julian [2018-08-05 14:27:18]
<@U08B65RM0> has joined the group

harri [2018-08-05 14:27:19]
<@U0DDJ0QSY> has joined the group

jasoncawood [2018-08-05 14:27:19]
<@UA97U141K> has joined the group

pepijn [2018-08-05 14:27:19]
<@UA6CC3MT5> has joined the group

rhysys [2018-08-05 14:27:19]
<@U08B6KZJ4> has joined the group

cary [2018-08-05 14:27:19]
<@U945NT4K0> has joined the group

aimo_alaniemi [2018-08-05 14:27:19]
<@U0D8KR8GH> has joined the group

julian [2018-08-05 14:28:16]
Step in increments of +/-4 x90

julian [2018-08-05 14:33:26]
Steps in increments of +/-1 x90. Pretty crap.

julian [2018-08-05 14:35:13]
(As pertains to the “stuck/sticky” hand issue.)

julian [2018-08-05 18:34:25]
<@U0DDJ0QSY> How does the stepping go for the distance hand in your algorithm? What size are the steps and when are those steps made? I’ve been doing a benchtop test to see when the hand may “stick” (which is as if the hand is attempting to move, but does not actually move, just shakes a bit.) This seems to happen pretty consistently for single steps. Steps of “2" (in the CLI App) work fairly well. Steps of “2” then “1" does not work well.

harri [2018-08-05 23:13:32]
Stepper motor has four positions (0,1,2,3), it can't be stopped on indexes 1 and 3, therefore firmware multiplies move hand steps by 2 in order to avoid invalid stop index positions. Only difference between hands is that speed is driven in non-blocking mode.

harri [2018-08-05 23:19:05]
Try stepping with different drive frequencies, so that stepper driver switches between two drive modes (continuous and pulse mode). The pulse mode is used for 1-50Hz and continuous mode for 51Hz->.

harri [2018-08-05 23:24:03]
Try to identify if there is certain frequency range in continuous drive mode that cause hand sticking issue, i.e. try to reproduce issue with 10Hz steps in frequency range of 51-200Hz.

pepijn [2018-08-06 02:00:55]
Got a stuck hand today as well. Just got back from ride. Will report details after shower :sweat_smile:

pepijn [2018-08-06 04:30:43]

pepijn [2018-08-06 04:31:44]
Ride was 2:45 approx. Time hand got stuck at 2:00. After ending the ride the photo above is what I ended with. Looks like the internal time tracking kept on working but stopped getting translated in hand movement. When ‘rewinding’ it went the exact amount that was ‘missing’ into the negative.

julian [2018-08-06 06:53:08]
This is consistent with what others have experienced.

julian [2018-08-06 06:53:22]
(The “rewind” effect)

julian [2018-08-06 06:53:38]
Which makes sense of course.

harri [2018-08-06 07:37:06]
I managed to reproduce the distance hand stuck issue on my B3.

harri [2018-08-06 07:44:24]
I was looping 2 steps at the time with short delay when hand got stuck (equal for 1 step through BLE API).

julian [2018-08-06 07:49:40]
I have a few films I made last night with various stepping/delay sequences. All done at <@UA6CC3MT5> CLI app default 150hz. I can share those later after trimming and compressing them.

harri [2018-08-06 13:40:12]
Distance hand does not get stuck on my B3 if the frequency is lowered down to 120Hz or less, this gives a bit more energy for each motor step. Maybe the drive frequency needs to be adjusted for the next firmware release. I will continue testing on tomorrow. I did the same tests for B2, it not get stuck at all.

julian [2018-08-06 13:47:55]
<@U0DDJ0QSY> What’s the relationship between frequency and “energy”, presumably lower frequency results in more torque or something? Anything in the spec in this regard?

harri [2018-08-06 13:55:25]
In continuous mode pulse is stretched to achieve lower frequency. I have not checked from spec, but I assume it must be stronger as more current flows through stepper motor coils due to longer control period.

julian [2018-08-07 11:02:09]
Must’ve gotten stuck for 10km

julian [2018-08-07 11:03:10]
Ended ride with odometer around 40km

julian [2018-08-07 11:04:16]
Time stuck as well, it seems

harri [2018-08-07 13:32:20]
FW: 2018.08.07.1 Step frequency set to 120Hz for ascent, distance and time hands.

julian [2018-08-07 18:49:52]
Woops..

julian [2018-08-07 19:11:22]
FW: 2018.08.07.1 (I accidentally deleted it)

julian [2018-08-16 07:46:15]
Very brief testing of the App, I seemed to see something in the logs to indicate that the resending of packets is happening but in two attempts it seemed like the data stopped coming from the device and everything stalled.

julian [2018-08-16 07:46:53]
I'll do more testing. I'm also sending the App through Test Flight — it may take a bit to reach you <@U0DDJ0QSY>

pepijn [2018-08-16 08:28:53]
<@U08B65RM0> if you have any additional info, I'll have a look as well

pepijn [2018-08-16 08:29:14]
I've been having trouble reproducing the dropped packet issue with my iphone

pepijn [2018-08-16 08:29:38]
Have you come up with a reliable reproduction scenario in the meantime?

julian [2018-08-16 08:30:44]
Nothing reliable..trying hiding the device far away, metal mixing bowl, etc.

pepijn [2018-08-16 08:31:08]
I must have less iron in my blood in summertime. The faraday cage hands haven't been working.

pepijn [2018-08-16 08:31:15]
I'll try a metal bowl indeed

julian [2018-08-16 08:32:54]
It was late but the logs showed the retry requests from blekit and then a few packets later you would see the requested packets come through - it happened more than I would've expected to be honest. Then one time it appeared (from the logs anyway) that the data simply stopped. I didn't go much further except to go to bed..

pepijn [2018-08-16 08:34:38]
during my earlier testing, the only cases where I saw that happening was near the end of the transfer

pepijn [2018-08-16 08:35:09]

Harri confirmed that this could still happen. If the Omata side considers the transfer complete (it sent out the last packet) it will no longer respond to the retry request

pepijn [2018-08-16 08:35:32]
If I remember correctly it did send a nack back then though and blekit marked the transfer as failed

julian [2018-08-16 08:42:43]
I have to look at how the completions are handled at the UI

pepijn [2018-08-16 08:44:08]
in a nutshell the earlier tuples of `(success_value, error)` have been replaced with `OmataResult` enum values which are either `.result` or `.error`. Handling of errors in the app itself is the same as it was before (or at least should be).

pepijn [2018-08-16 08:44:31]
Any `nack` during a multi-packet transfer will result in a `.error` value being returned to the completion handler

pepijn [2018-08-16 08:45:09]
That happens at

pepijn [2018-08-16 08:48:22]
In the app that's at

pepijn [2018-08-16 08:48:40]
on error all that happens is a logged message

pepijn [2018-08-16 08:49:19]
On `master` that didn't even happen :smile: just got silently ignored

julian [2018-08-16 08:56:49]
Okay, just as a note, I saw it twice: once when uploading GPS aiding data to a device. The other time downloading a ride. I'll look closer of course.

harri [2018-08-16 22:30:36]
Retransmit request generates a nack response on firmware side if the last packet is already sent out, this should be only limitation. I will try to figure out how this case could be fixed.

julian [2018-08-16 22:32:29]
I can reliably reproduce the device seemingly "timing out" — stop transmitting after a retransmit request. It takes several retransmit requests, but eventually it stops responding.

julian [2018-08-16 22:33:38]
This is from RxApp downloading an Activity FIT file. Several retransmits appear to succeed, but last one ends the log as the Rx App process will wait forever.

julian [2018-08-16 22:35:20]
(Usual procedure for interrupting packets — cover with hands, moving across the room, etc.)

pepijn [2018-08-16 22:35:21]

<@U08B65RM0> do you get the same thing with the CLI app? If so, perhaps a packet logger capture will show what's going on.

julian [2018-08-16 22:35:46]
Good idea.

julian [2018-08-16 22:50:19]
Huh, Much more difficult to get missed packets on my laptop. Disconnect happens before there's a request to resend a packet. I'll keep trying.

pepijn [2018-08-16 23:03:31]
Debug logging from the omata firmware might help too

pepijn [2018-08-16 23:03:50]
Check if the retransmit actually comes in or not

pepijn [2018-08-16 23:16:07]
Reproduced the same issue here...

pepijn [2018-08-16 23:18:16]
Based on packet logger output it's definitely the Omata side that stops responding

pepijn [2018-08-16 23:18:43]

pepijn [2018-08-16 23:18:58]
corresponds to ``` 2018-08-17 08:17:40.415842+0200 OmataCLI[61437:1422082] [omata] Response chunk 301/8132 (18 bytes) 2018-08-17 08:17:40.416791+0200 OmataCLI[61437:1422228] [omata] Response chunk 302/8132 (18 bytes) 2018-08-17 08:17:40.505929+0200 OmataCLI[61437:1422082] [omata] Response chunk 303/8132 (18 bytes) 2018-08-17 08:17:40.506530+0200 OmataCLI[61437:1422228] [omata] Response chunk 304/8132 (18 bytes) 2018-08-17 08:17:40.595938+0200 OmataCLI[61437:1422082] [omata] Response chunk 305/8132 (18 bytes) 2018-08-17 08:17:40.596494+0200 OmataCLI[61437:1422228] [omata] Response chunk 306/8132 (18 bytes) 2018-08-17 08:17:40.625968+0200 OmataCLI[61437:1422082] [omata] Response chunk 307/8132 (18 bytes) 2018-08-17 08:17:40.626518+0200 OmataCLI[61437:1422228] [omata] Response chunk 309/8132 (18 bytes) 2018-08-17 08:17:40.626565+0200 OmataCLI[61437:1422228] [omata] Sequence error; requesting retransmit from 308 ```

pepijn [2018-08-16 23:21:27]
In the screenshot that last write for `FC 34 01` is the `retransmit 308` request. Gets sent out and acknowledged.

pepijn [2018-08-16 23:24:14]
Flashing a debug firmware so I can capture that side of things as well

pepijn [2018-08-16 23:30:35]
<@U0DDJ0QSY> it looks like the retransmit request get lost every now and then

pepijn [2018-08-16 23:30:52]
packet loss in the other direction...

pepijn [2018-08-16 23:31:01]
collecting log info for you

harri [2018-08-16 23:31:13]
I will take a look

pepijn [2018-08-16 23:31:28]
desktop side I see this: ``` 2018-08-17 08:27:17.446011+0200 OmataCLI[61437:1440007] [omata] Response chunk 1215/8132 (18 bytes) 2018-08-17 08:27:17.446074+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.446674+0200 OmataCLI[61437:1439882] [omata] Response chunk 1216/8132 (18 bytes) 2018-08-17 08:27:17.446729+0200 OmataCLI[61437:1439882] [omata] Sequence error; ignoring 2018-08-17 08:27:17.506725+0200 OmataCLI[61437:1440007] [omata] Response chunk 1217/8132 (18 bytes) 2018-08-17 08:27:17.506866+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.507023+0200 OmataCLI[61437:1440007] [omata] Response header 'Acknowledgment' (2 bytes) 2018-08-17 08:27:17.537279+0200 OmataCLI[61437:1439882] [omata] Response chunk 1210/8132 (18 bytes) 2018-08-17 08:27:17.537442+0200 OmataCLI[61437:1439882] [omata] Response chunk 1211/8132 (18 bytes) 2018-08-17 08:27:17.566138+0200 OmataCLI[61437:1440007] [omata] Response chunk 1212/8132 (18 bytes) 2018-08-17 08:27:17.566773+0200 OmataCLI[61437:1439882] [omata] Response chunk 1214/8132 (18 bytes) 2018-08-17 08:27:17.566848+0200 OmataCLI[61437:1439882] [omata] Sequence error; requesting retransmit from 1213 2018-08-17 08:27:17.596108+0200 OmataCLI[61437:1439883] [omata] Response chunk 1215/8132 (18 bytes) 2018-08-17 08:27:17.596171+0200 OmataCLI[61437:1439883] [omata] Sequence error; ignoring 2018-08-17 08:27:17.596758+0200 OmataCLI[61437:1440007] [omata] Response chunk 1216/8132 (18 bytes) 2018-08-17 08:27:17.596810+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.626254+0200 OmataCLI[61437:1439883] [omata] Response chunk 1217/8132 (18 bytes) 2018-08-17 08:27:17.626358+0200 OmataCLI[61437:1439883] [omata] Sequence error; ignoring 2018-08-17 08:27:17.686775+0200 OmataCLI[61437:1440007] [omata] Response chunk 1218/8132 (18 bytes) 2018-08-17 08:27:17.686975+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.687171+0200 OmataCLI[61437:1440007] [omata] Response chunk 1219/8132 (18 bytes) 2018-08-17 08:27:17.687234+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.716059+0200 OmataCLI[61437:1439883] [omata] Response chunk 1220/8132 (18 bytes) 2018-08-17 08:27:17.716151+0200 OmataCLI[61437:1439883] [omata] Sequence error; ignoring ```

harri [2018-08-16 23:31:48]
Need to build FW debug build for you.

pepijn [2018-08-16 23:31:53]
last retransmit for 1213 is not being acknowledged and omata keeps on sending original sequence

pepijn [2018-08-16 23:32:34]

pepijn [2018-08-16 23:32:42]
packet capture shows the retransmit being sent out and a write response coming back

harri [2018-08-16 23:32:49]
Maybe it is not coming to main MCU side, it might be dropped on nRF.

pepijn [2018-08-16 23:33:24]

Omata side I see this. Retransmit for 1213 never shows up. ``` [1534487234.776]manu_ble_callback: received 230 bytes of data: [1534487234.786]event_handler_file_tx: retransmit seq: 1210 [1534487234.786]send_ble_ack: msg: 0xFC [1534487234.796]__manu_ble_send_msg: BLE message written ok: [1534487234.806]__manu_ble_send_msg: BLE message written ok:
[1534487234.806]event_handler_file_tx: seq: 1210, nread: 18, left: 124587
[1534487234.816]manu_ble_callback: received 230 bytes of data:
[1534487234.826]__manu_ble_send_msg: BLE message written ok:
[1534487234.826]event_handler_file_tx: seq: 1211, nread: 18, left: 124569
[1534487234.836]manu_ble_callback: received 230 bytes of data:
[1534487234.846]__manu_ble_send_msg: BLE message written ok:
[1534487234.846]event_handler_file_tx: seq: 1212, nread: 18, left: 124551
[1534487234.856]manu_ble_callback: received 230 bytes of data:
[1534487234.866]__manu_ble_send_msg: BLE message written ok:
[1534487234.866]event_handler_file_tx: seq: 1213, nread: 18, left: 124533
[1534487234.876]manu_ble_callback: received 230 bytes of data:
[1534487234.886]__manu_ble_send_msg: BLE message written ok:
[1534487234.886]event_handler_file_tx: seq: 1214, nread: 18, left: 124515
[1534487234.896]manu_ble_callback: received 230 bytes of data:
[1534487234.906]__manu_ble_send_msg: BLE message written ok:
[1534487234.906]event_handler_file_tx: seq: 1215, nread: 18, left: 124497
[1534487234.916]manu_ble_callback: received 230 bytes of data:
[1534487234.926]__manu_ble_send_msg: BLE message written ok:
[1534487234.936]event_handler_file_tx: seq: 1216, nread: 18, left: 124479
[1534487234.946]manu_ble_callback: received 230 bytes of data:
[1534487234.956]__manu_ble_send_msg: BLE message written ok:
[1534487234.956]event_handler_file_tx: seq: 1217, nread: 18, left: 124461
[1534487234.966]manu_ble_callback: received 230 bytes of data:
[1534487234.976]__manu_ble_send_msg: BLE message written ok:
[1534487234.976]event_handler_file_tx: seq: 1218, nread: 18, left: 124443
[1534487234.986]manu_ble_callback: received 230 bytes of data:
[1534487234.996]__manu_ble_send_msg: BLE message written ok:
[1534487235.006]event_handler_file_tx: seq: 1219, nread: 18, left: 124425
[1534487235.016]manu_ble_callback: received 230 bytes of data:
[1534487235.016]__manu_ble_send_msg: BLE message written ok:
[1534487235.026]event_handler_file_tx: seq: 1220, nread: 18, left: 124407
[1534487235.036]manu_ble_callback: received 230 bytes of data:
[1534487235.046]__manu_ble_send_msg: BLE message written ok:
[1534487235.046]event_handler_file_tx: seq: 1221, nread: 18, left: 124389
[1534487235.056]manu_ble_callback: received 230 bytes of data:
[1534487235.066]__manu_ble_send_msg: BLE message written ok:
[1534487235.076]event_handler_file_tx: seq: 1222, nread: 18, left: 124371 ```

pepijn [2018-08-16 23:34:56]
I'll try to capture the same info for the transfer stall now

harri [2018-08-16 23:36:00]
"event_handler_file_tx: retransmit seq: 1210" this is the last retransmit seen by main MCU.

harri [2018-08-16 23:36:23]
Do you wait for ack for retransmit request?

harri [2018-08-16 23:36:39]

[1534487234.786]event_handler_file_tx: retransmit seq: 1210 [1534487234.786]send_ble_ack: msg: 0xFC

harri [2018-08-16 23:37:01]
Need to request again if ack is not received by app.

pepijn [2018-08-16 23:37:51]
There's no retransmit re-request yet no

pepijn [2018-08-16 23:38:04]
the ack was received afaict

pepijn [2018-08-16 23:38:07]
``` 2018-08-17 08:27:17.357304+0200 OmataCLI[61437:1439882] [omata] Sequence error; requesting retransmit from 1210 2018-08-17 08:27:17.386090+0200 OmataCLI[61437:1440007] [omata] Response chunk 1212/8132 (18 bytes) 2018-08-17 08:27:17.386158+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.386747+0200 OmataCLI[61437:1439882] [omata] Response chunk 1213/8132 (18 bytes) 2018-08-17 08:27:17.386790+0200 OmataCLI[61437:1439882] [omata] Sequence error; ignoring 2018-08-17 08:27:17.415998+0200 OmataCLI[61437:1440007] [omata] Response chunk 1214/8132 (18 bytes) 2018-08-17 08:27:17.416051+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.446011+0200 OmataCLI[61437:1440007] [omata] Response chunk 1215/8132 (18 bytes) 2018-08-17 08:27:17.446074+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.446674+0200 OmataCLI[61437:1439882] [omata] Response chunk 1216/8132 (18 bytes) 2018-08-17 08:27:17.446729+0200 OmataCLI[61437:1439882] [omata] Sequence error; ignoring 2018-08-17 08:27:17.506725+0200 OmataCLI[61437:1440007] [omata] Response chunk 1217/8132 (18 bytes) 2018-08-17 08:27:17.506866+0200 OmataCLI[61437:1440007] [omata] Sequence error; ignoring 2018-08-17 08:27:17.507023+0200 OmataCLI[61437:1440007] [omata] Response header 'Acknowledgment' (2 bytes) 2018-08-17 08:27:17.537279+0200 OmataCLI[61437:1439882] [omata] Response chunk 1210/8132 (18 bytes) 2018-08-17 08:27:17.537442+0200 OmataCLI[61437:1439882] [omata] Response chunk 1211/8132 (18 bytes) 2018-08-17 08:27:17.566138+0200 OmataCLI[61437:1440007] [omata] Response chunk 1212/8132 (18 bytes) 2018-08-17 08:27:17.566773+0200 OmataCLI[61437:1439882] [omata] Response chunk 1214/8132 (18 bytes) 2018-08-17 08:27:17.566848+0200 OmataCLI[61437:1439882] [omata] Sequence error; requesting retransmit from 1213 ```

pepijn [2018-08-16 23:39:08]
I'll add some code to send out another retransmit request if a resync doesn't happen fast enough

harri [2018-08-16 23:39:39]
Need to continue working with current project. I will continue later on today with Omata. Let me know all details how to reproduce issues, thanks.

pepijn [2018-08-16 23:41:41]
The details? Put my laptop on the other side of the table, start file transfer, hold the omata behind my back and wave it around :smile:

pepijn [2018-08-16 23:42:34]
I start seeing these issues with a distance of 2-3m between omata and laptop with my body in between causing interference.
```

pepijn [2018-08-16 23:42:54]
I'm sure you guys have better equipment for this kind of thing in your lab :smile:

pepijn [2018-08-16 23:45:47]
Got the stall as well now

pepijn [2018-08-16 23:46:06]
No useful information on the Omata side; it simply stops all of a sudden

pepijn [2018-08-16 23:46:44]
``` [1534488310.716]send_ble_ack: msg: 0xFC [1534488310.716]__manu_ble_send_msg: BLE message written ok: [1534488310.726]__manu_ble_send_msg: BLE message written ok:
[1534488310.736]event_handler_file_tx: seq: 353, nread: 18, left: 140013
[1534488310.746]__manu_ble_send_msg: BLE message written ok:
[1534488310.746]event_handler_file_tx: seq: 354, nread: 18, left: 139995
[1534488310.756]manu_ble_callback: received 230 bytes of data:
[1534488310.756]__manu_ble_send_msg: BLE message written ok:
[1534488310.766]event_handler_file_tx: seq: 355, nread: 18, left: 139977
[1534488310.776]manu_ble_callback: received 230 bytes of data:
[1534488310.786]__manu_ble_send_msg: BLE message written ok:
[1534488310.786]event_handler_file_tx: seq: 356, nread: 18, left: 139959
[1534488310.796]manu_ble_callback: received 230 bytes of data:
[1534488310.806]__manu_ble_send_msg: BLE message written ok:
[1534488310.806]event_handler_file_tx: seq: 357, nread: 18, left: 139941
[1534488310.816]__manu_ble_send_msg: BLE message written ok:
[1534488310.826]event_handler_file_tx: seq: 358, nread: 18, left: 139923
[1534488310.826]manu_ble_callback: received 230 bytes of data:
[1534488310.836]__manu_ble_send_msg: BLE message written ok:
[1534488310.836]event_handler_file_tx: seq: 359, nread: 18, left: 139905
[1534488310.846]manu_ble_callback: received 230 bytes of data:
[1534488310.856]__manu_ble_send_msg: BLE message written ok:
[1534488310.856]event_handler_file_tx: seq: 360, nread: 18, left: 139887
[1534488310.866]manu_ble_callback: received 230 bytes of data:
[1534488340.136]__manu_get_temperature: 32C [1534488370.146]__manu_get_temperature: 32C
[1534488374.096]__manu_gauge_current: 372 mA [1534488374.176]__manu_gauge_soc: 95 %
[1534488374.176]handle_event: BATTERY_LEVEL [CONNECT] [1534488374.176]handle_event: level: 95 [1534488374.186]__manu_meter_set_value: battery:95 [1534488374.226]meter_set_pos: ascent, 160 (abs) ```

**pepijn [2018-08-16 23:47:09]**
For the last send of seq 360, there's no corresponding `BLE message written ok`

**pepijn [2018-08-16 23:47:21]**
is there some error handling missing in the code perhaps?

**pepijn [2018-08-16 23:48:40]**
<@U0DDJ0QSY> this is with the 2018.06.05.1 debug firmware; should I try with a more recent image or do you not expect that to make any difference? If I should, which one should I use?

**pepijn [2018-08-16 23:49:01]**
off to the day job now as well
```

harri [2018-08-16 23:59:37]
2018.08.07.1_Manu_Retail_dbg

harri [2018-08-17 00:00:26]
BLE implementation should be exactly the same as in 2018.06.05.1

julian [2018-08-17 07:33:34]
<@U0DDJ0QSY> <@UA6CC3MT5> Just as a note and for a bit of expediency, I started looking at implementing a dead-man switch time out in the UI to catch the stalls. Not the “right” way to handle this case, but..

julian [2018-08-17 07:34:03]
I know it’d be better to be in the comms plumbing, I would presume..

pepijn [2018-08-17 07:35:57]
I did fix one thing already in blekit this morning, just didn't get round to comitting the change

pepijn [2018-08-17 07:36:20]
If the omata misses the retransmit, blekit will now send out another retransmit request

julian [2018-08-17 07:36:31]
Ah — anything I should fetch/pull?

pepijn [2018-08-17 07:36:35]
It'll do that every 50 chunks until everything resyncs

pepijn [2018-08-17 07:36:46]
Not yet, I'll commit that when I get home

pepijn [2018-08-17 07:40:33]
Just scanned the GCD docs; timeout timer should be pretty straightforward as well

pepijn [2018-08-17 07:41:17]
a timer DispatchSource should do the trick

pepijn [2018-08-17 07:41:50]
I'll see if I can get that integrated this evening

julian [2018-08-17 07:44:58]
I was looking at similar..

pepijn [2018-08-17 09:59:57]
<@U08B65RM0> if you want to have a go at it, you're welcome to :slightly_smiling_face:

pepijn [2018-08-17 10:02:18]
I was thinking something along the lines of - add a last received timestamp field to the internal omata state - when a request is initiated start a time DispatchSource that uses the bluetooth RX queue and fires every 1-2 seconds - in the handler of the DispatchSource check the last received timestamp and if it's greater than some threshold fail the current request - when a request is finalized make sure to stop

the timer

julian [2018-08-17 10:46:59]
I'll give it a go and try not to muck everything up..

harri [2018-08-17 13:24:02]
I got the stall issue reproduced, it is the nRF that sends empty packet to main MCU, then it keeps waiting for ack, but it never arrives. Need to have nRF traces and then figure out what actually happens. I dont have Omata with me that has nRF tracing cables, so this goes for next week.

julian [2018-08-17 21:41:44]
<@UA6CC3MT5> Did a bit of debugging. Successfully set timeout and can handle them well enough — pop an error, etc. But, it seems that if I induce a dropped packet or other comms problem and then try again, the timeout triggers immediately. I think maybe the timer is not properly reset in the OmataBLEKit. ``` *2018-08-17 21:29:56.546090-0700 OmataRx[2616:854851] [omata] Request timed out after 5.28762209415436 seconds* 2018-08-17 21:30:06.845 [Warning] [OmataDetailViewController.swift:1025] collectionView(_:cellForItemAt:) > Error Timed out 2018-08-17 21:30:22.164058-0700 OmataRx[2616:855243] [omata] Request 'Get FIT file' (15 bytes) *2018-08-17 21:30:23.165923-0700 OmataRx[2616:855371] [omata] Request timed out after 31.9068320989609 seconds* 2018-08-17 21:30:23.168 [Warning] [OmataDetailViewController.swift:1025] collectionView(_:cellForItemAt:) > Error Timed out 2018-08-17 21:38:28.372615-0700 OmataRx[2616:858142] [omata] Request 'Get FIT file' (15 bytes) *2018-08-17 21:38:29.373885-0700 OmataRx[2616:858193] [omata] Request timed out after 518.11543905735 seconds* 2018-08-17 21:38:29.376 [Warning] [OmataDetailViewController.swift:1025] collectionView(_:cellForItemAt:) > Error Timed out ```

julian [2018-08-17 21:58:06]
In that request I attempted to get the file three times. The first time I induced the error. The other times I just requested the file without any shenanigans. This is with a timeout of 5 seconds.

julian [2018-08-17 21:58:35]
It's perhaps as if `lastReceivedTime` is not reset to 0 with the next request, perhaps?

pepijn [2018-08-18 01:38:32]
When the timeout happens afaict the omata is kind of stuck. Nothing will work after that until you turn it off and in again.

pepijn [2018-08-18 01:38:44]
So I think this is to be expected.

pepijn [2018-08-18 01:55:49]
:bulb:

pepijn [2018-08-18 01:56:44]
Probably a good idea to set lastreceivedtime to the current time at the start of the request indeed.

pepijn [2018-08-18 02:01:41]
I've added the bit of code that does this. I don't expect much difference in behaviour though. After a timeout I expect subsequent requests to still timeout until the omata is reset.

pepijn [2018-08-18 02:02:36]
Each request should respect the specified timeout now (5s default if not specified) though instead of timing out too quickly

pepijn [2018-08-18 02:08:41]
Here's an example of what happens after the fix ``` 2018-08-18 11:05:27.716839+0200 OmataCLI[9919:1860992] [omata] Response chunk 514/8132 (18 bytes) 2018-08-18 11:05:27.716890+0200 OmataCLI[9919:1860992] [omata] Sequence error; ignoring while waiting for resync 2018-08-18 11:05:27.717120+0200 OmataCLI[9919:1860992] [omata] Response header 'Acknowledgment' (2 bytes) 2018-08-18 11:05:32.804132+0200 OmataCLI[9919:1862241] [omata] Request timed out after 5.08689200878143 seconds Unexpected error: timedOut. Omata_DBA23C4967DE> sw 2018-08-18 11:05:36.167994+0200 OmataCLI[9919:1862241] [omata] Request 'Get device software version' (1 bytes) 2018-08-18 11:05:41.173226+0200 OmataCLI[9919:1863658] [omata] Request timed out after 5.00522601604462 seconds Unexpected error: timedOut. ``` I then turned reset the omata (bezel to off, back to connect) ``` Omata_DBA23C4967DE> 2018-08-18 11:05:55.860940+0200 OmataCLI[9919:1863658] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Unexpected connection loss (Connected) 2018-08-18 11:05:55.860996+0200 OmataCLI[9919:1863658] [manager] Started scanning for peripherals with 222D0002-BA58-2FB0-1A43-77A2BFDDE5DF omata> 2018-08-18 11:05:59.722871+0200 OmataCLI[9919:1863658] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Detected new Omata (Disconnected) ... 2018-08-18 11:06:01.012765+0200 OmataCLI[9919:1864329] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Ready to connect (Discovered) omata> c 287 2018-08-18 11:06:04.836471+0200 OmataCLI[9919:1864329] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Connection established (Connecting) 2018-08-18 11:06:05.010913+0200 OmataCLI[9919:1864329] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Discovered RX characteristic (Connecting) 2018-08-18 11:06:05.011091+0200 OmataCLI[9919:1864329] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Discovered TX characteristic (Connecting) 2018-08-18 11:06:05.160667+0200 OmataCLI[9919:1863658] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] RX characteristic notifying? true (Connecting) 2018-08-18 11:06:05.160729+0200 OmataCLI[9919:1863658] [manager] [7CCEC621-1ED5-4098-8353-821F0BE17721] Connection established Omata_DBA23C4967DE> sw 2018-08-18 11:06:06.266093+0200 OmataCLI[9919:1863658] [omata] Request 'Get device software version' (1 bytes) 2018-08-18 11:06:06.315907+0200 OmataCLI[9919:1864534] [omata] Response 'Get device software version' (12 bytes) FirmwareInfo(firmwareYear: 2018, firmwareMonth: 6, firmwareDay: 5, firmwareNum: 1, firmwareDbg: 1, bootloaderMajor: 0, bootloaderMinor: 7, bootloaderPatch: 0, fitProtocolBcdFormat: 32, fitProtocolMajor: 20, fitProtocolMinor: 54) Omata_DBA23C4967DE> ```

pepijn [2018-08-19 07:09:43]
<@U08B65RM0> do you have a commercial license for paintcode already?

julian [2018-08-19 07:10:00]
Yes, indeed I do.

julian [2018-08-19 07:10:08]
What’re you thinking?

pepijn [2018-08-19 07:10:15]
ok, I think I can build something with it then and hand it over to you

pepijn [2018-08-19 07:10:31]
the trial version is fully functional, but generated code can't be used for commercial purposes...

julian [2018-08-19 07:10:35]
Ah, okay. Check!

julian [2018-08-19 07:11:00]
Yeah, I bought it that one day I sat at Copenhagen airport for about 8 hours..

pepijn [2018-08-19 07:11:04]
not sure I'll have the time to finish this, but it's a neat tool that I would like to experiment with

julian [2018-08-19 07:11:19]
Seems reasonable and useful and I wanted to get some work done..

pepijn [2018-08-19 07:11:23]
What I'm going for is a parameterized custom view of an omata

pepijn [2018-08-19 07:11:29]
where you can highlight hands using variables

julian [2018-08-19 07:11:34]
and the parameters would be..?

pepijn [2018-08-19 07:11:34]
and set rotation of the hands

julian [2018-08-19 07:11:40]
Ah, got it.

pepijn [2018-08-19 07:11:51]
just to see how far you can take this stuff :smile:

pepijn [2018-08-19 07:12:07]
the only things I'm missing is a vector version of the left/right calibration arrows

pepijn [2018-08-19 07:12:19]
I can rebuild those of course, but they probably won't match 100% with the current images

julian [2018-08-19 07:14:10]
Yes, that just reminds me of another little App I had created that day that created a “photo real” (from our renderings) view of the Omata based on your speed, distance, ascent and time. Getting the components to draw in the right position at the right orientation was tricky. And getting an image of that to save to the photo library was not entirely obvious. I had to draw offscreen and then bring it back. It was weird. Then I thought about using PaintCode to do that. And then I realized my plane was boarding as I looked around the lounge and the others who were on my delayed flight were gone.. :rolling_on_the_floor_laughing:

pepijn [2018-08-19 07:15:02]
things like that tend to happen when you get deep into coding... :smile:

julian [2018-08-19 07:15:46]
no doubt!

julian [2018-08-19 07:15:57]
Maybe I'll look at that again.

julian [2018-08-19 07:16:01]
..someday

julian [2018-08-19 07:20:04]
The overall idea, just fwiw, was to create a little shareable "token" of your ride, like an image that had the overall stats using the omata as the data representation. Just a trial sketch. Not nearly fully thought through or designed. But, something to do while sitting around with a sketchy internet connection..(meaning I kept having to go to Stack Overflow to look for answers to questions I had about drawing to screen and so forth..)

pepijn [2018-08-19 07:20:43]
That kind of CoreGraphics code is what I used to do on a daily basis at my previous job

pepijn [2018-08-19 07:20:54]
Drawing interactive maps to the screen using AWT in Java

julian [2018-08-19 07:21:04]
Oh, wow. I wish I was more fluent in that.

pepijn [2018-08-19 07:21:18]
Fun with vector math

julian [2018-08-19 07:21:43]
Right the abstract window toolkit. I never got super comfortable there. I was always more inclined to work in the boiler room of backend code..

pepijn [2018-08-19 07:21:45]
I was thankful for my linear algebra course at university when I was doing that :slightly_smiling_face:

julian [2018-08-19 07:22:23]
Yes, all that makes my eyes go cross a bit..lots of drawing on graph paper and trying to remember geometry and trig

julian [2018-08-19 07:23:56]
And all the window kits always have their funny way of drawing..CoreGraphics and angles for example: you can't seem to specify a direction if you do a rotational transformation, say if you want something to turn clockwise, it may not always do so. That seems a bit weird to me. Entire threads on SO of people trying to figure all that out.

pepijn [2018-08-19 07:45:47]
huh weird

pepijn [2018-08-19 07:46:08]

in the end it's all 3x3 matrices; don't see why it wouldn't be possible to rotate both ways...

julian [2018-08-19 07:49:56]
Yeah, could be me. I tried pretty hard thought. But also..matrix algebra..

harri [2018-08-19 09:34:02]
Rx app gets stuck when omata has low battery -> ”Battery level low xx, some commands may be disabled”. I didn’t check traces from Omata side.

pepijn [2018-08-19 10:08:45]
<@U0DDJ0QSY> in what way is it stuck?

julian [2018-08-19 10:40:23]
Presumably hangs with no UI response?

harri [2018-08-19 10:46:59]
Black screen, no buttons visible.

harri [2018-08-19 10:47:22]
Need to restart rx app.

pepijn [2018-08-19 11:28:32]
What’s the quickest way to drain the battery? :joy:

pepijn [2018-08-19 11:28:43]
Download files over Bluetooth non stop?

harri [2018-08-19 11:34:06]
Is it possible to change low battery threshold level on rx app?

pepijn [2018-08-19 11:34:35]
Probably; I’m not too familiar with the code.

pepijn [2018-08-19 11:35:30]
I had assumed this would be caused by a battery low error coming from the omata. Could indeed just be an app level thing.

pepijn [2018-08-19 11:36:55]
My device is fully charged now. I have it transferring files in a loop at the moment. Will let the battery drain for a bit and then see if I can find and change the threshold in the app.

harri [2018-08-19 11:37:32]
Omata just reports level and then app shows popup message.

harri [2018-08-19 11:38:03]

pepijn [2018-08-19 11:38:35]
Let me check the source code in the meantime...

pepijn [2018-08-19 11:39:04]
``` if percent < 31 { self.popupNotification("Battery Level Low \(percent). Some commands may be disabled.") } ```

pepijn [2018-08-19 11:39:06]
there we go

pepijn [2018-08-19 11:40:31]
not sure why this results in a non-functional app, but should be easy enough to reproduce

harri [2018-08-19 11:40:35]
Maybe threshold is 30%

pepijn [2018-08-19 11:41:13]
that's what the code says indeed :smile:

julian [2018-08-19 11:41:59]
Sorry - just got to clubhouse from a ride..that’s right <@UA6CC3MT5> - I check programmatically..

pepijn [2018-08-19 11:42:35]
any idea why showing a popup from `viewDidAppear` would cause the entire thing to get stuck?

pepijn [2018-08-19 11:43:15]
maybe this needs a `main.async` around it to defer the popup. Not too familiar with the ins and outs of UIKit...

harri [2018-08-19 11:43:49]
Maybe buttons are somehow hidden due to popup?

pepijn [2018-08-19 11:45:41]
I don't see anything in the code along those lines

pepijn [2018-08-19 11:45:50]
Anyway, I'll try to reproduce this and figure it out

pepijn [2018-08-19 12:06:43]
they weren't kidding when they made bluetooth low-energy...

pepijn [2018-08-19 12:07:04]
I've been transfering files for a while now; charge hasn't dropped a single percent

julian [2018-08-20 07:31:17]
<@U0DDJ0QSY> You should have an updated version of the Rx available now that takes care of that “black out” error for low battery level. It was purely a UI issue — not related to firmware, fwiw.

julian [2018-08-20 07:31:27]
(Available via Test Flight)

harri [2018-08-20 08:00:27]
```

Rx app crashes if Omata is selected again after app informs that it is connecting to omata, need to wait that buttons are visible.

julian [2018-08-20 08:01:38]
Give it a moment to establish the connection and the view transitions to the “control panel” detail view. I should do something better in the UI, for example disable the button or something..

julian [2018-08-20 08:02:39]
I see the crash..I’ll note it for a fix later.

harri [2018-08-20 08:02:55]
I can now start rx app with Omata that has low battery.

julian [2018-08-20 08:03:24]
Okay. So no more “death star” screen with no UI visible?

harri [2018-08-20 08:05:08]
After this progress animation disappears, it is needed to wait for couple of seconds, otherwise app crashes.

julian [2018-08-20 08:05:27]
Yes, looking at that flow now..

julian [2018-08-20 08:06:57]
(In the background it first takes a snapshot of the activity summary files and stores them in the cloud, then it downloads any new summaries..but presently the UI does not show that progress clearly so it’s a bit confusing, unfortunately..It could seem like its either stuck or waiting for you to do something..bad user experience!)

harri [2018-08-20 08:11:16]
I will get modified Omata with BLE debugging cables for tomorrow. Hopefully I get nRF debugger working without problems, so I can get some more information about the stall issue.

harri [2018-08-20 08:12:57]
Rx app crash is not a problem, just need to avoid pressing button right after BLE connection.

julian [2018-08-20 08:13:27]
That would be great. Both <@UA6CC3MT5> and I feel that if we get the retry sorted we’ll have a good, robust communications flow. It’s quite promising so far.

julian [2018-08-20 08:14:39]
Also, just a side note that once we’ve updated people to the firmware with the 120hz step frequency it seems to control the sticking hand problem. Let’s see over time. For me, it has worked over the last few weeks, although I get nervous a bit when the distance hand gets up to 40 or 50 — I keep looking to see if it will keep moving! :eyes:

harri [2018-08-20 08:18:07]
Retry logic itself was working fine. I need to make about 15 meters distance between iPhone and Omata when I was testing stall issue and retry logic.

julian [2018-08-20 08:19:41]
What do you think it is with this particular issue where some retry will fail and stall everything? Buffer? Communication between nRF and MCU?

harri [2018-08-20 08:46:49]
Need to have traces on nRF side when stall error happens, it should send ack for previous transfer, but instead stm32 receives empty buffer. Seems that there is no SPI interrupts after stall happens.

dustin [2018-08-20 08:51:20]
<@UC6ULKGV6> has joined the group

harri [2018-08-24 05:20:28]
This BLE firmware has updated uplink tx error handling and mcu communication ack handling. Update works the same way as stm32 update -> 1) copy "nrf52_update.hex" to the root in mass storage mode. 2) eject and disconnect USB. Note this BLE firmware is local build and hence does not have proper version number.

julian [2018-08-24 06:31:19]
Okay! So for testing. I'll let you know how it goes. This goes with latest desk build from 08.07?

harri [2018-08-24 06:48:17]
It does not have dependency for stm32 firmware, so it should work with the very first retail firmware release and with the latest desk build.

julian [2018-08-24 06:50:03]
If I recall I can move them both update.oci and the nrf52 image onto the volume at the same time and both will be ingested for updating both chips?

harri [2018-08-24 06:53:17]
Yes, both can be stored onto volume at the same time. The nrf52 will flashed first by stm32, and then bootloader flashes stm32.

julian [2018-08-24 06:54:40]
Okay. Anyway to confirm? Or just trust that it happened?

julian [2018-08-24 06:58:10]
Were you able to reproduce the error <@UA6CC3MT5> and I saw? What were you able to see on the debug harness?

harri [2018-08-24 07:21:41]
Maybe stall and packet drop issues were connected to each other. Made a fix for packet dropping and after that I did not see packet drops neither stalls.

harri [2018-08-24 07:23:23]
This nrf firmware needs to be carefully tested before sharing for test team users.

julian [2018-08-24 07:24:01]
Understood

julian [2018-08-24 07:32:00]

I get an unexpected disconnect quite easily by moving a few paces away from my iPhone. I see this in our debug trace

julian [2018-08-24 07:32:07]
``` 2018-08-24 07:30:14.993410-0700 OmataRx[10573:3927962] [omata] Response chunk 116/4637 (18 bytes) 2018-08-24 07:30:14.994047-0700 OmataRx[10573:3927962] [omata] Response chunk 117/4637 (18 bytes) 2018-08-24 07:30:15.053085-0700 OmataRx[10573:3927850] [omata] Response chunk 118/4637 (18 bytes) 2018-08-24 07:30:15.173264-0700 OmataRx[10573:3927962] [omata] Response chunk 119/4637 (18 bytes) 2018-08-24 07:30:15.263375-0700 OmataRx[10573:3927962] [omata] Response chunk 120/4637 (18 bytes) 2018-08-24 07:30:15.293461-0700 OmataRx[10573:3928041] [omata] Response chunk 121/4637 (18 bytes) 2018-08-24 07:30:15.294175-0700 OmataRx[10573:3928041] [omata] Response chunk 122/4637 (18 bytes) 2018-08-24 07:30:15.294833-0700 OmataRx[10573:3928041] [omata] Response chunk 123/4637 (18 bytes) 2018-08-24 07:30:15.295670-0700 OmataRx[10573:3928041] [omata] Response chunk 124/4637 (18 bytes) 2018-08-24 07:30:15.296489-0700 OmataRx[10573:3928041] [omata] Response chunk 125/4637 (18 bytes) 2018-08-24 07:30:15.623603-0700 OmataRx[10573:3927980] [omata] Response chunk 126/4637 (18 bytes) 2018-08-24 07:30:15.624234-0700 OmataRx[10573:3927980] [omata] Response chunk 127/4637 (18 bytes) 2018-08-24 07:30:15.743570-0700 OmataRx[10573:3927993] [omata] Response chunk 128/4637 (18 bytes) 2018-08-24 07:30:15.833287-0700 OmataRx[10573:3927980] [omata] Response chunk 129/4637 (18 bytes) 2018-08-24 07:30:15.833751-0700 OmataRx[10573:3927980] [omata] Response chunk 130/4637 (18 bytes) 2018-08-24 07:30:16.589874-0700 OmataRx[10573:3927962] [manager] [64417892-0A9D-6F95-EE58-53482290BE2B] Unexpected connection loss (Connected) 2018-08-24 07:30:16.591 [Debug] [OmataBluetoothModel.swift:75] omataManager(_:didDisconnect:error:) > ==========> Disconnected from Optional("Omata_F39EF15CFCD8") 2018-08-24 07:30:16.591369-0700 OmataRx[10573:3927960] [omata] Request 'Get battery info' (1 bytes) ```

julian [2018-08-24 07:33:00]
I can consistently reproduce this by covering the device in my hands and moving away a bit.

julian [2018-08-24 07:34:40]
Repeats with a different device as well.

julian [2018-08-24 07:37:22]
I'll have to dig into this further on the App side.

julian [2018-08-24 07:39:28]
It may be that the message sent from the device is unexpected from <@UA6CC3MT5>'s BLE code. Not sure.

julian [2018-08-24 07:39:56]
I don't know why the device sends `Get battery info` in the middle of the communication.

julian [2018-08-24 07:40:20]
`case getBatteryInfo = 0x04`

julian [2018-08-24 07:43:04]
Oh. Hold on. Sorry. I think I see the problem. I'll debug later. Have to run now. Might be related to the UI, at least I hope so.

harri [2018-08-24 07:49:14]
```

Maybe there is still some bug left, I got also weird BLE disconnect when testing with command line tool.

julian [2018-08-24 07:49:41]
Yeah, it still happens even when I remove what I thought was the UI problem.

julian [2018-08-24 07:51:26]
It’s pretty easy to repeat at least when I use my iPhone in the debugger.

julian [2018-08-24 07:52:01]
Yes, just happened without doing much in the CLI

julian [2018-08-24 07:53:04]
I connected with CLI, listed activities and then before I could attempt to download one I got a disconnect

julian [2018-08-24 07:54:07]
It seems then the device is not advertising. I can’t get see it from the CLI, either in the initial process or when I spin up another instance. If I cycle the bezel `OFF` and then back to `CONNECT` it comes back fine.

harri [2018-08-24 07:58:10]
Same disconnect here all the time, I was running on debugger and traces enabled and it was working fine. Stop testing, this needs more work.

pepijn [2018-08-24 08:42:42]
<@U08B65RM0> if you run the CLI app in debug mode you get pretty verbose output related to all the BLE communication. Might help in diagnosing what’s going on.

julian [2018-08-24 08:51:47]
Yes <@UA6CC3MT5> - I run it in Xcode watching debug console. This is what you mean?

pepijn [2018-08-24 08:52:33]
Yep that’s it

julian [2018-08-29 14:46:23]
So, <@U0DDJ0QSY> with your nrf52 firmware I have tested with the CLI App running in Xcode so I can follow the debugger. I put the Omata in my refrigerator..closed the door..walked with my laptop outside. At some point stepping further outdoors it stopped and disconnected, which I would expect at some point. Did the same thing putting it into a metal cup and covering that with another metal cup. I could fairly easily make the transmission stop and then continue. If I kept the cups together for a long period, the connection would disconnect, which I would expect. What I have not been able to simulate is a retry. I’m also aware that communication with the laptop may be more “robust” than on an iPhone, fwiw. I will continue testing now with the Rx App, and also try with an iPhone 5. Not very scientific, but… :man-shrugging::skin-tone-4:

harri [2018-08-30 00:55:22]
nRF52 firmware 0.0.13 5c8597c Fix main mcu communication on uplink failure

harri [2018-08-30 01:02:13]

Try with this one, this is still my local build, only ble firmware version number has been changed to 0.0.13. Seems that I have some problem with nRF development environment, as it sometimes generates bad hex-image, which cause disconnect problem that was seen with previous update.

harri [2018-08-30 02:37:28]
One Android user reported that 0.0.13 nRF update cause disconnect problem with Android application. I also verified that Android disconnect happens right after startup. Need to debug root cause of this issue.

julian [2018-08-30 08:06:15]
I also see a disconnect shortly after connect (using CLI). I noticed that if I issue a command straight away before it has time to disconnect (check BT version, for example) the connection seems to stay. Maybe this is a clue?

pepijn [2018-08-30 08:06:52]
what triggers the disconnect in blekit Julian?

pepijn [2018-08-30 08:07:08]
corebluetooth peripheral 'did disconnect' callback?

julian [2018-08-30 08:07:19]
I'm not running in Xcode at the moment..

pepijn [2018-08-30 08:07:29]
np, just curious

julian [2018-08-30 08:07:51]
Yep, let me look quickly (have to run to do some photos in about 20 minutes..)

julian [2018-08-30 08:09:42]
`Omata_F39EF15CFCD8> Omata_F39EF15CFCD8> 2018-08-30 08:09:20.797047-0700 OmataCLI[68179:3774002] [manager] [4BE324D7-42D8-4E3A-8EC8-AE4214A48D34] Unexpected connection loss (Connected)`

julian [2018-08-30 08:09:58]
I then have to cycle the bezel on the device before it appears in the scan again.

pepijn [2018-08-30 08:10:24]
`Unexpected connection loss` is in the callback I was referring to

julian [2018-08-30 08:10:51]
Disconnect from the device side?

julian [2018-08-30 08:10:54]
peripheral

pepijn [2018-08-30 08:11:05]

pepijn [2018-08-30 08:11:18]

`centralManager(_ central: CBCentralManager, didDisconnectPeripheral peripheral: CBPeripheral, error: Error?)`

pepijn [2018-08-30 08:11:30]
this is one of the CoreBluetooth central manager delegate methods

pepijn [2018-08-30 08:11:50]
CB is informing you that for whatever reason the connection to the peripheral in question was lost

pepijn [2018-08-30 08:12:00]
details are in the Error object (if present)

pepijn [2018-08-30 08:12:23]
which of course I'm not printing in the debug message :face_with_rolling_eyes:

pepijn [2018-08-30 08:12:25]
woops

julian [2018-08-30 08:13:47]
A bit peculiar because if I throw a bunch of things at the peripheral to do, the connection maintains. Maybe I’m making things up — I’m not sure what’s going on on the device side. Just noticing some behavior.

pepijn [2018-08-30 08:14:26]
first thing to do will be to print out the error, that might point us in the right direction

julian [2018-08-30 08:14:50]
The actual error object, you mean, yes?

pepijn [2018-08-30 08:14:57]
indeed

pepijn [2018-08-30 08:15:22]
add the localizedDescription value to the debug output

julian [2018-08-30 08:17:20]
``` if let error = error { log.debug("[%@] Unexpected connection loss (%@) error (%@)", o.identifier.description, o.state.description, error.localizedDescription) } else { log.debug("[%@] Unexpected connection loss (%@) no error", o.identifier.description, o.state.description) } ```

julian [2018-08-30 08:17:27]
:man-shrugging::skin-tone-4:

pepijn [2018-08-30 08:20:00]
`log.debug("[%@] Unexpected connection loss (%@): %@", o.identifier.description, o.state.description, error?.localizedDescription ?? "<no error>")`?

pepijn [2018-08-30 08:20:58]
same thing, bit more compact
```

julian [2018-08-30 08:35:20]
`Unexpected connection loss (Connected) error (The connection has timed out unexpectedly.)`

julian [2018-08-30 08:35:33]
(formatting from my less-compact version..)

julian [2018-08-30 08:36:24]
I thought it was fairly repeatable to get this to occur. Current connection is holding.

julian [2018-08-30 08:36:31]
(Sorry, have to run. Back a bit later.)

julian [2018-08-30 08:37:38]
BTW, when I cycled my Omata off, of course I got an error in the same place, but with the exact same message. Seems its some sort of hard disconnect from the nRF

julian [2018-08-30 08:37:45]
in both cases

julian [2018-08-30 08:38:14]
Let's see what <@U0DDJ0QSY> discovers. In the mean time, I'll continue to test the robustness of the communications flow.

pepijn [2018-09-05 12:21:40]
<@U08B65RM0> the issues you logged on github related to no activities and missing gps folder; are those regressions wrt the current release of the app?

julian [2018-09-05 12:36:15]
Those are existing issues, unrelated. They'd also be in master - discovered over the last while.

julian [2018-09-05 12:36:29]
If I understand your question...

pepijn [2018-09-05 12:36:49]
ok. I was asking to know if these should hold back the release of the blekit version or not

pepijn [2018-09-05 12:38:49]
~how should I go about resetting my omata?~ nevermind, clear activities command worked; was trying to use the factory reset command...

pepijn [2018-09-05 12:38:55]
trying to get rid of all activities...

pepijn [2018-09-05 12:40:34]
<@U0DDJ0QSY> `cmdRestoreFactorySettings` (`0x40`) seems to be broken. If I send that command I get `ACK cmdClearActivities` (`0x42`) back.

julian [2018-09-05 12:53:07]
Yes, nearly nothing is holding back the blekit branch. I've been doing long-standing issue fixed in that branch - maybe not the best hygiene..

julian [2018-09-05 12:55:34]
<@U0DDJ0QSY> Went quite deep on figuring out this disconnect bug but has found the source of the issue, which is quite submerged in the nRF SDK..just fyi/fwiw. Remarkable excavation on his part.

harri [2018-09-06 02:10:12]
nRF52 0.0.14 ed13a42 App scheduler max event size aligned to 4 bytes

harri [2018-09-06 02:15:54]
This release fixes BLE connection drop issues. Previous firmware release (0.0.13) was actually causing a hardfault exception due to load instruction for unaligned address, it is a bug in Nordic SDK.

harri [2018-09-06 02:21:10]
Seems that restore factory settings command sends two ack messages, 0x42 and then 0x40. I will fix that issue.

pepijn [2018-09-06 05:49:47]
that alignment issue probably took quite some digging to figure out. nice work!

pepijn [2018-09-06 05:51:18]
Factory reset is not used by the utility app yet, so I'll leave handling of the dual ACK out of the blekit code for the time being.

harri [2018-09-06 05:51:22]
Firmware release 2018.09.06.3 3b8d06c manu-device-app: fix ack value on restore factory settings 6e6cbb4 manu-device-app: retransmit counter and throughput

harri [2018-09-06 05:51:53]

pepijn [2018-09-06 05:52:15]
I should have some time this evening to test this now that I have my laptop back. Was without a BLE adapter for 2 weeks so I couldn't do any useful testing.

harri [2018-09-06 05:58:06]
Most probably there is no retransmits seen with 0.0.14 as nRF should stop acking packets to stm32, so nRF transmit buffer should never get overwritten.

pepijn [2018-09-06 06:01:38]
I'll do my very best to try and break it :wink:

pepijn [2018-09-06 06:02:12]
That would be fantastic though. Transmission issues fixed on both sides.

julian [2018-09-06 07:01:16]
Woohoo! You guys are amazing. Looking forward to testing this today as well!

pepijn [2018-09-06 12:23:41]
<@U0DDJ0QSY> I can confirm factory reset works now

harri [2018-09-06 23:21:15]

Maybe Omata retail application should show only BLE application version on setting page, all other BLE related version could be left out. We don't have BLE bootloader enabled, so it will be always 255.255.255, and SoftDevice version can be figured out by BLE application version.

harri [2018-09-06 23:24:02]
Could it be simply "BLEFW: <app version>" under MCUFW info? BLE app version is the same thing as our BLE firmware release version.

pepijn [2018-09-07 00:50:53]
Changed that in the code

pepijn [2018-09-07 00:51:00]
Only shows the app version now

harri [2018-09-07 01:24:14]
:+1:

julian [2018-09-07 07:16:07]
Thanks <@UA6CC3MT5> — good eye <@U0DDJ0QSY>

julian [2018-09-07 07:16:35]
<@UA6CC3MT5> Where did you change that?

pepijn [2018-09-07 07:30:51]

julian [2018-09-07 08:05:38]
Check. Okay, that'll make it into the next Test Flight archive. (I pushed one last night..it's making its way through Apple's bureaucracy algorithm..)

julian [2018-09-07 08:07:07]
Sorry, I could've checked..just wasn't sure if it was possibly a OmataBLEKit change or at the UI surface..also doing an email campaign and negotiating a discount with Dropbox at the same time, fwiw.

pepijn [2018-09-07 08:08:18]
np

pepijn [2018-09-07 08:08:39]
in blekit I'm doing as little interpretation as possible, just passing on all the info from the device

julian [2018-09-07 08:30:34]
Yes, good deal. Of course, that makes the most sense. I wouldn't expect any different! :smile:

julian [2018-09-07 08:34:45]
Parenthetically — any suggestions on where to plant a small Node.js script that needs to run for us once a day? This is — right now, I run it by hand from my laptop.. :rolling_on_the_floor_laughing: . My generally intention was to maybe slip it on a Heroku instance, but am curious if anyone has any other thoughts.

pepijn [2018-09-07 08:55:33]
Something cron job like in the cloud makes sense indeed

pepijn [2018-09-07 08:55:38]
Many many ways to skin that cat

pepijn [2018-09-07 08:56:03]
On Heroku, their scheduler addon looks like what you need

pepijn [2018-09-07 08:57:04]
:see_no_evil:

pepijn [2018-09-07 08:57:16]
just spotted your AWS access token in git

pepijn [2018-09-07 08:59:37]
If your already on AWS you could use Lambda for the same thing

pepijn [2018-09-07 09:01:40]
see

julian [2018-09-07 09:36:35]
Oh, right...:shushing_face::hugging_face:

pepijn [2018-09-07 10:31:24]
Lambda might be a good choice. It takes care of credentials when accessing other aws services like s3

pepijn [2018-09-07 10:31:45]
And it supports node so using the existing snippet for the http download of mga file shouldn't be an issue.

julian [2018-09-07 10:37:17]
Thanks. I'll look into that. There are so many ways it's almost like I froze and said..I'll just run my script every day..

harri [2018-09-08 04:01:38]
The latest firmware release 2018.09.06.3 does not have stepper frequency adjustment commit included, need to do new firmware release on monday. The missing commit has been included in my local builds, but not for the latest release.

pepijn [2018-09-08 05:56:57]
<@U08B65RM0> is there a simple way to debug the testflight versions of the app?

pepijn [2018-09-08 05:57:04]
getting app crashes on startup

julian [2018-09-08 06:44:42]
Hmmm..onlu way would be to checkout the commited code.

julian [2018-09-08 06:46:02]
I also see some crashes in Firebase

julian [2018-09-08 06:46:20]
These should possibly have serial number attached

julian [2018-09-08 07:05:59]
<@UA6CC3MT5> I can add you to our Firebase “team” (basically just me..) which captures crashes amongst other things. So far it has captured two crashes from 0.4.x from 2 separate users.

julian [2018-09-08 07:06:53]
This one is likely you — running iOS 12.0 on an SE?

julian [2018-09-08 07:07:01]
SN 287

pepijn [2018-09-09 06:40:24]
<@U08B65RM0> I'm getting a compile error related to the UBloxUtility class

pepijn [2018-09-09 06:41:05]
OmataDetailViewController is trying to pass `.two_weeks` but `sendMgaDatRequest` doesn't have a parameter for that

pepijn [2018-09-09 06:41:11]
Merge error?

pepijn [2018-09-09 06:41:51]
yep, merge error

julian [2018-09-09 06:42:04]
Merge error..

julian [2018-09-09 06:42:09]
I was removing some kruft..

pepijn [2018-09-09 06:42:18]
I'll redo the merge

julian [2018-09-09 06:42:21]
..sorry

pepijn [2018-09-09 06:44:12]
no worries

pepijn [2018-09-09 06:57:34]
<@U08B65RM0> the code currently always retrieves the MGA file before uploading to the device

pepijn [2018-09-09 06:57:49]
it caches it locally on disk as well, but that cached data seems to never really be reused

pepijn [2018-09-09 06:57:58]

is that intentional?

pepijn [2018-09-09 06:58:30]
`if true /*isMgaDatModificationDateOld(days: 1)*/ {` in OmataDetailViewController

pepijn [2018-09-09 06:59:03]
if the intention is to just always load fresh data the code can be simplified a bit

julian [2018-09-09 07:13:38]
Yes, now I always load fresh data.

julian [2018-09-09 07:15:22]
At one point, I was going to try and be excessively clever, but the network costs are nil I realized. And simpler to just pull fresh. Originally, I was going to have the client (i.e. the App), pull directly from the Ublox server, but that got messy and potentially problematic. Easier for “us” to cache the data once a day (or whenever I run that command.. :man-shrugging::skin-tone-4: ..) and pull from the cache as needed on the client side.

julian [2018-09-09 07:15:44]
Thanks <@UA6CC3MT5> — have to run, back later..

julian [2018-09-09 07:16:52]
In the UI now (still wip) the user is reminded if the aiding data is close to expiry (OmataOverviewViewController) in the “connect” reactive code. Still to be thoroughly tested..

pepijn [2018-09-09 07:17:00]
Ok. Ill strip out the local copy on disk then. Straight from http download to omata

julian [2018-09-09 07:54:52]
Thanks. Not sure what happened but I had a conflict - stepped on myself somehow - and my eyes got tired last night..etc.

pepijn [2018-09-09 08:07:55]
:smile:

julian [2018-09-09 11:13:46]
<@U0DDJ0QSY> Curious if the latest build does not have the stepper frequency update. Long ride today and it worked perfectly. Of course, whatever you say is right, is right. Just a note..

harri [2018-09-09 12:08:57]
I will double check this one on tomorrow.

harri [2018-09-10 00:19:07]
Stepper frequency adjustment commit is missing from 2018.09.06.3 firmware release.

harri [2018-09-10 00:21:30]
Firmware release 2018.09.10.1 6f1c442 manu-device-app: decrease stepper frequency for ascent, distance and time

harri [2018-09-10 00:22:00]

pepijn [2018-09-10 00:39:12]

pepijn [2018-09-10 00:39:46]
<@U0DDJ0QSY> In Strava the altitude profile shows the stairstep profile above. Measurements seem to be truncated to integer meter values.

pepijn [2018-09-10 00:39:58]
I haven't checked the FIT file yet, but is that expected?

pepijn [2018-09-10 00:41:33]
Best precision in FIT record messages is 200cm FWIW

harri [2018-09-10 00:44:24]
I will check this one, maybe firmware calculation returns integer value. This can be changed.

pepijn [2018-09-10 00:44:54]
ok, I'll have a look at the FIT file itself this evening as well and will let you know what I find

harri [2018-09-10 01:15:10]
Firmware truncates individual altitude values (Strava altitude graph). However, truncation does not take place for individual ascent values that are used in total ascent calculation.

pepijn [2018-09-10 01:41:40]
Thanks for checking. Would be nice to remove the truncation if that's not too hard to change.

harri [2018-09-10 03:25:11]
Altitude truncation removed, this is local build. Needs to be tested...

pepijn [2018-09-10 03:26:24]
Anything particular to focus on when testing?

pepijn [2018-09-10 03:26:46]
I only have one Omata so it'll be hard for me to do a side-by-side test

harri [2018-09-10 03:29:17]
I just removed truncation of altitude. Maybe you could ride the same slope that is shown in altitude graph above.

pepijn [2018-09-10 03:30:00]
I'll walk up and down the hill in front of my house instead :smile:

pepijn [2018-09-10 03:30:08]
That particular slope is 20-30km away

pepijn [2018-09-10 03:30:32]
(I was looking through Strava segments of a 92km ride and noticed the staircasing effect on this particular one, but it's actually present everywhere)

pepijn [2018-09-10 03:31:39]
I don't think the slope itself matters all that much; it's just very obvious on short Strava segments since their UI shows zoomed in altitude profiles for the segment you selected

pepijn [2018-09-10 03:31:51]
The more you zoom in on the altitude profile the more obvious the effect is

harri [2018-09-10 03:32:34]
My work route is so flat that Strava scales altitude graph so that I can't see small changes.

harri [2018-09-10 03:32:45]
I was not aware of zoom functionality.

pepijn [2018-09-10 03:34:36]

pepijn [2018-09-10 03:34:37]
Just as an example

pepijn [2018-09-10 03:35:11]
When you click on a segment you get the detail view displayed in the bottom of the screenshot

pepijn [2018-09-10 03:37:51]
The crop UI also zooms in. Does some weird interpolation if you ask me :joy:

harri [2018-09-10 03:38:55]
Maybe I need to create a segment for my work route, then it will come visible.

harri [2018-09-10 04:08:14]
Got it working, let see how does it look like with the latest firmware build.

harri [2018-09-10 05:58:35]
Expiration is not updated for both fields.

harri [2018-09-10 06:00:19]
Maybe QuickFix expiration info field should be only once on setting page.

pepijn [2018-09-10 06:10:27]
I noticed that yesterday as well

pepijn [2018-09-10 06:11:20]
Code related to GPS aiding data needs to get some attention in general

pepijn [2018-09-10 06:11:49]
It's duplicated a bunch of times in the various screens at the moment which isn't really ideal

pepijn [2018-09-10 06:12:13]
I'll log an issue for this in the github project

julian [2018-09-10 07:25:25]

Fellas, just an FYI I had to drop my work laptop at the Apple store. Hopefully I get it back soon. I have an older laptop that I can use, but it’s proving difficult to get the build environment going. Lots of issues with cocoapods. I’ll continue to try, but I may be hobbled for a few days..

julian [2018-09-10 07:25:41]
Also have to run the other parts of the enterprise..

harri [2018-09-10 08:38:32]
SW version info seems to have some decoding issues, it should be something like this [Omata-app]# GET_SW_VERSION fw: 2018-09-10.2-dbg, bl: 0.7.0, fit protocol: 20, fit profile: 20.54

harri [2018-09-10 08:40:19]
Bootloader is 0.7.0 and FIT protocol is BCD coded, it should be 20.

harri [2018-09-10 08:44:52]
In my opinion we need just MCUFW, Bootloader and BLEFW version fields in retail app, rest of the version fields can left out.

pepijn [2018-09-10 08:45:53]
Probably not very relevant to 99% of the app users indeed

pepijn [2018-09-10 08:46:39]
BCD decoding isn't done indeed. At the moment the BCD value from the message is just being passed on the app as the raw uint8 value. I'll split that into fitProtocolMajor and fitProtocolMinor fields and decode the BCD value in blekit.

pepijn [2018-09-10 08:49:33]
While I was working on that I wondered what BcdFormat meant in this context. Never gave it much thought... :flushed:

harri [2018-09-10 08:52:12]
This could have been done on firmware side as well, but it comes BCD formatted from FIT library.

harri [2018-09-10 08:53:12]
Actually it is defined in FIT header file.

pepijn [2018-09-10 08:53:27]
ok to leave it as is. changing the message structure will be more complicated than splitting the uint8 in two.

pepijn [2018-09-10 08:53:56]
and the blekit library will hide this from the app either way

harri [2018-09-10 08:56:02]
Did you have time to test altitude values with the latest firmware?

pepijn [2018-09-10 08:57:36]
still ~at work~ in the office :slightly_smiling_face:

harri [2018-09-10 09:11:04]

Altitude graph with the latest firmware, no stairs anymore.

pepijn [2018-09-10 09:13:50]
The interpolation gets even more 'interesting'

pepijn [2018-09-10 09:22:16]
out of curiosity, why was the elevation value truncated earlier? integer variables with meters as unit?

julian [2018-09-10 09:35:13]
I *may* have time to get this laptop off my lap and go out on a ride to try the latest firmware..I hope so!

julian [2018-09-10 10:26:33]
Holy cripes. Personal access token. I needed a fresh one of those. When git was asking for me to login in order to, for example, retrieve our ‘omatainstruments’ podspec? It didn’t want my password. It wanted a freshly generated personal access token. My head is still oozing from exploding for the last three hours.

pepijn [2018-09-10 10:31:21]
Oh right; AppCode hid that from me.

pepijn [2018-09-10 10:31:31]
Prompts for user name and password in order to obtain a token

pepijn [2018-09-10 10:31:36]
And then saves the token...

pepijn [2018-09-10 10:45:41]
<@U0DDJ0QSY> :+1: on the truncate fix. Seeing altitude changes of 0.2m now.

harri [2018-09-10 11:44:42]
About the truncated altitude, it was earlier GPS based that has integer unit, I somehow forgot to change function return value to float type when barometer based altitude was taken in use.

julian [2018-09-10 12:41:37]
it builds!!

pepijn [2018-09-10 12:42:10]
:dancers: :confetti_ball:

julian [2018-09-10 12:43:22]
In that time I wrote and sent out 3 mass emails, took the dog out, had two business calls, sent an email to a retailer, sent an email to an investor, put the trash out, emptied the dishwasher, ate a hard boiled egg with toast, ate some yoghurt and nuts and started folding laundry.

pepijn [2018-09-10 12:44:03]
So, what was the missing bit?

julian [2018-09-10 12:44:56]
It seems freshening everything. I finally removed and re-cloned the repo, and removed and reinstalled cocoapods. Maybe some repos were old and frozen in ~/.cocoapods? Or in that Cache that lives in

~/Library? Dunno..

pepijn [2018-09-10 12:45:19]
I've seen similar issues recently

pepijn [2018-09-10 12:45:33]
I've had to install XCode 10 beta to deploy to my phone running ios 12

pepijn [2018-09-10 12:45:53]
But my laptop is still running macos 10.13 (i.e., not the beta)

pepijn [2018-09-10 12:46:25]
I've been having to switch back and forth between xcode 9 and 10 and every single time I need to clean my build directory and do a full recompile or I get seemingly random build errors

julian [2018-09-10 12:47:54]
Oof..I have Xcode 10 beta, but I'm frankly not sure I should launch it..

pepijn [2018-09-10 12:48:13]
I wouldn't recommend it :slightly_smiling_face:

pepijn [2018-09-10 12:48:24]
But with the phone on iOS 12 I don't have much choice

pepijn [2018-09-10 12:48:36]
9 complains that it doesn't have the necessary support files to fire up the debugger

julian [2018-09-10 12:51:17]
:face_palm::skin-tone-4:

pepijn [2018-09-10 13:20:45]
<@U08B65RM0> what do you think about this one?

julian [2018-09-10 13:26:51]
Yes, that sounds right to me as well..

pepijn [2018-09-10 14:00:38]

pepijn [2018-09-10 14:00:41]
Better?

julian [2018-09-10 15:29:27]
Yes!

harri [2018-09-11 00:32:52]
Firmware release 2018.09.11.1 c2d333d manu-device-app: altitude to float type

harri [2018-09-11 00:32:57]

harri [2018-09-11 00:39:41]
Bootloader version needs to be corrected on setting page, it should be 0.7.0

julian [2018-09-11 06:09:59]
<@U0DDJ0QSY> In what context should we use the Debug edition? I've never really been clear on that point..

pepijn [2018-09-11 06:11:55]
difference is debug logging in the console afaik

pepijn [2018-09-11 06:12:21]
useful when analyzing communication between phone/desktop and omata

julian [2018-09-11 06:12:23]
I think there was also some traces that perhaps slowed comms

julian [2018-09-11 06:12:52]
In the BT packet sniffer? It may also generate a crash log? Dunno..

pepijn [2018-09-11 06:13:30]
Don't know about the crash logs. My Omata gave me NACK responses for those requests.

julian [2018-09-11 06:17:50]
Quite possibly..I think there may on occasion be a crash log file on an OMATA that has some traces that prove useful to <@U0DDJ0QSY>…

harri [2018-09-11 07:34:08]
Debug release is only for developers, it generates syslog.txt file and enables firmware tracing to USB ACM device. In general it slower and change timings as well, and battery usage is higher. It depens what configuration options are enabled for retail-dbg build. Debug build does not generate crash log files, crash reason and dump can be seen from syslog.txt.

harri [2018-09-11 07:38:30]
Retail configuration does not have tracing enabled for ACM and no syslog file, tracing is enabled for UART port only. On firmware crash it generates crashlog file to .crashlogs directory.

harri [2018-09-11 07:43:34]
Retail-dbg builds should be shared for trusted person only as it is relatively easy to understand firmware functionality based on traces, in addition many hardware component expose detailed type.

pepijn [2018-09-11 07:44:19]
:bulb: the 'not available' NACK for the crash logs probably means there are no crash logs just like with activity listing. Is that correct <@U0DDJ0QSY>?

harri [2018-09-11 07:50:02]
Returns nack(fail) if directory is missing and nack(not_available) if there is no files in the directory.

pepijn [2018-09-11 07:51:20]
is fail returned for other cases as well? for instance, assuming a posix layer, if the readdir calls fail?

harri [2018-09-11 07:57:40]
'fail' error code is more like generic error and it is always returned if there is no specific error code defined. Fail is returned if readdir fails.

harri [2018-09-11 07:59:52]
I have earlier posted example crashlog file with instructions, maybe this feature should be tested with the latest firmware and rx app.

pepijn [2018-09-11 07:59:54]
ok, not much choice then to pass it on then.

pepijn [2018-09-11 08:00:24]
I hid the not_available errors from the app and returned an empty list instead to make things simpler on the app side.

pepijn [2018-09-11 08:01:22]
directory missing is effectively the same as empty directory (I guess), but if the same error code is returned as for other cases, then I can't hide that one.

pepijn [2018-09-11 08:01:32]
so be it

harri [2018-09-11 08:04:07]
It is not big effort to change these for firmware. Maybe nack should be returned only when there is actual fail, such as file read failure.

pepijn [2018-09-11 08:04:32]
that would simplify things indeed

harri [2018-09-11 08:06:18]
Another one that returns nack for empty directory is get activity listing api?

pepijn [2018-09-11 08:06:19]
I guess that would be `GET_FIT_FILE_LISTING 0` as response then

pepijn [2018-09-11 08:06:44]
yes, activity listing returns an error for empty directory as well

pepijn [2018-09-11 08:07:50]
the alternative to this would be to specify which NACK error codes are returned in which conditions for each message so that the client can handle them appropriately.

pepijn [2018-09-11 08:08:06]
At the moment the spec says, for example, > If there are no stored activity files then negative acknowledgement is the response.

pepijn [2018-09-11 08:08:24]
which is a little bit too vague :slightly_smiling_face:

harri [2018-09-11 08:08:32]

I will put these on firmware todo list.

julian [2018-09-11 16:58:04]
How are you guys creating the altitude graphs?

julian [2018-09-11 16:58:16]
I have a ride with the latest build..

julian [2018-09-11 16:58:38]

julian [2018-09-13 05:12:47]
Quick note fellas, I'm traveling today and at a wedding this weekend, visiting family, etc. I'll be traveling back to LA Monday, fwiw…

pepijn [2018-09-13 05:26:03]
Strava

julian [2018-09-14 06:55:26]
Computer programming question..I noticed an exception in Crashlytics at line 659 in `OmataBluetooth.swift` happening in `0.4.0` and I was, like..hmmmm.. So I dug back a commit or two to `048cb11` (I'm actually not sure how to link to commits in Github..) and found code on line 659, which is the return statement here: ``` /// The URL to the Totals.fit file stored locally var totals_file_url : URL { var result : URL! do { result = try standardFilesDirectory().appendingPathComponent("Totals.fit") } catch { log.error("Couldn't get Totals.fit") } return result } ```

julian [2018-09-14 06:57:15]

julian [2018-09-14 06:59:20]
So, my question is more related to that little computed parameter block — what's the correct way to design that, do you think? In the case that `result` could definitely be nil or undefined, do you think? It seems possible that `Totals.fit` could be missing in some exceptional case. A crash seems excessive. And <@U0DDJ0QSY> — is it the case that `Totals.fit` will be recreated on start-up? I seem to recall a discussion like that some time ago..

pepijn [2018-09-14 07:01:11]
The IUO is causing the crash indeed

pepijn [2018-09-14 07:01:22]
Make the return type `URL?` if it's a case you expect to happen commonly

julian [2018-09-14 07:01:54]
Yeah, one thought definitely. So that puts the burden on working the problem further up.

pepijn [2018-09-14 07:01:56]
If it's completely unexpected behaviour that should never happen make it throw?

pepijn [2018-09-14 07:02:07]
Not sure if that's possible with computed properties

julian [2018-09-14 07:02:15]

Yeah, good point..

julian [2018-09-14 07:02:37]
I wonder how far up `?` would force some rewriting/rethinking..

julian [2018-09-14 07:03:11]
One way to find out. But, the hard crash is definitely not something that would help me sleep at night. Fortunately I know who’s device this is from the keys in the crash report.

pepijn [2018-09-14 07:03:30]
In general I think about things like this as follows: - Can I deal with it locally in a sensible way? - Yes, deal with it - No, pass it on - Is this something that's likely to happen? - Yes, optional - No, exception

pepijn [2018-09-14 07:03:47]
never sweep stuff under the rug (i.e., log and pretend it didn't happen)

julian [2018-09-14 07:04:51]
..and walk away whistling and brushing a bit of dirt off your shoulder

pepijn [2018-09-14 07:05:30]
Fine for prototyping, but always comes back to bite you in production some way or another

pepijn [2018-09-14 07:06:51]
fwiw, I've been removing IUOs to the extent possible whenever I've modified some code. Either replaced it with a default value (` ?? <some default value>`), optional chaining (`?.<some expression>`) or passed on the optional

julian [2018-09-14 07:11:50]
That’s great — thank you <@UA6CC3MT5>

julian [2018-09-14 07:12:39]
I’m just double-checking with the fellow who’s device it was to see if `Totals.fit` is on there or not. I suspect that file gets recreated if it doesn’t exist, but <@U0DDJ0QSY> is the one to confirm this. I think I tested once…

harri [2018-09-14 10:59:44]
Firmware creates new totals.fit if user has accidentally removed it in mass storage mode.

julian [2018-09-17 06:13:00]
Regarding the timeout issue that Simon Rich seems to be having..not sure, but wondering if enforcing a 5 second timeout would do anything. I sort of think that it would not, but I don’t know. Quite hard to debug from afar..

pepijn [2018-09-17 06:15:49]
the timeout message he's seeing is because of the 5s timeout timer

pepijn [2018-09-17 06:16:04]
blekit is expecting incoming data and nothing's arriving

julian [2018-09-17 06:16:19]

Where is the 5s timeout put in place? I thought the default was no timeout?

pepijn [2018-09-17 06:16:33]
~there's a timeout for multi-packet response streams~ timeout defaults to 5s if unspecified for all messages

pepijn [2018-09-17 06:17:44]
for multi-packet streams the timeout is per chunk

pepijn [2018-09-17 06:18:13]
so for downloads, if blekit doesn't receive a chunk for 5s you'll see the timeout error as well

pepijn [2018-09-17 06:18:34]
without debug logs it's pretty hard to debug this indeed

pepijn [2018-09-17 06:18:43]
for reference

julian [2018-09-17 06:18:45]
definitely…

harri [2018-09-17 07:13:18]
Maybe nRF hit in the stall issue? Simon is not running with the latest BLE firmware (0.0.14)?

julian [2018-09-17 07:14:34]
Is that true? I see him at 2018.9.11.1 —perhaps I am confused?

harri [2018-09-17 07:15:16]
This is the stm32 image version

harri [2018-09-17 07:15:33]
nRF needs to be updated separately.

julian [2018-09-17 07:15:34]
Ah, was there a desk build?

julian [2018-09-17 07:15:59]
Okay, I may be confused then. I assumed that the nRF image was bundled in there as well.

julian [2018-09-17 07:16:56]
My device is also BLE v0.0.13 — how do I update?

harri [2018-09-17 07:17:08]
You should see BLE 0.0.14 on settings page.

harri [2018-09-17 07:18:30]

harri [2018-09-17 07:19:33]
Copy this one to mass storage drive, works exactly the same way as stm32 update (update.oci)

harri [2018-09-17 07:22:38]
I thought that you did want to test new retail application and stm32 firmware update together, and then share nRF update later on. Anyway, nRF update should be shared for test team users.

harri [2018-09-17 07:29:29]
Note that nRF52 firmware update must be named as "nrf52_update.hex". Update does not reboot stm32 mcu, firmware update algorithm for nRF52 is included in the stm32 firmware.

julian [2018-09-17 07:29:49]
<@UA6CC3MT5> Do you have an opinion on this point? I personally think having both firmware rolled together is easier to manage.

pepijn [2018-09-17 07:30:17]
I would be inclined to go for the new BLE firmware in this case

pepijn [2018-09-17 07:30:26]
since there's a known issue in the previous one

pepijn [2018-09-17 07:30:48]
I was also under the impression everything got upgraded together; never assume...

julian [2018-09-17 07:30:55]
Some of the Test Team need quite some hand holding through this - one lovely lovely guy in Italy and we could mostly communicate with hand gestures

julian [2018-09-17 07:48:58]
<@U0DDJ0QSY> If it is possible to have a full firmware build in the conventional fashion with the latest nRF fw that would be best. Thank you!

harri [2018-09-17 08:05:40]
nuttx.dfu (extracted from manu release archive): - Image is generated by Haltian build server - Bootloader for stm32 - Nuttx for stm32 - Erase for unused flash blocks - Update with dfu-util tool, a bit dangerous as there is possibility to brick the device. This is mainly for RnD and exceptional cases when bootloader needs to be updated. Dfu image is also needed when device is in reset loop condition and hence fails to start nuttx RTOS. There is special recovery logic in firmware that forces device in dfu-mode if multiple resets takes place within specified time period. update.oci: - Nuttx image for stm32 - Bootloader performs update from FAT file system on device reboot - Can't be used with device that fails to enter in mass storage mode nRF52_update.hex: - Complete nRF52 image (softDevice and BLE application code) - Update from FAT file system with flashing algorhithm included in stm32 firmware

harri [2018-09-17 08:09:13]
Combined image for nRF52 and STM32 is likely to not happen as it requires quite many updates for many places. I would like to use effort for bug fixes and ant sensor support.

harri [2018-09-17 08:20:20]
Maybe it is good point to enable firmware update (stm32 and nRF52) feature for retail application?

julian [2018-09-17 08:55:33]
Once we have tested I can enable App-based firmware update by changing a server-side file

julian [2018-09-17 08:56:23]
But it updates via your API. I assume we should have complete firmware- both stm32 and nRF.

julian [2018-09-17 08:56:57]
Would you be able to provide a complete firmware build shortly?

pepijn [2018-09-17 09:01:39]
There are separate update request for each part <@U08B65RM0>

pepijn [2018-09-17 09:02:02]
All of them are implemented. Not sure I tested each one alteady though.

julian [2018-09-17 09:06:21]
Yes, understood. I was angling for a combined one to make it easier to enroll the Test Team. One update rather than sorting through who has tried which, or which ones they are running. It's a bit of a scrappy group, and not everyone is actually following the procedures precisely, etc. We could end up with someone running an old stm32 build and a new nRF build, etc. If it's one update - that would be better..

pepijn [2018-09-17 11:25:49]
Perhaps the test flight app builds could use a different download url for the images to perform an ota update?

pepijn [2018-09-17 11:26:37]
Do you know if it's possible to detect this at runtime? Or would we need to switch the urls at build time?

julian [2018-09-17 17:04:07]
Hrm...I don't know if there's some sort of key to use. Maybe our version number?

pepijn [2018-09-17 22:56:13]
Found some hacks on Stack Overflow but nothing supported by Apple

pepijn [2018-09-17 22:56:36]

pepijn [2018-09-17 22:57:25]
That's one version, but there are always reports of these techniques not working on certain iOS versions. Really counting on undocumented implementation details in other words.

pepijn [2018-09-17 22:58:24]
We could make a separate build configuration, but then you have to be careful not to promote test flight builds to the App Store.

julian [2018-09-18 05:23:31]
I was looking at - fee service a friend mentioned..

julian [2018-09-18 05:35:02]
<@UA6CC3MT5> Hello. I'm back in LA! Say — quick one: have you tested updating the firmware with the OmataBLEKit? Just curious..I haven't, but I suppose I should… :laughing:

julian [2018-09-18 06:03:22]
Hrm..get invalid message length straight away while doing `update_bluetooth`

julian [2018-09-18 06:03:24]
Investigating…

julian [2018-09-18 06:25:50]
Just a note: I haven't been able to update the `MCU` nor the `BT1 firmware with the CLI tool. For the `BT` I get the error mentioned above straight away. For `MCU`, I get `Upload failed with error <decode: missing data>` around 250-300 chunks in.

julian [2018-09-18 06:26:14]
This is on a device with both the latest nRF firmware and the latest MCU firmware, fyi.

pepijn [2018-09-18 06:26:23]
> updating firmware yes and no. I did the update.oci upgrade using the CLI app.

pepijn [2018-09-18 06:26:30]
haven't tried the BLE firmware yet

pepijn [2018-09-18 06:27:07]
hmm, odd that you're getting errors... I'll have to give it another go this evening then

pepijn [2018-09-18 06:27:45]
`<decode: missing data>` obviously, what else could it be :slightly_smiling_face:

pepijn [2018-09-18 06:27:57]
missing a `localizedDescription` in the code...

julian [2018-09-18 06:28:01]
:laughing:

pepijn [2018-09-18 06:29:22]
localizedDescription is in there in the code

pepijn [2018-09-18 06:29:29]
:man-facepalming:

pepijn [2018-09-18 06:29:36]
`%s` instead of `%@`

julian [2018-09-18 06:29:44]
:rolling_on_the_floor_laughing:

julian [2018-09-18 06:29:57]
Well..not so bad..

pepijn [2018-09-18 06:30:09]
Could you make that change at ?

pepijn [2018-09-18 06:30:26]
No code editing capabilities here at the moment

pepijn [2018-09-18 06:31:07]
Does the CLI app not print the actual error?

pepijn [2018-09-18 06:31:26]
debug output is wrong, but CLI contains `print("Unexpected error: \(error).")` which should print it correctly

julian [2018-09-18 06:31:45]
Yes, and the `error` appears to be *fail*

pepijn [2018-09-18 06:31:55]
great

julian [2018-09-18 06:32:09]

julian [2018-09-18 06:32:29]
I've made that change. Let me try just in Xcode

julian [2018-09-18 06:32:55]
But I suppose it'll be about as revealing as *fail*

pepijn [2018-09-18 06:32:59]
The `upload failed` message comes from the response handler that's used while uploading

pepijn [2018-09-18 06:33:19]
That's in the `NACK` handling branch. The error code is from the NACK message.

pepijn [2018-09-18 06:33:26]
So basically the Omata said `fail`

julian [2018-09-18 06:33:32]
Yes

pepijn [2018-09-18 06:33:44]
I think you'll have to check syslog on the omata to figure out why you're getting that error

julian [2018-09-18 06:34:32]
So, *Failed* is what we were missing, as we suspected.

pepijn [2018-09-18 06:34:40]
could be a checksum failure

pepijn [2018-09-18 06:36:05]
On second thought, can't be a checksum failure. The Omata can only determine that when the upload is complete.

pepijn [2018-09-18 06:36:38]
Is there any trace of the Omata requesting a retransmit?

pepijn [2018-09-18 06:37:00]
Something of the form `log.debug("Upload retransmit chunk %d", sequenceNumber);`

julian [2018-09-18 06:37:17]
It appears to have a few times during the transaction, but not near the point where it fails.

julian [2018-09-18 06:37:59]
Actually goes quite far back. Around chunk `121` it asks for `86` and then the transmission picks up from there.

pepijn [2018-09-18 06:38:04]
Perhaps the resync isn't working correctly for some reason and the Omata aborts after too many incorrect chunks.

pepijn [2018-09-18 06:38:58]
That's suspicious that a retransmit is requested so quickly

pepijn [2018-09-18 06:39:26]
You could try slowing down the upload a bit

pepijn [2018-09-18 06:39:57]
Increase the inter-chunk delay at OmataBLEKit/Omata.swift#L944

pepijn [2018-09-18 06:40:43]
0.2s is an approximation of the rate at which we can transfer over BLE.

julian [2018-09-18 06:41:07]
Okay. Let me see to that..

pepijn [2018-09-18 06:42:44]
Another alternative is to try 'write with response'. At line 966 change `.withoutResponse` to `.withResponse`.

pepijn [2018-09-18 06:43:01]
That will probably be significantly slower though

julian [2018-09-18 06:43:51]
So far so good with super long delay - *0.1s* — original was *0.02s*

julian [2018-09-18 06:44:17]
Of course, I'll be here until I'm through with my second cup of coffee..going to boil an egg, brb.

pepijn [2018-09-18 06:45:31]
It'll take a while, but will already be useful to rule out any other problems. If this is successful we'll have to figure out a way to make the upload transmission more reliable.

julian [2018-09-18 06:46:43]
Yes. It appears from first glance that it is on the device side that something goes wrong, but of course not conclusive.

julian [2018-09-18 06:46:57]
This is something <@U0DDJ0QSY> wanted to focus on — reliable and speed.

pepijn [2018-09-18 06:47:42]
I was hoping to be able to use `func peripheralIsReady(toSendWriteWithoutResponse: CBPeripheral)` to throttle the upload from the BLE central side, but I was never able to get that working.

julian [2018-09-18 06:47:44]
I'm torn because I also am very eager to get some activity on pairing and recording from external sensors. It's a big deal according to a survey we did and clamoring from the `crowd`

pepijn [2018-09-18 06:47:54]
For some reason I never got that callback from CoreBluetooth

julian [2018-09-18 06:48:21]
Both in iOS 11 and now 12?

pepijn [2018-09-18 06:49:13]
Haven't tested in 12 yet.

pepijn [2018-09-18 06:49:21]
I only tried this on High Sierra.

pepijn [2018-09-18 06:49:45]
From a WWDC session transcript: > For this year, we've enhanced CBPeripheral with a new property called canSendWriteWithoutResponse. > > So if you call this before you do a write and it and it returns yes, that's our promise to you that your data will not be dropped in software before we get a chance to send it to the remote peripheral. > > If that returns no, you'll also get a delegate callback when we're ready and we'll call back peripheralIsReady (toSendWritewithoutResponse.

pepijn [2018-09-18 06:50:13]
I initially tried this, but it didn't seem to work. Worth another shot...

pepijn [2018-09-18 06:50:39]

pepijn [2018-09-18 06:51:11]
Quote: > It seems to be working on iOS 11.2 and above but broken currently on MacOS.

julian [2018-09-18 06:52:08]
Hrm..

julian [2018-09-18 06:52:28]
And I presume you tried on iOS rather than just on MacOS, of course.

pepijn [2018-09-18 06:52:30]

We're close enough to GA that I'm willing to give Mojave beta a try; you never know. Having this working on the desktop is not critical, just very convenient for development

julian [2018-09-18 06:52:43]
Yes, definitely.

pepijn [2018-09-18 06:52:49]
No, I was only working on macos at the time. All blekit development was on macos.

julian [2018-09-18 06:52:56]
I’m nervous to absorb the latest update, which my mac keeps asking me to do.

julian [2018-09-18 06:53:33]
It would be violating Rule No. 4..never update the toolchain whilst in the midst of deployment.

pepijn [2018-09-18 06:54:11]
what could possibly go wrong? </sarcasm>

pepijn [2018-09-18 06:55:02]
I'm willing to take the leap and test the waters. Indeed best to keep your side of things (or at least the box you use to make app store builds) as is.

julian [2018-09-18 06:55:16]
I “accidentally” updated Adobe tools 4am while jet lagged in Finland last trip and it basically bricked my laptop. Turned Every. Single. Character. In. Every. Font. Into. Square. With. Question Mark.

pepijn [2018-09-18 06:55:27]
:scream:

pepijn [2018-09-18 06:55:42]
FU Adobe!

pepijn [2018-09-18 06:56:06]
let me just add a sarcasm mark for clarity

julian [2018-09-18 06:56:35]
Imagine..it felt about as disorienting as the one time I tried to get back to Tokyo from a small university town about 50km away. 100% Kanji. No Romanji whatsoever.

pepijn [2018-09-18 06:57:06]
That particular writeWithoutResponse API is only used for file uploads. So that would affect GPS expiry data upload and firmware updates.

julian [2018-09-18 06:57:12]
3 hours blindly trying to navigate to do a complete system reinstall..

julian [2018-09-18 06:57:45]
I remember thinking and meditating for a few minutes, comforting myself to say — well..no more development this trip..I can just finish the book I brought..

pepijn [2018-09-18 06:57:56]
I'll see if I can get it working (or make the code conditional for macos/ios) and give it a shot.

julian [2018-09-18 06:58:03]
Check.

julian [2018-09-18 06:58:13]
Update still running, so that’s encouraging..

pepijn [2018-09-18 06:58:37]
Planning for the evenings is pretty packed the rest of the week, so not sure when I'll be able to do this yet.

pepijn [2018-09-18 06:59:41]
The code to do this isn't super complex, but involves some more locks and conditions if we don't want to reorganise the code too much.

pepijn [2018-09-18 07:02:23]
We'll need to make the following changes: - In `uploadPackets` query `CBPeripheral#canSendWriteWithoutResponse`. If that returns `false`, wait on a new 'readyToWrite' condition - Implement `CBPeripheralDelegate#peripheralIsReady(toSendWriteWithoutResponse: CBPeripheral)` in which you notify the `readyToWrite` condition.

pepijn [2018-09-18 07:02:53]
`OmataInternalState` is already a `CBPeripheralDelegate` so we can just add that extra delegate function implementation in there.

pepijn [2018-09-18 07:03:53]
If that works, then the `Thread.sleep` is no longer needed. That's only there to avoid overflowing the CoreBluetooth transfer queue.

julian [2018-09-18 07:05:04]
I’ll try to find time to look at it. A bit packed as well — shipping, update email to investors, new ads need to be produced, anniversary, etc., etc. But, I should be at least able to study the problem, I hope.

julian [2018-09-18 07:05:19]
Okay, update worked fine with the throttling way way down

harri [2018-09-18 07:06:39]
I will take a look for stm32 / nRF firmware update issue later on today.

julian [2018-09-18 07:20:15]
So throttling to 0.1s works fine, 0.05s works fine.

julian [2018-09-18 07:20:43]
`update_bluetooth` still fails, but that is certainly not due to throttling. It appears a complaint that happens from the start.

julian [2018-09-18 07:21:07]
perhaps the reply from the device to the update command

pepijn [2018-09-18 07:21:17]
I don’t think I ever tested that one. Could be as silly as a copy/paste error.

pepijn [2018-09-18 07:21:42]
Or indeed unexpected reply. What error is it returning?

julian [2018-09-18 07:24:28]
`Unexpected error: invalidMsgLength.`

pepijn [2018-09-18 07:24:43]
message is wrong indeed

julian [2018-09-18 07:24:53]
The error message, or what is returned?

pepijn [2018-09-18 07:25:06]
Should be ``` SET_BT_FW UInt32 File size UInt32 CRC ```

pepijn [2018-09-18 07:25:12]
The code is missing the CRC at the moment

pepijn [2018-09-18 07:25:25]
``` public func updateBluetoothFirmware(to data: Data, progressHandler: ProgressHandler? = nil, completionHandler: @escaping CompletionHandler<Void>) { var request = Data(capacity: 5) request.count = 5 request[0] = OmataMessage.setBtFw.rawValue request.writeUInt32(UInt32(data.count), at: 1) ```

pepijn [2018-09-18 07:25:32]
Change capacity and count to `9`

pepijn [2018-09-18 07:25:53]
add `request.writeUInt32(data.crc32(), at: 5)`

julian [2018-09-18 07:26:33]
Ah, I see..hold on..

julian [2018-09-18 07:27:27]
``` public func updateBluetoothFirmware(to data: Data, progressHandler: ProgressHandler? = nil, completionHandler: @escaping CompletionHandler<Void>) { var request = Data(capacity: 9) request.count = 9 request[0] = OmataMessage.setBtFw.rawValue request.writeUInt32(UInt32(data.count), at: 1) request.writeUInt32(data.crc32(), at: 5) self.internalState.sendUploadRequest(.setBtFw, request: request, data: data, progressHandler: progressHandler, completionHandler: completionHandler) } ```

pepijn [2018-09-18 07:27:41]
that should do the trick

pepijn [2018-09-18 07:27:47]
:crossed_fingers:

julian [2018-09-18 07:28:01]
..building

pepijn [2018-09-18 07:28:12]
JulianTTY

julian [2018-09-18 07:28:30]
..running

julian [2018-09-18 07:29:16]
It’s transmitting now..

julian [2018-09-18 07:29:35]
At the 0.05s..time for another hard boiled egg

julian [2018-09-18 07:30:09]
Genius. Sharp eye! Thanks..

pepijn [2018-09-18 07:30:36]
My bad... That's what I get for not testing my code.

pepijn [2018-09-18 07:31:00]
Ideally all this stuff would be unit tested

julian [2018-09-18 07:31:17]
If that’s all that’s the worst to come from not testing your code, I’m fine with that!

julian [2018-09-18 07:31:31]
Yes, of course – that’d be the right way, some day..

julian [2018-09-18 07:31:36]
If this takes hold and works, I may commit that change — as well as the throttling — and push it.

pepijn [2018-09-18 07:31:46]
That would require mocking out CoreBluetooth though; not sure it's worth the effort

julian [2018-09-18 07:32:06]
The procedure for bumping the version is to, basically bump the version and then update the podspec with the new version? I did it once, but sort of shoved my way through it..

pepijn [2018-09-18 07:33:20]
update version and tag in podspec and commit. tag the newly created commit. run the pod upload command. bump version in the podfile of utility app.

julian [2018-09-18 07:34:01]
By tag you mean a git tag, yes?

pepijn [2018-09-18 07:34:04]

yep

julian [2018-09-18 07:34:27]
Got it. I'll do that after the ride this morning, which was to have started 94 minutes ago! :rolling_on_the_floor_laughing:

pepijn [2018-09-18 07:34:31]
`pod repo push <repo name> <podspec file> --skip-import-validation --allow-warnings`

pepijn [2018-09-18 07:34:40]
is the pod upload command

pepijn [2018-09-18 07:34:53]
you need to skip validations for the time being due to bugs in cocoapods

pepijn [2018-09-18 07:35:14]
<repo name> is specific to your local setup

pepijn [2018-09-18 07:35:24]
<podspec file> I simply forgot the name of the file :slightly_smiling_face:

pepijn [2018-09-18 07:35:56]
you'll have to `git tag <version>` and then `git push --tags` in order for it to work.

pepijn [2018-09-18 07:36:12]
`pod` will complain if you forget

julian [2018-09-18 09:51:32]
My <@U5ZSJAD2S> found this re: remote config

wcrtr [2018-09-18 09:51:38]
<@U5ZSJAD2S> has joined the group

pepijn [2018-09-18 15:30:40]
<@U08B65RM0> just checked the `peripheralIsReady(toSendWriteWithoutResponse peripheral: CBPeripheral)` thing again. no luck on macos 10.13.6. `canSendWriteWithoutResponse` always returns false. Delegate method is never called.

julian [2018-09-18 15:30:59]
:confused:

pepijn [2018-09-18 15:31:10]
Either I'm doing something wrong, or it's simply broken

pepijn [2018-09-18 15:31:35]
Firebase remote config looks like what you need indeed

pepijn [2018-09-18 15:31:52]
I only looked at the docs briefly; not 100% sure how you would target the test users exactly, but that's probably cause I'm not familiar with Google Analytics.

julian [2018-09-18 15:31:58]
Yes, was just going to take a closer look..just pushing the pod now

pepijn [2018-09-18 15:32:17]
Maybe app version is good enough as criterium

julian [2018-09-18 15:32:31]
Yes, the segmentation is a question..there's a pay service called rollout that lets you do by location and other things..

pepijn [2018-09-18 15:33:34]
If the config property is the firmware download URL and you have a stable and beta URL, you could switch on app version.

pepijn [2018-09-18 15:34:12]
As long as a particular app version is in beta / test flight you feed it the beta URL, when it's made generally available you raise the app version condition.

pepijn [2018-09-18 15:34:28]
No idea if this actually works; just thinking out loud

pepijn [2018-09-18 15:39:42]
I'm going to push the code I have so you can give it a try on iOS if you like. Protected by a `#if` conditional.

harri [2018-09-18 22:48:22]
<@U08B65RM0> should we share the latest BLE firmware (0.0.14) for Simon as he seems to have troubles on downloading rides even though he is running the latest firmware release.

julian [2018-09-19 09:24:18]
<@U0DDJ0QSY> Does the bluetooth activate under any conditions when in RIDE mode? For example when not moving for some length of time? I think it did at some version?

harri [2018-09-19 09:29:01]
It does not, this feature was removed from the first retail firmware release.

julian [2018-09-19 09:53:20]
Okay. Is there a technical issue with it or just to simplify things? Just curious..

harri [2018-09-19 11:04:20]
Just to simplify things, if I remember correctly the initial idea was to use BLE in the middle of the ride to download activity highlights.

harri [2018-09-19 22:53:02]
Current BLE 0.0.14 does not have dependency to stm32 firmware, so it can be updated separately if needed. It does not matter if BLE 0.0.14 is used together with the very first retail stm32 firmware. Also nRF52 flashing algorithm (in stm32 firmware) is exactly the same in the very first retail firmware release. In future firmware releases we need to be extra careful if there is dependency issue. I will try to avoid dependency problems in stm32 and nRF52 communication interfaces.

harri [2018-09-19 23:05:29]
<@U08B65RM0> Could you check what happens in application code if firmware returns ack (list size = 0) for empty activity list and crashlog list. This is related to discussion where we agreed together with pepijn that it is better to return nack for real errors only. Does the rx app generate crash reports? RX app did crash several times when I tried updated firmware that had nack replaced with ack + list size 0. RX app does not start if this change is added to firmware.

pepijn [2018-09-19 23:08:17]
I had assumed I had handled this case :face_with_rolling_eyes:

pepijn [2018-09-19 23:08:46]
Currently the code is going to generate a timeout. Doesn't check for the 'expected number of chunks == 0' case yet.

pepijn [2018-09-19 23:08:51]
I'll add that right away. Improves the robustness of the code regardless of whether the firmware is changed or not.

julian [2018-09-20 07:35:26]
Just a note: lots of refactoring related to the firmware update mechanics, so you know. It'll take a bit to clean it up and then also integrate the UI for updating both NRF and MCU firmware. I haven't precisely figured out how both will update — one after the other with intermediary notifications to the user, or all at once, etc. Small but important detail. But first, as I had no mechanism in place to update the NRF firmware (complete oversight on my part!) I will build that in, including the rather simple 'server-side' component.

julian [2018-09-20 07:35:42]
It'll be a long update, time-wise, to upload the firmware files to the device.

julian [2018-09-20 07:36:22]
I'm pondering a way to communicate the 'secondary' path, which is a simple file copy..

julian [2018-09-20 07:36:47]
And of course in the midst of this, Apple is taunting me to update to Xcode 10..I am resisting!

pepijn [2018-09-20 07:37:11]
my laptop just did it it seems

pepijn [2018-09-20 07:37:16]
automatic app store update

pepijn [2018-09-20 07:37:23]
seems to work fine so far

julian [2018-09-20 07:37:42]
Your laptop? Or Xcode builds our code?

pepijn [2018-09-20 07:37:50]
both

julian [2018-09-20 07:37:56]
Hrmmm….

pepijn [2018-09-20 07:38:12]
but I agree with you that switching compiler version in the middle of things is a bad idea

pepijn [2018-09-20 07:38:49]
Putting on my release engineer hat for a moment: ideally you would have a dedicated machine to make the release builds that doesn't auto update. That's a simple way to ensure reproducible builds.

pepijn [2018-09-20 07:39:57]
I'm less concerned about these things on my laptop since I don't build the code that gets shipped to other people

pepijn [2018-09-20 07:40:20]
xcode server is kind of what you want/need for that

pepijn [2018-09-20 07:40:33]
don't know if anyone provides that as a cloud service that you could use

pepijn [2018-09-20 07:41:56]
but that aside, you have more than enough work as is :smile:

julian [2018-09-20 07:42:36]
Yeah, I've heard of that..with a squad of release engineers minding the build process from a boiler room..that'd be so nice..I might even get an extra hour of sleep each night and wake up smacking my lips as I ponder whether to have a soft boiled egg for a light breakfast, or the smoked salmon on toast..

julian [2018-09-20 07:43:32]
(Soft boiled egg and coffee this morning, btw.. :laughing: — and anniversary date at the Hollywood Bowl this evening!)

pepijn [2018-09-20 07:43:40]
first thing I did at my current fulltime project

pepijn [2018-09-20 07:43:53]
'wait what, you're making release builds on your development laptop??? :scream: '

julian [2018-09-20 07:43:54]
Put in place a build server?

pepijn [2018-09-20 07:44:02]
automate all the things

pepijn [2018-09-20 07:44:11]
no human involvement in release build process

julian [2018-09-20 07:44:18]
Yep. Nightly builds..that'd be so grown-up! Someday..

pepijn [2018-09-20 07:44:47]
they followed a multi step process with many manual changes that needed to be made

pepijn [2018-09-20 07:44:55]
that's a recipe for disaster

pepijn [2018-09-20 07:45:30]
to be fair, I was coming from an ISO9001 certified place into a startup.

pepijn [2018-09-20 07:45:35]
slight case of culture shock

julian [2018-09-20 07:45:54]
:rolling_on_the_floor_laughing:

julian [2018-09-20 07:46:01]
I can imagine..

julian [2018-09-20 07:46:54]
But, discipline can set you free rather than bog you down, so — I admire disciplined approaches rather than hoping that things hold together..

pepijn [2018-09-20 07:48:53]
balancing act indeed. the upside to it is that cutting a release here now consists of pressing a button, enjoying a cup of coffee, and 15minutes later we can ship it.

pepijn [2018-09-20 07:49:05]
used to take an hour and involved lots of anxiety

julian [2018-09-20 07:51:05]
…including Apple deciding that they don’t want to distribute it for one reason or another, after a week of review..

pepijn [2018-09-20 07:53:21]
have you had that happen already?

julian [2018-09-20 07:59:49]
Not _really_

julian [2018-09-20 08:00:24]
Early, early on when I first pushed the App through Test Flight, they said they needed the product to go through their process, which was a bit unnerving.

julian [2018-09-20 08:00:45]
I don’t know what happened next — we have some “people” at Apple so we asked on the sly if this was normal, etc.

julian [2018-09-20 08:01:22]

It just felt like that would've been a whole thing..it's not a straightforward product like a "connected speaker" or toy of some sort.

julian [2018-09-20 08:01:58]
(Btw, there are a bunch of Apple folks who have one and I've been told it's in their informal internal "museum" of cool designed objects..)

julian [2018-09-20 08:02:23]
In any case, somehow it went through the next time — I think I made the description and notes a bit more vague the next time through.

julian [2018-09-20 08:03:41]
What *has* happened recently with the Rx App is that they identified it as something that should be done through their Enterprise program, but I again changed the description a nudge and it went through. They are probably right that it should at one level: we imagine the Rx App as something mechanics and the like at shops can use as a diagnostic aide or to help 10-thumbed customers calibrate, etc.

julian [2018-09-20 08:04:38]
By the by <@UA6CC3MT5> — do you know any you who has Android experience? Just something to keep in the back of your noggin. I'm asking everyone..

pepijn [2018-09-20 08:08:24]
:hand:

pepijn [2018-09-20 08:08:32]
but I'm a little bit rusty

pepijn [2018-09-20 08:10:53]
Only other Android dev I know is my brother, but he works at Google in Zurich on internal Android projects (Google Now if I remember correctly). Won't be able to help you.

julian [2018-09-20 08:11:18]
Check.

pepijn [2018-09-20 09:17:12]
Are you looking for something specific? Work on the app?

pepijn [2018-09-20 09:18:06]
A Java/Android port of blekit should be fairly simple to do at this point FWIW. Doesn't help with the UI, but gets some low level complexity out of the way.

julian [2018-09-20 10:42:59]
The blekit part would be first on my list. While I haven't done Amdroid UI in the past I feel more confident that I could skill up that bit and get a decent (if not parity) UI done on my own.

pepijn [2018-09-20 10:49:39]
I don't have any Android devices, but it seems running in fusion does support BLE. The official emulator doesn't.

pepijn [2018-09-20 10:50:11]
If that x86 build works I should be able to put something basic together a la the Rx app.

julian [2018-09-20 11:36:40]
I'd send you my dev Android with "phone"

julian [2018-09-20 11:42:57]
Any help is graciously accepted!

pepijn [2018-09-22 03:58:57]
<@U08B65RM0> could you make a new repo on github for me. Lets go for the very original `OmataBLEAndroid`.

pepijn [2018-09-22 03:59:34]
What's the oldest version of Android you want to support? Much more varied in terms of actually deployed OS versions than iOS...

julian [2018-09-22 06:40:59]
<@UA6CC3MT5> Wooohooo! Okay, I've just created a repo. As for minimum Android version, it seems 7.0 has the largest market share, but I don't know what sort of API constraints that might put on us..do you have any insights on that point?

pepijn [2018-09-22 06:47:08]
Not yet

pepijn [2018-09-22 06:48:05]
Don't get too excited just yet. Have some other projects starting as well so time will be even more limited, but I'll try.

julian [2018-09-22 06:48:32]
I'm an optimist this morning..

pepijn [2018-09-22 07:13:07]
BLE is BLE so I'm expecting this to be a fairly simple porting effort. The devil is in the details of course. We'll see...

julian [2018-09-22 07:24:24]
Check..

pepijn [2018-09-23 08:29:35]
<@U08B65RM0> I got a basic skeleton project set up and was now trying to get an Android device set up for testing, but no luck

pepijn [2018-09-23 08:30:08]
android-x86 doesn't seem to be able to use the builtin BLE device of my laptop; probably needs a dedicated USB BLE adapter.

pepijn [2018-09-23 08:30:31]
I can try to get something up and running on a raspberry pi

pepijn [2018-09-23 08:30:47]
regardless I can write the code already; just won't be able to actually test it

julian [2018-09-23 08:30:50]
I sent you an Android device..plus a catalog book..i tried to fit a piece of cake in the envelope, but it got messy..

pepijn [2018-09-23 08:31:01]
:joy:

julian [2018-09-23 08:31:25]
I had it knocking around, ostensibly to test. I'll get another cheap-o one, but wanted to send you something straight away.

julian [2018-09-23 08:31:34]
(Android device, not the cake..)

pepijn [2018-09-23 08:31:52]
could have ordered a cheap one here. might have been less expensive than intl shipping

pepijn [2018-09-23 08:33:09]
wow those things are cheap

pepijn [2018-09-23 08:33:16]
you can get a Nokia 1 for 99€...

julian [2018-09-23 08:33:24]
yeah, crazy..

pepijn [2018-09-23 08:33:44]
apples and oranges comparison with an iPhone of course, but still

pepijn [2018-09-23 08:34:42]
anyway, time to get cracking

pepijn [2018-09-23 08:35:07]
I have `(BluetoothManager) context.getSystemService(Context.BLUETOOTH_SERVICE)` already :smile:

julian [2018-09-23 08:37:27]
I just got lost looking at Nokia phones..the 105 is gorgeous..

pepijn [2018-09-23 08:37:40]
HMD is on a roll indeed

pepijn [2018-09-23 08:38:11]
Android wise those are some of the nicest ones you can get I think. No garbage software on them; timely software updates.

julian [2018-09-23 08:38:30]

It. Has. Snake!

pepijn [2018-09-23 08:38:46]
After having used iOS for so many years, I find Android hard to use personally. Just can't get used to their UI model

julian [2018-09-23 08:49:05]
Yes, I completely agree. There’s definitely a curve upward to overcome..

julian [2018-09-23 08:49:50]
It’s likely safe to say that both platforms do not have as a goal making it easy to move from one to the other..the idioms and interaction design are like completely different points of view..

pepijn [2018-09-23 09:57:38]
Not just the UI layer. Android APIs also follow a completely different philisophy. More ‘here’s a bag of nuts and bolts’ style.

julian [2018-09-23 15:49:52]
:face_with_raised_eyebrow: I admit to never having built for Android..but I can learn pretty much whatever I have to to survive!

julian [2018-09-23 16:24:20]
<@UA6CC3MT5> Just a note that I got a minimum target error building OmataCLI when I upgraded to Xcode 10. I had to change build settings like so..

julian [2018-09-23 16:25:18]
I don’t know how to change the last column, which is grayed out/unselectable. But, the second to last column was blank so I changed it to 10.13 (which I’m still running..). Presumably the default column overrode the blank..

pepijn [2018-09-23 22:24:58]
I got those too. Thought I had fixed them all already.

julian [2018-09-24 06:21:16]
Should I commit that change to the project file, do you think?

pepijn [2018-09-24 06:24:14]
:man-shrugging:

pepijn [2018-09-24 06:24:20]
check the diff to see if it makes sense

pepijn [2018-09-24 06:24:31]
if it's just the version number then by all means go right ahead

julian [2018-09-24 06:29:55]
Additional item added in the property list. I assume it would default to some value built into the tool if it’s not overridden. I’ll commit for completeness’ sake..and afraid I’ll forget what I did if I checkout or pull some other day..

pepijn [2018-09-24 08:51:47]
Missed the DHL delivery today. Should be able to pick it up tomorrow.

pepijn [2018-09-24 08:52:07]
There’s already a completely untested crude port of the swift code in the repo

julian [2018-09-24 09:12:37]
Amazing...

julian [2018-09-24 09:13:39]
Thank you <@UA6CC3MT5>

julian [2018-09-24 09:14:29]
What IDE are you using? Or are you sitting in front of emacs and a blinking cursor?

julian [2018-09-24 09:15:08]
I wonder if IntelliJ..? Or Android Studio..I have both but never went down the Android path.

pepijn [2018-09-24 09:20:39]
Intellij Ultimate with the Android plug-in

pepijn [2018-09-24 09:20:53]
Essentially the same thing as Android Studio

pepijn [2018-09-24 09:21:01]
What I use on a daily basis

pepijn [2018-09-24 09:22:43]
For Android development the two are identical for all practical purposes. Differences are in set of supported plugins.

pepijn [2018-09-25 16:47:48]
<@U0DDJ0QSY> the BLE spec states that > After connection establishment - Notifications must be enabled by the Central (for example, a mobile phone) on the Tx characteristic. is that correct or should it be Rx?

harri [2018-09-25 22:40:10]
Notification should be enabled for 0002

harri [2018-09-25 22:43:39]
Maybe names of the characteristics should be swapped, so that RX is 0002 and TX is 0003.

harri [2018-09-25 22:47:32]
I will correct the API spec at the same time with Ant+ sensor updates.

pepijn [2018-09-25 23:10:54]
<@U0DDJ0QSY> it’s a matter of whose perspective you look at them from I guess. Should I set the descriptor to notification or indication?

pepijn [2018-09-25 23:11:21]

(Fighting a bit with the Android BLE API and wondering what might be wrong...)

pepijn [2018-09-25 23:11:54]
<@U08B65RM0> if you thought the CoreBluetooth code was complicated, wait till you see the Android stuff.

julian [2018-09-25 23:12:31]
uh oh..

pepijn [2018-09-25 23:13:18]
There SDK only supports a single gatt request/response in flight at any given moment. Not a big deal, but if you don’t respect this, eg send two writes right after each other, the SDK silently discards the first one. No warning or anything.

pepijn [2018-09-25 23:13:35]
Talk about a major pitfall. Not well documented at all of course.

pepijn [2018-09-25 23:14:34]
The entire thing is asynchronous of course so it’s callbacks and state machines again; just lower level than CB

harri [2018-09-25 23:42:02]
I'm not familiar with the Android BLE. On top of Linux bluez I detect rx service by uuid and then register notification by its value handle.

harri [2018-09-25 23:43:06]
<@UA6CC3MT5> Do you have source code of the current Android app?

pepijn [2018-09-25 23:43:28]
Just to be sure I'm not doing anything stupid: on iOS I'm using these two UUIDs for the characteristics ``` TX_CHARACTERISTIC_UUID = CBUUID(string: "222D0002-BA58-2FB0-1A43-77A2BFDDE5DF") RX_CHARACTERISTIC_UUID = CBUUID(string: "222D0003-BA58-2FB0-1A43-77A2BFDDE5DF") ```

pepijn [2018-09-25 23:43:45]
TX is the one I write to from the central; RX is the one that's notifying the central

pepijn [2018-09-25 23:44:09]
That works, but based on your explanation it sounds like it should be the other way around

pepijn [2018-09-25 23:44:37]
(looking at a packet dump to confirm that this is what's really happening or if CoreBluetooth is playing tricks on me

harri [2018-09-25 23:46:09]
These are from command line app: #define OMATA_NUS_SVC "222d0002-ba58-2fb0-1a43-77a2bfdde5df" #define OMATA_NUS_RX "222d0002-ba58-2fb0-1a43-77a2bfdde5df" #define OMATA_NUS_TX "222d0003-ba58-2fb0-1a43-77a2bfdde5df"

pepijn [2018-09-25 23:48:19]

Ok, so naming is reversed

pepijn [2018-09-25 23:48:33]
and you're setting `OMATA_NUS_TX` to notify right?

pepijn [2018-09-25 23:49:17]
If I'm interpreting my wireshark dump correctly, that's how it's working...

pepijn [2018-09-25 23:49:49]

pepijn [2018-09-25 23:50:01]
Assuming the UUID there is the characteristic UUID

harri [2018-09-25 23:50:42]
Cmd line app looks for gatt attributes for each uuid and then register notification for OMATA_NUS_RX.

pepijn [2018-09-25 23:51:06]
huh that's weird then

harri [2018-09-25 23:52:38]

pepijn [2018-09-25 23:53:44]
I'm doing the exact same thing in corebluetooth but with the UUIDs flipped

pepijn [2018-09-25 23:53:51]
And for some reason that works...

pepijn [2018-09-25 23:55:11]
You're probably better at interpreting BLE traces than I am. Could you have a look at the following capture with display filter `bluetooth.addr == db:a2:3c:49:67:de` in wireshark and see if it makes sense to you?

pepijn [2018-09-25 23:55:19]

pepijn [2018-09-25 23:55:38]
sorry for the large size, can't seem to find a way to reduce the capture to just the relevant packets in PacketLogger

pepijn [2018-09-25 23:58:29]
For comparison, the swift code at the moment is this

pepijn [2018-09-25 23:58:54]

harri [2018-09-25 23:59:59]
How this is done in current android app?

pepijn [2018-09-26 00:00:05]
not at all yet

pepijn [2018-09-26 00:00:10]
still writing the code

pepijn [2018-09-26 00:00:35]
let me rephrase that; I don't know :smile:

pepijn [2018-09-26 00:00:44]
I'm writing a port of the swift code at the moment

pepijn [2018-09-26 00:01:05]
And the swift code works for better or worse; struggling a bit to get things to respond on Android

pepijn [2018-09-26 00:01:17]
That's why I'm double checking everything

harri [2018-09-26 00:01:59]
I'm referring to the demo Android app that was made by one of our Android developers.

pepijn [2018-09-26 00:02:20]
I haven't seen that code yet I think

harri [2018-09-26 00:02:21]
You should have source code for that.

pepijn [2018-09-26 00:02:27]
Let me check

pepijn [2018-09-26 00:06:05]

pepijn [2018-09-26 00:06:31]
I think that's the relevant bit you're looking for

pepijn [2018-09-26 00:06:53]
`CMD_NTF` is what I'm calling `RX` and is being set to notify

pepijn [2018-09-26 00:07:07]
that's `3` not `2`

pepijn [2018-09-26 00:09:05]
That contradicts your CLI app code and the specification though

pepijn [2018-09-26 00:11:45]
Would it help if I send you a dump of the Android code?

pepijn [2018-09-26 00:12:08]
<@U08B65RM0> I'm assuming it's ok to extract that from github and to pass it on to <@U0DDJ0QSY>

pepijn [2018-09-26 00:13:03]

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aimo_alaniemi [2018-09-26 00:23:01]
<@UA6CC3MT5> Permission granted by Haltian. Feel free to use.

pepijn [2018-09-26 00:23:39]
<@U0D8KR8GH> thanks. It will be a good starting point. Plan is to turn what's now baked into an Activity into a more reusable library.

harri [2018-09-26 00:24:21]
I will check later on what happens in my CLI app if TX and RX UUIDs are swapped.

aimo_alaniemi [2018-09-26 00:25:57]
<@UA6CC3MT5> This Android app was done fast to support very basic stuff. Entry screen looks the same, hands calibration is supported, gps aiding data download is supported but I do not recall if anything else was done. (I use iPhone...)

pepijn [2018-09-26 00:26:44]
I think that's about it indeed. For iOS/macOS we have a library now that supports the full set of commands that the Omata supports.

pepijn [2018-09-26 00:27:49]
We need the same thing for Android now. Once the basic BLE message exchange is working adding all the commands is the easy part. I'll lift the low-level BLE code from the existing Android code and build on that.

pepijn [2018-09-26 00:28:12]
I have to say, the Android BLE API is pretty awful compared to the iOS one...

aimo_alaniemi [2018-09-28 01:14:00]
Yes, we've seen Android BLE "challenges" in many projects...

pepijn [2018-09-28 01:15:42]
Nice to hear I'm not alone

pepijn [2018-09-28 01:17:18]
<@U08B65RM0> if you're interested in the nitty gritty details, have a look at

pepijn [2018-09-28 01:17:31]
> Also, the API was designed to be asynchronous, but doing multiple operations without waiting for the callback, I can see the message "already has a pending command!!" on logcat. Looking at the message in bta_gatt_utils.c, command don't seem to be enqueued but just thrown away if there's currently an unfinished command.

pepijn [2018-09-28 01:18:05]
Nice example of how to make a developer hostile API :slightly_smiling_face:

julian [2018-09-28 06:41:09]

Unfun..

mkruzeniski [2018-10-01 06:31:13]
<@UD3GRPYRY> has joined the group

julian [2018-10-01 20:32:14]
<@UA6CC3MT5> Ahoy. I was away since last Thursday at a cycling event. Hope all is well. Just a note: I came across this build error just now that seems to be an Xcode issue `(cf: )` The first note to delete derived data cleared it. Just in case you come across similar..

pepijn [2018-10-04 13:57:15]
<@U08B65RM0> I was wondering why you needed that blocking callback handler and then I had a look at the AlamoFire API

pepijn [2018-10-04 13:57:34]
They go out of their way to force everything to be async.

julian [2018-10-04 13:57:36]
Yes? I may be completely wrong..

pepijn [2018-10-04 13:57:55]
The exact opposite of the HTTP client library I use in Java (Square's OKHttp)

pepijn [2018-10-04 13:58:14]
There the basic use case is synchronous and you wrap your stuff in a background executor thread if you want async

pepijn [2018-10-04 13:58:30]
Seems like they wanted to cater to silly developers who do HTTP requests on the main dispatch queue :smile:

julian [2018-10-04 13:59:42]
Well, it’s even in my whacky reactive connect handler. When a connection is made (async) I do a few housekeeping tasks and then check for new activities. Now what I want to do is check for new firmware after I’ve gotten the version on the device. Then if new firmware exists, popup a notification to do the update. If the user decides to do that, I want to do all of that before I do anything like check for activities. In fact, that’ll take some time. It’s all getting a bit baroque..

julian [2018-10-04 14:00:26]
Or, I could punt on all of that and simply tell the user to go to the Settings page and do it from there..

julian [2018-10-04 14:00:51]
Have a popup that simply says — New Firmware..please go to Settings

julian [2018-10-04 14:01:19]
And then they have the option to do that at their leisure as a single task rather than having a bunch of long running queued tasks.

julian [2018-10-04 14:01:27]
#needswhiteboard

pepijn [2018-10-04 14:01:46]
I would suggest you factor our the uninterruptible sequential bits into functions

pepijn [2018-10-04 14:02:09]
make it easy to reorder stuff, call bits in async blocks or not, etc

julian [2018-10-04 14:02:14]
I believe most of it is at this point (not checked in…)

julian [2018-10-04 14:02:32]
..if I'm following.

pepijn [2018-10-04 14:02:41]
beyond that, the type of workflow you're describing is always messy in my experience.

pepijn [2018-10-04 14:02:58]
whenever you have to prompt the user for a decision and then continue based on that things getty icky

julian [2018-10-04 14:03:07]
So, checking for new firmware is a function; getting the new firmware data is a function; and of course then in `OmataBLEKit` is the actual updating.

pepijn [2018-10-04 14:04:36]
yep so you end up with a flow chart kind of thing

pepijn [2018-10-04 14:04:52]
and in each node transition you have to pass along all the data you've gathered so far

julian [2018-10-04 14:05:08]
I think for the moment I'll try the prompt, and then push the work to Settings. I should be able to do that quickly to see how the flow behaves and hopefully keep the code design legible.

pepijn [2018-10-04 14:05:17]
usually I end up with either long parameters lists or a 'context' dumping ground object that contains all the collected state so far

pepijn [2018-10-04 14:05:45]
sometimes you can improve this with lambdas and closures, but often that becomes unintelligible just as well.

pepijn [2018-10-04 14:06:05]
the code is cleaner but locality of reasoning goes out the door in my experience

pepijn [2018-10-04 14:08:50]
not sure what the correct term for that is actually. what I mean is that you end up with functions that take, for instance, two closures `onOk` and `onCancel` and then depending on the user choice you call one or the other. That's fine but your code ends up being twisted inside out which makes it harder to debug and harder to predict what will happen when the code is executed. You can't just read it from top to bottom since during execution you're actually jumping all over the place.

pepijn [2018-10-04 14:08:57]
Sometimes simple imperative code is nice :smile:

julian [2018-10-04 14:10:20]
Yeah, I think one of the UI notification do-dads I use has that..a separate closure for each button, kinda thing.

julian [2018-10-04 14:11:06]
If there's anything more complicated than some straightforward code, it's fine. But as soon as you start calling perhaps another async task — :shocked_face_with_exploding_head:

pepijn [2018-10-04 14:18:33]
Shouldn't be too complicated though. Is it more than bouncing back and forth between main and some other dispatch queue?

julian [2018-10-04 22:38:31]
Bit of an open question and not an issue: can you think of any easy/quick way to add an 'estimated time remaining' hook in the progress handler for the data upload to the device? Currently progress tracks essentially percentage. The data uploads to the device are pretty long so I'm trying to find some UX candy that'll give some sense that something is happening, besides a very small number crawling towards 1..

pepijn [2018-10-05 09:34:15]
Progress bar?

pepijn [2018-10-05 09:34:51]
ETE shouldnt be hard to come up with. The transfer rate is pretty consistent.

julian [2018-10-05 09:57:14]
Yeah, so I have a Progress Bar. It moves quite slowly. I could put an indeterminate progress bar which has more "action", but the percentage moves up so slooooowwwwllllyyyy..I can see how it could be frustrating or confusing. Slow enough where one might wonder if anything is happening.

pepijn [2018-10-06 04:06:32]
upload is probably somewhat artificially slow now due to the sleep that we extended

pepijn [2018-10-06 04:06:57]
I haven't had a chance to test the auto throttling based approach yet, that might go at less of a snails pace

pepijn [2018-10-06 04:07:41]
related to that it might be worth investigating if the BLE stack on the omata side could potentially support large MTUs

pepijn [2018-10-06 04:07:58]
That would allow us to transfer at a higher data rate probably.

harri [2018-10-06 04:23:36]
Upload speed should be about 2kB/s.

pepijn [2018-10-06 04:25:11]
<@U0DDJ0QSY> we're working around an issue in iOS/macOS where the BLE transmit buffer can silently overflow

pepijn [2018-10-06 04:25:49]
In order to not trigger retransmits all the time we need to either use write with response or insert sleeps to throttle the transfer rate.

pepijn [2018-10-06 04:26:05]
neither approach is ideal, but that's what's making everything rather slow

pepijn [2018-10-06 04:26:47]
they have a mechanism to tell you when the buffer is full and notify when it's ok to write again, but it doesn't currently work on macos

pepijn [2018-10-06 04:26:56]
I have the necessary code in place behind `#ifdefs` but haven't been able to test on ios yet

harri [2018-10-06 04:27:05]
That does not sound good, what is current throughput?

harri [2018-10-06 04:27:29]
With throttling.

pepijn [2018-10-06 04:27:29]
<@U08B65RM0> raised the sleep quite a bit I believe; not sure what the current value is

harri [2018-10-06 04:29:00]
Any idea about buffer size?

harri [2018-10-06 04:30:44]
How about ack every 50 or 100 packets from mcu to app?

pepijn [2018-10-06 05:42:54]
Not sure what’s going on exactly. It’s just pretty clear that if we send out data too fast packets get lost pretty quickly. There’s nothing in CoreBluetooth that’s providing push back.

pepijn [2018-10-06 05:43:19]
Application protocol level flow control could help indeed.

pepijn [2018-10-06 05:44:16]
I haven’t dug deep enough in the BLE spec to understand how you’re supposed to make this work reliably to be honest.

pepijn [2018-10-06 05:44:50]
Write with notification is an option of course, but that’s pretty slow due to the small mtu size

pepijn [2018-10-06 05:46:18]

If I understood it correctly that’s how the download side works reliably. It’s using indication rather than notification I believe. I.e. acknowledged rather than unacknowledged.

julian [2018-10-06 08:14:34]
Just chiming in here — on the one hand, it works. But, for example, the nRF firmware update takes about 25 minutes to transfer. It’s a bit more than 500k. I recall that several weeks ago the throttling issue came up as we were quickly losing the connection if we did not have throttling. I don’t recall if we had identified the deep, dark SDK bug you found <@U0DDJ0QSY> before or after that, or if that may or may not be associated with issue that caused us to up the throttling. It may be worth looking at again. I can add that to my list. I’d just need to dig into where precisely the throttling happens in `OmataBLEKit`

julian [2018-10-06 08:25:20]
<@UA6CC3MT5> If I were to make test changes in OmataBLEKit locally, is there an easy configuration management way to make it available to `Omata Utility App`? Or perhaps its best just to test it within the CLI..just pondering..

harri [2018-10-06 09:07:06]
I don't understand why this issue does not happen with Linux CLI app, it does not have throttling enabled. Could I have rx app version that does not throttle writes? So I could check what actually happens on firmware side. Here are numbers what I got: stm32 firmware upload 1m 47s and flashing ~20s, upload speed 2292B/s. BLE write with response is very slow on Linux side as well, all writes are currently without response.

julian [2018-10-06 11:02:39]
<@U0DDJ0QSY> The Rx App hasn’t been rebuilt since OmataBLEKit was introduced. It almost builds, but I’m cautious about spending time on it at the moment — it may be a simple thing, but the MCU firmware update methods are old and would need to be redone. The best test is the CLI that <@UA6CC3MT5> created. Unless we are thinking that the issue is iOS specifically?

pepijn [2018-10-06 12:00:20]
We saw it on macos as well iirc

pepijn [2018-10-06 12:00:37]
<@U0DDJ0QSY> bluez vs corebluteooth?

harri [2018-10-06 13:20:17]
Maybe there is something in bluez that limits BLE packet rate even though throttling is not enabled on Linux CLI app, and in macos data is pushed faster over the BLE connection? Maybe it then causes problems for nRF or stm32 firmware, and this is seen on your side as lost packets.

pepijn [2018-10-06 13:20:48]
I'm going to run a test (as soon as my IDE responds) with all throttling turned off

pepijn [2018-10-06 13:21:04]
I'll capture the debug output on the omata and packet log

harri [2018-10-06 13:26:28]
That is the best way to proceed

pepijn [2018-10-06 13:29:45]
packet logger already answers the question

pepijn [2018-10-06 13:30:34]
In blekit the upload logic is basically this: ``` private func uploadPackets() { log.debug("Upload chunks started"); while state == .upload_data { if currentSequenceNumber <= finalSequenceNumber { let s = currentSequenceNumber uploadPacket(UInt16(s), of: transferBuffer) let progress = (0.0...1.0).clamp(value: Double(s) / Double(finalSequenceNumber)) currentProgressHandler?(progress) atomicCompareAndSwapInt(&currentSequenceNumber, expected: s, new: s + 1) #if BLEKIT_USE_PERIPHERAL_READY_TO_SEND readyToSend.lock() while !peripheral.canSendWriteWithoutResponse { log.debug("Waiting until peripheral can send write without response"); readyToSend.wait() } readyToSend.unlock() #else // Thread.sleep(forTimeInterval: 0.04) #endif } else { waitUntilState { $0 != .upload_data } } } log.debug("Upload chunks finished"); } ```

pepijn [2018-10-06 13:31:04]
`Thread.sleep` is commented out and `BLEKIT_USE_PERIPHERAL_READY_TO_SEND` is not defined, so it's running through this loop as fast as it can

pepijn [2018-10-06 13:31:33]
I see 3639 chunks being written from the application debug log

pepijn [2018-10-06 13:31:46]
In packet logger only a fraction of that is actually written

pepijn [2018-10-06 13:32:48]
In other words, the majority of the chunks just get silently dropped by corebluetooth

pepijn [2018-10-06 14:01:43]
<@U08B65RM0> I've replaced that custom define with `os(iOS)`, so with 0.20 there should be nothing to do

pepijn [2018-10-06 14:02:41]
signing off for today. do you have time to give this a quick test?

julian [2018-10-06 14:03:27]
Yes, I should. Currently struggling with some configuration management issues between pods and Xcode 10, but I should be able to solve those and give this a test. Thank you!

pepijn [2018-10-06 14:26:23]
<@U08B65RM0> can't help myself :smile: I found a suggestion on stack overflow that could be used as workaround that avoids the arbitrary sleep

julian [2018-10-06 14:26:40]
:rolling_on_the_floor_laughing: I know the feeling..

pepijn [2018-10-06 14:27:16]
someone suggested sending batches of writes without response and then inserting one with response in between each batch.

pepijn [2018-10-06 14:27:35]

you then wait for the with response one to be acknowledged before continuing

pepijn [2018-10-06 14:27:58]
kind of, sort of approximates what the canSendWriteWithoutResponse is doing

pepijn [2018-10-06 14:28:52]
this allows me to upload the gps aiding data on macos in about a minute

pepijn [2018-10-06 14:29:29]
still only a datarate of about 1kbps of course

pepijn [2018-10-06 14:30:01]
we might be able to improve this further by playing with the batch sizes a bit

pepijn [2018-10-06 14:30:41]
that's just the fallback approach for macos then (or old versions of iOS) for where the proper API doesn't work

julian [2018-10-06 21:10:34]
Gave it a whirl with 0.20. It took about the same time, 24 minutes for firmware update (581k)

julian [2018-10-06 22:10:45]
Curious if you're able to get it to build for ios 11.2 or higher? I'm having a bear of a time with dependency problems.

pepijn [2018-10-07 05:43:54]
regarding the external dependencies, version specifiers should be added to each external dependency.

pepijn [2018-10-07 05:44:12]
many of them don't have any at all which can cause uncontrolled, undesired updates to happen

pepijn [2018-10-07 06:15:20]
builds fine for me btw

pepijn [2018-10-07 06:15:41]
I did a 'clean build dir', pod update/install, and then a full rebuild

pepijn [2018-10-07 06:15:43]
no errors

julian [2018-10-07 06:15:55]
In the past I had hoped that the latest was best. But, at times I've had complaints from various Pods and addressed them with version specifiers. But yesterday it seemed that specifying iOS 11.2 caused a cascade of issues.

pepijn [2018-10-07 06:16:43]
latest = best is often true, but you want those updates to happen in a somewhat controlled fashion

pepijn [2018-10-07 06:17:07]

without locking down the versions you might bump blekit and get a whole bunch of other updates along with it

pepijn [2018-10-07 06:17:15]
makes it hard to root cause problems

julian [2018-10-07 06:19:16]
What's the best way to clean that issue up? Should I just go one by one and specify a version based on what's currently being used?

pepijn [2018-10-07 06:19:30]
way ahead of you

pepijn [2018-10-07 06:19:43]
I took the versions from the lock file and added those as version specifiers

julian [2018-10-07 06:23:43]
Wow. Fantastic. Thank you!

julian [2018-10-07 06:24:10]
Oh, there it is. Just saw the commit.

julian [2018-10-07 06:24:27]
(Coffee just now getting in my belly..)

pepijn [2018-10-07 06:24:54]
I need to tweak the ready to send stuff a bit further I think

pepijn [2018-10-07 06:24:59]
That callback is unreliable as heck

pepijn [2018-10-07 06:25:25]
The upload is pretty zippy with it in place, but callback sometimes just doesn't arrive

julian [2018-10-07 06:32:05]
From where does does the callback "come" — is it in response to that acknowledgement from the device?

julian [2018-10-07 06:32:49]
(Still trying to understand what's going on here — I get confused between what Core Bluetooth is meant to do, what it's not doing, and what we're doing to mitigate Core Bluetooth problems.)

pepijn [2018-10-07 06:36:18]
To summarize: - To write a packet to the device we use `CBPeripheral#writeValue(_ data: Data, for characteristic: CBCharacteristic, type: CBCharacteristicWriteType)` - write type can be `.withResponse` or `.withoutResponse`. The former is guaranteed delivery, the latter is best effort; no acknowledgment from receiving end - if we send everything with `.withResponse` things work, but slower than they could. - if we send everything with `.withoutResponse` packets get dropped by corebluetooth; not even being sent out over the ether.

pepijn [2018-10-07 06:36:51]
So why is that last bit happening? The device not being able to keep up would be understandable, the packets not being sent to begin with isn't really.

pepijn [2018-10-07 06:38:37]
The relevant bits that should help here are `CBPeripheral#canSendWriteWithoutResponse` and `CBPeripheralDelegate#peripheralIsReady(toSendWriteWithoutResponse:)`

pepijn [2018-10-07 06:38:50]
both have a tremendous amount of documentation...

pepijn [2018-10-07 06:39:46]
says > For this year, we've enhanced CBPeripheral with a new property called canSendWriteWithoutResponse. > > So if you call this before you do a write and it and it returns yes, that's our promise to you that your data will not be dropped in software before we get a chance to send it to the remote peripheral. > > If that returns no, you'll also get a delegate callback when we're ready and we'll call back peripheralIsReady (toSendWritewithoutResponse.

pepijn [2018-10-07 06:40:24]
But in practice it seems pretty tricky to get that callback to be invoked reliably

pepijn [2018-10-07 06:43:20]
one bullet proof solution (which might be the way to go for now) is to use writeWithResponse

pepijn [2018-10-07 06:43:36]
Leave the withoutResponse stuff as an optimisation for later

julian [2018-10-07 06:47:36]
Are we not using `.withResponse` presently?

pepijn [2018-10-07 06:47:53]
nope

pepijn [2018-10-07 06:48:05]
only for command execution

pepijn [2018-10-07 06:48:11]
not for large uploads

pepijn [2018-10-07 06:48:37]
the performance issue is that every packet upload then takes 2x connection interval

pepijn [2018-10-07 06:48:46]
once to send the data, once to receive the acknowledgment

julian [2018-10-07 06:49:10]
Copy. Right. So — the strategy now? That SO approach?

pepijn [2018-10-07 06:49:36]
:man-shrugging:

pepijn [2018-10-07 06:49:46]
maybe start with a simple withResponse implementation after all?

pepijn [2018-10-07 06:51:56]
what's really odd is that in the debug output of the app and the console of the phone things don't add up

pepijn [2018-10-07 06:52:39]
grabbing to logs...

pepijn [2018-10-07 06:53:58]
Phone shows this ``` Sending XPC message "CBMsgIdReadyForUpdates" to session "com.omata.utility-app-central-483-70" Received XPC message "CBMsgIdCharacteristicWriteValue" from session "com.omata.utility-app-central-483-70" Writing value without response to characteristic handle 0x0016 on device "<private>" Using Write Without Response Sending XPC message "CBMsgIdReadyForUpdates" to session "com.omata.utility-app-central-483-70" Received XPC message "CBMsgIdCharacteristicWriteValue" from session "com.omata.utility-app-central-483-70" Writing value without response to characteristic handle 0x0016 on device "<private>" Using Write Without Response Sending XPC message "CBMsgIdReadyForUpdates" to session "com.omata.utility-app-central-483-70" ```

pepijn [2018-10-07 06:55:13]
You can see that it's sending a `CBMsgIdReadyForUpdates` XPC message to our app

pepijn [2018-10-07 06:55:55]
On the app side though I get ``` Waiting until peripheral can send write without response Peripheral is ready to send write without response Upload chunk 96/3639 (18 bytes) Waiting until peripheral can send write without response Peripheral is ready to send write without response Upload chunk 97/3639 (18 bytes) Waiting until peripheral can send write without response ```

pepijn [2018-10-07 06:55:57]
and then nothing

julian [2018-10-07 06:57:53]
so the phone sends and the app is waiting for the message which presumably was sent but lost in the air

pepijn [2018-10-07 06:58:05]
no air involved

pepijn [2018-10-07 06:58:10]
This is all on the iphone

pepijn [2018-10-07 06:58:25]
the app is waiting for 'ready to send more data' from the operating system

pepijn [2018-10-07 06:58:32]
the operating system seems to be sending that

pepijn [2018-10-07 06:58:39]

the app never receives it as far as I can tell

pepijn [2018-10-07 07:00:01]
either I'm doing something wrong or this can't be used reliably...

pepijn [2018-10-07 07:00:33]
the fact that it doesn't work at all on macos (`canSendWriteWithoutResponse` is always false there) makes me think it's the latter

julian [2018-10-07 07:09:35]
11.2+?

pepijn [2018-10-07 07:09:46]
12.0

julian [2018-10-07 07:10:00]
Works on 12.0 or “still fails” on 12.0?

pepijn [2018-10-07 07:10:06]
still fails

julian [2018-10-07 07:10:12]
(this is frustrating..)

pepijn [2018-10-07 07:10:18]
quite

pepijn [2018-10-07 07:10:29]
I have a change ready to use with response

pepijn [2018-10-07 07:10:35]
testing it now

pepijn [2018-10-07 07:10:38]
let's give that a try

julian [2018-10-07 07:10:54]
…and other people have this issue, do we know?

pepijn [2018-10-07 07:11:11]
very little information online

pepijn [2018-10-07 07:11:31]
and I don't know any people in the iOS/macOS developer community to ask

pepijn [2018-10-07 07:11:49]

pepijn [2018-10-07 07:11:52]
there's that

pepijn [2018-10-07 07:12:28]

pepijn [2018-10-07 07:14:22]
pffff withResponse is really slow

pepijn [2018-10-07 07:14:43]
seems like it's sending one chunk every 2 connection intervals indeed

pepijn [2018-10-07 07:34:18]
:man-facepalming:

pepijn [2018-10-07 07:34:33]
writeWithResponse: 298 bytes/sec transfer rate

pepijn [2018-10-07 07:34:39]
that's not usable

pepijn [2018-10-07 07:40:18]
4 without / 1 with batch: 738 bytes/sec

julian [2018-10-07 07:41:55]
Ugh..

pepijn [2018-10-07 07:42:46]
9 without / 1 with: 981 bytes/sec

pepijn [2018-10-07 07:43:08]
let me time the 'sleep' based approach again as well

julian [2018-10-07 07:45:03]
Okay. This seems crazy that the iOS people haven’t addressed this — just looking at that thread in the developer forum..bonkers.

pepijn [2018-10-07 07:45:14]
quite

julian [2018-10-07 07:45:17]
This is one of those days where I wish I had a guy at Apple..

pepijn [2018-10-07 07:45:23]
they have addressed it. it just doesn't work (reliably)...

julian [2018-10-07 07:45:44]
Is that the workaround where you disconnect and reconnect?

pepijn [2018-10-07 07:46:07]
no I mean with the canSend and callback stuff

pepijn [2018-10-07 07:46:26]
that's to make write without response based data transfer work reliably

pepijn [2018-10-07 07:47:10]
so the iOS BLE connect interval seems to be fixed at 30ms as far as I can tell

pepijn [2018-10-07 07:47:28]
The number of packets that can be transferred per connect does not seem to be defined

pepijn [2018-10-07 07:47:47]
I'll write some code that writes x packets and then sleeps 30ms

pepijn [2018-10-07 07:47:53]
See how well that works

pepijn [2018-10-07 07:47:57]
Really icky...

julian [2018-10-07 07:50:52]
Yeah..seems kludgy, but..well..

pepijn [2018-10-07 07:53:16]
sleep approach is slower than the batch approach

pepijn [2018-10-07 07:53:42]
923 bytes/sec

julian [2018-10-07 07:55:11]
Is my math right? That’s about 9 minutes for 512k

pepijn [2018-10-07 07:55:35]
yep

pepijn [2018-10-07 07:55:38]
9 1/2

pepijn [2018-10-07 07:56:19]
BLE isn't really made for large data transfers...

julian [2018-10-07 07:56:21]
Well, that’s about 3x faster than presently based on my test last night. It took 25 minutes+ to transfer the ~512k BLE firmware file.

pepijn [2018-10-07 07:56:32]
at the very least you need larger MTU for that

pepijn [2018-10-07 07:57:46]
the nrf52 can do larger mtu

pepijn [2018-10-07 07:57:54]
not sure if there's enough RAM for that though

julian [2018-10-07 07:58:25]
Larger MTU for the batch approach? Bit confused..

pepijn [2018-10-07 07:58:34]
That's at the BLE level

pepijn [2018-10-07 07:58:52]
every packet we send out over the air is limited to 18bytes payload

pepijn [2018-10-07 07:59:18]
there are a couple extra bytes of overhead being sent as well

pepijn [2018-10-07 07:59:51]
you can send more per packet but to do that the two devices need to negotiate a larger BLE MTU

pepijn [2018-10-07 08:00:13]
that boosts the data to protocol overhead ratio significantly

pepijn [2018-10-07 08:00:21]
and enables higher transfer rates

pepijn [2018-10-07 08:00:27]
anyway all moot at this point, needs a fw change

pepijn [2018-10-07 08:00:52]
so last I have (need to pick up the kids now) is doing 3 writes and then sleeping 30ms.

pepijn [2018-10-07 08:01:00]
That gets me 1065 bytes/sec

pepijn [2018-10-07 08:01:10]
1kbps FTW!

pepijn [2018-10-07 08:01:27]
that's on macOS

pepijn [2018-10-07 08:01:37]
I'll try it on iOS this evening

julian [2018-10-07 08:03:05]
Jeepers. Reminds me of the cassette tape drive I had on my TRS-80..

julian [2018-10-07 08:04:34]
Okay, well — so you know, I have to focus a bit today on finishing a few video ads. But, there are still some UI issues to sort out that need to be sorted out whether the data transfer is fast or slow..

pepijn [2018-10-07 13:04:28]
I've added a timeout on the wait for the callback in the iOS code

pepijn [2018-10-07 13:04:52]
transfer is significantly faster than the alternative, but now the Omata is having problems keeping up it seems

pepijn [2018-10-07 13:06:17]
it requests a retransmit which the app does, but doesn't seem to be accepted by the omata

pepijn [2018-10-07 13:06:28]
further down the line I get transfer failures

pepijn [2018-10-07 13:06:46]
My omata is still on the 0.0.12 ble firmware though.

pepijn [2018-10-07 13:06:52]
I'll try the 0.0.14

pepijn [2018-10-07 13:20:12]
<@U08B65RM0> do you have the debug image of the 2018.9.11.1 firmware?

pepijn [2018-10-07 13:21:11]
nevermind, slack search found it

julian [2018-10-07 13:24:49]
Oooh...are you watching debug output?

pepijn [2018-10-07 13:25:06]
yes, it's fascinating :smile:

pepijn [2018-10-07 13:25:16]
upload loses sync somewhere

pepijn [2018-10-07 13:25:21]
trying to figure out why it isn't resyncing

pepijn [2018-10-07 13:28:01]
ok, so now I think I'm at the point where everything is being sent out fine, but the Omata can't keep up

pepijn [2018-10-07 13:28:11]
need to grab a packet logger dump to confirm

pepijn [2018-10-07 13:29:22]
ah dang it, can't do that from iOS

pepijn [2018-10-07 13:34:02]
<@U0DDJ0QSY> I think we'll need to look into the flow control stuff we talked about earlier.

pepijn [2018-10-07 13:43:46]
In the omata console log I see a chunk being missed and a retransmit request being sent out. Unfortunately it takes another 300-400 chunks before that notification actually pops up on the iOS side. Once the retransmit is received everything resyncs, but sometimes the resync itself is missed or sync is lost again after 10-20 chunks.

pepijn [2018-10-07 13:44:29]
Unfortunately I can't easily capture what's actually being sent out by the iOS device and the same code doesn't work on my desktop

pepijn [2018-10-07 13:47:30]
There's an odd pattern to the received chunks. For the first 470 chunks everything is going fine. Then when sync is lost, I see these batches of consecutive chunks coming in and then a gap 10 chunks, another consecutive batch, another gap ``` [1538944761.876]manu_ble_callback: received 230 bytes of data: [1538944761.876]event_handler_file_rx: seq: 470, len: 18, left: 57042
[1538944761.886]event_handler_file_rx: seq: 471, len: 18, left: 57024
[1538944761.886]event_handler_file_rx: seq: 472, len: 18, left: 57006
[1538944761.896]event_handler_file_rx: seq: 473, len: 18, left: 56988
[1538944761.896]event_handler_file_rx: seq: 474, len: 18, left: 56970
[1538944761.906]event_handler_file_rx: seq: 475, len: 18, left: 56952
[1538944761.916]event_handler_file_rx: seq: 476, len: 18, left: 56934
[1538944761.916]event_handler_file_rx: seq: 477, len: 18, left: 56916
[1538944761.926]event_handler_file_rx: seq: 478, len: 18, left: 56898
[1538944761.926]event_handler_file_rx: seq: 479, len: 18, left: 56880
[1538944761.936]manu_ble_callback: received 230 bytes of data:
[1538944761.946]event_handler_file_rx: invalid sequence number: 488, expecting: 480 (0x01E0)
[1538944761.946]send_ble_retransmit: seq: 0x1E0 [1538944761.966]__manu_ble_send_msg: BLE message written ok: [1538944761.966]event_handler_file_rx: invalid sequence number: 489, expecting: 480 (0x01E0) [1538944761.976]event_handler_file_rx: invalid sequence number: 490, expecting: 480 (0x01E0) [1538944761.986]event_handler_file_rx: invalid sequence number: 491, expecting: 480 (0x01E0) [1538944761.996]event_handler_file_rx: invalid sequence number: 492, expecting: 480 (0x01E0) [1538944761.996]event_handler_file_rx: invalid sequence number: 493, expecting: 480 (0x01E0) [1538944762.006]event_handler_file_rx: invalid sequence number: 494, expecting: 480 (0x01E0) [1538944762.016]event_handler_file_rx: invalid sequence number: 495, expecting: 480 (0x01E0) [1538944762.026]event_handler_file_rx: invalid sequence number: 496, expecting: 480 (0x01E0) [1538944762.036]event_handler_file_rx: invalid sequence number: 497, expecting: 480 (0x01E0) [1538944762.036]manu_ble_callback: received 230 bytes of data:
[1538944762.046]event_handler_file_rx: invalid sequence number: 515, expecting: 480 (0x01E0)
[1538944762.056]event_handler_file_rx: invalid sequence number: 516, expecting: 480 (0x01E0)
[1538944762.056]event_handler_file_rx: invalid sequence number: 517, expecting: 480 (0x01E0)
[1538944762.066]event_handler_file_rx: invalid sequence number: 518, expecting: 480 (0x01E0)
[1538944762.076]event_handler_file_rx: invalid sequence number: 519, expecting: 480 (0x01E0)
[1538944762.086]event_handler_file_rx: invalid sequence number: 520, expecting: 480 (0x01E0)
[1538944762.096]event_handler_file_rx: invalid sequence number: 521, expecting: 480 (0x01E0)
[1538944762.096]event_handler_file_rx: invalid sequence number: 522, expecting: 480 (0x01E0)
[1538944762.106]event_handler_file_rx: invalid sequence number: 523, expecting: 480 (0x01E0)
[1538944762.116]event_handler_file_rx: invalid sequence number: 524, expecting: 480 (0x01E0)
[1538944762.126]manu_ble_callback: received 230 bytes of data: ```

pepijn [2018-10-07 13:57:16]
<@U08B65RM0> In the meantime I'm going to push a version of the code that's already better than what we had so far and seems to work reliably

pepijn [2018-10-07 13:57:26]
Not blazing fast, but at least it works

pepijn [2018-10-07 13:57:50]
There's a commented out line in the podfile that you can uncomment to enable the faster, but unreliable code path

julian [2018-10-07 13:59:24]
Okay..sorry this is such a brain teaser..

pepijn [2018-10-07 14:00:14]
It's download troubles all over again :smile:

pepijn [2018-10-07 14:00:31]
I'm uploading the BLE firmware update as we speak

pepijn [2018-10-07 14:00:45]
It's fast enoug that you can see the progress circle move with the naked eye

pepijn [2018-10-07 14:01:03]
It'll take 4-5 minutes in total by the looks of it

pepijn [2018-10-07 14:05:10]
BTW the progress dialog says `Foo` initially when you start the firmware upload

julian [2018-10-07 14:06:21]
Yes. `Foo`. Cause just sometimes it’s important to remember the important things. Like `Foo`. :rolling_on_the_floor_laughing: Or `Bar`. On occasion, I’ve said `Baz`, but not lately..

julian [2018-10-07 14:06:56]
So that 4-5 minutes is with the “unreliable” code path with “switch” in the Podfile that’ll turn it on or off?

julian [2018-10-07 14:07:02]
I’d like to try that..

pepijn [2018-10-07 14:07:17]
Slow reliable is the default now. That's the 4-5 minutes

julian [2018-10-07 14:07:39]
Oh. Well — that’s not bad at all, is it? I mean — I was seeing 25 minutes last night..

pepijn [2018-10-07 14:08:15]
Well the faster version is by my estimate 2-3x faster

pepijn [2018-10-07 14:08:49]
All we need to do is figure out why we're losing data

pepijn [2018-10-07 14:09:32]

Anyway, the reliable code is already acceptable I think in terms of performance

pepijn [2018-10-07 14:09:59]
It's not blazing fast, but it's useable this way

pepijn [2018-10-07 14:10:32]
What this does now is perform three writes and then sleeps 30ms

pepijn [2018-10-07 14:10:53]
Conservative estimates of the number of packets we can send per connection and the connection interval

pepijn [2018-10-07 14:11:15]
Unfortunately you can't query the actual values from CoreBluetooth

pepijn [2018-10-07 14:16:30]
Looks like something's still wrong with the BLE version check

pepijn [2018-10-07 14:16:57]
Just installed 0.0.14 through the app, version info panel confirms it's installed, but the app still says an updated version is available.

julian [2018-10-07 14:17:57]
Yeah - known issue. Or - I put that there so I could easily try again without backing the fw to an earlier version by hand..

pepijn [2018-10-07 14:18:31]
conditional compilation flags are your friend :smile:

julian [2018-10-07 14:19:26]
I never got familiar where I set the flag while building, to be honest. The IDE got a bit in the way. I mean, I think it’d be in Build Settings, but I never dug too deep..

pepijn [2018-10-07 14:19:42]
Under 'OTHER_SWIFT_FLAGS'

pepijn [2018-10-07 14:19:55]
Add a `-DMY_BUILD_FLAG`

harri [2018-10-07 22:46:53]
<@UA6CC3MT5> Could you provide complete syslog from the device side, so that it shows packet transfers from seq 0 to the first retransmit / packet drop.

pepijn [2018-10-07 22:48:45]
Sure. Will have to wait until this evening though.

pepijn [2018-10-07 22:49:39]
If I remember correctly it was basically batches of packets coming in sequentially and then ‘received 230 bytes’ in between each batch.

harri [2018-10-07 23:17:29]
Do you have idea how fast iOS is pushing BLE packets to the device with the latest fixes included? Just trying figure out where the bottleneck is.

harri [2018-10-07 23:25:18]
Based on the MCU trace the limit seems to be around 3kB/s, note that debug firmware should be slower than the retail firmware. Does the retransmit happen for the same sequence number? Do you see difference between retail-dbg and retail? Maybe we should try this with all traces removed from the ble callback related functions and then check if it affects to the packet drop sequence number.

julian [2018-10-08 09:26:56]
So, not a thorough test but I ran the Rx App and attempted to do an aiding data update. It looked like it was cooking quite quickly just based on the progress bar and debug output in Xcode. It had a few times that it seemed to go back and retry. Then towards the end it failed.

julian [2018-10-08 09:27:24]
First Time

julian [2018-10-08 09:27:41]
Second Time

julian [2018-10-08 09:29:50]
Oh, hold on. I just realized this was with old BLE firmware. Let me try again.

pepijn [2018-10-08 09:53:49]
Yep that’s the behaviour I’m seeing as well, even with latest firmware

pepijn [2018-10-08 09:54:39]
The jump back is due to the retransmit request from the omata that eventually arrives. Jumps back 100-200 chunks.

julian [2018-10-08 09:55:32]
Check..

julian [2018-10-08 10:02:06]
Hrm..just tried again with Rx and it goes without any jump back/retransmit..This is with 0.0.14 BLE. Appears a slower..

julian [2018-10-08 10:02:45]
Unfortunately there’s something wrong with the UI flow for putting mcu fw and I never implemented Put BLE FW..

pepijn [2018-10-08 10:04:48]
just learned I can't test today... My wife took my new laptop off to here furniture design course. Old MBP is still on El Capitan. No xcode 10 or swift 4 there...

pepijn [2018-10-08 10:04:57]
And no BLE either

harri [2018-10-08 10:35:50]

If you can pull syslog.txt from the device that should be fine, it does not matter if it has additional stuff, it should be fairly easy to find relevant part of the syslog.

pepijn [2018-10-08 11:23:20]
Will do

pepijn [2018-10-08 11:24:48]
Already 32mb

pepijn [2018-10-08 11:25:08]
I'll slice off the most recent parts and compress it, just a second

pepijn [2018-10-08 11:38:02]

harri [2018-10-08 11:51:21]
I'm pretty sure that buffer overflows on nRF52, because stm32 side can't handle data fast enough.

harri [2018-10-08 11:55:27]
Any change to get rx app with the latest BLE updates?

julian [2018-10-08 11:55:47]
Yes, but it takes some time to push it through Test Flight..

julian [2018-10-08 11:56:04]
You don’t have an Xcode build environment locally, do you?

julian [2018-10-08 11:56:22]
Oh, wait..there may be some back end way to do it through Fabric..

harri [2018-10-08 11:57:20]
I will try to optimize execution of stm32 ble callback, but I need RX app for testing.

julian [2018-10-08 11:57:45]
I’ll figure something out or push it through Test Flight

harri [2018-10-08 11:57:59]
Thanks

julian [2018-10-08 11:58:14]
Apple has gotten noisy once or twice, so sometimes it takes a bit of convincing to them that this is a “retail” app.

harri [2018-10-08 12:01:24]
I don't have Xcode build environment.

harri [2018-10-08 12:02:51]
We might need to fallback to application level flow control if there is nothing to optimize in stm32 ble callback execution.

pepijn [2018-10-08 12:24:52]
<@U08B65RM0> don't forget to build with the 'use ready to send' build flag

pepijn [2018-10-08 12:25:09]
without it the app sends slow enough that the overflow doesn't get triggered

julian [2018-10-08 21:22:45]
Let me know if you guys got an invite to the Rx build via Fabric or something of that sort..

pepijn [2018-10-08 21:56:06]
Got it

harri [2018-10-08 22:39:36]
Got it

julian [2018-10-09 05:45:23]
:+1::skin-tone-4:

harri [2018-10-09 07:55:51]
For some reason Rx tool gets stuck after sync, this happens before command buttons are visible.

julian [2018-10-09 07:56:31]
Let me check. I thought I removed this bit. Can you try deleting the rides from your device?

harri [2018-10-09 08:00:34]

harri [2018-10-09 08:04:18]
I will try with B2. My B3 device has some extra changes for firmware, however those should not cause problems for Rx tool.

julian [2018-10-09 08:04:48]
It should not be trying to download those files. I’m creating another build. Maybe I sent you the wrong one.

harri [2018-10-09 08:10:31]
It did not work with B2 either, it has 2018.09.18.1-retail firmware.

julian [2018-10-09 08:10:58]
What’s 2018.09.18.1? I don’t think I have that one.

julian [2018-10-09 08:11:22]
2018.09.11 is the latest I have.

julian [2018-10-09 08:11:45]
(Shouldn’t matter, I think this is a UI problem I thought I had removed)

julian [2018-10-09 08:15:39]
New build is uploading. You should get an email when it’s done.

harri [2018-10-09 08:16:07]
Maybe 09.18.1 is my local firmware that returns ack for empty activity list.

harri [2018-10-09 08:20:37]
installing now.

julian [2018-10-09 08:20:39]
Uh oh. It still seems to have this issue. I'm not sure what's going on with my build configuration..

julian [2018-10-09 08:20:45]
Please check. I'm looking as well.

julian [2018-10-09 08:23:19]
Hold on — I didn't have a particular flag set for release build, I believe. Let me create a new build.

julian [2018-10-09 08:43:38]
New build seems to work now.

harri [2018-10-09 12:20:21]
2018.10.09.1-dbg firmware - ble callback transfer status traces removed.

harri [2018-10-09 12:23:33]
Seems that buffer overflow does not happen anymore (tested with aiding data only), seems that debug traces were slowing down execution of ble callback.

harri [2018-10-09 12:26:22]
<@U08B65RM0> could you make this firmware available in RX tool? So I can test the overflow issue with larger files.

julian [2018-10-09 12:26:39]
Available as a download, I presume?

julian [2018-10-09 12:27:17]
It may take a bit. I noticed that the download list doesn't show up currently but I never looked into why. But, yes, of course.

harri [2018-10-09 12:33:22]
2018.10.09.1-retail

harri [2018-10-09 12:33:44]
This one as well.

julian [2018-10-09 12:38:57]
Okay. Almost there..

harri [2018-10-09 12:48:34]
Throughput was ~3.8kB/s, this was tested with GPS assist data upload.

julian [2018-10-09 12:52:20]
Okay. Archiving the build. Should be done in a few minutes.

julian [2018-10-09 12:52:54]
Both of those appear in the list. I attempted one and it failed maybe 1/3 through. Hopefully you can see on your side what may have happened.

julian [2018-10-09 13:05:09]
Should have come through

pepijn [2018-10-09 22:26:19]
3.8 Kbps? :champagne:!

pepijn [2018-10-09 22:27:26]
I'll try to reproduce locally with a retail fw as well.

harri [2018-10-10 01:11:48]
Let me know how fast application is pushing data on iOS side with the latest updates.

pepijn [2018-10-10 01:14:19]
As fast as it can at the moment

harri [2018-10-10 01:14:24]
~3800 bytes/s, it can be still improved as buffer is overflowing on nRF due to stm32 performance issues.

pepijn [2018-10-10 01:14:26]
No idea what that actually is

harri [2018-10-10 01:15:05]
Could you check it from application side timestamps?

pepijn [2018-10-10 01:15:22]
The code now is basically ``` while (more packets) { send_packet if (!ready_to_send_more_packets) { wait_until_os_notifies_ready_to_send_more } } ```

pepijn [2018-10-10 01:15:44]
ah sure, I can check that

pepijn [2018-10-10 01:15:47]
will do that this evening

harri [2018-10-10 01:19:16]
GPS aiding data upload works, but firmware update files still fail according to Julian. This is indication that stm32 has troubles to process data fast enough, and throughput can be still improved. I will continue debugging this evening as well.

pepijn [2018-10-10 01:20:05]
perhaps we should put some kind of flow control in place?

pepijn [2018-10-10 01:20:22]
it's hard to get the two devices to stay in sync without any feedback channel

harri [2018-10-10 01:20:36]
Throughput numbers starting to sound really good.

pepijn [2018-10-10 01:21:14]
Yep 4kbps is not lightning fast, but much better than where we started

harri [2018-10-10 01:27:03]
Most probably we need flow control. If stm32 could guarantee that it is able to process data at BLE theoretical maximum speed, this could work without. I have some performance update ideas for stm32 ble processing, will test those this evening.

harri [2018-10-10 01:29:23]
Throughput is 32kbps (4kB/s), actually exact number was 3.8kB/s.

pepijn [2018-10-10 01:29:54]
nice

harri [2018-10-10 01:34:14]
Flow control is required if stm32 runs debug firmware, because it can't perform fast enough. And we can not debug BLE related issues without debug traces. We can already decide that flow control must be added.

pepijn [2018-10-10 01:37:31]
Some kind of ACK every <x> chunks should be sufficient I think

pepijn [2018-10-10 01:37:38]
A hard coded sliding window size is probably good enough

pepijn [2018-10-10 01:39:02]
Or a credit granting system might work as well; whatever is easiest for you to implement

pepijn [2018-10-10 01:39:44]
i.e., transfer starts with <x> initial credits; each chunk consumes one credit; extra credits are received from omata by means of some kind of ACK message

pepijn [2018-10-10 01:40:26]
Might be simpler to implement since we don't have to deal with sliding window resets on retransmits then

harri [2018-10-10 08:11:57]
Let me know if you get failure on MCU firmware update with the dbg-firmware. I have done it now 5 times in a row without problems, I'm running rx tool on iPhone 5s. Throughput 239668/65 = 3687 B/s.

julian [2018-10-10 08:22:56]
I will check as well in a bit. That’s encouraging?

julian [2018-10-10 14:31:04]
So a couple of tests, much faster transfers without any hiccups using “2018.10.9.1 0”

julian [2018-10-10 16:29:44]
Of course, I can’t get it to run to update the firmware OTA on the earlier firmware..

julian [2018-10-11 06:11:52]
<@U0DDJ0QSY> Any concern about having the test team try this new firmware? If so, do you want to send me the more complete build package with checksum and the like? I tried several large downloads yesterday and they all worked fine. :champagne:

harri [2018-10-11 08:08:51]
"2018.10.09.1" is my local build, so it does not have all files that are included in complete release. I will do new release tomorrow morning.

julian [2018-10-11 09:06:57]
Cool.

harri [2018-10-12 02:44:05]
Does the application need to check which firmware version device has and make decision to BLE uplink speed throttling? For example if the application has been updated to push BLE packets at full speed and firmware is still the old one (2018.09.11 or earlier), GPS aiding data and firmware uploads will fail.

harri [2018-10-12 02:48:34]
BLE API version will be updated to v. 1.01 for the new firmware, as there will be update for activity and crashlog listing reply message, so that those return ack for empty list. Maybe API version should be checked instead of firmware version -> full speed BLE for v1.01 and newer.

harri [2018-10-12 02:52:21]
[1539332559.280]ble_api_set_mcu_fw: size: 234420 [1539332559.390]ble_enter_state: FILE_RX [1539332616.310]ble_exit_state: FILE_RX --> 234420 / (616.310 - 559.280) = 4110 B/s

harri [2018-10-12 02:55:47]
57s for firmware upload, this is great improvement to the first retail firmware and app, actually 4kB/s was set as target in the beginning of the project :grinning:

harri [2018-10-12 03:07:36]
Flow control implementation goes for the next week.

harri [2018-10-12 03:13:41]
Do you have numbers for iOS side BLE packet upload speed? Maybe it could be checked with the new firmware release, it will be available later on today once code review is done. I haven't had time to check on nRF side how rx buffer gets utilized on file upload.

harri [2018-10-12 03:27:38]
Firmware release 2018.10.12.1 846ce3e manu-device-app: reduce ble tracing on file receive b7f15e6 manu-device-app: return ack for empty activity and crashlog list d8428af manu-config: set ble spi frequency to 8MHz

harri [2018-10-12 03:27:43]

harri [2018-10-12 03:49:15]

Download speed has improved a bit as SPI clock frequency is now set to 8MHz, this changes timings as well. Maybe we should test activity downloads and firmware/gps aiding uploads before sharing to test team.

pepijn [2018-10-12 04:12:07]
good idea indeed

pepijn [2018-10-12 04:12:16]
nice improvements all around

pepijn [2018-10-12 04:12:27]
I should be able to find some time over the weekend to do some testing

julian [2018-10-12 07:08:02]
Me too!

julian [2018-10-12 07:08:14]
Thanks guys!

julian [2018-10-13 06:44:23]
So far I haven’t had any issues. I’ve tried installing firmware several times without a problem. It seems that the first update will need to be done manually — I have not been able to get the firmware to update from an earlier version without coming across the buffer overflow failure..

pepijn [2018-10-13 12:04:34]
we would probably have to make the upload strategy conditional based on the current firmware version

julian [2018-10-13 12:05:57]
The alternative strategy is basically drag-and-drop, if I’m following?

julian [2018-10-13 12:06:28]
Or is there a switch to throw and then it updates, but just exceptionally slowly?

pepijn [2018-10-13 12:07:24]
yep there's a switch

pepijn [2018-10-13 12:07:41]
currently compile time switch that enables the 'ready-to-send callback' based code path

pepijn [2018-10-13 12:08:23]
the alternative code path uses sleeps to throttle the upload

julian [2018-10-13 12:35:47]
I’ll look at that.

pepijn [2018-10-16 14:32:59]
<@U0DDJ0QSY> on macos I can't seem to umount the Omata properly

pepijn [2018-10-16 14:33:16]
everytime I eject the drive, it just comes right back again

pepijn [2018-10-16 14:33:39]
any info I can capture to help analyze this?

julian [2018-10-16 15:07:42]
Eject and pull the plug straight away. It seems to want to remount almost immediately. Probably more an <@U0DDJ0QSY> thing, I think..

julian [2018-10-16 15:08:07]
It'll try to remount directly, unlike a typical USB drive, etc.

pepijn [2018-10-16 15:08:23]
ok, that's what I'm seeing as well

julian [2018-10-16 15:08:44]
Yeah. I had to describe this in the firmware update instructions for normal humans..

pepijn [2018-10-16 15:09:13]
hey!

pepijn [2018-10-16 15:09:22]
:nerd_face:

julian [2018-10-16 15:10:55]
You know..like..normal people. We're computer-fingers-y people..we KNOW that the technology that underpins much of the human world BARELY works..

pepijn [2018-10-16 15:12:35]

pepijn [2018-10-16 15:16:30]
<@U08B65RM0> just put the automatic switching between 'fast upload' and 'ludicrous mode' in place

pepijn [2018-10-16 15:16:40]
what a difference that makes!

pepijn [2018-10-16 15:17:00]
GPS data updates in 5s

julian [2018-10-16 15:17:46]
Oh, snap! (as the kids say..)

julian [2018-10-16 15:17:49]
Is that in the

julian [2018-10-16 15:18:07]
okay, just saw the push..

pepijn [2018-10-16 15:18:15]
last utility app commit integrates your empty response fix and the upload mode switching

pepijn [2018-10-16 15:18:32]
with that users should be able to apply the 2018.10.12 FW update with the app

pepijn [2018-10-16 15:19:53]
ok closer to 12s

pepijn [2018-10-16 15:20:00]
but still, we've come a long way :smile:

julian [2018-10-16 15:23:31]
It's AMAZING work! Thank you so much for your super dedication and just, like..getting after it..

julian [2018-10-16 15:23:44]
It's a BIG DEAL. I hope to make it up to you somehow

pepijn [2018-10-16 15:24:31]
Yeah... you owe me a beer :wink: :beers:

julian [2018-10-16 15:25:08]
And a large wheel of cheese :cheese_wedge:

julian [2018-10-20 04:57:00]
<@U0DDJ0QSY> Quick question: is it the case that some of the commands in the current spec are not implemented? For example I tried Clear Activities (0x42) and it failed through the OmataBLEKit — before I dig further, I wanted to check with you.

harri [2018-10-20 10:28:27]
This must have got broken after empty activity list was changed to return ack instead of nack, I will check why the clear activities returns nack response.

harri [2018-10-20 11:35:11]
Firmware release 2018.10.20.1 5527612 manu-device-app: fix return value for clear activities

harri [2018-10-20 12:07:31]
2018.10.20.1-dbg

harri [2018-10-20 12:09:14]
The latest Omata app (3113) seems pass incorrect file name on activity delete ->
[1540061682.855]ble_api_cmd_delete_fit_file: 181008045850.fit.fit
[1540061682.895]ble_api_cmd_delete_fit_file: unlink failed, '/media/Summary/181008045850.fit.fit'
[1540061682.925]ble_api_cmd_delete_fit_file: unlink failed, '/media/Activities/181008045850.fit.fit'

julian [2018-10-20 18:57:47]
Thanks <@U0DDJ0QSY>

pepijn [2018-10-21 03:10:30]
I've seen that file name issue a couple of times as well. Utility app passes `<basename>.fit` to blekit instead of `<basename>` sometimes. Haven't spent the time to figure out why that is yet. Blekit just passes the name you give it on to the omata.

julian [2018-10-21 14:08:37]
Hrmmm...I can dig into that..

julian [2018-10-24 16:59:34]
<@U0DDJ0QSY> Are you okay to prepare a proper release of that firmware from 2018.10.20? I've tested `clear activities` and it appears to work fine.

julian [2018-10-24 18:40:56]
<@U0DDJ0QSY> Just a note to say I came across a situation where a device very clearly has activities on it as well as Summary files, but the CLI and Apps indicate that there are no activities. One of our test team members reported this situation as well. I don't know what may be causing it and I haven't been able to track down what may result in an empty list returned. I also haven't been able to debug it closely enough to see if there is an error caught in the OmataBLEKit, which would return an empty list.

julian [2018-10-24 18:41:16]
This is with the latest Bluetooth firmware (0.0.12)

julian [2018-10-24 19:11:57]
I have repeated the issue. After a factory reset, I produced an activity which appears on the device. Listing activities produces an empty list (0 bytes).

julian [2018-10-24 19:16:32]
This was produced using the debug version of the firmware. It seems to show that the activity is found. Maybe a clue..

julian [2018-10-24 19:24:45]
D'ah. Okay. If there's only one activity on the device OmataBLEKit assumes according to the spec that the file list is `0` long, when in fact it appears like the file list will have one item.

julian [2018-10-24 19:39:12]
I think in that case the specification would indicate that the File List Size returned should be `1`, I think. If there are two activities on the device I can confirm that File List Size returned is `1`, which is used to indicate what the last sequence number would be in the sequence of returned BLE packets.

julian [2018-10-24 19:40:08]
If OmataBLEKit is interpreting the returned data correctly, when File List Size is 1, packets 0 and 1 are read back. When File List Size is 0, it assumes there is no further packets and returns an empty list.

julian [2018-10-24 19:43:13]
``` let size = data.readUInt32(at: 1); let chunks = chunkCount(dataLength: size) log.debug("Response header '%@' (%d bytes, %d chunks)", msg.description, size, chunks); if chunks == 0 { omata.requestFinished(Data(capacity: 0)) } else { omata.state = .download_data omata.transferSize = size; omata.finalSequenceNumber = chunks omata.packetHandler = OmataInternalState.multiPacketContinuation } ``` cf. lines 1156.. <@UA6CC3MT5> — I'm actually right at this moment not entirely sure how this should index in this case. In some other API cases, that `0` will mean no more data, possibly. In this case, `0` may mean no more data, or 1 more packet?

julian [2018-10-24 20:25:18]
```

I think the index and sequence number semantics need to be fixed somehow.

pepijn [2018-10-24 22:03:53]
the chunk count calculation is incorrect it seems

pepijn [2018-10-24 22:06:21]
count and seq index are mixed up indeed which is really confusing

harri [2018-10-24 23:32:46]
I'm on holiday this week so proper release will be available on next Monday.

pepijn [2018-10-25 00:13:35]
<@U0DDJ0QSY> it's a blekit side issue

pepijn [2018-10-25 00:13:55]
off-by-one error in certain cases in the expected chunk count calculation

dustin [2018-10-26 12:44:27]
<@UC6ULKGV6> has left the group

harri [2018-10-29 02:06:54]
Firmware release 2018.10.29.1 f10907d manu-device-app: fix return value for clear activities

harri [2018-10-29 02:07:01]

harri [2018-11-06 06:54:11]
<@U08B65RM0> Seems that Omata app updates debug firmware, is this intentional? The last character is "1" in the version string on settings page.

julian [2018-11-06 18:18:45]
Huh...I'll check the link..

harri [2018-11-08 00:31:27]
No changes, just version update.

harri [2018-11-08 00:31:33]

harri [2018-11-08 00:35:55]
Users have now syslog.txt stored in devices as app updated 2018.10.29.1-dbg, it should be somehow removed. Basically two options, add support for retail firmware to remove syslog.txt on device restart or manually.

harri [2018-11-08 00:46:53]
Note that syslog contains information about firmware logic and exposes all hardware components. Easy way is to instruct users to remove syslog.txt, but there is risks that someone stores this file before removing it.

julian [2018-11-08 06:36:22]
Got it. Only a few test team members have updated.

roadkillrabbit [2019-01-02 02:33:01]
<@UF411KL2C> has joined the group

pepijn [2019-01-02 06:11:55]
Hi <@UF411KL2C>. Just replying to Julian's request for a Slack call.

pepijn [2019-01-02 06:12:15]
<@U08B65RM0> we can continue planning here if you like. Or via mail. Whatever works for you.

julian [2019-01-02 07:06:36]
Hello <@UA6CC3MT5>! Happy New Year..

julian [2019-01-02 07:07:18]
Here might be easier to arrange a time to chat. We'll be on 3 significantly different timezones..should be interesting! :wink:

julian [2019-01-02 07:07:34]
I'm mostly OoO today filming, fwiw..

julian [2019-01-02 08:35:34]
<@UF411KL2C> <@UA6CC3MT5> So, looking at my timezone calculator and given our various constraints, it looks like perhaps a "reasonable" time might be 20:00 CET, which would mean 07:00 for you Michael and noon for me here — on some day convenient. Let me know your thoughts…

pepijn [2019-01-02 08:49:55]
Works for me. I'm available most days around that time. Only exception is this Saturday.

julian [2019-01-02 09:28:43]
Cool. Let's see what <@UF411KL2C> says when he checks his calendar..

roadkillrabbit [2019-01-03 00:40:31]
Hi <@U08B65RM0> <@UA6CC3MT5> :wave: 7am's good and any day suits at the moment. How about thursday (LA/EU time – friday for me)?

pepijn [2019-01-03 01:48:15]
<@UF411KL2C> works for me. Is there anything in particular you would like to discuss regarding the app? Just to know if I need to gather some notes in preparation.

roadkillrabbit [2019-01-03 02:23:49]
<@UA6CC3MT5> mostly a general introductory chat. Think I have a good feel now for what's involved, might be good to hear more detail of the bluetooth comms.

julian [2019-01-03 07:09:34]
<@UA6CC3MT5> Yes, I was hoping just to have an introductory chat where <@UF411KL2C> could begin to get an understanding of what lies ahead. We had a talk for a bit on Skype where I gave him a bit of the App's history and the various challenges. I also mentioned that we had talked briefly about the Android App, as well as preliminary discussions about the versions and so forth.

pepijn [2019-01-03 10:04:23]

Household management tasks are slipping time wise so I might be a little bit later.

pepijn [2019-01-03 11:01:09]
made it just in time

pepijn [2019-01-03 11:01:12]
ready when you are

julian [2019-01-03 11:11:03]
Oh - is it now? I can do now..

roadkillrabbit [2019-01-03 11:11:19]
we might have our hours slightly out, (5am here!) I'm good to chat though

pepijn [2019-01-03 11:11:37]
ouch sorry bout that Michael

pepijn [2019-01-03 11:11:41]
20:00 here

julian [2019-01-03 11:11:44]
Me too! I was just going to go to Rapha but perfectly fine now..

julian [2019-01-03 11:11:59]
I had poked the time ahead an hour for Michael’s sake — but if we’re all here!

julian [2019-01-03 11:12:39]
Started a .

pepijn [2019-01-03 11:19:51]
<@UF411KL2C>

pepijn [2019-01-03 11:19:59]
That's the entry point for the really basic mac CLI app

pepijn [2019-01-03 11:29:35]
BLE stuff is here for Android

pepijn [2019-01-03 11:29:57]
That deals with service discovery, charateristic discovery and sending one or two different commands.

pepijn [2019-01-03 11:32:01]

pepijn [2019-01-03 11:41:06]

julian [2019-01-03 12:17:37]
<@UF411KL2C> Also check out the Omata Rx app in the repository. It’s “like” the CLI App but running under iOS..so just a way to bash buttons on the API with a minimal interface. Just another tool..

julian [2019-01-07 06:24:10]
<@UF411KL2C> Saw the new repo. Cool! It looks like you're using IntelliJ — I've never used it for Android development so I'm curious to import the project and see what happens. Fun stuff!

julian [2019-01-07 06:26:55]
Oh, wait. I see. Android Studio is built on IntelliJ, not the other way around..

pepijn [2019-01-07 06:46:27]
IntelliJ is pretty much a superset of Android Studio

pepijn [2019-01-07 06:47:10]
The Android plugin for IntelliJ gives you about the same set of functionality of Studio along with all the other stuff it provides

julian [2019-01-07 07:02:15]
Copy that..just as a configuration management thing and for my insight, do you use IntelliJ with the Android plugin, or Android Studio?

pepijn [2019-01-07 07:34:48]
I was using IntelliJ

pepijn [2019-01-07 07:35:36]
Simply because I've been using that for 10+ years now

julian [2019-01-07 07:38:40]
Got it..

julian [2019-01-11 06:23:16]
Morning/Afternoon/Evening fellers. I want to bring <@UA97U141K> into the loop and etroduce him to <@UF411KL2C>. Jason offered that he could help a little bit as he is able. Jason and I talked about the Android app awhile back. Now that there's a bit more attention to it, I thought it'd be good to bring him back in the loop..

jasoncawood [2019-01-11 07:30:22]
Hello <@UF411KL2C> glad to meet you and be of any assistance.

roadkillrabbit [2019-01-11 13:34:40]
Hi <@UA97U141K>, great to meet you! Quick Android update: Got things started with the layout, so you can click around the app now. Not pixel perfect, but pretty close. I've been working through the utils needed (so far: pairing devices, parsing FIT files & uploading to strava). A few more to explore before tying it all together, like bluetooth comms (big one)

roadkillrabbit [2019-01-11 13:39:04]
Everything's in git (_OmataAndroidApp_) feel free to look around. If there's something you want to work on, great!

julian [2019-01-11 15:04:15]
<@UA97U141K> I don't know if you're available but <@UF411KL2C> and I are going to talk here on a Slack call Saturday (tomorrow) at 1pm PST..

jasoncawood [2019-01-11 15:18:34]
Excellent! I have a washer and dryer being delivered between noon and four but I will jump in if I can

julian [2019-01-11 15:18:50]
Exciting day! ;-)

julian [2019-01-12 13:02:44]
Started a .

julian [2019-01-12 13:03:19]
Hold on..tech difficulties..

julian [2019-01-12 13:10:54]

jasoncawood [2019-01-12 13:36:29]
Sorry I'm late, I was in the middle of my new washer and dryer being delivered.

julian [2019-01-12 13:50:08]
Hey - no worries. We went through some of the Firebase integration and, um...talked about using Github issue tracker as a way to also show what tasks need to be done. Perhaps that’s a good way to cherry pick little units of work that you and I can take to pitch in and help.

jasoncawood [2019-01-12 17:30:33]
That's a great idea.

roadkillrabbit [2019-01-17 01:24:21]
Hi all, quick progress update on the Android app. Basically, everything except Bluetooth is now there. This is using real data – I copied my Omata's files onto the Android SD Card and it reads from there (I can show you how) At the core is SQLite, with a table of rides. Add one, and the dashboard and lists update automatically... pretty neat. Sets things up for auto-sync in the future. Time for a crash course in BLE...

pepijn [2019-01-17 02:32:31]
Great work <@UF411KL2C>!

pepijn [2019-01-17 02:40:41]
For BLE, explains the concepts pretty clearly

pepijn [2019-01-17 02:41:12]
In the case of the Omata, your phone plays the role of central, the Omata device is a peripheral

pepijn [2019-01-17 02:51:19]
In a nutshell what the BLE code needs to do is - Scan for peripherals that have provide a service that has the correct UUID - Once a peripheral has been found, connect to it and try to obtain the transmit (TX) and receive (RX) characteristics. These two attributes are used together to emulate a simple serial connection to the Omata. You send requests on the TX characteristic by writing the attribute value and receive the response via value change notifications of the RX characteristic. - Since this is a serial connection you have to synchronise requests correctly. The Omata protocol doesn't have notion of request ids, so you should only have a single request in flight at any moment. The easiest way to implement this, I think, is to put requests on a queue and process those from a single worker thread.

Send one request, wait for the entire response to come in, repeat. - The size of the value of an ATT attribute is very limited. Large requests (e.g., firmware upload) and responses (e.g., activity download) are split into small chunks. In the Swift implementation I implemented a simple state machine to deal with this. In design pattern lingo there's an IncomingChunkStrategy that handles each incoming RX value change. The actual implementation of the strategy gets swapped out on state changes depending on what kind of response we're expecting next. For instance, there are implementations to deal with single packet responses, multi packet response, upload responses, etc.

pepijn [2019-01-17 02:52:46]
BLE does not maintain a constant radio connection between devices. Instead the devices communicate with each other at fixed intervals and exchange data during that short period of time. See the diagram at

pepijn [2019-01-17 02:58:55]
The implication for the BLE code is that whenever you ask something to happen at the GATT level (e.g., write the value of an attribute), that request can't be performed immediately. It will happen at the next connection interval. On Android specifically, the APIs are all asynchronous. On top of that, if I understood it correctly, you can only have one outstanding request pending at a time. Calling for instance BluetoothGatt#writeCharacteristic two times in a row without waiting for the BluetoothGattCallback#onCharacteristicWrite in between the two will most likely not actually perform two writes. Instead it seems to silently drop one of the two requests. Here also it looks like you need some kind of GATT level request queue so that you can perform one request, wait for the callback and repeat.

pepijn [2019-01-17 03:00:21]
This is kind of the point where I left off. contains a lot of the required bits already, but doesn't handle the GATT level request queuing yet. As a consequence it doesn't work properly just yet.

roadkillrabbit [2019-01-17 13:40:16]
thanks <@UA6CC3MT5>, very helpful :+1:

roadkillrabbit [2019-01-20 17:43:28]
Got basic bluetooth going on Android :+1: Plenty to do yet (it doesn't have the queues mentioned above, or handle multipart messages) but simple calls are working. The structs were ported straight from <@UA6CC3MT5>'s kit. And using the library RxAndroidBle has helped simplify things - much cleaner than stock Android! Here's the source if you want to peek:

julian [2019-01-28 14:39:02]
Hi <@U0DDJ0QSY> — Raimo mentioned that he had a firmware version that was recording heart rate and he has had some good tests. 2018.10.07. If there is a version doing this, can I try it as well?

roadkillrabbit [2019-02-09 02:25:01]
Android update: The bluetooth library is mostly there! There's a high level interface for each operation, it handles multi-packet responses, and the todo list is getting shorter (Support retransmit, test uploading firmware, and connect to the UI) Two things someone might have suggestions for: · Why does _GetActivityHighlights_ always return _Not Allowed_? · When uploading a file, does each sequence packet respond get acknowledged, or silence?

pepijn [2019-02-09 03:37:26]
not sure about GetActivityHighlights

pepijn [2019-02-09 03:37:42]
upload is silent with an ack all the way at the end

pepijn [2019-02-09 03:38:56]
not sure how things work on Android, but on iOS I had to make sure to throttle the sending of each chunk so as to not overflow the transmit and receive buffers on the phone and omata respectively

pepijn [2019-02-09 03:39:27]
first attempt used `sleep`s to do this; current code uses a 'ready to transmit' callback from the OS

julian [2019-02-09 07:17:00]
That `GetActivityHightlights` may not have been finally implemented. I do not recall specifically if it was. There was a point in the requirements document to be able to get summary info during the ride, but frankly I think this is a bit out of scope at this point. The idea was that someone might want to open their phone and get stats on the current accumulated data..but that data is basically right there on the face of the device.

julian [2019-02-09 07:17:22]
If it is returning `Not Allowed` I think we can safely assume for the moment that it is not implemented.

julian [2019-02-10 14:50:15]
<@UF411KL2C> Is it correct you are targeting Android Pie (9)? Just asking so I get a up-to-date dev phone..

julian [2019-02-10 14:50:36]
(I just checked the build settings, but want to confirm…)

roadkillrabbit [2019-02-10 17:08:32]
Yep, my phone is a Nokia 7.1 running Pie (9). The app should work on Lollipop (5) and above, but will be hard to test - the simulators don't support bluetooth.

julian [2019-02-10 17:08:56]
Hah! That’s the one I was looking at..

pepijn [2019-02-10 23:55:59]
<@UF411KL2C> Julian sent me an ancient (no-offence) Android phone that I can use to test the app

pepijn [2019-02-10 23:56:29]
I think that one was still running KitKat

pepijn [2019-02-10 23:56:41]
maybe too old to support the app...

julian [2019-02-11 10:43:32]
<@UA6CC3MT5> I’d happily reimburse you for a compatible Android phone if you wanted to help test!

roadkillrabbit [2019-02-11 12:16:22]
For those trying the current build, there's now a screen in Settings for running things in progress

roadkillrabbit [2019-02-11 12:17:06]

There isn't much feedback though, for now you just have to watch the logs

pepijn [2019-02-13 04:19:36]
Just FYI, seeing if I can get the app working on KitKat. First hurdle; adding multidex support because there are more than 64k methods :face_with_rolling_eyes:

julian [2019-02-13 06:59:53]
:flushed:

pepijn [2019-02-13 07:04:13]
(that's the app and all used libraries together btw)

julian [2019-02-13 07:06:19]
I would suspect..

julian [2019-02-13 21:59:09]

rhysys [2019-02-14 10:20:09]
<@U08B6KZJ4> has left the group

pepijn [2019-02-14 23:51:08]
<@UF411KL2C> I got the app up and running on my test phone. Ran into a couple of issues so far: - The splash screen PNG seems to be too high resolution. App crashes with a 'bitmap too large to draw' error. I downscaled it a bit to get past this. Probably should be mipmapped. - The app isn't performing the runtime request to access coarse or fine location which makes it impossible to do ble scanning ``` D/BluetoothLeScanner: onClientRegistered() - status=0 clientIf=7 mClientIf=0 E/BluetoothLeScanner: fail to start le scan - SecurityException thrown: java.lang.SecurityException: Need ACCESS_COARSE_LOCATION or ACCESS_FINE_LOCATION permission to get scan results D/BluetoothLeScanner: Scan failed, reason app registration failed for UUID = a5c0dd0b-6832-4521-87ca-4489f0ce6a42 ```

pepijn [2019-02-14 23:56:39]
See

pepijn [2019-02-14 23:56:49]
Haven't checked yet, maybe you're doing this already

pepijn [2019-02-14 23:56:55]
but I didn't get a popup

pepijn [2019-02-14 23:57:48]
hmm, the code seems to be in place; why is this not getting triggered...

pepijn [2019-02-15 00:15:39]
The pairing setup doesn't seem to behave properly yet. After scanning an Omata and pressing the button corresponding to it, this bit of code is run

pepijn [2019-02-15 00:15:40]
``` override fun didSelectDevice(device: Device) { this.bluetooth.stopScan() Timber.d("Tap on: %s (%s)", device.name, device.address)
```

Preferences(requireContext()).set(Preferences.Key.BluetoothAddress, device.address) NavHostFragment.findNavController(this).popBackStack() } ```

pepijn [2019-02-15 00:16:19]
the popBackStack is taking me back to the ScanFragment and makes the scan button reappear

pepijn [2019-02-15 00:16:35]
perhaps this is intentional, but it feels like the app didn't do anything in response to me pressing the button

pepijn [2019-02-15 00:19:55]
Ah BTW, I worked around the earlier scan security issue by requesting `ACCESS_FINE_LOCATION` instead of `ACCESS_COARSE_LOCATION`.

robdjonas [2019-02-15 05:40:13]
<@UG8N3GAMU> has joined the group

roadkillrabbit [2019-02-16 12:58:20]
Excellent feedback, thanks <@UA6CC3MT5>! Did you get it running on KitKat? Feel free to commit any changes. DashboardFragment requests the permissions, but I had noticed the popups are sometimes delayed. Fine vs Course... Course worked for my phone, but sounds like we may need to change it, or request both. Pairing, yep, that's all that happens for now. It saves the address, later used by the Calibration and Developer Tools fragments. Bluetooth isn't quite there yet (no retransmit, and uploads aren't working) and then this integration is the main thing left to do.

julian [2019-02-16 14:21:42]
Good stuff <@UF411KL2C> — thank you. I noticed, btw, that you've started stubbing out TrainingPeaks? I presume you saw the oauth credentials in my post a page or so back? Just want to make sure.

julian [2019-02-16 14:21:58]
I haven't gotten to it really on iOS; I just created that branch as a place holder.

pepijn [2019-02-17 00:11:14]
<@UF411KL2C> not sure about KitKat. The phone I got from Julian runs Nougat (7.0) after all. I lowered the minSdk level to 19 and that required some multi-dex stuff in the build file and a manifest tweak. Nothing too dramatic. I'll make a PR for that. I'll see if it will start up in a KitKat sim, but as you already said ble only works on a real device. I don't think you can buy those anymore... <@U08B65RM0> where do you want the version cutoff point to be?

roadkillrabbit [2019-02-17 20:27:02]
<@UA6CC3MT5> <@U08B65RM0> the latest update changes the db schema, so you'll need to delete the app before it will run again. I fixed the permissions problem, and worked on syncing

roadkillrabbit [2019-02-17 20:32:27]
There's also a first go at TrainingPeaks support. Completely untested :slightly_smiling_face:

julian [2019-02-18 07:42:09]
..I'll have to sign up with TrainingPeaks.

julian [2019-02-18 07:42:18]
Oh, wait — you're probably still in the Sandbox..

roadkillrabbit [2019-02-21 02:42:44]
I got Training Peaks uploads to work. It took me a while to realise, you log into the sandbox using real account details (not a separate sandbox account). It's probably less interesting than Strava for individual rides, but the dashboard has better insights across all your rides.

julian [2019-02-21 05:42:11]
…some people swear by it..

julian [2019-02-25 06:35:51]
Related/Unrelated..I need a bash script that can take a wildcard and `doSomething` to every file in a directory that matches. I'm at a loss..it's been awhile and strangely Stack Overflow isn't helping. I can find script examples that have the wildcard hardcoded, but not any that allow me to pass the wildcard at the command line. e.g. `SetPixelDensityForFile.sh *.jpg` (FWIW my script just runs through a directory of our images and does a color and pixel density conversion..it's a one line command, but I can't get the loop to iterate on the specified wildcard..) Do any of you have just even the most embarrassingly trivial example of how to glob a command line argument in Bash. :shocked_face_with_exploding_head:

pepijn [2019-02-25 07:57:13]
if you want to call this from a shell and pass the wildcard on to your script you need to disable shell expansion

pepijn [2019-02-25 07:57:34]
to do that you'll need to either escape the `*` or put the parameter in quotes

pepijn [2019-02-25 07:58:09]

julian [2019-02-25 07:58:34]
Yeah, so that makes sense. When I quote the parameter on the command line, it works. And then I nerded out wondering how I could do it just as you might for other shell commands..

pepijn [2019-02-25 07:59:53]
if you do, for example, `ls *.jpg`, what actually happens is that the shell expands `*.jpg` into all the files/directories that match that expression. `ls` itself gets `1.jpg 2.jpg 3.jpg ...` as input parameters and never sees the wildcard

pepijn [2019-02-25 08:00:13]

pepijn [2019-02-25 08:00:22]
I think that answers what you would want to do then in your script

julian [2019-02-25 08:31:59]
Right. So the unfurling of that expression inside the script I suppose is what I need to do..into individual items. I was wondering if there was an "easier" way that I was missing..not that chunking that list is hard, but..you know.

pepijn [2019-02-25 09:20:16]
No other way that I know of. But I'm no bash expert either...

julian [2019-02-25 10:04:25]
Copy. Thanks for that, and that link. I think I went there earlier this morning. Pretty sure I know what to do now..and hopefully it won't start a dumpster fire in my file system.

julian [2019-03-16 12:50:23]
<@UA6CC3MT5> <@UF411KL2C> Fellas — I set up a Google Play account per Michael's suggestion and invited you both as Admins, fwiw..

julian [2019-03-27 11:17:18]
Sharing to Stories - Instagram Platform

roadkillrabbit [2019-04-08 03:15:45]
I've made a TODO list for the Android app:

roadkillrabbit [2019-04-08 03:17:17]
Also uploaded a build to the Google Play store, so we can start sharing builds privately. It's waiting for review

julian [2019-04-08 07:51:12]
I just saw — thank you <@UF411KL2C>!

julian [2019-04-11 06:46:19]
<@UF411KL2C> Starting to recruit some volunteers to help test the build. You may start seeing some chatter in <#C5U8TGFJN|> — exciting!

julian [2019-04-17 13:36:19]
<@UF411KL2C> What's the next step for me to run on the Google Play store? I've never deployed an Android App, so may need a little hand-holding..

roadkillrabbit [2019-04-22 14:19:17]
<@U08B65RM0> Sorry, time has been short lately, but I got a solid run on Android this weekend and it's in a good place. A couple things to address (will look at these tonight) and then we can share with the test group confidently: · After pairing, it syncs all rides, but they don't appear immediately (just a tiny tweak somewhere) · How often/when to sync newer rides · UI during sync (minimal info currently)

roadkillrabbit [2019-04-22 14:22:20]
Google Play Store. You can find the test group here. You either add people manually (by email) or share the opt-in URL with them (also on this page): ```omata > Release Management > App Releases > Internal test track > MANAGE > Manage Testers```

julian [2019-04-22 21:53:33]
Got it! Thanks. So — I added all the users, although it may be easier to use the opt-in URL. Some had email addresses that the release manager didn't seem to like. I'm not sure if this will be mitigated if they use the opt-in URL (was one, and one that ended in .cc)

julian [2019-04-22 21:53:51]
When you have an APK you're comfortable with, we should go ahead and give it a go! Super exciting.

roadkillrabbit [2019-04-28 23:00:51]

Hi all, quick update on Android. Here's the app running through everything with my device. Fairly close to the iPhone app features except for GPS/firmware updates. It's not perfect and still testing, but we can probably share to a small group now, I just uploaded a build #2.

julian [2019-04-29 06:29:49]
That’s great <@UF411KL2C>! Thank you!

julian [2019-04-29 06:36:56]
I’ve never deployed to Android. I may have some questions as to how to precisely do that from the Play Console.

gwpowell [2019-05-24 15:13:40]
<@UAEU4CWJ1> has joined the group

julian [2019-05-25 13:16:13]
<@UF411KL2C> meet <@UAEU4CWJ1> - Gary reached out offering help on the Android app. Are there any particular areas that you could use a second hand?

gwpowell [2019-05-25 14:40:10]
<@UF411KL2C> Hi! I'm a software guy from way back and I'm between gigs. I have the Omata computer and was wondering if there was anything you might need help with. Testing?.. (I can write unit tests..) etc. I'm strongest in C++ but I've done a little of everything. for my "resume"

julian [2019-06-03 12:53:30]
<@UF411KL2C> What do you think about getting <@UAEU4CWJ1> into the code base on Github?

julian [2019-09-03 07:26:38]
Hrmm.. // <@UA6CC3MT5>

pepijn [2019-09-17 13:28:09]
<@U08B65RM0> one small bug in the code (which had been lurking for a long time), but it's working

pepijn [2019-09-17 13:28:12]
``` Omata_DBA23C4967DE> start_scan 2019-09-17 22:26:51.372583+0200 OmataCLI[55881:8497869] [omata] Request 'Start ANT+ sensor scan' (1 bytes) 2019-09-17 22:26:51.413433+0200 OmataCLI[55881:8497712] [omata] Write complete 2019-09-17 22:26:51.414058+0200 OmataCLI[55881:8498172] [omata] Response 'Acknowledgment' (1 bytes) Omata_DBA23C4967DE> Detected ANT+ sensor 10220 (type: Heart-rate Monitor, rssi: -51) Detected ANT+ sensor 10220 (type: Heart-rate Monitor, rssi: -47) Detected ANT+ sensor 10220 (type: Heart-rate Monitor, rssi: -39) Detected ANT+ sensor 10220 (type: Heart-rate Monitor, rssi: -40) ```

pepijn [2019-09-18 11:55:21]
<@U08B65RM0> I was just looking at generating FIT files again.

pepijn [2019-09-18 11:55:39]
Given the constraints imposed by the firmware I'm going to keep it simple

pepijn [2019-09-18 11:56:36]
I'll go for just enough code to get things working. :slightly_smiling_face: The generated FIT files might not be the most optimal or compact that they could be, but that probably doesn't really matter all that
```

much.

julian [2019-09-18 11:57:26]
Sounds fine to me. I think compression and such all is irrelevant given that this will be a one-off transaction in many cases..and, just a hand full of bytes..

pepijn [2019-09-18 11:57:33]
The FIT spec focuses on keeping things as compact as possible, only writing the minimal amount of data necessary. But the firmware doesn't actually support that for settings at least so no need to bother with that.

julian [2019-09-18 11:57:49]
Solid copy..

julian [2019-09-23 07:13:12]
Okay, so I should be getting a power meter tomorrow or Wednesday, fyi/fwiw! I've also lined up a couple of beta testers as well.

sam.selfridge [2019-09-25 18:50:34]
<@UNR7DUT52> has joined the group

julian [2019-09-28 07:14:53]
<@UA6CC3MT5> Goo Morning/Afternoon! Can you please remind me of the procedure to get OmataBLEKit into the private pod? I thought there were instructions in here but maybe my scrollback isn't finding them..

pepijn [2019-09-28 09:35:45]
oh boy, long time ago

pepijn [2019-09-28 09:36:06]

julian [2019-09-28 09:36:21]
Check.

julian [2019-09-28 09:36:28]
I feel like I wrote it down somewhere back in the day…

pepijn [2019-09-28 09:36:29]
`pod repo push <REPO_NAME> <SPEC_NAME>.podspec`

sam.selfridge [2019-09-30 11:30:34]
Hey All, wanted to introduce my self - I'm going to be helping out with getting the Android App ready for the new ANT+ connectivity. I'm currently looking for a full time gig as a web developer and this is a great project for me in the meantime. I messed around with android apps a couple years ago but not in a while and defiantly not in Kotlin. Currently getting up to speed with the language using this: Will be back with any questions about how things work, but looking forward to contributing

julian [2019-09-30 16:22:23]
Welcome <@UNR7DUT52>!

julian [2019-09-30 16:22:43]
Thanks for helping out

cary [2019-09-30 16:23:16]
Stoked to have your help!

pepijn [2019-10-01 12:24:18]
<@UNR7DUT52> hi, nice to meet you

pepijn [2019-10-01 12:24:38]
I guess you'll be digging into the OmataBLEKit code soon. If you have any questions feel free to ask.

pepijn [2019-10-01 12:25:11]
I was just having a browse through the Android BT code. When you compare the two you see it's very different in style :slightly_smiling_face:

pepijn [2019-10-01 12:26:36]
My take is that the Android code is an optimistic client, it assumes the happy path where the firmware doesn't get too much wrong. BLEKit is pessimistic and validates everything it can. The consequence is that the code is quite a bit more complicated.

sam.selfridge [2019-10-01 12:34:59]
Gotcha - I'm still in ramp up mode on java/kotlin, but I'll take note of where things tend to go wrong when using the android app and can make it a little more flexible when things go wrong.

sam.selfridge [2019-10-01 12:39:30]
I just got xcode installed and got a successful build on the BLEKit - but I don't see what got built or where.

julian [2019-10-01 13:01:06]
You have to point at the Product and right click — it'll tell you where it cooked out the executable.

julian [2019-10-01 13:02:05]

julian [2019-10-01 13:02:26]
And make sure your 'Active Scheme' is OmataCLI

pepijn [2019-10-08 07:32:05]
<@U08B65RM0> I just saw the discussion on settings.fit on <#C08B77FJT|>

pepijn [2019-10-08 07:32:42]
I'm kind of not finding enough time to actually sit down and write the general purpose FIT marshalling code. Maybe it's better that I just write some simple ad hoc code for this.

pepijn [2019-10-08 07:33:10]
The firmware doesn't accept arbitrary FIT files anyway and writing something fixed format will take me significantly less time.

pepijn [2019-10-08 07:35:30]

What I'm proposing is the following 1. Use the existing FIT parser to parse the settings.fit file into FitMessage objects 2. Convert those into a new Settings object that contains all the fields as regular Swift properties 3. Add a method to convert Settings to a Data object containing the binary FIT data in the format the firmware expects it

pepijn [2019-10-08 07:36:00]
that should be enough to add functionality to the CLI app (and even the phone app) to do the pairing stuff

julian [2019-10-08 07:36:09]
I think that would be fine in this case. It is really only the Settings file we need in this case. The arbitrary/generic use case is really just extra sauce.

pepijn [2019-10-08 07:36:22]
we can rip out 3. later (if I ever find enough spare time) and replace it with more general purpose code.

julian [2019-10-08 07:37:19]
So in step 2 is when the Data representation would be manipulated to contain the additional fields for the devices to be paired?

pepijn [2019-10-08 07:39:12]
You would do something like this: ``` let omata = getOmata() let settingsData = omata.getFitFile(.settings, ...) let settings = Settings.fromFitFile(settingsData) settings.hrm = 1234; let newSettingsData = settings.toFitFile omata.setFitFile(.settings, newSettingsData) ```

pepijn [2019-10-08 07:41:17]
`Settings.fromFitFile` will use the existing FIT parser to parse the Data object and transform it into a Settings object

pepijn [2019-10-08 07:41:31]
`Settings.toFitFile` would be new ad hoc code

julian [2019-10-08 07:45:05]
Seems quite straightforward..

pepijn [2019-10-08 07:47:09]
:+1:

julian [2019-10-08 08:02:36]
Thank you <@UA6CC3MT5> - so helpful! Definitey could not get this done without your help.

sam.selfridge [2019-10-08 15:32:50]
So my progress has been slow - was running through the kotlin tutorial but think I might be able to get things going faster by just getting the app built and learning the language as I go now that I have the basics. Ran into a build issue right away since the version of gradle in the current app (5.1.1 IIRC) throws errors with the latest JDK 13, it looks to be fixed in gradle 6.0 but I want to get it running as is before I start upgrading and possibly breaking something else. Got JDK12 and my IDE isn't throwing errors so now I just need to figure out how to build the APK. Hopefully will get that by next, I haven't had much time to dedicate to this recently - currently up in SB looking at wedding venues and have been busy with running the LG cross program.

sam.selfridge [2019-10-08 15:34:40]
I want to be able to start helping out test the ANT+ stuff out, is there a doc for how to get my HR and power meter paired to the Omata? I think I have an old iPod if I need to use the iOS app to get that going.

julian [2019-10-08 16:21:21]
There's no doc. It's all ad-hoc at this point but <@UA6CC3MT5> is working on a mechanism for his CLI to do this, which would be the first step. It might be worthwhile seeing if you can get that to build?

julian [2019-10-08 16:21:24]
<@UNR7DUT52>

sam.selfridge [2019-10-08 20:55:22]
I got the CLI built but haven't used it on the Omata yet - I think I got the latest firmware on it by via drag and drop (forgot to check on the existing android app)

pepijn [2019-10-09 00:11:41]
<@U08B65RM0> <@UNR7DUT52> CLI bits are done. Example usage session below:

pepijn [2019-10-09 00:14:03]
``` omata> omata> o Omata_DBA23C4967DE (model: CL-G02, serial: 287, uuid: 7CCEC621-1ED5-4098-8353-821F0BE17721) omata> c 287 Omata_DBA23C4967DE> print_file settings ..... File ID type settings manufacturer 286 product 1 number 1 product name CL-G02 serial 287 Bike profile message index 0 name Name spdEnabled false cadEnabled false spdcadEnabled false powerEnabled false enabled true HRM profile enabled false Omata_DBA23C4967DE> start_scan Omata_DBA23C4967DE> Detected ANT+ sensor 10220 (type: Heart-rate Monitor, rssi: -33) Omata_DBA23C4967DE> stop_scan Omata_DBA23C4967DE> set_hrm 10220 .... Omata_DBA23C4967DE> set_bike_name Ridley .... Omata_DBA23C4967DE> print_file settings ..... File ID type settings manufacturer 286 product 1 number 1 product name CL-G02 serial 287 Bike profile message index 0 name Ridley spdEnabled false cadEnabled false spdcadEnabled false powerEnabled false enabled true HRM profile enabled true hrm ANT id 10220 Omata_DBA23C4967DE> ```

pepijn [2019-10-09 00:15:40]
<@U08B65RM0> have a look at `-[Main updateSettingsOnOmata:error:adjustSettings:]` in particular. That illustrates how you can build all kinds of settings update logic in the app.

pepijn [2019-10-09 00:16:19]
For instance, the firmware only supports one bike profile, but you could let the app store multiple ones and replace the single firmware bike profile from the app.

julian [2019-10-09 06:54:41]
Awesome! Looking forward to digging into this!

julian [2019-10-11 14:29:25]
So, making a bit of progress — not a ton, but things are happening. I went to start OmataCLI to confirm some data and I got a crash in `OmataManager` ``` 2019-10-11 14:16:32.099907-0700 OmataCLI[59714:3797347] [manager] Central manager updated state to 0x5 2019-10-11 14:16:32.100293-0700 OmataCLI[59714:3797347] [manager] Started scanning for peripherals with 222D0002-BA58-2FB0-1A43-77A2BFDDE5DF Fatal error: Unexpectedly found nil while implicitly
```

unwrapping an Optional value: file /Users/julian/Code/omata/OmataBLEKit/Sources/OmataBLEKit/OmataManager.swift, line 90 2019-10-11 14:16:32.100582-0700 OmataCLI[59714:3797347] Fatal error: Unexpectedly found nil while implicitly unwrapping an Optional value: file /Users/julian/Code/omata/OmataBLEKit/Sources/OmataBLEKit/OmataManager.swift, line 90 ``` And the first thing I wondered was..I just updated to Catalina.. Have you ever seen this <@UA6CC3MT5>?

julian [2019-10-11 15:53:49]
So digging a bit this (fairly obvious) is a result of CBCentralManager being nil. In Omata CentralManager : CBCentralManager is declared as non-optional: `fileprivate var centralManager: CBCentralManager` When I explicitly initialized it there, then centralManager is non-nil. I wonder if some part of the API changed in 10.15? I'm not sure where to hunt for change notes to CoreBluetooth..

julian [2019-10-11 16:05:36]
One consequence is that it seems the scan won't succeed until Bluetooth (at least on *my* laptop) is cycled off then on.

julian [2019-10-11 16:05:39]
Strange..

pepijn [2019-10-12 00:10:29]
The central manager being nil is not something I've encountered before

pepijn [2019-10-12 00:10:51]
Having to turn bt off and on is something I did see quite often on my macbook

pepijn [2019-10-12 00:13:19]
I'm not quite sure how the `centralManager` property could ever be nil though

pepijn [2019-10-12 00:14:10]
it gets explicitly initialised in the init of OmataManager, it's not that we query it using some other method that may return nil.

pepijn [2019-10-12 00:15:56]
:thinking_face:

pepijn [2019-10-12 00:29:40]
I wonder if there's some kind of read-after-write threading issue here. I can't risk updating my laptop to Catalina just yet, some CAD software my wife uses is most likely not compatible with it yet. My work desktop machine in my office is on Catalina already. I'll see if I can find some time to test things on that machine.

julian [2019-10-12 07:10:27]
Okay <@UA6CC3MT5>. I looked closer an saw how `centralManager` gets initialized in `init()` — and I also noticed how `scan()` gets called as soon as that line is executed, but not before `init()` completes. A bit odd..anyway, not a showstopper but a bit of a bother. I don't know exactly why it bothers me — but I don't think it was the behavior earlier. (OS update? Not sure..) <@UNR7DUT52> Maybe you could check as well if you have a moment. I might be able to pull out my clunker laptop as well to check.

sam.selfridge [2019-10-12 08:47:41]

My laptop is still running 10.13 - which I need because nvidia CUDA drivers don’t work on 10.14 (or didn’t last time I tried, they might be out now) but they’re definitely not on 10.15, so I’m keeping the current OS, editing video on this thing without the graphics card is not fun

julian [2019-10-12 10:40:37]
If you have a chance <@UNR7DUT52> to run OmataCLI and see if if it has the above issue I’d be curious..not an emergency type of thing..more a puzzle.

pepijn [2019-10-12 10:42:23]
<@U08B65RM0> could you grab a dump of the stack of each running thread when the crash happens?

pepijn [2019-10-12 10:43:27]
not sure how to do that in xcode. appcode pauses automatically when the debugger is running and you the process crashes

julian [2019-10-12 10:44:02]
Yeah. Two threads.

julian [2019-10-12 10:44:10]

julian [2019-10-12 10:44:26]
Weird.

pepijn [2019-10-12 10:44:35]
well look at that

julian [2019-10-12 10:44:43]
I put a bit of a guard just to band-aid the crash.

julian [2019-10-12 10:44:50]
(in `scan()`)

pepijn [2019-10-12 10:45:05]
the problem is in the CLI app, not the BLEKit lib

pepijn [2019-10-12 10:45:25]
you're not supposed to call instance methods on an object before it has been completely initialised

julian [2019-10-12 10:45:49]
How would that even be able to happen?

pepijn [2019-10-12 10:46:02]
that's the bit I don't quite get

julian [2019-10-12 10:46:25]
Check this Thread 1

julian [2019-10-12 10:46:32]

pepijn [2019-10-12 10:46:37]
ah got it

pepijn [2019-10-12 10:46:45]
let me grab my ipad to sketch what's going on

julian [2019-10-12 10:47:10]
`OmataManagerInternalState()` spinning a thread??

pepijn [2019-10-12 10:48:29]
no corebluetooth

julian [2019-10-12 10:48:42]
Huh.

julian [2019-10-12 10:50:00]
Thread 2. What kicks it off? `omataManagerDidUpdateState()`

pepijn [2019-10-12 10:51:26]

pepijn [2019-10-12 10:52:22]
`OmataManager#init` calls `CBCentralManager#init` `CBCentralManager#init` triggers a `centralManagerDidUpdateState` callback on a separate DispatchQueue right away

pepijn [2019-10-12 10:52:44]
and that callback ends up executing before `Thread 1` finishes the `init`

pepijn [2019-10-12 10:56:17]
:thinking_face:

julian [2019-10-12 10:56:42]
Hrm..I see this, and I see where `Main: OmataManagerDelegate#omataManagerDidUpdateState` would then start the `scan`.

pepijn [2019-10-12 10:56:43]
The docs for CBCentralManager state () > queue > The dispatch queue used to dispatch the central role events. If the value is nil, the central manager dispatches central role events using the main queue.

pepijn [2019-10-12 10:56:55]
in the CLI app the queue is `nil`

pepijn [2019-10-12 10:57:22]
and processing the main dispatch queue is only kicked off later (the call to `dispatchMain()` all the way at the end of the CLI app code)

julian [2019-10-12 11:00:14]
So, question — here’s a snapshot of state just as above (line 58)

julian [2019-10-12 11:00:17]

pepijn [2019-10-12 11:00:25]
hmm, but the callback is queued on the `omataBleRx` queue

julian [2019-10-12 11:00:44]
What's the difference between the `rxQueue` and `txQueue` in purple and those in green?

pepijn [2019-10-12 11:01:21]
`rx` is used to process incoming events (responsed) and state change events from corebluetooth

julian [2019-10-12 11:01:59]
I mean there's one symbol that is nil, and another symbol named the same thing is not nil

pepijn [2019-10-12 11:02:01]
`tx` is used to serialise the commands you try to send to the omata

pepijn [2019-10-12 11:02:30]
one's the property, the other the local variable?

pepijn [2019-10-12 11:03:29]
I can hack something nasty in to avoid this

pepijn [2019-10-12 11:04:11]
quick fix is to use the main dispatch queue instead of the omatarx one

julian [2019-10-12 11:04:25]
Is the assumption from the docs that if the queue specified in the line in question (58) is nil, a new thread is started; and if it is not nil, then that particular queue is used?

julian [2019-10-12 11:04:48]
I guess what I'm confused at the moment about is that the local variables used in that line are non-nil

pepijn [2019-10-12 11:05:00]
replace `let manager = OmataManager(delegate: main)` with `let manager = OmataManager(delegate: main, rxQueue: DispatchQueue.main)`

pepijn [2019-10-12 11:05:05]
in the CLI app

pepijn [2019-10-12 11:05:11]
that's the quick fix

pepijn [2019-10-12 11:05:48]
(I think)

pepijn [2019-10-12 11:12:39]
hmm no, that causes a deadlock it seems

julian [2019-10-12 11:12:58]

Um..now I can’t reproduce the earlier meta-issue. OmataCLI is finding my test device straight away without the BT power-cycling.

pepijn [2019-10-12 11:13:40]
definitely some CoreBluetooth behaviour differences between Mojave and Catalina

julian [2019-10-12 11:20:22]
Okay just some forensics: If I was explicit about the queues parameters for the `OmataManager#init`, Threads look like this:

julian [2019-10-12 11:20:43]
and scanning “doesn’t work”

julian [2019-10-12 11:21:50]
If I’m not explicit (original initialization with no explicit queue specified), there are those two threads and scanning now (quite mysteriously/confusingly) “works” (at least within Xcode)

pepijn [2019-10-12 11:25:24]
using the main dispatchqueue won't work indeed

pepijn [2019-10-12 11:25:39]
I'm already (ab)using that thread for other things

pepijn [2019-10-12 11:29:01]
need to brush three sets of teeth real quick

pepijn [2019-10-12 11:29:09]
I'll have another look once the kids are in bed

julian [2019-10-12 11:31:05]
Hahahaha! Check..take your time..good dental hygiene pays dividends in the future..

pepijn [2019-10-12 11:42:55]
I pushed a commit with a quick hack that should fix things

pepijn [2019-10-12 11:43:41]
I'm creating the serial DispatchQueue to handle the incoming events in the CLI app and then scheduling a task that blocks until the rest of the initialisation is complete

pepijn [2019-10-12 11:44:06]
right before kicking off the main dispatchqueue, the blocked task is unblocked and the incoming events will start flowing

pepijn [2019-10-12 11:44:18]
could you give that a try Julian?

pepijn [2019-10-12 11:47:22]
in the Omata app, you can probably just use the main dispatch queue as rxQueue

pepijn [2019-10-12 11:47:35]

Maybe that should be the default in OmataBLEKit...

julian [2019-10-12 11:57:57]
Okay. Seems to work.

pepijn [2019-10-12 12:01:06]
:+1:

julian [2019-10-12 12:01:29]
Yeah, just looking at your changes here..more fun lessons!

pepijn [2019-10-12 12:01:48]
So in `OmataManager`, we probably want to change `let rxQueue = rxQueue ?? DispatchQueue(label: "omataBleRx")` to `let rxQueue = rxQueue ?? DispatchQueue.main`

pepijn [2019-10-12 12:02:18]
less error prone that way since most likely you'll be creating the OmataManager on the main thread

julian [2019-10-12 12:02:20]
Is it okay to do this all on the main queue? Will that muck up the UI?

pepijn [2019-10-12 12:02:53]
that's the flipside indeed

pepijn [2019-10-12 12:02:55]
it might

pepijn [2019-10-12 12:03:42]
you could give it a try

pepijn [2019-10-12 12:04:14]
create the OmataManager with `OmataManager(..., rxQueue: DispatchQueue.main)` in the app and see what happens

pepijn [2019-10-12 12:04:53]
normally speaking the incoming events are all handled very quickly

pepijn [2019-10-12 12:05:05]
but we are doing extra work on the UI thread indeed which does have its risks

julian [2019-10-12 12:06:26]
So, also to clarify, that `OmataManager#init(` signature has parameters for “both” queues, right?

pepijn [2019-10-12 12:06:44]
it does. both default to `nil`

pepijn [2019-10-12 12:07:02]
you can specify just one of them and leave the other `nil`

pepijn [2019-10-12 12:07:21]
there's not much point in specifying the `tx` queue besides wanting to give it a specific name

julian [2019-10-12 12:08:32]
Ah, copy that. Understood.

pepijn [2019-10-12 12:10:15]
just so you understand what I hacked into the CLI app, here's what's going on 1. create a serial dispatch queue that we'll use as rx queue. Serial queues execute scheduled blocks one-by-one. If a block hangs, no other blocks will get executed until the hanging block exits. `let rx = DispatchQueue(label: "omataRx")` 2. Schedule a 'hanging' block ``` var initialised = false let initialisedCondition: NSCondition = NSCondition() rx.async { initialisedCondition.lock() while (!initialised) { initialisedCondition.wait() } initialisedCondition.unlock() } ``` I'm using `NSCondition#wait` here to tell the thread to 'wait here until you get signalled. 3. Do the rest of the init 4. Signal the NSCondition to unblock the rx queue ``` initialisedCondition.lock() initialised = true initialisedCondition.signal() initialisedCondition.unlock() ```

pepijn [2019-10-12 12:10:55]
During step 3. a number of callback are fired. Those get scheduled on the rx queue.

pepijn [2019-10-12 12:11:13]
Since that queue is blocked in step 2. they will not execute right away

pepijn [2019-10-12 12:11:46]
When we unblock the queue in step 4. the dummy block exits and all the scheduled callbacks get executed one-by-one.

pepijn [2019-10-12 12:12:28]
So we're putting a plug in rx queue temporarily and we remove the plug once everything has been set up to process events correctly

pepijn [2019-10-12 12:12:53]
No idea if this is the right way to go about this kind of thing, but it gets the job done :grimacing:

pepijn [2019-10-12 12:20:27]
:man-facepalming:

pepijn [2019-10-12 12:20:40]

pepijn [2019-10-12 12:20:54]
I’m jumping through hoops while we could simply use suspend/resume

pepijn [2019-10-12 12:26:19]
what's in the CLI app now is less of a hack I think now <@U08B65RM0>

pepijn [2019-10-12 12:26:41]
much more obvious what's being done

julian [2019-10-12 12:34:44]
Now = Your change just now?

julian [2019-10-13 08:00:16]
`suspend()` and `resume()` seem decidedly less opaque..thanks <@UA6CC3MT5>

julian [2019-10-13 08:00:42]
I wish I had more time to study up on this stuff!

pepijn [2019-10-13 10:16:23]
Hey Julian, do you still need some help fixing bugs in the Android app?

pepijn [2019-10-13 10:17:04]
Just saw the grumbling in <#C5U8TGFJN|> about hrm and then saw the report of the ‘too large bitmap’

pepijn [2019-10-13 10:17:20]
I had the same error on the low-end Samsung phone you provided for testing.

pepijn [2019-10-13 10:17:39]
The fix is trivial, I can take care of that if you like

pepijn [2019-10-13 10:18:04]
I’ll leave the bigger chunks like adding ant+ pairing to <@UNR7DUT52> though :)

julian [2019-10-13 10:50:52]
That would be *greatly appreciated if you could take a peek! I tracked the issue, bit simply have so much piled on that it has sunk in priority..

pepijn [2019-10-13 11:54:34]
Understandable

pepijn [2019-10-13 11:55:19]
I’ll get the app functional on that J9

pepijn [2019-10-13 11:55:32]
Should cover most of the low-end of the Android spectrum

sam.selfridge [2019-10-13 20:15:07]
I have my intellij env setup, but haven’t had much time to get used to building the current android app. Is the build process straight forward or are there any weird bits that I need to look out for? I’m planning to be able to build and deploy the current app to my phone by end of the week. I also have some older android devices I can bring online for testing

sam.selfridge [2019-10-13 20:17:54]
In the mean time, did some high HR testing today - seems to work fine when I’m redlined for 40min

pepijn [2019-10-14 12:44:51]
<@U08B65RM0> I got the app up and running on the Samsung phone

pepijn [2019-10-14 12:45:05]
reducing the resolution of the images did the trick

pepijn [2019-10-14 12:45:29]
UI is still a bit crude here and there compared to iOS

julian [2019-10-14 13:44:42]
Yes..just simple tap zones..

julian [2019-10-14 13:44:47]
Thanks for fixing that!

pepijn [2019-10-14 23:43:05]
Oops my last sentence got lost

pepijn [2019-10-14 23:43:19]
I meant the download ride UI for instance

pepijn [2019-10-14 23:43:31]
There’s no 0-100% style progress indicator

pepijn [2019-10-14 23:43:52]
Just a ‘downloaded chunk 1034’ message counter.

pepijn [2019-10-14 23:44:09]
Nothing dramatic, it could just use a bit of polishing

pepijn [2019-10-14 23:51:29]
<@U08B65RM0> is there an equivalent of the Fabric crashlytics things for the Android app?

pepijn [2019-10-14 23:51:52]
A couple of crashes were reported on <#C5U8TGFJN|> but I can't seem to find logged issues for those or crash logs

julian [2019-10-15 06:59:08]
I don’t believe such was bolted on to the current Android App? I honestly don’t know if it was. Fabric became (bought by) Google and is part of their suite of support tools. It is now called Crashlytics. I am a bit confused by the transition though.

pepijn [2019-10-15 08:57:43]
Ok so some kind of crash thing needs to be built in

pepijn [2019-10-15 08:58:12]
Google play does that already to a certain extent, but I don’t think I have access to that console at the moment.

julian [2019-10-15 09:14:49]
I can see some Google Play crash with a stack trace.

julian [2019-10-15 09:16:17]
Two over the last 180 days seem to be basically ANRs

julian [2019-10-15 09:16:24]
Suspicious that there are not more types of crashes.

julian [2019-10-15 09:16:44]
Oh, wait..I was only filtering by ANRs

pepijn [2019-10-15 09:16:48]
:smile:

julian [2019-10-15 09:17:47]
I should be able to add you to the Google Play thing but in the meantime it looks like the main crashes are in 18 clusters.

julian [2019-10-15 09:17:52]

pepijn [2019-10-15 09:18:11]
would you mind giving me access to that console for a while?

pepijn [2019-10-15 09:18:20]
I would like to go over those and turn them into github issues

julian [2019-10-15 09:18:44]
Not at all. I'll have to riddle through how to do that — completely unfamiliar with this console. Shouldn't be too difficult, let me see now.

julian [2019-10-15 09:19:32]
I'll re-invite you

julian [2019-10-15 09:19:37]

julian [2019-10-15 09:19:43]
That email correct?

pepijn [2019-10-15 09:20:09]
yep

pepijn [2019-10-15 09:20:23]
hmm so I should an invitation somewhere in my mailbox then...

pepijn [2019-10-15 09:20:34]
got the new one

julian [2019-10-15 09:20:39]
Check!

pepijn [2019-10-15 09:22:22]
waiting for access approval it says here

pepijn [2019-10-15 09:22:32]
gmail account is ``

julian [2019-10-15 09:23:20]
Should I try with the gmail account?

julian [2019-10-15 09:24:04]
Woops. Did two things at once..

pepijn [2019-10-15 09:31:09]
I'm in and got to the logs

julian [2019-10-15 09:35:13]
Excellent!

julian [2019-10-15 09:35:29]
Thanks for the Issue tracking!

pepijn [2019-10-15 09:36:08]
np

pepijn [2019-10-15 09:38:39]
FYI I'm marking the crashes that I've transferred to github as issues as hidden in the google play console

pepijn [2019-10-15 09:50:48]
Nothing too bad in there. Most of them are missing error handling code it seems.

julian [2019-10-15 10:00:18]
Yes. How did you describe it? `Optimistic Coding`?

pepijn [2019-10-15 10:30:11]
:smile:

sam.selfridge [2019-10-15 14:25:21]
Finally got my app built - Planning to update the README as I go, so hopefully at the end it’ll be a good doc for ramping up someone new to the code base - for now just trying to parse through the app and figure out how everything is tied together. definitely agree on wanting to update the UX of the android app. I’ll get one of my modern iOS friends to download the app so i can see what it looks like there - my iPod only goes up to ios9 and its too old to install the iOS app on

julian [2019-10-15 14:49:50]
<@UNR7DUT52> Let me know if you want to borrow my little dev iPhone!

pepijn [2019-10-18 07:38:27]
<@U945NT4K0> here's a build of the cli app that supports all the ant+ sensor types.

julian [2019-10-18 08:03:16]
<@U945NT4K0> You’ll have to run this from Terminal and punch plastic squares. I can walk you through it. Getting it running may be the hard/not-hard part. Just may be an unfamiliar way of running a

program..

cary [2019-10-18 08:04:48]
Thank yep we will have to discuss on a call… I will hit you up later today to get it rolling.

julian [2019-10-19 13:14:57]
HRM this morning, including a very long stop for a Vietnamese Coffee. I found a cadence sensor but unfortunately I didn't have a battery. I will get one to pair and test soon.

julian [2019-10-19 13:15:39]

julian [2019-10-20 19:27:01]
<@UA6CC3MT5> If you have a chance can you see if you can build the Rx target for `Archive` (in Xcode) with the latest commit? I'm having problems. I think it's a Cocoapod versioning thing. Trying to figure out what's what..

julian [2019-10-20 19:30:02]
Has something to do with `Debug` versus `Release` settings somewhere, I suspect.

julian [2019-10-20 23:25:00]
It did work - then I attempted to Archive to push it to Test Flight and there were a bunch of Code 0 errors for a bunch of Pods..

pepijn [2019-10-20 23:50:07]
let me see if I can try that out quickly here

pepijn [2019-10-21 00:15:40]
cocoapods isn't cooperating on my catalina machine <@U08B65RM0>

pepijn [2019-10-21 00:15:48]
can't even get a regular build up and running it seems

pepijn [2019-10-21 00:42:18]
:face_palm: I had the xcode project open instead of the workspace that also contains the pod project

pepijn [2019-10-21 02:09:02]
<@U08B65RM0> after some tinkering I got the archive generation up and running

pepijn [2019-10-21 02:13:00]
The main culprit that was causing problems for me was the gRPC library. The podfile specified a pretty old version. More recent versions fixed the issues. In particular I was getting - `include of non-modular header inside framework module` which was fixed in - an `openssl` linker error that was fixed using the workaround described at

julian [2019-10-21 06:48:09]
Huh. Okay. Thanks! I'll give that a shot. I remember I first saw some errors related to some pods and then it just sort of went out of control after a few cycles of clearing Pods and rebuilding. Thank you for sanity checking me. This sort of thing becomes the "last mile" dumpster fire, just when you think you made it home safe!

julian [2019-10-21 06:48:57]
I got a rudimentary UI in the Rx App to pair/un-pair HRM. It ain't pretty, but I had to feel my way around the existing code to remember how it all works. I can clean it up as I go forward from here.

julian [2019-10-21 09:42:58]
Okay. Seems to have worked. Uploading now for distribution.

cary [2019-10-21 10:12:31]
My upload seems to be stuck cleaning?

cary [2019-10-21 10:14:36]
Sorry I meant update install

julian [2019-10-21 10:14:45]
Mine came through okay on Test Flight

pepijn [2019-10-21 10:16:46]
Could you send me a test flight link for the Rx app <@U08B65RM0> ?

julian [2019-10-21 10:17:49]
Will do. Just at the barbershop :barber: back at HQ in a bit.

cary [2019-10-21 10:18:18]
Hard reset on phone fixed "cleaning" issue

julian [2019-10-21 10:18:19]
Trying not to look like a halloween creature before halloween :jack_o_lantern:

pepijn [2019-10-21 10:19:25]
Enjoy the hot towel and shave :smile:

julian [2019-10-21 10:19:27]
<@U945NT4K0> You need a device with the latest beta firmware..the app won't complain if the device is incompatible

cary [2019-10-21 10:20:30]
k

julian [2019-10-21 12:36:05]
There are two firmware files to update. One is for the MCU the other is for Bluetooth. The Bluetooth one is called `nrf52_update.hex`

julian [2019-10-21 12:37:42]
That one is tricky to download because it's treated as a text file. It's usually fine, but you want to keep the name precisely as it is in case your computer tries to rename it.

julian [2019-10-21 12:38:32]
The other one is the MCU firmware here:

cary [2019-10-21 12:38:42]

Ok I will make a second folder for these, I have one already for updating current devices.

julian [2019-10-21 12:39:00]
You can drag them both onto your Omata at once and then disconnect and it'll reboot and take a bit to restart.

cary [2019-10-21 12:39:24]
Actually I will save these to a flash drive to keep them seperated so I some how do not mess them up..ha

julian [2019-10-21 12:39:37]
Yeah, they are also all on Dropbox

julian [2019-10-21 12:40:05]

cary [2019-10-21 12:40:51]
K

cary [2019-10-21 20:40:22]
Ok downloaded, installed on Omata and had successful pairing with 4iiii Heart rate Monitor. I will test it tomorrow. Super easy simple pairing. I also have a very old Mio Heart rate watch I will test it tomorrow too just to see.

sam.selfridge [2019-10-22 09:46:31]
Is there a hardware hard reset some how? my omata is acting up. arrow won't only moves a little to the left instead of all the way to GPS or BT when the dial is moved. Can still connect via BT but couldn't factory_reset or list activities. Can't get it to come up as mass storage. Was thinking of loading firmware via bluetooth next but haven't tried yet

julian [2019-10-22 09:47:22]
Via the Rx App. Sounds weird though. Maybe a mechanical issue, not a firmware issue.

julian [2019-11-08 11:36:36]
<@UA6CC3MT5> Any opinions about Combine (the asynchronous framework from Apple)?

pepijn [2019-11-08 11:41:31]
:man-shrugging:

pepijn [2019-11-08 11:41:41]
no opinion, I haven't used it

julian [2019-11-12 10:01:21]
<@U945NT4K0> I don't know how this will work, but maybe try unzipping this and double-clicking the executable in there (OmataCLI) — it might pop open a Terminal window and start working. It's all command-line driven, meaning you have to type in the commands. Best command to start with? `help`

julian [2019-11-12 10:02:02]
I haven't actually run this build, which <@UA6CC3MT5> just updated. I just built it here. Haven't run it yet. I'm sure it works, just not 100% sure how it'll work on your Mac.

cary [2019-11-12 10:04:28]
Ok I will test this evening..

julian [2019-11-23 06:35:39]
<@UA6CC3MT5> I'm noticing some failures with the latest firmware (mcu and ble) where hand calibration and end calibration isn't working. I get an `Unexpected error: fail.` I haven't noticed when this started, except to notice it this morning. This is via the CLI App. I haven't tried in Rx or the retail App.

pepijn [2019-11-23 06:36:17]
Could you run the app in debug mode from Xcode?

pepijn [2019-11-23 06:36:26]
That should produce more verbose output

pepijn [2019-11-23 06:36:43]
And hopefully provide some hints as to what's going wrong

julian [2019-11-23 06:36:48]
So, yeah — I did.

julian [2019-11-23 06:37:15]
```2019-11-23 06:30:12.130777-0800 OmataCLI[26663:103682] [omata] Request 'Get Bluetooth software version' (1 bytes) 2019-11-23 06:30:12.169925-0800 OmataCLI[26663:104945] [omata] Write complete 2019-11-23 06:30:12.170717-0800 OmataCLI[26663:104945] [omata] Response 'Get Bluetooth software version' (9 bytes) BluetoothInfo(bleMajor: 255, bleMinor: 255, blePatch: 255, bleAppMajor: 0, bleAppMid: 0, bleAppMinor: 19, bleSoftDevice: 8, bleSoftDeviceSubId: 148) Omata_F39EF15CFCD8> ec 2019-11-23 06:34:16.653427-0800 OmataCLI[26663:107889] [omata] Request 'Stop calibration' (1 bytes) 2019-11-23 06:34:16.711195-0800 OmataCLI[26663:123753] [omata] Write complete Unexpected error: fail.```

julian [2019-11-23 06:37:42]
Is there a further setting for the build to produce more output?

julian [2019-11-23 06:38:05]
(Also, I'm not certain which end this error may occur. I'll also check the Syslog on the device.)

julian [2019-11-23 06:42:00]
<@U0DDJ0QSY> related to the above failure to end calibration (I also get a similar failure while trying to perform calibration of a hand), I have this Syslog. It doesn't give any further clues, except it seems to be the case that the device sends back a `nack` Can you investigate please? (It's near the very end of this fairly new syslog.)

pepijn [2019-11-23 06:50:47]
`unexpected error: fail`... :thinking_face:

pepijn [2019-11-23 06:50:58]
Needs more debug logging

julian [2019-11-23 06:57:26]
:wink::laughing:
```

pepijn [2019-11-23 07:52:44]
which firmware version should I use to test this Julian?

pepijn [2019-11-23 07:53:48]
that last 2019.11.22.3-dbg one?

julian [2019-11-23 07:54:26]
I'm on the latest. I have the `update.oci` that <@U0DDJ0QSY> sent through quite recently — maybe it was last night. It represents `manu_debug_2019.11.22.3`. And the latest BT firmware is `0.0.19` . If you want, I can make a zip and shove it through here to save your digging around?

pepijn [2019-11-23 07:54:54]
that's the latest one on <#C08B77FJT|> indeed

pepijn [2019-11-23 07:54:57]
I'll grab it from there

julian [2019-11-23 07:55:31]
Okay. Note that the latest `update.oci` just came through without any clothes on..it's not in a .zip.

sam.selfridge [2019-11-23 07:56:53]
I'll put that on my unit too. Going to go for a ride with just my power meter + HR set. Anything particular I should try?

julian [2019-11-23 07:58:07]
Just trying is helpful. Have you checked via the CLI that you're devices are properly paired?

sam.selfridge [2019-11-23 07:58:37]
yes ,they're both showing up in the settings file

sam.selfridge [2019-11-23 07:58:46]
will confirm after new firmware is loaded

pepijn [2019-11-23 08:04:28]
<@U08B65RM0> how do you get into mass storage mode again?

pepijn [2019-11-23 08:04:42]
can't remember this being problematic before, but I can't get it to work for some reason

julian [2019-11-23 08:04:45]
Before connecting, turn the bezel to connect. Then plug in over USB

julian [2019-11-23 08:04:57]
Yes, there may be a problem with the device getting state stuck.

pepijn [2019-11-23 08:05:12]
reboot fixes it?

julian [2019-11-23 08:05:24]
The fix (appears) to be to connect the BT via the CLI or Rx. Then disconnect.

julian [2019-11-23 08:05:39]
Reboot may do similarly. Effectively the state machine gets stuck somewhere, according to <@U0DDJ0QSY>

pepijn [2019-11-23 08:06:34]
connect/disconnect did the trick

pepijn [2019-11-23 08:06:34]
thanks

julian [2019-11-23 08:06:41]
Sure.

sam.selfridge [2019-11-23 08:09:15]
Would it make sense to have firmware in a shared dropbox (or similar) folder? Keep all the firmware update in one place to prevent digging through slack channels. There is a slack / dropbox integration that could prevent even needing to announce things here.

pepijn [2019-11-23 08:09:42]
<@U08B65RM0> calibration is not working for me at all

pepijn [2019-11-23 08:09:57]
On the Omata serial console I see `NOT_ALLOWED`

pepijn [2019-11-23 08:10:28]
```[1574525262.985]ble_connect_state: EVT_BLE_MSG [1574525262.985]ble_msg_handler: 0x46 [1574525262.995]ble_api_cmd_start_calibration: -> [1574525262.995]__manu_meter_set_value: index:0 [1574525262.995]meter_set_pos: speed, 0 (abs) [1574525263.005]__manu_meter_set_value: index:0 [1574525263.355]meter_set_pos: ascent, 0 (abs) [1574525263.365]__manu_meter_set_value: index:0 [1574525263.365]meter_set_pos: duration, 0 (abs) [1574525263.365]__manu_meter_set_value: index:0 [1574525263.375]meter_set_pos: distance, 0 (abs) [1574525263.375]send_ble_ack: msg: 0x46 [1574525263.385]ble_exit_state: CONNECT [1574525263.385]ble_enter_state: GEN_TRANSFER [1574525263.395]ble_transfer_state: EVT_ACK [1574525263.395]ble_exit_state: GEN_TRANSFER [1574525263.395]clean_up_handler: handler_type: 255 [1574525263.405]ble_enter_state: CONNECT [1574525272.765]ble_connect_state: EVT_BLE_MSG [1574525272.775]ble_msg_handler: 0x47 [1574525272.775]ble_api_cmd_stop_calibration: -> [1574525272.785]send_ble_nack: msg: 0x47, status: FAIL (9) [1574525272.785]ble_connect_state: EVT_ACK [1574525272.795]ble_connect_state: ack - msg: EVT_ACK```

pepijn [2019-11-23 08:10:35]
that just start/stop calibration

pepijn [2019-11-23 08:10:51]
Move hand in between results in ```[1574525187.265]ble_connect_state: EVT_BLE_MSG [1574525187.275]ble_msg_handler: 0x44 [1574525187.275]ble_api_cmd_move_hand: -> [1574525187.285]send_ble_nack: msg: 0x44, status: NOT_ALLOWED (3)```
```

pepijn [2019-11-23 08:11:18]
The `fail` you're seeing in the CLI app is the actual error code we're getting back from the firmware

julian [2019-11-23 08:13:14]
Okay. So seems to be a problem on the firmware side?

harri [2019-11-23 08:13:37]
I will check firmware side.

harri [2019-11-23 09:21:41]
The last release broke the calibration functionality.

harri [2019-11-23 09:22:21]

harri [2019-11-23 09:24:45]
Try with this one, note that this update has the same version number.

harri [2019-11-23 09:25:41]
I will revert the bad commit and do new release firmware package on Monday.

julian [2019-11-23 09:53:35]
Thanks <@U0DDJ0QSY>

pepijn [2019-11-23 10:54:14]
I just confirmed that calibration works again from the cli app

julian [2019-11-23 12:42:45]
Me too! Thanks <@U0DDJ0QSY>

julian [2019-11-28 07:01:55]
Say, <@UNR7DUT52> or <@UA6CC3MT5> would it be possible for you to cook out an APK with <@UA6CC3MT5>'s fix to the java.lang.Number error? My Android Studio and IntelliJ installs are woefully broken, it seems. I'm trying to update but it's become a bit of a bear.

julian [2019-11-28 07:02:26]
Some complaints about not having Kotlin correctly installed or something.

julian [2019-11-28 07:39:46]
(I may've fixed it..not sure..)

pepijn [2019-11-28 11:10:50]
<@U08B65RM0> still need help with this?

julian [2019-11-28 11:22:08]
I think I got it sorted. In any case I got a signed bundle built and sent it up to Google. Thanks <@UA6CC3MT5> ! Off to Mexico City for a few day's break!

sam.selfridge [2019-12-22 11:27:46]

Hey guys, sorry I've been MIA for a while, I just started a new front end position in Burbank and have been getting ramped up there + commuting so I haven't had much in the way of free time. I'd like to help where I can and I'm sure I'll be able to help out once my mental-onboarding at work is done. I also managed to tweak my knee skiing last weekend so I haven't been riding much, but at bare minimum once I get pedaling again I can help with testing.

pepijn [2020-01-15 05:12:38]

pepijn [2020-01-15 05:12:43]
One for your scrapbook Julian :joy:

pepijn [2020-01-15 05:12:54]
DIY cadence sensor test rig

julian [2020-01-15 07:02:48]
Holy cow. I was just catching up this morning from <#C08B77FJT|> — thank you so much for digging into this. I know for sure we wouldn’t be able to do this without your help!

pepijn [2020-01-15 07:07:14]
My neighbours must think I'm losing my mind

pepijn [2020-01-15 07:07:46]
Walking up and down my driveway while swinging a ratchet wrench :slightly_smiling_face:

julian [2020-01-15 07:29:04]
Hahahahahaha!

julian [2020-01-15 07:29:13]
That’s actually kinda brilliant..

julian [2020-01-15 07:29:38]
This is definitely going in the section of the scrapbook where we’re working on the ANT+ stuff

julian [2020-01-24 08:10:07]
<@UA6CC3MT5> Quick semi-related question: what are the modern ways to create little web services with a Java backend? Last I was poking around maybe 2 years ago, maybe more, I’d create something on an EC2 instance on AWS. It may be precisely the same. Just doing some diligence. (I’ll also ask some other folks who may keep up with this.) I have a vague idea to create a drag-n-drop one-page mini site where people can drop a .FIT file and have a CSV spit out the other end. I’ve seen some services that provide this, but they want all kinds of personal info, sign-ups, etc. I’m thinking of something distinctly less commercial.

pepijn [2020-01-24 08:38:20]
Not really my area of expertise I’m afraid.

julian [2020-01-24 08:57:27]
Sure, no problem. Just checking around.

wcrtr [2020-01-24 09:28:07]
Lambda

wcrtr [2020-01-24 09:28:16]
“serverless”

julian [2020-01-24 09:28:18]
What di dyou call me!?

julian [2020-01-24 09:28:24]
Oh..never mind.

wcrtr [2020-01-24 09:28:34]

julian [2020-01-24 09:29:04]
Serverless..like Driverless but for servers.

wcrtr [2020-01-24 09:29:09]
something like that

wcrtr [2020-01-24 09:30:16]
also could possibly look into this:

julian [2020-01-24 09:34:46]
Copy. Thanks <@U5ZSJAD2S>

wcrtr [2020-01-24 09:47:56]
mmmhrm

julian [2020-01-26 19:38:11]
So, data is captured at the start of the ride, but then stops later on.

julian [2020-01-26 20:41:26]
Here’s the syslog

harri [2020-01-27 00:29:27]
I did a quick review for syslog data, no obvious issues found. However, BPWR data seems to be intermittent in Strava data graph. I will have closer look later on today.

julian [2020-01-27 05:39:58]
Okay. There were some pauses in the ride, fwiw. My instinct is that perhaps these are related, but I have no evidence.

harri [2020-01-27 06:20:45]
I did notice several pause periods, but did not spot obvious bugs in the pause handling. Actually it did log analysis a bit tricky, because I need to match timestamps between the syslog and FIT. I will try to provide results tonight.

julian [2020-01-27 06:48:07]
Okay. Strange.. Thanks <@U0DDJ0QSY>

harri [2020-01-27 23:08:15]
<@U08B65RM0> this is your syslog is from your Omata with the Stages power sensor? There are gaps in the BPWR event counts, I don't know why this happens. No errors seen in the log, data is just missing. Device keeps recording activity data in stationary state, because HRM sensor is configured for the activity. This logic could be improved so that proper HRM data should have been received before it cause control logic to keep BLE activated in stationary state. Another thing, BPWR manufacturer data fields change during the activity, this should not happen. You have just one side Stages power meter, right?

julian [2020-01-28 12:40:35]
Correct - one side Stages power meter.

harri [2020-01-28 23:00:59]
<@U08B65RM0> Should we track firmware related bugs with the GitHub issue tracker? The same way you do for the utility app. I could create new issues and add comments based on feedback we are getting from the omata-test-team users.

pepijn [2020-01-28 23:45:30]
<@U0DDJ0QSY> if you encounter issues with the iOS BLE side of things, please log them in

pepijn [2020-01-31 04:47:16]
<@U08B65RM0> should we be concerned about the connectivity issues people have been reporting?

harri [2020-01-31 04:52:08]
Let me know if reported connectivity issues are somehow related to BLE/MCU firmware.

pepijn [2020-01-31 04:53:17]
Could be the ios side of things just as well.

julian [2020-01-31 05:23:59]
It feels quite isolated, but that is just my initial impression. I suspect the issue where the device does not leave mass storage mode. If the App can’t get a serial number it will freeze like this. I haven’t looked super closely at this because it is tricky to replicate the problem - I suppose removing the sd card may be a way to cause it? But in any case it is not clear the App could do anything if this is an issue with a device at a particular moment. Happy to hear other thoughts on the matter.

harri [2020-01-31 08:24:28]
Maybe the iOS app should show informative error message that can be used for identifying failed BLE API command, it could be hex string about what was sent sent and received. I need to review whole mass storage implementation once more.

harri [2020-01-31 08:35:10]
The last time we were debugging this issue the failing command was "get device.fit" and response was NACK (file not found) ?

julian [2020-01-31 11:08:55]
Yes, correct. That is where the SN lives if memory serves me. I looked for a moment at the context for the request and it is at the very start of the connection procedure. The SN is a primary key for local storage of meta data, activity summaries and actual downloaded activities and so forth.

julian [2020-01-31 11:09:28]
I can look at a more reasonable failure experience and reporting of some sort certainly.

julian [2020-01-31 19:32:52]
I created a branch to look into the connection issue. I'm pretty sure it has to do with the device file, but I'll have to double-check. I *think* that the `getDeviceFileSync()` call may not throw an exception in this case we're talking about..not entirely sure though and could be completely wrong. Just a guess while I was looking at the code flying back to LA but with nothing available to test.

julian [2020-01-31 20:20:58]
Actually, now it's all coming back. I think it will be a bit complicated to provide a UI notification for the failure without some modifications further down in `OmataBluetoothModel` It's called as a Singleton `OmataBluetoothModel.sharedInstance.startScanning()` and then `func omataManager(_ manager: OmataManager, didDetect omata: Omata)`` is called presumably by `CoreBluetooth` when one is detected. It's here that the connection procedure begins, including getting the various files like `Device.fit`. The only way I can think of to signal an error back to the UI would be to have another observable of some sort. <@UA6CC3MT5> But, curious about other thoughts — that idea feels a bit convoluted?

pepijn [2020-02-01 02:27:25]
It works slightly differently than what you described Julian. 1. `OmataManager#scan` calls `CentralManager#scanForPeripherals` to start BLE scanning 2. The `centralManager(didDiscover:)` callback kicks off the `quick connect` logic. This starts a chain of calls that: connect to the peripheral, discover services, discover characteristics, and finally calls `OmataMager#getQuickConnectInfo` 3. `getQuickConnectInfo` will retrieve the device file, api version, sw version and BLE sw version. If any of these fails the corresponding fields in the Omata object are simply left blank. The only thing you can be 100% sure of that you will have is the device UUID which is accessible as `Omata#identifier`. 4. After all the info has been retrieved (possible failing and leaving the fields blank), the `omataManager(didDetect:)` will get called.

pepijn [2020-02-01 02:36:35]
Connecting to an Omata works like this 1. `Omata#connect` calls `CentralManager#connect` passing in the `CBPeripheral` we got from the earlier scan 2. Once connected, service and characteristic discovery is repeated. Once that's done, the quick connect stuff isn't repeated; instead the connection is considered done.

pepijn [2020-02-01 02:38:00]
What we'll need to figure out is at which point exactly things are getting stuck. Could be that you're scanning for devices, waiting for one with a particular serial number to show up that never comes for instance.

pepijn [2020-02-01 02:39:20]
Using the peripheral UUID internally (which we're guaranteed to have) to track devices instead of the serial number might make this more reliable. Or at least let you connect to devices that have a failed SD card.

pepijn [2020-02-01 02:49:38]
What might be going wrong is the error handling in the app. At `B1 Utility App/Bluetooth/OmataBluetoothModel.swift:184` you're calling getDeviceFileSync which throws an exception on failure. Assuming the fails for a moment, that would mean we jump to the catch block at `B1 Utility App/Bluetooth/OmataBluetoothModel.swift:245`. There you can see the completion handler

gets called twice: once on the worker thread and then again on the main thread. Not sure if that can cause the state tracking of the app to go wrong, but it's suspicious.

julian [2020-02-02 07:08:26]
<@U0DDJ0QSY> Is it the case that in order to interoperate with the various make/models of sensors it is necessary to somehow switch where the firmware is looking for data based specifically on the make/model? Which seems a bit crazy?

harri [2020-02-02 08:44:27]
Power meters can use different data page based on sensor type, apparently nobody has tested pedal power sensors before the guys on the test-team tried those out.

harri [2020-02-02 09:02:51]
Current firmware just outputs content of the power only data page to syslog, but does not add data to activity file, need to add support for this one.

harri [2020-02-02 09:58:15]
I will do required changes for firmware at some point next week and share it for test-team user Rooster who has PowerTap pedal power meter.

julian [2020-02-02 10:03:21]
Great. Thanks <@U0DDJ0QSY>

julian [2020-02-02 10:03:31]
I will be pushing the fixed version of the App shortly.

harri [2020-02-03 08:01:22]
<@U08B65RM0> App is stuck in this state when I try to sync all rides after fresh install. Actually it gets one download done and then it is needed to force shutdown the app.

harri [2020-02-03 08:07:35]
I paired for two devices, first for B2 and then to B3. Now the app seems to show both devices on settings page, does the app support multiple devices?

harri [2020-02-03 08:11:35]

julian [2020-02-03 09:47:31]
Yes, now it does.

julian [2020-02-03 09:49:26]
It seems to hang if it comes across a corrupt file, I believe. I had the same thing happen over the weekend.

harri [2020-02-03 10:23:00]
Issue could be on the BLE side as well. However, no changes have been done recently for the implementation that is responsible for data transfer. Note that modified device is needed for BLE tracing.

harri [2020-02-03 11:14:50]
No problems seen with the RX app 0.4.9 (1215)

harri [2020-02-04 23:18:52]
A few findings about the app 0.7.0 (3425): • Got some error message while pairing sensors • Assist data expiration time does not update to settings page • Pairing seems to overwrite HRM sensor ID with BPWR sensor ID

harri [2020-02-04 23:20:12]

harri [2020-02-04 23:20:28]

harri [2020-02-04 23:20:41]

harri [2020-02-04 23:22:56]
HRM has ID of the power sensor.

harri [2020-02-05 04:23:45]
<@U08B65RM0> BPWR sensor ID could have been already in place of HRM because this issue was seen with the earlier application version and I have not cleared it away.

harri [2020-02-05 04:43:43]
<@U08B65RM0> How I can remove paired device from the application?

julian [2020-02-05 07:23:26]
These are helpful. Thanks <@U0DDJ0QSY>. Not sure why this behavior occurs, but I'll look at the Pairing code. Also, yes - currently there is no way to unpair a device. I'll add an issue.

julian [2020-02-24 07:27:34]
Last few rides haven't recorded anything from sensors and no obvious clue in the syslog. I'm going to try re-pairing the sensors and re-flashing the firmware, although I can think of no reason why either of these procedures would make any difference. :mage::skin-tone-4:

harri [2020-02-24 10:23:18]
<@U08B65RM0> please share the syslog and name of the FIT file, I can have a look.

julian [2020-02-24 10:38:09]
Here's the syslog. The FIT files are `200223180414.fit` and `200223155956.fit` (attached as well). Thanks <@U0DDJ0QSY> - curious what you find. Could very well be a bad configuration caused by the App, but I double-checked the Settings.fit and it seemed correct at a glance.

harri [2020-02-24 11:47:58]
<@U08B65RM0> Maybe the above syslog is not the right one, the last time stamp is from 16-Feb and your ride is 23-Feb.

julian [2020-02-24 11:52:33]
Darn. I'm not sure where it's gone — and I already started a fresh one on the device. Let's see what happens next ride later.

harri [2020-02-24 12:01:13]
Maybe RSSI level could checked with the sensor scan to make sure that there is no problem with BLE antenna connection.

julian [2020-02-29 07:25:13]
<@U0DDJ0QSY> Any thoughts about these empty rides? Seems to happen more than I suspected.

julian [2020-02-29 07:25:23]
Any idea on a root cause that we can investigate?

harri [2020-02-29 23:19:58]
Following syslog lines are copied from Mat Ashton's syslog: 160316 [1582499103.154]manu_handle_usb_change: enable mass storage mode 160317 [1582969820.321]exit_state: CONNECT -> device has been in the mass storage mode about five days, Sunday, February 23, 2020 11:05:03 PM -> Saturday, February 29, 2020 9:50:20 AM (GMT +0)

harri [2020-02-29 23:41:58]
Maybe Mat Ashton could give details how to reproduce this issue, as this has happened several times with his Omata device. Is he unintentionally entering to mass storage mode and then controlling bezel and unplugging the USB without ejecting mass storage? However, this should not cause problems for device as long as USB is not removed in the middle of file system write operation.

julian [2020-03-02 14:33:34]
<@U0DDJ0QSY> what's the epoch for the timestamps in the syslog? I've never managed to have a quick conversion for my own checking.

harri [2020-03-02 23:09:02]

julian [2020-03-03 07:05:18]
Huh. Yeah. That's what I usually use. Weird. I thought it was giving me wrong conversions. My fault..

julian [2020-03-03 09:59:53]
Did you see my note about the eeprom writer question? It's a weird one, but I'm curious.. //

harri [2020-03-03 12:49:21]
One step is 0.5065 degrees -> ~710.75 steps per revolution. Units: Speed 10^-3 m/s Duration seconds Ascent meters Distance meters "motor_cfg": [speed max step index, speed, ascent, duration, distance] US -> [642,45.2856706,4.2884158,60.7806960,226.4283528] EU -> [652,46.8986852,5.6278422,60.7806960,140.6960556] For example, one speed hand step in EU variant is equal for 46.8986852 * 10^-3 m/s

julian [2020-03-03 13:30:01]
Okay cool. Thanks <@U0DDJ0QSY>

harri [2020-03-07 13:30:11]
<@U08B65RM0> I got the zero activity file issue on my Omata device, this did happen because sd card device was completely lost, device reboot fixed the issue. It was not related to mass storage mode, as I have not connected device to USB at all. Could the guys on test-team channel switch to the retail firmware build? Maybe only those who have experienced this issue several times, I would like to know is this somehow related to dbg build and syslog feature.

julian [2020-03-13 08:08:06]

<@UA6CC3MT5> Hello. Hope all is well there with you and the family what with everything going on. I have a mundane question if that’s okay — the Android App. I have a customer who is getting the `java.lang.NumberFormatException` when sharing to Strava. I remember a discussion about this and my recollection was that there was a fix you had put in? I can’t find the issue if it was entered in Github. Do you have a recollection of this topic?

pepijn [2020-03-13 08:08:51]
I was going to look at this one indeed, but now I can't remember if I actually ever got round to it

pepijn [2020-03-13 08:09:17]
Everything's still ok in Belgium BTW. Corona madness is kicking in. Toilet paper out of stock everywhere :joy:

julian [2020-03-13 08:09:23]
For some reason I thought you had — or maybe I was being optimistic..

pepijn [2020-03-13 08:09:48]
I'll check on my workstation at home later today. Maybe I have some change pending that hasn't been committed or pushed yet.

julian [2020-03-13 08:11:09]
Yeah, stay calm is what I say. Stay calm and stay away from lots of people, as healthy as they may seem! Easy enough with bad weather here in Los Angeles! It’s crazy how the grocery stores have been cleaned out of everything. There was a lady at the local grocery who had 12 tins of oysters in the shopping cart because that’s nearly all that was left!

julian [2020-03-13 08:11:15]
Oysters!

julian [2020-04-19 12:06:31]
<@UA6CC3MT5> So, I was testing the new OmataBLEKit (which I tagged `0.30`) and I got some hard crashes within the App during the first stages of the connection stages. It was somewhere in a response handler in OmataBLEKit — sorry I didn’t copy info about precisely where.) I deleted the App and then tried from “ground zero” with no Omata paired. When it found a device it had the serial number as 0, which might have been the “serial number 0" issue, not sure. I tried connecting with the Rx which, on my phone, was still at the previous version of OmataBLEKit (`0.29`). I then backed the Utility App out to `0.29` and now it works. I’ll got back to `0.30` and see if I can make it crash again and report back.

pepijn [2020-04-19 12:16:59]
I must have overlooked something. I’ll run some tests myself tomorrow as well.

julian [2020-04-19 12:17:49]
Perhaps, but now I am not getting the error. Yeah, if you could try on your end as well that would add a measure of sanity-checking.

julian [2020-04-19 12:19:05]
(At least before I push it to the test team..)

julian [2020-04-19 12:19:20]

Trusting you and the family are well!

pepijn [2020-04-20 04:33:18]
Mea culpa Julian. Stupid inverted condition in the IO code.

pepijn [2020-04-20 05:38:38]
I've finally added some initial unit tests for this bit of code

pepijn [2020-04-20 05:38:44]
Should have done that a long time ago...

julian [2020-04-20 06:30:01]
Look at you..like you know what you're doing.. :wink:

julian [2020-04-20 06:30:09]
Thank you <@UA6CC3MT5>!

pepijn [2020-04-20 06:32:51]
you're welcome

pepijn [2020-04-20 06:33:19]
I'll see if I can add some more test coverage for things like message (un)marshalling as well

julian [2020-04-20 06:34:32]
One of these days I'll learn how best to do this. I tried initially to do this with the very very early versions of the App, but unfortunately got stuck in get-there-itis and lost the focus on the good practices..

pepijn [2020-04-26 00:30:49]
<@U08B65RM0> I'm happy to have a look at syslogs and app debug logs related to the gps update failure. Not sure I'll be able to help, but if it's something in the ble data transfer, I might.

julian [2020-04-26 08:06:40]
I'll be curious if we get one more similar failure. Part of me wondered if it was corrupt mga.dat data, but I have no syslogs and no crashlogs to verify.

julian [2020-04-26 08:06:52]
Thank you for the offer <@UA6CC3MT5>!

pepijn [2020-04-26 11:09:57]
We could add some basic mga.dat validation in blekit or the app.

pepijn [2020-04-26 11:10:36]
The app side code has more headroom to perform validation and report precise errors.

pepijn [2020-04-26 11:12:12]
I had a quick look at the u-blox technical documentation. There seems to be a per message checksum and the mga.dat file is essentially a message dump.

pepijn [2020-04-26 11:12:39]
Still need to confirm that with an actual file, but if that's the case validation should be fairly easy.

julian [2020-04-26 11:53:46]
That would be awesome if we could. It would just add a note of reliability, I think. We could report any invalid data in the analytics.

julian [2020-04-26 11:55:11]
Meanwhile, I think I managed to get the latest BLEKit pushed to its Cocoapod..I got tangled a bit confused why I wasn't pulling the latest code despite it being tagged and all the rest. Turns out, there were two places to mark the version number in the podspec..I had overlooked one because my editor window wasn't pulled all the way open horizontally..

julian [2020-04-26 11:55:41]
I've tested it just myself, but I'll push it to Test Flight shortly if you're okay with that?

julian [2020-04-27 07:11:26]
<@UA6CC3MT5> Ignore that issue related to the `getBatteryInfo` thing. My "legacy" code is a bit of a tangled mess. Someday it will need a thorough refactoring..I addressed the issue that the Battery Level doesn't get indicated properly in some code here which I'll push some point soon.

pepijn [2020-04-27 07:40:33]
:+1:

julian [2020-04-29 10:26:29]
<@UA6CC3MT5> A mysterious one. I can't riddle how this crash would happen with the test for nil. (Let me know if you cannot access that..I think you had the old Fabric access and I just added you to the "team" on Firebase a moment ago) Here's what I did out of a bit of confusion. I couldn't see how the crash might happen, but it does with relative frequency. (I haven't committed or pushed this code yet) ``` //@available(*, deprecated, message:"This was never useful. Or is it...") var file_url : URL? { get { if let omata = appDelegate.currentBluetoothOmata { var url = omata.activitySummaryFilesDirectory() guard self.deviceActivityName != nil else { return nil } if let name = self.deviceActivityName { url.appendPathComponent(name+".json") return url } } return nil } }``` Curious what your eyes see in the original code. (No rush..more a puzzle mystery to me..)

julian [2020-04-29 10:27:31]
(I was also looking at it last night while Hobbs and Shaw were saving the world from a virus on the TV, so could've easily missed the obvious..)

pepijn [2020-04-29 11:03:01]
Hard to say exactly what's wrong without some kind of data dump of the stack.

pepijn [2020-04-29 11:03:12]

pepijn [2020-04-29 11:04:08]
Assuming the line numbers match (hint: always make a git tag when cutting a release) that's the line it's crashing on. I wouldn't expect there to be much that can go wrong there.

pepijn [2020-04-29 11:06:19]
The only thing that I can potentially see going wrong there is that a write of deviceActivityName happens in another thread between line 354 and 355. Because you read the field twice it might be non-nil at 354, but nil at 355.

julian [2020-04-29 12:09:04]
Yeah. I need to be much better about my git tagging hygiene..

ts [2020-05-18 08:53:02]
<@U012F84BCV9> has joined the group

julian [2020-05-18 08:57:33]
Hello <@U012F84BCV9> — meet <@UA6CC3MT5> who is based in Belgium and who has been a super awesome help with the App and many other things. <@UA6CC3MT5> meet Tyson (<@U012F84BCV9>) who has offered to help. You've likely seen him in <#C5U8TGFJN|>

ts [2020-05-18 08:59:13]
:wave: <@UA6CC3MT5> Happy to try and jump in to help! Thanks for pushing this along with <@U08B65RM0> for all of us Omata users!

pepijn [2020-05-18 23:33:49]
Hi <@U012F84BCV9>, welcome aboard. My small contribution is the iOS Bluetooth bits. Happy to answers any questions you might have.

julian [2020-05-19 07:09:09]
(<@UA6CC3MT5> is being modest..it's been no small contribution! :birthday:)

pepijn [2020-05-19 07:10:16]
in contrast to designing a device, getting it built, handling marketing, writing an app for two platforms, ... I think it's small :smile:

pepijn [2020-05-19 07:10:31]
but I'll accept the cake

julian [2020-05-19 07:28:24]
Enjoy your delicious cake <@UA6CC3MT5> and have a nice Port as well:wine_glass: ….

ts [2020-05-19 09:29:52]
Managed to grab the utility source and get it building and running in the simulator.

cary [2020-05-19 09:31:30]
Welcome to the team Tyson.. <@U012F84BCV9> Thank you in advance from the Cardiff office..ha

ts [2020-05-19 09:53:03]
Ha, thanks <@U945NT4K0>! But don't thank me yet!

ts [2020-05-19 09:54:32]
Is there any formal or loose process for the dev team? Separate forks and PRs? Or leaning on braches?

ts [2020-05-19 09:55:24]
I've got the most insignificant commit to push just so I can roll through the process once on something small

julian [2020-05-19 09:57:02]
I’m not the greatest at this, but for big changes I create a branch. Small things I usually don’t think too much about it and just commit changes on master..I could do much better and every so often <@UA6CC3MT5> reminds me to do better..

pepijn [2020-05-19 09:57:49]
<@U012F84BCV9> since I was the sole developer on OmataBLEKit, I skipped the formalities and just pushed to master. For the utility app, it's only Julian you have to coordinate with.

ts [2020-05-19 09:58:08]
<@UA6CC3MT5> makes sense!

ts [2020-05-19 09:58:25]
I’m happy to do whatever, no hard stance from my end

julian [2020-05-19 09:58:38]
Yeah, I think basically use your best judgement?

julian [2020-05-19 09:59:05]
There are just three of us here..although we are quite global, I think we can manage just with good communication here in Slack and such.

ts [2020-05-19 09:59:38]
<@U08B65RM0>, I’ll push the tiny changes just to test things out/make sure I’m set. Just fixed the font style for the floating titles on Login and Signup vc’s

julian [2020-05-19 09:59:52]
So, like…I’ll start by saying that I’ve been meaning to push the current build that the test team is using to the App Store someday pretty soon as soon as I get over my nerve about releasing this new firmware to the world..

ts [2020-05-19 09:59:53]
Sounds good to me!

julian [2020-05-19 10:00:04]
(“the world” = 2000 people, fwiw..)

pepijn [2020-05-19 10:07:22]
Just talking as dev team lead (my day job) here for a moment Julian. The main question to ask here is if you want to maintain a stable branch that's in a ready to build/ship state at all times or not. For small projects it typically doesn't matter all that much. For my day job where we have multiple versions of the software deployed out in the field and need to be able to make patch releases within a matter of hours it obviously does. The tradeoff is a 'heavier' process where people must make branches, someone else must review the code changes and integrate them, etc. I would suggest the lightest process you can get away with for this project given the size of the codebase and team. That's probably: • pushing to master for small bugfixes and safe small changes • short lived feature branches for experimental changes, new features, etc. to avoid disrupting other people

ts [2020-05-19 10:10:47]
I agree with that take and the suggested approach. No need to complicate for the sake of it at this point

ts [2020-05-19 10:32:19]
I'll start combing through the issues already logged on GH and see what I can tackle. I'll probably aim for the ui/ux low-hanging fruit at first. Any reason not to keep any visual/ux conversation in this room since there are so few of us, <@U08B65RM0>?

julian [2020-05-19 13:45:21]
I agree with your suggestion <@UA6CC3MT5> fwiw. I think the way we've been working is nice and agile in that regard, if not entirely resilient..but the pace of releases and the like is such that this makes sense.

julian [2020-05-19 13:46:07]
<@U012F84BCV9> Having those chats here in this channel is perfectly fine. There are really only the three of us in here being active.

julian [2020-05-22 08:02:28]
<@U012F84BCV9> I may do a build for the Test Team with any updates you might want to put through. Is there anything other than the latest commits that you're working on that I should wait on?

ts [2020-05-22 08:04:02]
Nothing else ready to go on my end. :ok_hand::skin-tone-3:

julian [2020-05-22 08:04:12]
Check. Cool.

ts [2020-05-22 19:35:30]
The last post you reposted of dirtdrops was goooood!

julian [2020-05-23 08:03:42]
Oh thanks <@U012F84BCV9>!

julian [2020-05-26 09:17:54]
Fellas — do you have a tight workflow for updating start up screens via XCode? I feel like every time I go to do that (which is only a few times..) it feels rather..kludgey? Like creating all the different scales and so forth. For some reason I'd imagine that there would (by now..) be a way to say — here's the highest resolution and then some automaton would do whatever is necessary to make the scaled versions? Or am I missing a trick?

julian [2020-05-26 09:18:34]
And I don't stay as up to date as I probably should, but I think I saw something somewhere about how we're meant to use some new Storyboard facility for these things? Maybe?

pepijn [2020-05-26 09:58:31]
I haven't done any serious UI work for neither macOS nor iOS, so I'm afraid I can't help you out with that. If it's any comfort, whenever I tried to experiment with xcode's GUI builder stuff (interface builder, the storyboard thing, etc.) I always found it hard to grok. I prefer to know what's going on under the hood and I could never get my mental model of what's going on correct.

julian [2020-05-26 10:01:20]

Yeah. You and I are the same in that regard..it looks like I started out trying to use the Storyboard GUI stuff and then bailed to be able to wire stuff up directly. I “get” what they’re trying to do..it’s just that it seems a bit opaque once you’ve got everything sorted out, plus you end up clicking lots of widgets and all which isn’t explicit enough for me..

pepijn [2020-05-26 10:01:59]
real men don't do wysiwyg Julian :muscle: :joy:

julian [2020-05-26 10:02:13]
:laughing:

ts [2020-05-27 09:04:59]
This just may work out swimmingly as I’ve probably sat on the other side of the code/design table more lately

ts [2020-05-27 09:05:38]
I’ll read up on it this evening if you’d like, <@U08B65RM0>

julian [2020-05-27 09:06:59]
Well, I ended up using a tool I had around called `Asset Catalog Creator Pro` which cooks out an image asset bundle of some description. It generates various scales and sizes and cooks it right out.

julian [2020-05-27 09:07:05]

ts [2020-05-27 09:07:14]
Nice!

julian [2020-05-27 09:07:20]
I don’t know if that is the right way..or just “a” way..but it worked..

ts [2020-05-27 09:08:23]
I got the dev team invite, thanks for that! I’ll get a build on my device later today and dig in some more

julian [2020-05-27 09:08:41]
Sure. I forgot I hadn’t added you to the dev team..

ts [2020-05-27 09:09:12]
Mostly just working my way through the code to get a better overview and picking off anything tiny along the way

ts [2020-05-27 09:10:04]
No sweat!

julian [2020-05-27 09:10:43]
Apologies for the barely legible code..I was more-or-less learning all the new idioms and stuff while writing it.. <@UA6CC3MT5> was also teaching me a bunch of things along the way so it probably feels like it and there may in fact be many moments while going through it where you wonder..wtf? :rolling_on_the_floor_laughing:

julian [2020-05-27 09:12:55]

I have this screen recorder software where I can connect my development iPhone up to my laptop and record the screen (w/o the red record light when you do it natively using the iPhone's recording feature). One thing I have on my list is to make some screen videos of some of the basic flows, possibly to use on the website and/or the App Store. That could be something to talk about. We can then take the video and composite it in AE or Premiere or whatever. I did that ages ago for some FAQ videos.

pepijn [2020-06-06 02:59:58]
Hi Julian, congratulations on getting the ANT+ firmware out. :crossed_fingers: now :smile:

pepijn [2020-06-06 03:01:33]
I just wanted to reiterate that if you can get hold of the firmware source code I would be happy to tinker on this stuff.

julian [2020-06-06 07:02:50]
I know that we can. That's not a problem. Should we do it? It would be just a matter of getting Haltian to provide access through some repository. I imagine the toolchain is a bit of a knot but no more tricky than all the other crazy things we've been dealing with over the last few years!

julian [2020-06-06 07:03:05]
If you're game — I'll engage the folks at Haltian to see what we can do.

julian [2020-06-06 07:03:42]
And thank you for your help all along the way. Honestly, we'd be in a much worse situation if you weren't helping but maybe more so — supporting and encouraging everyone!

pepijn [2020-06-06 07:05:21]
The usual disclaimers apply. I'm willing to give it a go; can't make any promises.

julian [2020-06-06 07:06:20]
Of course. Completely understood.

pepijn [2020-06-06 07:06:37]
The main thing I'm curious about is the ANT+ message handling

pepijn [2020-06-06 07:07:01]
I remember we had a bit of an issue with the Garmin sensor I had because it was using a more recent revision of the main data message

pepijn [2020-06-06 07:07:11]
That turned out to be a simple interpretation bug in the firmware; it was ignoring some of the data it received because the specification was not interpreted correctly.

julian [2020-06-06 07:07:23]
Check. Well, I think the first thing would be to get a copy of the source code in a repository somewhere.

pepijn [2020-06-06 07:07:28]
Perhaps some of the other sensor issues are as simple as that

julian [2020-06-06 07:09:37]

Yes, could be. It might be simple things. It’d be great to get things as buttoned up as they can be for the sensor pairing.

harri [2020-06-09 08:32:20]
Sorry for delay, I have been a bit busy with other projects. One bug fix attempt that Rooster has been testing is not included the latest firmware release that is shared for test team, I was waiting for his test results and then forgot make the commit. Actually the missing commit adds support for BPWR common data pages. The commit changes interface between the main MCU and BLE, so it makes dependency, should take another look whether the dependency could be somehow avoided. There might be some improvements needed for common data page handling etc. It should not be big effort to fix remaining ANT+ bugs, at least most of them should be easy to fix once you have failing sensor available. I have not been actively monitoring test-team feedback, are the issues listed somewhere? About sharing source code, for the BLE there is no problem at all, I can send it right away. For main MCU firmware (Nuttx), there might something that needs to be cleaned away, maybe someone from our releasing could handle that, this one goes for Aimo.

harri [2020-06-09 08:33:36]

harri [2020-06-09 08:33:54]
It should look something like this: ■■■ manu-nrf52-firmware ■ ■■■ src ■ ■■■ tools ■■■ nrf5_sdk ■■■ components ■■■ config ■■■ documentation ■■■ examples ■■■ external ■■■ svd

pepijn [2020-06-09 08:43:33]
<@U0DDJ0QSY> which compiler toolchain are you guys using to compile this?

harri [2020-06-09 08:44:40]
The latest arm gcc should be fine.

pepijn [2020-06-09 10:36:12]
<@U08B65RM0> what would you like to do as next steps? create a github repo and commit this there? the code is marked copyright Haltian, so I'm not sure if that's acceptable.

julian [2020-06-09 10:51:16]
<@U0DDJ0QSY> what is it that needs to be cleaned away for the MCU code? Is it extraneous code or Haltian components from other projects? What we should have is enough to be able to do a build on our end if we need to?

pepijn [2020-06-09 12:37:43]
<@U0DDJ0QSY> the S332 soft device, does that have to be exactly v4.0.2? Trying to puzzle together how we could rebuild the nrf5_sdk zip from the original sources so I don't have to commit the entire thing in git, but that particular revision is no longer available it seems. The ANT+ site has 4.0.5, 5.0.0 and 6.1.1.

julian [2020-06-09 17:53:34]
Okay, so I had the following Error. I ran the procedure again from the beginning in case the updates didn’t take (I didn’t watch the whole time) but received the same error again.

julian [2020-06-09 17:53:36]

julian [2020-06-09 17:59:43]

I found this in output of the setup script `Error: Permission denied @ dir_s_mkdir - /usr/local/Caskroom/segger-jlink`

julian [2020-06-09 17:59:58]
I used to have the segger tools installed..

julian [2020-06-09 18:14:49]
I manually created the directory and ran ```sudo chown $(whoami):admin /usr/local/localCaskroom/segger-jlink ``` and got past that step..

julian [2020-06-09 18:17:18]
Okay. That was a problem. `make` in `manu-nrf52-firmware` seems to have produced a nrf52_update.hex

pepijn [2020-06-09 23:54:42]
Great!

pepijn [2020-06-09 23:55:26]
<@U0DDJ0QSY> what's the risk that applying one of these builds completely bricks the omata device?

pepijn [2020-06-09 23:56:12]
In other words, what's the worst that can happen because of programming error? And if something breaks is there a recovery procedure?

pepijn [2020-06-10 05:00:03]
<@U08B65RM0> FYI, the s332.zip file are the S332 SoftDevice files. I extracted those from the nRF SDK zip Harri provided. The original source is at . As you can see there, this is a commercially licensed component. I did not check the license agreement to see if it's ok to commit this in the repository or not. As long as the repo is private you're probably fine.

pepijn [2020-06-10 06:14:07]
<@U0DDJ0QSY> who owns the license key for that softdevice? Haltian? Are there any limitations or changes in behaviour to be aware of when using the evaluation key?

julian [2020-06-10 08:09:57]
I know I paid a fee and signed a license directly with the ANT+ consortium some time ago when we got our..whatever they call it..company ID

julian [2020-06-10 08:10:58]
But I take your point. We'd have to do a few contortions if we ever open the source beyond us here.

julian [2020-06-11 07:45:34]
<@U0DDJ0QSY> Would it make sense to provide you with access to the Github repo that <@UA6CC3MT5> made so that any of the evaluation you did for those changes you had been testing with Simon could be put there?

pepijn [2020-06-21 23:55:30]
<@U08B65RM0> regarding Mat Ashton's pairing issue: does the retail app have a way of turning on and capturing debug output at runtime? The BLE code debug output would be helpful in figuring out what's going on.

julian [2020-06-22 08:44:25]
There isn't this ability to do so remotely. But, we could always do a build of some description. Currently the debug logging framework — I'm not sure where the logs would go in this instance. They normally appear in the console output when attached to the debugging workstation. There are probably some frameworks that could send the logs some place useful. I used one of those once. But it's something that would have to be looked into.

julian [2020-06-25 11:05:13]
Say, anyone in here ever make a 'movement' for the Apple Watch?

pepijn [2020-06-25 11:10:55]
nope

pepijn [2020-06-25 11:11:28]
do you mean a 'complication' or a complete watch face?

pepijn [2020-06-25 11:11:45]
or are movements something new for watchos 7?

cary [2020-06-25 11:47:24]
Interesting question?

pepijn [2020-06-25 11:51:59]
For me Cary? Sure, I have an Apple Watch. Would be fun to experiment with. Do you guys have something in particular in mind?

cary [2020-06-25 11:54:59]
Sorry curious what Julian is thinking..

cary [2020-06-25 11:57:02]

julian [2020-06-25 11:58:26]
Just wondering. It literally just came to mind yesterday. Along with wondering why and how it would be a thing that Omata would do. Doing it is easy — technically speaking. The why is more interesting to me — or as interesting.

cary [2020-06-25 12:01:46]
It might be cool to do a companion app/ watch face option.. now that navigation on a Apple Watch is a big new part of the next IOS update.

julian [2020-06-25 17:00:19]
What would make it cool though is the question? And how does omata do it so it's not just another donut or another wheel in a world full of donuts and wheels?

cary [2020-06-25 17:22:50]
Agreed good question. We are long over due for a call and talk. Maybe a bike ride is needed to discuss in-depth.

julian [2020-06-26 07:31:28]

maybe. don’t want to necessarily make a huge deal of it. just pondering..

julian [2020-06-27 08:18:30]
<@UA6CC3MT5> If you ever want to dig into the firmware further it might be good to have one of these debug devices..

pepijn [2020-06-27 08:19:36]
I was waiting for some input from Harri before I started experimenting

julian [2020-06-27 08:19:49]
The question about bricking a device?

pepijn [2020-06-27 08:19:52]
Yep

pepijn [2020-06-27 08:20:14]
If I have a way to revive the patient, I’m happy to experiment.

julian [2020-06-27 08:20:39]
I heard parenthetically that he was caught in a project hornet’s nest, but seems a easy quick one to address. I’ll ping him directly..

pepijn [2020-06-27 08:20:54]
we still need the main MCU firmware as well

pepijn [2020-06-27 08:21:22]
I don’t have a complete picture of how the device operates, but I seem to have understood there’s an interdependency between the MCU firmware and the BLE app

pepijn [2020-06-27 08:21:37]
do you have any technical specs that describe this stuff?

julian [2020-06-27 08:22:07]
I do not, unfortunately. There wasn’t a lot of exposure to the firmware side of things at all.

julian [2020-06-27 08:22:31]
At least at the level of code and so forth. I never built the toolchain or anything.

pepijn [2020-06-27 08:23:20]
Not even the hardware bits? I’m looking for a diagram showing the components that are used. I know there’s an nrf52 in there, but what else?

pepijn [2020-06-27 08:23:52]
(embedded is not really my comfort zone, so sorry if I’m asking silly questions :smile:)

julian [2020-06-27 08:23:53]
Oh, the hardware is easier. I have schematics I can send over. I was just looking at them earlier this week.

julian [2020-06-27 08:27:09]

This is everything except the board stackup spec and the panelization drawing.

julian [2020-06-27 08:28:01]
Starting at page 3 is the schematic block diagram. I also have the Gerbers and drawings of the actual trace routing if that's ever useful.

pepijn [2020-06-27 08:33:41]
that debug device, is that one with the jtag port still in place?

julian [2020-06-27 08:34:18]
It is at least serial output. I actually only hooked it up once.

julian [2020-06-27 08:35:06]
JTAG would be nice though..we could probably make something.

pepijn [2020-06-27 08:35:24]
just wondering since a jtag port is on the schematics, but crossed out

julian [2020-06-27 08:37:47]
Looks like the connector is crossed off..

pepijn [2020-06-27 08:38:50]
Seems like it. I'm not seeing X1000 on main diagram either.

pepijn [2020-06-27 08:39:47]
Anyway, serial out is good enough probably

julian [2020-06-27 08:41:19]
Still..sorta funny that JTAG wouldn't at least go to a test port or something..

pepijn [2020-06-27 08:41:37]
every penny counts?

julian [2020-06-27 08:45:12]
I suppose..

julian [2020-06-27 08:47:00]
There may be a better reason though. Firmware flashing happens via DFU. Maybe I'm old-fashioned but when I designed the small number of boards I build, I always kept JTAG on there. But, I'm definitely more hobby guy and sorta never wanted to be locked out. But my presumption was that I would get locked out as I've bricked an MCU or two but could always manage to get it back with JTAG. Actually..I don't think I ever used DFU for things I've built, come to think of it..

pepijn [2020-06-27 08:50:59]
Suppose a device has a bad firmware flashed on it, how do you get it in DFU mode to recover?

julian [2020-06-27 08:51:21]
Good question.

julian [2020-06-27 08:51:46]

I sorta hope that the DFU mode is not dependent on the application firmware, but I’m making that up.

julian [2020-06-27 08:52:24]
In other words that the bootloader isn’t a part of the application firmware

pepijn [2020-07-14 07:53:41]
<@U08B65RM0> I saw Harri's MCU tarball email. I'll try to find some time to pull that into the Github firmware project. Then it's a matter of building it and taking the plunge I guess. :grimacing:

julian [2020-07-14 07:53:55]
Yes — I just replied to them with thanks.

julian [2020-07-14 07:54:26]
I also moved that tarball onto Dropbox for safe keeping for the time being.

pepijn [2020-07-14 07:54:43]
I had a quick look at the contents. NuttX is a full blown RTOS. Didn't know that.

julian [2020-07-14 07:54:46]
Very curious what it looks like in there..

julian [2020-07-14 07:54:55]
Yeah — I’ve never worked with an RTOS, tbh.

pepijn [2020-07-14 07:55:04]
It'll take some time to try and find the Omata specific bits in there.

julian [2020-07-14 07:55:06]
But, I’m a learner so I’m curious..

pepijn [2020-07-14 07:55:14]
we're in the same boat

pepijn [2020-07-14 07:55:32]
I remember being taught all the concepts in operating systems 101 20 years ago.

pepijn [2020-07-14 07:55:35]
but that's 20 years ago

julian [2020-07-14 07:55:41]
So I guess when you’re able to get it into Github we just start poking around.

julian [2020-07-14 07:56:05]
There are some low-hanging fruit tasks that maybe we can think about after we’ve figured out what the heck..

julian [2020-07-14 07:56:37]
Oh, I didn’t even know it was an Apache project.

pepijn [2020-07-14 07:56:47]
My plan for world domination is: 1. Get the code checked in in Github 2. Do whatever's necessary to get it to compile 3. Deploy on my Omata 4. ?

pepijn [2020-07-14 07:56:58]
profits don't come into play at all :smile:

pepijn [2020-07-14 07:57:52]
What I'm really hoping to be able to do is figure out all the ANT+ bits and see if there's low hanging fruit in that area that could improve sensor compatibility.

julian [2020-07-14 07:59:22]
Check!

julian [2020-07-14 08:00:37]
Also I have a few dev devices that even go back to the first prototypes, so if you “brick” one we have backups. But, we are effectively out of stock — we do have a few but they are already going. I’m going to keep a set for the archives so hopefully we get the funding we need.

pepijn [2020-07-14 08:05:43]
That's a good thing, right?

pepijn [2020-07-14 08:06:01]
In the sense that that means you sold all of them

julian [2020-07-14 08:13:37]
Yes! It is. This is how I feel. It’s a big deal and adds confidence that we can do what we did again, only many times better, when it’s not just me and Cary in our backyard garages!

pepijn [2020-07-15 00:53:18]
<@U08B65RM0> I've been looking into the source tarball <@U0DDJ0QSY> provided. I'm trying to figure out which version of nuttx was used as the basis. Based on the ReleaseNotes file it's 7.9, but if I grab the 7.9 source code directly from the nuttx repository and copy it over the MCU firmware directory there are quite a few differences.

pepijn [2020-07-15 00:55:02]
The reason I wanted to do this exercise was to determine which changes Haltian made to the base NuttX software. Could you check with Harri what they used as starting point for this development?

julian [2020-07-15 07:01:22]
Will do. I’ll also tag <@U0DDJ0QSY> here in case he monitors the channel..

pepijn [2020-07-15 07:02:31]
I've been digging a bit further and really can't pinpoint which version they started from

pepijn [2020-07-15 07:03:11]
Definitely not one of the tagged versions. Release notes say 7.9, but there are fixes in some .c files that were first released in 7.12 for instance.

julian [2020-07-15 07:08:25]

(oh - just caught that you also tagged him - i'm emailing hin presently..)

pepijn [2020-07-20 04:24:03]
<@U08B65RM0> I went for a very flat ride yesterday. Altitude profile that came out was 'interesting'. Also weird was that I did not have my cadence sensor with me, but it's still paired, yet Strava is showing some weird cadence values.

pepijn [2020-07-20 04:25:11]

pepijn [2020-07-20 04:26:01]
Not complaining; I'm taking this as a call to action to figure out how the firmware works and see if this can be improved. :grin:

julian [2020-07-20 07:07:26]
"interesting" indeed...

julian [2020-07-20 07:08:15]
I'm also looking forward to digging deeper into the firmware and find little peculiarities like this..as well as other things!

pepijn [2020-07-20 08:33:58]
Just so you have an idea what I'm looking at, I was having some issues getting the much firmaware to compile on macOS. I spotted some fixes in later nuttx releases related to exactly that. Since you also work on macOS, I think that's worth sorting out.

pepijn [2020-07-20 08:34:15]
That's why I was asking about the base nuttx version that was used for this project.

julian [2020-07-20 08:34:44]
Copy that. I think you were on cc' to the mail I sent <@U0DDJ0QSY> but I haven't heard back. Finnish summer vacation, I reckon..

pepijn [2020-07-20 08:35:42]
My plan now is to put vanilla nuttx on a branch, v7.12 I think, get that to compile, and then see how big the delta is compared to the mcu version.

julian [2020-07-20 08:42:30]
Were you able to ultimately get it to build? Is the reason to find the diffs between the public branch and whatever <@U0DDJ0QSY> did just to sorta..map the terrain? (Note that I would be similarly disposed to understand where the diffs are and why..)

julian [2020-07-20 08:43:25]
One thing I do remember going back and forth on were issues related to USB connectivity. I remember <@U0DDJ0QSY> digging about in "the forums" to try and figure out why the USB connectivity was misbehaving, particularly on macOS. I don't know if this is where there may've been some divergence, tbh.

julian [2020-07-20 08:43:59]
I believe some patch may have been taken from somewhere specific to this topic and merged in.

pepijn [2020-07-21 00:17:33]
No luck with compiling yet. Still trying to figure out how everything's tied together.

pepijn [2020-07-21 00:20:16]
The reason for the diff work is mainly to figure out which parts of the code are omata specific and which ones are not.

pepijn [2020-07-21 06:11:36]
One I know what those are I can apply just the Omata/Haitian changes on a branch. That in turn makes it much easier to upgrade the baseline on the nuttx branch and merge that into the main branch. Once you've got that set up, git does a lot of the heavy lifting.

pepijn [2020-07-21 06:12:59]
The nuttx developers did a bunch of build improvements related to macos in later 7.x versions, so I'm slowly working my way towards bumping the nuttx baseline version.

pepijn [2020-07-21 06:13:38]
Sticking to the 7.x releases since 8.x and on reorganised a lot of the source tree.

ts [2020-07-21 16:34:41]
You're a hero <@UA6CC3MT5>!

ts [2020-07-21 16:35:43]
I'm barely able to keep tabs but very much interested in building things for Omata

julian [2020-07-21 18:15:12]
Hey <@U012F84BCV9>! Hope you're okay up there!

ts [2020-07-21 20:37:11]
Seattle is very wild! My partner works at the Rapha clubhouse here. And some super fancy restaurant

ts [2020-07-21 20:38:38]
But we're good. I just might be moving from an ant+ Quarq to a dzero so that's nice for me and testing both channels

pepijn [2020-07-26 08:57:13]
<@U08B65RM0> I made some good progress today. I've been reading up on NuttX, how to configure it, compile it, how the source tree is laid out, etc. With that knowledge I've been able to get things compiling and I've just deployed a local debug build of the MCU firmware to my Omata

pepijn [2020-07-26 08:58:12]
In the end I didn't have to do the NuttX version upgrade I though might have been necessary; this is the exact code Harri provided

julian [2020-07-26 09:02:09]
WHAAAT!? Amazing!

julian [2020-07-26 09:02:31]
And your Omata is not a door stop presumably? Or paper weight..

pepijn [2020-07-26 09:02:37]
:smile:

pepijn [2020-07-26 09:02:43]
the hands still move

julian [2020-07-26 09:02:49]
This is awesome news with my morning coffee!

pepijn [2020-07-26 09:03:05]
syslog output is showing up in my serial console

pepijn [2020-07-26 09:03:15]
so I think I'm good

julian [2020-07-26 09:03:24]
So you run it with the usb as console output?

pepijn [2020-07-26 09:03:34]
indeed

julian [2020-07-26 09:04:03]
The build chain is fairly hygienic- nothing weird to make a build?

pepijn [2020-07-26 09:04:27]
nope

julian [2020-07-26 09:04:51]
That’s great news. A bit of a relief I suppose..

pepijn [2020-07-26 09:05:34]
The only thing I haven't figured out yet is how to automatically fill in the version number using the current data and git commit id

pepijn [2020-07-26 09:06:00]
It's sourced from a `.version` file, but that's in `.gitignore` and afaict does not get updated by the Makefile

pepijn [2020-07-26 09:33:23]
Alright, that's fixed. `[1595781131.480]ble_api_get_sw_version: '2020.07.26.048f34c_Manu_Development_dbg'`

pepijn [2020-07-26 09:47:54]
<@U08B65RM0> I built the nRF52 firmware and installed that as well. So I think we're all set for tinkering.

pepijn [2020-07-26 09:51:25]
Do you have a shortlist of 'stuff that's not quite working the way it should yet'? Specific ANT+ sensor issue for instance?

pepijn [2020-07-26 09:53:06]
Regarding the height profile thing, I've been able to confirm that the pressure sensor is only used for ascent tracking and the altitude in the FIT records is sourced from GPS only.

pepijn [2020-07-26 10:08:57]
<@U08B65RM0> I've added some extra instructions on compiling the MCU firmware. When you have a chance could you give those a try? I would like to make sure we're at a point where the build is reproducible for both of us.

julian [2020-07-26 10:10:35]
Yes, definitely.

julian [2020-07-26 10:12:13]
I just fast-forwarded my local repo. Hope that worked okay.

julian [2020-07-26 10:12:42]
Will I need to run setup again?

julian [2020-07-26 10:16:26]
So, it looks like `configure.sh` is actually in the tools folder under nuttx, and then the Makefile is in the nuttx directory?

julian [2020-07-26 10:16:45]
(Small discrepancy with the README..just checking..)

julian [2020-07-26 10:20:30]
Okay, so when I ran `configure` to do a debug build and then ran `make` in the nuttx directory I had an uneventful build (no complaints..) that produced the `nuttx.hex` `nuttx.bin` and `nuttx.dfu` with no apparent issues.

pepijn [2020-07-26 10:31:10]
Excellent! I'll correct the instructions later this evening.

julian [2020-07-26 11:10:44]
Check

ts [2020-07-28 11:53:31]
Hey all! Sorry to be so in and out recently! I will review the recent convo and try to reproduce myself as well!

ts [2020-07-28 13:41:05]
Compiled the nRF52 firmware no problem

ts [2020-07-28 13:41:19]
Just about to do the MCU

julian [2020-07-28 13:41:37]
<@UA6CC3MT5> sorted it out proper, eh? Just builds..I was waiting for all kindsa kruft to get spit out..just goes.

ts [2020-07-28 13:42:09]
nrf52_update.hex is the final name for loading onto the One, correct?

ts [2020-07-28 13:42:21]
Just trying to be super throrough after so much time away

ts [2020-07-28 13:42:37]
For nRF52 firmware that is

julian [2020-07-28 13:42:39]
That's the name that will get read in and flashed to the NRF52 chip, yes.

julian [2020-07-28 13:42:42]
Yep.

ts [2020-07-28 13:43:22]
MCU gets renamed, but we could just build that in as well after all <@UA6CC3MT5>'s massive effort

julian [2020-07-28 13:47:41]
`nuttx.dfu` is for DFU flashing, whereas `update.oci` is the file that can get dragged onto the flash card.

julian [2020-07-28 13:48:03]
I've had to use DFU flashing for some troublesome early devices that have difficulty mounting as a USB drive..

julian [2020-07-28 13:48:06]
(FWIW..)

ts [2020-07-28 13:50:04]
Ooooh, that might be me

ts [2020-07-28 13:51:38]
Mine does this dance where I can't seem to eject it via Finder at the time it really wants it. Tried all sorts. Always get shamed for unmounting

julian [2020-07-28 13:52:21]
Huh. There also might be kruft on the drive. I remember sitting with <@U0DDJ0QSY> as we tried to figure out what was going on and this was an issue that was flagged in the nuttx forums for the USB drivers.

ts [2020-07-28 13:52:37]
Is `nuttx.dfu` different from `nuttx.hex` ?

julian [2020-07-28 13:53:05]
I since use this tool called Clean My Drives that will remove that drive kruft that macOS will put on drives. But, I believe he made some fixes or integrated a patch that was meant to deal with this..

ts [2020-07-28 13:53:10]
It's never bothered me. Much prefer the wireless sync anyway, but just good to note

julian [2020-07-28 13:53:48]
The `.hex` file is hex encoded. I assume the data is the same..I can’t think of how or why it would be, but I could easily be wrong.

julian [2020-07-28 13:54:07]
The DFU flashing is slightly more involved but only slightly.

julian [2020-07-28 13:54:31]
It requires connecting to the device over a serial port and then entering it into DFU mode from the nuttx prompt.

julian [2020-07-28 13:56:16]
I use the macOS program `Serial` but it can also be entered into using the `screen` command..you just need to figure out what device in /dev is the Omata One. It’s not always immediately obvious. Whereas with `Serial` you are only shown serial devices connected and it’ll be like..your speakers, a mouse, and then something odd and that odd thing is very likely the Omata.

julian [2020-07-28 13:56:50]
That all said, the ‘drop a file on the drive’ mechanism should always work in general, although sometimes the transfer gets hung up and needs to be run again..

julian [2020-07-28 13:57:15]
There’s also the OmataCLI which writes the firmware file over Bluetooth, same as the Rx App.

julian [2020-07-28 13:57:33]
I just like to see the data getting written..somehow a bit more reassuring..

pepijn [2020-07-29 00:44:49]
If you two want to start nosing around the code as well, the main directories to start reading code are `manu-mcu-firmware/apps/external/manu` for the MCU firmware and `manu-nrf52-firmware/src` for the nRF52 firmware The nRF52 is the BLE/ANT+ chipset. It executes code independently of the MCU, but is controlled via the MCU via the SPI () bus. See `manu-nrf52-firmware/src/utils/main_mcu_comm.h` and `manu-mcu-firmware/apps/external/manu/include/manu_spi.h` for the two sides of that. The MCU is the one running the show. The main 'process' is entry point is at `manu-mcu-firmware/apps/external/manu/app/manu_main.c#manu_main`. What that does is perform an initial bit of setup by calling `switch_state` and then kicks off an event processing loop. From that point on the whole thing is essentially callback driven.

pepijn [2020-07-29 01:12:06]
The state of the MCU application is held in a global variable `g_manu_app`. This serves as the shared blackboard that all the callbacks read data from and write data to. What I'm look at now in detail is how the altitude value is managed/tracked. This is a bit messy at the moment IMO. Ascent is tracked using the simple 'pressure_delta_in_pascal / 12' logic. Altitude itself on the other hand is computed from pressure and temperature using the hypsometric equation . That's then corrected using the GPS altitude. This bit of logic plays fast and loose with vertical datums and is what I suspect may be the root cause of the -30m below sea level altitude values I was seeing, but that's still to be confirmed. The direction I'm thinking of going here is to try to improve the quality of the altitude tracking. Ascent would then simply be a derived value from the changes in altitude. In other words, change the code to have one canonical source of altitude information and compute the altitude delta from that. <@U08B65RM0> we don't have the history of the source code, so I need to derive intent from the code as it is today. Are there any insights you might have from during the development related to the altitude tracking?

ts [2020-07-29 07:28:20]
Just got the MCU building as well

ts [2020-07-29 07:28:24]

ts [2020-07-29 07:34:12]
Might have missed it somewhere, but is the version number for either of these different than what i already have on my device? Mostly just want to verify that the One takes my firmware builds is all

julian [2020-07-29 07:52:10]
Hmm..actually just sitting here without digging, I'm not sure how or if the version is encoded anywhere..without checking in XCode (not enough coffee yet..) I'm not sure how I determine version in the App. API call?

pepijn [2020-07-29 07:57:24]
<@U012F84BCV9> it's different, but the app doesn't always seem to pick that up right away. I had to force quit the app and restart it and then I saw the proper version.

pepijn [2020-07-29 07:59:19]
If you build locally, the version string will be ```ifeq ($(CONFIG_DEBUG),y) GITVERSION_SUFFIX=Manu_Development_dbg else GITVERSION_SUFFIX=Manu_Development endif GITVERSION_CUR=${shell date "+%Y.%m.%d"}.${shell git rev-parse --short HEAD}_$(GITVERSION_SUFFIX)``` So something like `2020.07.09.<git sha abbreviation>_Manu_Development_dbg` See manu-mcu-firmware/nuttx/Makefile.unix:465

pepijn [2020-07-29 08:00:25]
The nRF52 firmware version is defined at manu-nrf52-firmware/manu_app.mk:5. I set it to 0.0.23 for now which is one higher than the last released build

pepijn [2020-07-29 08:03:00]
<@U08B65RM0> I spotted `if [ "$(JENKINS_BUILD)" = "" -a "$(GITVERSION_CUR)" != "$(CONFIG_VERSION_BUILD)" ]` in the Makefile. My assumption is that when building proper releases Haltian's build script running on Jenkins is generating a `.version` file for that build specifically. Something we could replicate using for instance GitHub actions.

julian [2020-07-29 08:16:45]
Check.

pepijn [2020-07-30 03:36:14]
<@U08B65RM0> just an FYI (no idea how relevant this is for you), but with the latest and greatest CLion version (2020.2), Makefile based project support was added. Before that it could only 'understand' CMake based projects. I've added a top-level Makefile and that seems to have been sufficient to get things working. With that small change all smart code features like 'find usages', 'navigate to declaration/implementation', etc. started working. Makes it much easier to browse through the code.

julian [2020-07-30 08:02:13]
Funny. I was going to ask what IDE you were using..

julian [2020-07-30 08:04:29]
I have a Jetbrains license but I haven't used the tools in a bit. Good enough excuse to update.

pepijn [2020-07-30 08:09:49]
I've been using their tools for 15+ years; hard to get accustomed to anything else at this point

pepijn [2020-07-30 08:10:10]
Especially XCode is this weird alien monster :smile:

julian [2020-07-30 08:10:48]
Yes, if memory serves they were one of the better. I also recall seeing the "bones" of their IDE in other IDEs, such as one I was using when I was first trying to build code for the nRF52 *way back in 2015..

julian [2020-07-30 08:11:09]
(That wasn't pleasant..but I do recall making friends with someone from one of the forums who was quite helpful..)

pepijn [2020-07-30 08:23:35]
<@U08B65RM0> I'm tinkering away at the firmware. I just pushed a first functional change on master and then realised it might be better to do that on a branch. Any preference from your side?

julian [2020-07-30 08:30:15]
I think a branch is probably more legible in the grand scheme.

pepijn [2020-07-30 08:31:54]
:+1:

pepijn [2020-07-30 08:35:38]
I've reset master back to before my code changes and moved the work I'm doing to an altitude_tracking branch

julian [2020-07-30 08:39:45]
Also, I wanted to fill you guys in on what I've been up to on this end which is about 80% updating our pitch material, or re-doing it I suppose. (10% operational stuff, and the other 10% I'm not sure what I was doing..) It seems that showing where I hope to take the company in the future is what prospective investors want to hear, which makes sense of course. I have this super detailed financial model — the mother-of-all spreadsheets, basically. It has all the "numbers" from the beginning of time up to the present (just about - it's being finished up to the end of July) and then it has projections forward, which are basically fiction. And a pitch deck that I was/am not especially proud of. So, what I have been working on is coming up with an audacious future — growing the brand and the portfolio of products, a lean highly efficient team, etc — but represented in a more vivid way than a typical pitch deck. The archetype of this won't be the 12 page powerpoint "deck" but the `Omata Annual Report from 2024`. It took years for me to realize that I had been running the company as I thought people expected someone with, an MBA or whatever to run a company rather than run the company as "Julian" would. And, well — when I asked a colleague how they would do the pitch deck, they snapped back, 'how would Julian do the pitch deck?' And, well — I've done pitch decks and related work for the clients from my little design agency and I'd never do a 12 page powerpoint deck for them. I'd cajole them into doing an annual report from the future as a way to tell a richer story than can be told in a 12 page powerpoint deck. So, there you go..just so you know what else I'm doing just in case I go silent for an hour or two.. And/also — I can't believe how fortunate I am that you guys are here helping. Thank you..I'm curious how you guys will show up in the Annual Report! :rolling_on_the_floor_laughing:

pepijn [2020-07-30 08:54:16]
Some random guy on the internet offered to help out a bit and then some innocent looking firmware change got into production and bricked all the Omatas out there :smile:

julian [2020-07-30 09:26:54]
Hahahahahaha!

julian [2020-07-30 09:27:54]
And memes and animated GIFs of Pepijn with devil horns and pirate ear rings sneaking around with a gigantic cutlass slashing people's bicycle tires in the middle of the night..

julian [2020-07-30 10:17:02]
CLion updated..let's see what happens..

pepijn [2020-07-30 13:01:12]
I already have a small update for you on the altitude stuff Julian. Have a look at this output:
```[1596138634.908]gps_cb: GPS_EVENT_LOCATION: lon: 47488071, lat: 509034894, hacc: 18522, amsl: 35553, aell: 81777, vacc: 26844 [1596138638.308]gps_cb: GPS_EVENT_LOCATION: lon: 47487865, lat: 509035234, hacc: 15306, amsl: 41275, aell: 87499, vacc: 28204 [1596138638.368]gps_cb: GPS_EVENT_LOCATION: lon: 47487648, lat: 509035328, hacc: 11660, amsl: 47586, aell: 93809, vacc: 24968 [1596138638.428]gps_cb: GPS_EVENT_LOCATION: lon: 47487531, lat: 509035407, hacc: 8727, amsl: 48359, aell: 94583, vacc: 22001 [1596138638.908]gps_cb: GPS_EVENT_LOCATION: lon: 47487519, lat: 509035400, hacc: 7780, amsl: 46712, aell: 92936, vacc: 18900 [1596138639.918]gps_cb: GPS_EVENT_LOCATION: lon: 47487485, lat: 509035296, hacc: 7144, amsl: 49566, aell: 95790, vacc: 17595 [1596138640.908]gps_cb: GPS_EVENT_LOCATION: lon: 47487482, lat: 509035198, hacc: 6511, amsl: 50233, aell: 96457, vacc: 16909 [1596138641.958]gps_cb: GPS_EVENT_LOCATION: lon: 47487580, lat: 509035118, hacc: 6085, amsl: 50015, aell: 96239, vacc: 15993 ... [1596138673.908]gps_cb: GPS_EVENT_LOCATION: lon: 47487209, lat: 509035503, hacc: 3756, amsl: 54247, aell: 100471, vacc: 9368 [1596138674.908]gps_cb: GPS_EVENT_LOCATION: lon: 47486994, lat: 509035553, hacc: 3707, amsl: 54453, aell: 100676, vacc: 9151 [1596138675.908]gps_cb: GPS_EVENT_LOCATION: lon: 47486828, lat: 509035667, hacc: 3645, amsl: 54327, aell: 100550, vacc: 9121 [1596138676.908]gps_cb: GPS_EVENT_LOCATION: lon: 47486704, lat: 509035780, hacc: 3584, amsl: 54104, aell: 100328, vacc: 9008 [1596138677.898]gps_cb: GPS_EVENT_LOCATION: lon: 47486705, lat: 509035901, hacc: 3465, amsl: 53190, aell: 99414, vacc: 8965 [1596138678.908]gps_cb: GPS_EVENT_LOCATION: lon: 47486744, lat: 509035944, hacc: 3321, amsl: 51871, aell: 98095, vacc: 8956```

pepijn [2020-07-30 13:02:07]
This is me walking around on an essentially level street. `amsl` , `aell` , and `vacc` are above-mean-sea-level in mm, above-ellipsoid in mm and vertical accuracy in mm

pepijn [2020-07-30 13:02:54]
Focusing on `amsl`/`vacc` you can see initially the gps is saying 35m +- 26m and progressively this improves to 51m +- 9m

pepijn [2020-07-30 13:03:17]
the calibration of the barometric altitude happens based on the very first location update, the one with the +- 26m accuracy
```

pepijn [2020-07-30 13:03:26]
and after that this is never corrected or adjusted.

julian [2020-07-30 13:03:31]
Ah, huh..

julian [2020-07-30 13:03:40]
And that may be the sensor warming up, etc.?

pepijn [2020-07-30 13:03:42]
That explains me going below sea level I think :smile:

julian [2020-07-30 13:04:00]
Or the other way around, why/how does the accuracy increase over time?

pepijn [2020-07-30 13:04:07]
better line of sight, more satellites visible, more readings averaging out over time

julian [2020-07-30 13:04:38]
Copy that. So a simple test case would be to sample accuracy over time?

pepijn [2020-07-30 13:04:46]
that's pretty normal; you can see the hacc doing the exact same thing,

pepijn [2020-07-30 13:05:34]
I'm thinking we mainly want a less simplistic altitude tracking model.

pepijn [2020-07-30 13:06:25]
I'm thinking a sliding average of the GPS altitude as an absolute altitude reference and the barometric delta for precise measurements

pepijn [2020-07-30 13:07:27]
The debug logging is dumping all the values I need now, so next step is what I suggested earlier. Collecting a large enough data dump and then experimenting with various algorithms.

julian [2020-07-30 14:07:02]
<@U012F84BCV9> Are you able to build the iOS App after the latest Xcode updates? I get a build error that isn’t code related but configuration related. I’m trying to diagnose, but just curious if you can build it without any issues?

julian [2020-07-30 14:14:27]
Specifically the Rx App..

ts [2020-07-30 14:41:48]
been a minute since I opened up the Rx App. What v of Xcode are you on? I might be behind on that too tbh

julian [2020-07-30 15:11:59]
11.6

julian [2020-07-30 15:12:13]
I’m fairly certain it’s something on my machine or I suspect this..

julian [2020-07-30 15:12:47]

julian [2020-07-30 15:13:21]
But I’ve been unable to make it go away. Cleaning, deintegrating cocoapods and reinstalling the Pods, etc

julian [2020-07-30 15:13:56]
Running through these..

julian [2020-07-30 15:15:39]
Oh. Maybe my Info.plist for the Rx App has gone missing..

julian [2020-07-30 15:19:27]
Never mind..there it is..

julian [2020-07-30 17:33:50]
I broke SO //

julian [2020-07-30 17:34:02]
Anyway..no joy so far. Bizarre one..

julian [2020-07-30 17:35:07]
That DerivedData directory path doesn’t exist on my system — or it stops after `Build`.

julian [2020-07-30 18:16:09]
So, I got it to build but it’s super krufty and not really right at all. Basically I copied the Info.plist (which in the project is named `Omata Utility App Rx-Info.plist` into that DerivedData directory and named as `Info.plist`..like..wtf Xcode?

ts [2020-07-30 18:19:35]
I’m not even sure I have any background on what target is for what now that I think about it!

ts [2020-07-30 18:20:06]
I’ve built OmataUtilityApp many times but now I’m thinking I haven’t touched Rx App

julian [2020-07-30 18:34:10]
It seems to want to process two plists when it builds: ```ProcessInfoPlistFile /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Products/Debug-iphoneos/OmataRx.app/Info.plist /Users/julian/Code/omata/OmataUtilityApp/OmataRx/Omata\ Utility\ App\ Rx-Info.plist (in target 'OmataRx' from project 'Omata Utility App') cd /Users/julian/Code/omata/OmataUtilityApp builtin-infoPlistUtility /Users/julian/Code/omata/OmataUtilityApp/OmataRx/Omata\ Utility\ App\ Rx-Info.plist -producttype com.apple.product-type.application -genpkginfo /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Products/Debug-iphoneos/OmataRx.app/PkgInfo -expandbuildsettings -format binary -platform iphoneos -additionalcontentfile /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Intermediates.noindex/Omata\ Utility\ App.build/Debug-iphoneos/OmataRx.build/MainOmataRx-SBPartialInfo.plist

-additionalcontentfile /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Intermediates.noindex/Omata\ Utility\ App.build/Debug-iphoneos/OmataRx.build/LaunchScreenRx-SBPartialInfo.plist -additionalcontentfile /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Intermediates.noindex/Omata\ Utility\ App.build/Debug-iphoneos/OmataRx.build/assetcatalog_generated_info.plist -requiredArchitecture arm64 -o /Users/julian/Library/Developer/Xcode/DerivedData/Omata_Utility_App-eunkgvpcqbkkfqerdxjlfxxozaap/Build/Products/Debug-iphoneos/OmataRx.app/Info.plist```

ts [2020-07-30 18:44:57]
Unable to load contents of file list: '/Users/ts/Library/Developer/Xcode/DerivedData/Omata_Utility_App-gadnemncmzzpqsgojiyubedmjadr/Build/Products/Debug-iphonesimulator/OmataRx.app/Info.plist'

ts [2020-07-30 18:45:04]
That's what I just got

ts [2020-07-30 18:45:33]
Seems the same underlying cause

ts [2020-07-30 18:48:30]
The OmataUtilityApp is building for me for the simulator

julian [2020-07-30 18:48:56]
Yeah, okay. Same issue.

julian [2020-07-30 18:48:58]
No clue.

julian [2020-07-30 18:50:10]
If I put the Info.plist file in that directory, it builds fine. But, that entire path isn't created. If I clean and try to build, the path stops after Build — not Products/ subdirectory.

julian [2020-07-30 18:50:34]
If I build that path by hand and shove the .plist in there with the name 'Info.plist' then it builds.

julian [2020-07-30 18:50:46]
:man-shrugging::skin-tone-4:

julian [2020-07-30 18:53:53]
What version of Xcode are you running?

ts [2020-07-30 18:56:26]
Version 11.5 (11E608c)

julian [2020-07-30 18:56:46]
Oh. So maybe it's not Xcode at all..

julian [2020-07-30 18:57:00]
I mean the 11.5 vs. 11.6

ts [2020-07-30 18:57:18]
I have been playing with a super small SwiftUI port of the app just to keep me fresh. It;s sooooo fast

ts [2020-07-30 18:57:38]
Yeah, seems not Xcode this one time

julian [2020-07-30 18:58:40]
Hrm..

julian [2020-07-30 19:00:31]
Maybe a permissions thing, but like..

ts [2020-07-30 19:02:50]
Are you able to build the Utility App okay?

julian [2020-07-30 19:02:57]
Yes.

ts [2020-07-30 19:03:07]
I only hit a roadblock with the Rx App

ts [2020-07-30 19:03:10]
Okay cool

ts [2020-07-30 19:03:13]
Same page

ts [2020-07-30 19:03:59]
I've done ZERO digging, but it's weird that the Rx App fails when asking for some stuff from the Utility App

ts [2020-07-30 19:04:10]
I'll dig in

julian [2020-07-30 19:05:00]
Yeah. It seems to be that somehow during the build the Info.plist file is meant to be copied into the DerivedData hierarchy and it simply isn't. Which made me wonder about it being a permissions issue but, like..

julian [2020-07-30 19:05:12]
we're both seeing this problem.

pepijn [2020-07-31 06:08:05]
<@U08B65RM0> Are you still expecting Haltian to work on the firmware source code?

pepijn [2020-07-31 06:08:53]
clang-tidy doesnt't like the `__manu` prefixes because of

pepijn [2020-07-31 06:09:29]

I was thinking to get rid of those underscores to get rid of a load of warnings in my IDE, but perhaps you want to stick as close to what the Haltian version as possible?

julian [2020-07-31 07:23:32]
It is entirely possible that they work on it at some point in the future, but there is not a specific plan/schedule for such..

pepijn [2020-07-31 07:41:42]
I guess you could ask them to continue working based on the github project if/when that happens

pepijn [2020-07-31 07:42:06]
I'll leave the nuttx bits as untouched as possible to avoid any conflicts there

julian [2020-07-31 08:38:24]
Okay. I think you're right. If you're able to work on it they should be able to pick things up at such a point as I bring them back into the program, I would think..

pepijn [2020-07-31 10:37:44]
Time for a data collection ride... in 38°C... :sweat:

julian [2020-07-31 10:38:03]
Ooof…and I thought it was hot here!

pepijn [2020-07-31 10:38:51]
Unusually hot for Belgium. Temperatures are dropping back to low 20s over the weekend

julian [2020-07-31 10:39:27]
Well..in the future Belgium might be the new Mediterranean, sadly..maybe I'll buy Belgium Olives someday.

julian [2020-07-31 10:40:02]
Belgian Olives.from the finest coastal vineyards..

ts [2020-07-31 10:40:07]
Yikes! That's a warm one indeed <@UA6CC3MT5>

julian [2020-07-31 10:40:29]
I'm still stuck with this Xcode configuration issue..making me a bit mental..

pepijn [2020-07-31 10:40:50]
Slow and steady. I need to practice staying in the low HR zone anyway :smile:

julian [2020-07-31 10:40:55]
I was even thinking of trying the Xcode beta but I can't seem to track down why it's doing what it's doing..

ts [2020-07-31 10:42:53]
I'm just now updating to 11.6

julian [2020-07-31 10:54:11]

There’s a worse version out I think..the beta in anticipation of Big Sur, I think.

pepijn [2020-07-31 12:43:03]
That should do it. Just over an hour worth of data. I've got some climbs in there and some very flat sections along the canal.

julian [2020-07-31 12:45:08]
Did you ride underwater? I guess the data will tell us..

pepijn [2020-07-31 13:00:10]

pepijn [2020-07-31 13:00:28]
not according to Strava, but I think they correct the altitude profile based on their own terrain model, right?

julian [2020-07-31 13:55:23]
I would reckon they ground truth..how does that compare to the omata data?

julian [2020-07-31 14:04:11]
Back in a bit..grocery shopping.. :mask: :shopping_trolley: :carrot:

pepijn [2020-08-01 08:34:25]
I haven't checked yet. I realised when I got back home I was still dropping precision. :face_palm:

pepijn [2020-08-01 08:35:36]
At first I had modified the code to use single-precision floating point everywhere, but then I realized in time that a CortexM3 doesn't have a hardware floating point unit.

pepijn [2020-08-01 08:38:03]
I've modified the code now so that it uses integer mPa and mC (millidegrees Celsius). I noticed from looking at the output I've collected so far that small differences in pressure and temperature already make quite a bit of difference in reported altitude so I want to keep as much precision as possible. That doesn't improve accuracy by itself of course, but by truncating the raw input data we're making the accuracy worse before we even start calculating anything.

pepijn [2020-08-01 09:08:57]
```[1596297809.970]handle_pressure_event: [ride/pressure] pressure: 101613.62Pa, temperature: 33.0C -> altitude: -25.50m [1596297810.980]handle_pressure_event: [ride/pressure] pressure: 101613.47Pa, temperature: 33.0C -> altitude: -25.48m [1596297811.970]handle_pressure_event: [ride/pressure] pressure: 101613.74Pa, temperature: 33.0C -> altitude: -25.51m [1596297812.970]handle_pressure_event: [ride/pressure] pressure: 101613.60Pa, temperature: 33.0C -> altitude: -25.49m [1596297813.970]handle_pressure_event: [ride/pressure] pressure: 101613.23Pa, temperature: 33.1C -> altitude: -25.46m [1596297814.970]handle_pressure_event: [ride/pressure] pressure: 101612.96Pa, temperature: 33.0C -> altitude: -25.44m [1596297815.970]handle_pressure_event: [ride/pressure] pressure: 101611.94Pa, temperature: 33.1C -> altitude: -25.35m [1596297817.050]handle_pressure_event: [ride/pressure] pressure: 101611.13Pa, temperature: 33.1C -> altitude: -25.28m [1596297818.060]handle_pressure_event: [ride/pressure] pressure: 101610.47Pa, temperature: 33.1C -> altitude: -25.22m [1596297819.070]handle_pressure_event: [ride/pressure] pressure: 101610.03Pa, temperature: 33.1C -> altitude: -25.18m [1596297820.080]handle_pressure_event: [ride/pressure] pressure: 101609.35Pa, temperature: 33.1C -> altitude: -25.12m [1596297821.090]handle_pressure_event: [ride/pressure]
```

pressure: 101608.64Pa, temperature: 33.1C -> altitude: -25.06m
[1596297822.100]handle_pressure_event: [ride/pressure] pressure: 101607.69Pa, temperature: 33.1C -> altitude: -24.98m [1596297823.110]handle_pressure_event: [ride/pressure] pressure: 101606.76Pa, temperature: 33.1C -> altitude: -24.90m [1596297824.120]handle_pressure_event: [ride/pressure] pressure: 101605.66Pa, temperature: 33.1C -> altitude: -24.80m
[1596297825.130]handle_pressure_event: [ride/pressure] pressure: 101604.93Pa, temperature: 33.1C -> altitude: -24.74m ... [1596297853.410]handle_pressure_event: [ride/pressure] pressure: 101576.20Pa, temperature: 33.3C -> altitude: -22.22m [1596297854.420]handle_pressure_event: [ride/pressure] pressure: 101575.17Pa, temperature: 33.4C -> altitude: -22.13m
[1596297855.430]handle_pressure_event: [ride/pressure] pressure: 101574.22Pa, temperature: 33.4C -> altitude: -22.04m [1596297856.440]handle_pressure_event: [ride/pressure] pressure: 101572.46Pa, temperature: 33.4C -> altitude: -21.89m [1596297857.450]handle_pressure_event: [ride/pressure] pressure: 101571.90Pa, temperature: 33.4C -> altitude: -21.84m
[1596297858.460]handle_pressure_event: [ride/pressure] pressure: 101570.77Pa, temperature: 33.4C -> altitude: -21.74m [1596297859.470]handle_pressure_event: [ride/pressure] pressure: 101569.75Pa, temperature: 33.4C -> altitude: -21.65m [1596297860.480]handle_pressure_event: [ride/pressure] pressure: 101568.51Pa, temperature: 33.4C -> altitude: -21.54m
[1596297861.490]handle_pressure_event: [ride/pressure] pressure: 101567.45Pa, temperature: 33.4C -> altitude: -21.45m [1596297862.500]handle_pressure_event: [ride/pressure] pressure: 101566.67Pa, temperature: 33.4C -> altitude: -21.38m [1596297863.520]handle_pressure_event: [ride/pressure] pressure: 101567.80Pa, temperature: 33.4C -> altitude: -21.48m```

pepijn [2020-08-01 09:10:45]
Looking good. The values displayed here are `%.2f` and `%.1f` formatted, so only an approximation, but you can already see that we were discarding information.

julian [2020-08-01 09:18:02]
Excellent. Actually, I think the fact that you are in a relatively flat terrain area may be quite useful!

julian [2020-08-01 09:18:24]
Let me know if you need me to do some flat rides! More than happy to trundle along the coast!

julian [2020-08-01 09:19:10]
Also, fwiw, here’s my pitch to SO about this compilation issue the Rx App is experiencing. I spent probably too much time yesterday trying to sort this out. It’s bigger than me..

julian [2020-08-01 09:19:11]

pepijn [2020-08-01 10:10:23]
<@U08B65RM0> sure extra data is welcome

pepijn [2020-08-01 10:11:06]
You’ll have to configure for `omata-manu/retail-dbg` and compile the latest revision of the `altitude_tracking` branch

julian [2020-08-01 10:14:10]
Yeah?

pepijn [2020-08-01 10:20:23]
:+1:

julian [2020-08-01 10:22:10]
Huh. That was painless..

julian [2020-08-01 10:22:52]
I'm assuming that the data you've been posting is generated from the syslog?

pepijn [2020-08-01 10:54:56]
Indeed

pepijn [2020-08-01 10:55:08]
Hence the need for the debug build

julian [2020-08-01 11:18:34]
Gonna give it a whirl..super exciting to finally have fingertips in the firmware, tbh. Thanks again for all your help and wisdom!

ts [2020-08-01 16:24:27]

ts [2020-08-01 16:24:56]
Smooth update for me. Heading out for a quick one to test!

ts [2020-08-01 21:15:52]
Recorded fine, though no power or HR, which have worked 100% thus far for me. Very reasonable to assume that updating firmware and NOT repairing those devices would lead to this. just another data point!

pepijn [2020-08-01 23:16:41]
<@U012F84BCV9> tbh I haven't looked into the ant+ stuff in detail yet. The paired device ids are stored in a .fit file so I would not expect anything to break/change because of a firmware update. Perhaps this has to do with the Nordic softdevice license key.

pepijn [2020-08-02 02:40:56]

pepijn [2020-08-02 02:41:26]
Is the ANT+/BLE firmware check that controls ANT+ sensor pairing availability in the app too strict?

pepijn [2020-08-02 02:45:22]
<@U012F84BCV9> fwiw I don't seem to have gotten any ANT+ sensor data for my last rides. ```[1596297724.787]__manu_fit_get_bike_profile: en: 1, index: 0, 'Ridley', spd(1): BD94, cad(1): 12D8, spdcad(0): 0000, pwr(0): 0000``` You can see that, at least according to the configured settings, my speed and cadence sensors are still paired

ts [2020-08-02 08:33:19]
Interesting!

ts [2020-08-02 08:34:43]
Another thing I wondered about is devices with dual BLE and ANT+. I can't be certain which protocol either my Quarq or my HRM is using in app

ts [2020-08-02 11:30:28]

<@U08B65RM0> Did you get any alpha characters with the Omata Numerals?

ts [2020-08-02 11:30:46]
And on that note, do you have an .otf/ttf file of them?

julian [2020-08-02 12:39:02]
The omata numeral set is just numbers..

julian [2020-08-02 12:39:18]
I have the font file - I'll send it through in a bit

julian [2020-08-02 18:04:55]
So, this is my syslog from a mostly flat ride along the coast..

pepijn [2020-08-03 00:44:47]
<@U08B65RM0> do you have any ideas on how to debug the nRF52 code? Writing output to syslog is not directly possible afaict.

pepijn [2020-08-03 05:31:20]
I messed around a bit with the SPI protocol and was able to send some log output over that channel. I didn't want to mess with the protocol too much (not sure what the implications are) so it's capped to 20 characters per message at the moment, but that's good enough for now. At least that way I can get some insight into what's going on on the nrf side

julian [2020-08-03 06:41:47]
Maybe the reason for the devices with the hard serial lines coming out of them, is the only vague thing I can recollect. I never actually used them though so I can't be entirely sure..

pepijn [2020-08-03 06:58:13]
I'm on the trail of the ant+ issue. The ant+ network key was not filled in in the nrf firmware.

pepijn [2020-08-03 06:58:36]
I've added that, but still didn't see any devices popping up during scan.

pepijn [2020-08-03 06:58:46]
More debugging to be done.

pepijn [2020-08-03 07:00:19]
Would be good to get some input from Haltian on this. I feel like I'm reinventing the wheel a bit.

julian [2020-08-03 07:18:57]
I'll ping them. I suspect they may be on that Finnish summer vacation, but let's see what comes back.

pepijn [2020-08-03 07:37:41]
there's no rush, but I might just put this on hold until we hear back from them

pepijn [2020-08-03 07:40:06]
aha! > Detected ANT+ sensor 48532 (type: Speed, rssi: -39)

pepijn [2020-08-03 07:41:07]

so it was just the key after all; my speed sensor was just being a pain and not powering on

pepijn [2020-08-03 07:42:07]
I'm going to put the fixes for ANT+ on the master branch already Julian

pepijn [2020-08-03 07:54:34]
<@U08B65RM0> <@U012F84BCV9> I rebased the altitude_tracking branch so that it includes the ANT+ network key fix. I think with that change sensors should work again.

julian [2020-08-03 07:55:20]
Oh, fantastic..well..in the interests of efficiency and maybe getting Harri to just have a glance, I had already sent the mail (cc'd you fwiw..)

julian [2020-08-03 07:55:32]
Could be a good use for the old trusty `README` in any case..

pepijn [2020-08-03 07:56:01]
For now I've just hardcoded it into a header file

julian [2020-08-03 07:56:06]
(By the by, similar situation when I was first testing the App side in that the battery in my power meter was shot..I keep a few in the fridge now..)

pepijn [2020-08-03 07:56:28]
I guess you would typically inject it externally somehow to avoid accidentally redistributing it, but since this is in a private repo I think it's acceptable.

julian [2020-08-03 07:56:47]
Copy that.

pepijn [2020-08-03 07:57:21]
It's not a unique key per licensee or anything, you just need to agree to the license terms that you'll only use this to release profile compliant ANT+ devices.

julian [2020-08-03 07:57:22]
If you rebased, `git fetch` should catch me up?

pepijn [2020-08-03 07:57:54]
a fetch and a reset will be necessary.

julian [2020-08-03 08:04:38]
Ugh. I'm going to start over. git told me I'm 6 commits ahead which is rubbish..

pepijn [2020-08-03 08:05:09]
no need to restart

pepijn [2020-08-03 08:05:13]
`git fetch --all`

pepijn [2020-08-03 08:05:48]

and then `git reset`

julian [2020-08-03 08:06:25]
Yeah, I sorta thought but still..

pepijn [2020-08-03 08:06:52]
:thinking_face:

pepijn [2020-08-03 08:06:59]
at that point I use the CLion UI :smile:

julian [2020-08-03 08:07:12]
Copy..

julian [2020-08-03 08:07:29]
I still haven't gotten CLion properly set up..

pepijn [2020-08-03 08:07:58]
you could try `git reset --hard origin/altitude_tracking`

julian [2020-08-03 08:13:36]
I hit it with a sledge hammer. That sorted it out.

pepijn [2020-08-03 09:03:55]

pepijn [2020-08-03 09:04:48]

pepijn [2020-08-03 09:05:14]
Still fiddling with gnuplot, but that's the barometric and GPS based altitude

pepijn [2020-08-03 09:05:52]
And GPS without the error bars

julian [2020-08-03 09:06:39]
gnuplot..good one.

julian [2020-08-03 09:07:04]
Top one is barometric pressure altitude?

pepijn [2020-08-03 09:07:13]
indeed; not corrected, just the raw calculated value

pepijn [2020-08-03 09:08:30]
I wonder if I have a scaling issue with the GPS value; that seems way too variable

pepijn [2020-08-03 09:08:58]
yep *1000 :smile:

pepijn [2020-08-03 09:14:33]

pepijn [2020-08-03 09:14:37]
<@U08B65RM0> much better

pepijn [2020-08-03 09:14:59]
The top line is GPS altitude, the bottom is barometric

pepijn [2020-08-03 09:16:06]
This shows the 'problem' nicely. GPS is way off in the beginning, gets better over time, but it's very jittery. Barometric is much smoother, but needs to be corrected.

pepijn [2020-08-03 09:16:39]
Taking the very first GPS elevation value to offset all the barometric is going to be off by quite a bit

pepijn [2020-08-03 09:21:02]

julian [2020-08-03 09:21:05]
And if I recall from your earlier comments, the first GPS elevation value was the snapshot that was used throughout the rest of the run?

pepijn [2020-08-03 09:21:06]
That gives you this as a result

pepijn [2020-08-03 09:22:32]
It would be interesting to compare this with the strava height profile. Not sure if there's a way to extract the raw data for that.

pepijn [2020-08-03 09:29:28]

pepijn [2020-08-03 09:29:49]
<@U08B65RM0> could you send me the exported GPX file that corresponds to this ride?

julian [2020-08-03 11:21:49]
`gpsbabel -t -i garmin_fit -f /Volumes/Omata One/Activities/200802174632.fit -o gpx -F /Users/julian/Desktop/200802174632.gpx`

pepijn [2020-08-03 11:23:24]
Would you mind going around via Strava? The Strava support link above describes how to get a GPX file from a Strava activity.

pepijn [2020-08-03 11:24:08]
The FIT file directly off the Omata is going to contain the same values as what I got from syslog. What I'm hoping to get from Strava is an approximation of the 'real' altitude.

ts [2020-08-03 11:25:44]
I can probably send you a couple too if that helps <@UA6CC3MT5>

ts [2020-08-03 11:26:24]
I've done two rides with your first altitude branch

pepijn [2020-08-03 11:27:02]
Absolutely. What I'm trying to do is compile some datasets where I have the raw measurements combined with a source of 'truth'. Assuming Strava uses a digital terrain model to come up with its own altitude profile I think we can use that as our oracle.

ts [2020-08-03 11:36:34]
Cool. I'll zip both rides up in pairs

ts [2020-08-03 13:08:50]

wcrtr [2020-08-03 13:35:23]
<@U08B65RM0> :wave:

julian [2020-08-03 13:35:42]
Jesus Christ..you scared the shit outta me <@U5ZSJAD2S>..

wcrtr [2020-08-03 13:38:07]
no giphy on this slack

wcrtr [2020-08-03 13:38:13]
how am I supposed to communicate with anyone

wcrtr [2020-08-03 13:38:45]
is there a repo I can try and build frash

ts [2020-08-03 13:39:29]
App or firmware?

wcrtr [2020-08-03 13:39:36]
the ios app

ts [2020-08-03 13:39:54]

wcrtr [2020-08-03 13:40:06]
was going to try and help debug the `plist` issue

wcrtr [2020-08-03 13:40:40]
am wcrtr on github if someone can invite me

ts [2020-08-03 13:40:48]
Ooooh nice. That's in the Rx target I think

ts [2020-08-03 13:41:14]
Haven't spent a second looking into it so :woman-surfing::skin-tone-2:

julian [2020-08-03 13:48:31]
It's all crazy that `plist` issue. It's a Stephen King character.

julian [2020-08-03 13:51:30]
<@UA6CC3MT5> Here’s that GPX from Strava

pepijn [2020-08-05 12:28:13]

pepijn [2020-08-05 12:29:09]
<@U08B65RM0> that's the raw pressure data vs the GPX data. The GPX data has been discretized which I believe is an artefact of the FIT encoding.

pepijn [2020-08-05 12:29:25]

pepijn [2020-08-05 12:29:44]
Except for that it's pretty much identical, so it doesn't look like there's any correction going on in Strava

pepijn [2020-08-05 12:35:43]
I'm going to have a go at using to query the actual altitude next.

ts [2020-08-05 12:53:43]
<@U08B65RM0> Has there been any effort to maintain an archive of the firmware (beyond the git repo) for testing/debugging purposes? Seems like it’d be beneficial to have a library of any firmware that got pushed to retail and any we built during testing

julian [2020-08-05 13:21:20]
<@U012F84BCV9> Everything you see here is everything that’s been done..so..not so much. <@UA6CC3MT5> branched the altitude tracking work but that’s it. Nothing at all has gone public. The 3 of us are the only people working and testing.

ts [2020-08-05 13:22:20]
Ahh, sorry, I just meant the prior versions that have gone out, not anything new since <@UA6CC3MT5> dove into it

ts [2020-08-05 13:22:55]
Mainly, right now, I want to revert both firmwares to a known version and document any of the differences in pairing ability/behavior

ts [2020-08-05 13:23:22]
No worries though, since I should be able to just checkout specific commits and build from there!

julian [2020-08-05 13:23:26]
Oh, I’m not worried about cataloging the older firmware tbh. There are only two versions. The 2018 and the 2020. There’s no real reason why anyone would have anything else. Or maybe I’m not following?

ts [2020-08-05 13:23:32]
Perfect!

ts [2020-08-05 13:23:40]
I assumed there were many, but that makes sense

ts [2020-08-05 13:23:56]
You’re following, I had wild assumptions lol

julian [2020-08-05 13:23:58]
N’ah. There were many builds prior to that but until they were stable nothing went out in the world.

ts [2020-08-05 13:24:23]
Do you have links to both sets? I assume I could find them in the test chat?

julian [2020-08-05 13:24:49]
I have an archive of them all with the READMEs and notes and stuff. But..I think we’d just be making work for ourselves if we did much more to catalog them. And, in any case, they are just binaries as it was all before we had access to the source code.

ts [2020-08-05 13:25:02]
Totally agree

julian [2020-08-05 13:25:17]
Did you want the other binaries for some reason?

julian [2020-08-05 13:25:41]
I mean — I’m happy to point you to them but they are just binaries.

ts [2020-08-05 13:26:38]
I’ll track them down. Don’t sweat it!

ts [2020-08-05 17:12:32]
This Rx Plist issue is wild

ts [2020-08-05 17:13:34]
Granted, I’ve never built the Rx target before, but still, this is insane. Cocoapods has served it’s time. SPM is soooo much better suited to take the throne

ts [2020-08-05 17:19:49]
It’s confusing when it says it can’t load contents of the file *list* vs just the file. None of the `.xcfilelist` files in the Rx target mention `Info.plist` so tracking that link down is the best bet

ts [2020-08-05 17:26:12]
My gut says it’s Crashlytics/Fabric related but I’m striking out too

ts [2020-08-05 17:31:07]
Oh shit

ts [2020-08-05 17:31:20]

ts [2020-08-05 20:12:49]
As far as I can tell it’s simply one line in the Crashlytics Run Script build phase. Once I killed that it built immediately

naveen.molloy [2020-08-07 09:55:35]
<@U018TH78V6V> has joined the group

pepijn [2020-08-11 06:20:19]
<@U08B65RM0> I've cooked up a little Ruby script to generate gnuplot data. It takes a GPX file and syslog file as input. The GPX input files I'm using are exported from Strava after making Strava correct elevation and distance. Example results below

pepijn [2020-08-11 06:20:39]
Cyan: Barometer (offset by initial GPS altitude) Green: GPS Purple: Strava

pepijn [2020-08-11 06:21:09]

pepijn [2020-08-11 06:22:25]
Conclusion so far: • GPS is all over the place and needs to be heavily filtered. • Barometer seems reasonable, but is still too jittery and would benefit from some extra smoothing • Using the initial GPS fix to offset the barometric values is not a good idea.

pepijn [2020-08-11 06:22:54]

pepijn [2020-08-11 06:25:51]
This is zoomed in on the barometric data. A low-pass filter should smooth that out nicely and avoid the current ascent overestimate.

julian [2020-08-11 06:57:59]
Amazing. I'd be interested in looking at that Ruby script just for curiosity. If I recall the way the algorithm currently works is that we in fact do use the initial GPS fix as a barometric offset? Would it be safe to say that now with a few tests and the implementation of a low-pass filter we can smooth out the noise and perhaps obtain more accuracy?

ts [2020-08-11 15:55:14]
<@U08B65RM0> What's adding to the wariness? I'm V sure that Crashlytics thing was inconsequential

ts [2020-08-11 15:55:38]
I'm starting a branch that extends the sharing of ride to many services

julian [2020-08-11 15:55:45]
Wary because it didn't cause any issues with the retail app.

ts [2020-08-11 15:55:51]
Cycling Analytics is my go to

ts [2020-08-11 15:56:26]
It didn't because the build schemes were only attributed to the Rx app

julian [2020-08-11 18:00:00]
But I thought Rx and the retail app were using the same pods?

julian [2020-08-13 07:40:45]
So, just stumbled across this fwiw via friend Craig Mod who does book projects..I guess he created his own crowd funding platform called..Craigstarter. Sorta intrigued by this //

ts [2020-08-13 09:39:07]
I saw that! I missed out on the book he built it for but saved that for later.

ts [2020-08-18 14:29:05]
I've got a dummy project that implements OAuth2 for most of the main players we'd likely want to support sending ride data too. Normalizing the auth flow atm

cary [2020-08-18 14:30:32]
I can help connect with the Kamoot crew if needed.

ts [2020-08-18 14:31:54]
Oooh! That would be great <@U945NT4K0>!

ts [2020-08-18 14:32:14]
The only way to get registered is to email them

ts [2020-08-18 14:32:28]

ts [2020-08-18 14:32:49]
That has the link to the "Apply for Partner Access" or whatever they call it

ts [2020-08-18 14:33:25]
Should be pretty simple. Already got Strava and Cycling analytics working. These are a good set of things to aim for:

ts [2020-08-18 14:33:39]

cary [2020-08-20 20:25:52]
<@U012F84BCV9> <@U08B65RM0> Here is the secret sauce for Kamoot ```omata: client_id: omata-2pjmkh client_secret: uxoede5iecoom9aig9ethe2ae```

cary [2020-08-20 20:28:09]
I look forward to this being an option for sure.. nice to offer one that is not competitive in nature. Its nice to have a option purely about the fun of riding..

ts [2020-08-20 21:16:22]
The documentation from komoot is scarce but seems straightforward enough. Should be able to get this into the app tomorrow sometime assuming no disasters at the day job

julian [2020-08-20 21:17:23]
Awesome! I'll be around if you want a second set of eyes or whatever!

pepijn [2020-08-20 23:32:06]
And a third. Also very interested in using Komoot.

cary [2020-08-21 06:36:41]
Once we are up and running any questions let me know I am happy to field the communication with their team. Then we will work on the communication to the World that we are NOW officially Partners with Kamoot, they will feature us on their site and possibly do a email blast about the simply JOY of riding with OMATA and reviewing your data post adventure with Kamoot.

cary [2020-08-21 06:38:00]
Thank you <@U012F84BCV9> for helping get this kicked off.

ts [2020-08-21 08:36:22]
Glad it'll help in more ways than one!

ts [2020-08-24 19:27:30]
Been unconventionally busy but just got OAuth interface situated and flexible enough to handle any of the standard services. Strava and Cycling Analytics and komoot are all authorizing and saving the tokens.

ts [2020-08-24 19:27:45]
Working on generalizing the upload atm

ts [2020-08-24 19:37:54]
<@U08B65RM0>, any reason to hang onto the SwiftyStrava dep when we're basically just authing and uploading? It's looks good, but if we generalize the rest it's just "another dependency"

julian [2020-08-24 20:49:02]
Yeah, happy to decommission that dependency!

pepijn [2020-08-30 04:28:54]
<@U08B65RM0> <@U012F84BCV9> has either of you been testing the iOS 14 betas? Looks like there's some BLE communication problems; the initial sync stops abruptly at the point where activities are being synced.

julian [2020-08-30 10:00:47]
Huh. One of our test team guys Sheldon had the same question and then he tried it on iOS 14 and said he didn't have an issue.

julian [2020-08-30 10:02:03]
(Just for the record/archives let me put his email here so I don't lose track)

julian [2020-08-30 10:03:54]
I personally have not tried installing iOS 14 on my device.

pepijn [2020-08-30 10:04:13]
Ok

julian [2020-08-30 10:04:37]
Pinged him over there in <#C5U8TGFJN|> — let's see if we can get some more details from him.

pepijn [2020-08-30 10:04:38]
I'll try making a debug build and see if I can figure out what's going on.

julian [2020-08-30 10:05:46]
Copy. Thanks. I've been buried in repairs and working on this pitch deck and so just haven't looked at the updates lately.

pepijn [2020-08-30 10:07:27]
No worries Julian. There are only 24 hours in a day.

pepijn [2020-08-30 10:07:53]
I wrote all the BLE stuff anyway. Hoping I can figure it out quickly.

julian [2020-08-30 10:08:54]
Thanks Pepijn! I'm going to write a spec for a 36 hour day and submit it. I'm going to argue that two sunrises a day is good for mental health.

pepijn [2020-08-30 10:22:03]
It'll be easier if you go for 48 :smile:

julian [2020-08-30 10:25:14]
It feels like 48 would make it seem like I didn't really do work figuring out what would be optimal. Like..if I say something slightly unexpected — 32.4 hours or something — then people might pause and consider it.

pepijn [2020-09-07 02:31:19]
Slightly updated version that launches gnuplot directly. Next step is playing with filtering.

julian [2020-09-07 08:41:59]
Whoa..

julian [2020-09-07 19:28:27]
Weird data from a customer. I'm not trusting the GPX data (I'm not sure how they generated it..I'd prefer seeing the .fit file) but the frequency of readings from the Omata is like..3x with lots of noise it seems.

julian [2020-09-07 19:28:33]

ts [2020-09-17 18:01:48]
General update and apology! Day job got busy in the worst way. Just got comfortable with the OAuth stuff again this afternoon. Strava, komoot, and Cycling Analytics are set.

ts [2020-09-17 18:02:27]
komoot is weird because they don't publish the available scopes so I've been guessing :man-shrugging::skin-tone-2:

julian [2020-09-17 18:06:15]
Oh, cool.

julian [2020-09-17 18:06:32]
Weird about komoot..I think <@U945NT4K0> has a contact there which we could nudge if it's an issue?

julian [2020-09-17 18:06:42]
(And thanks again for looking into this!)

cary [2020-09-17 19:30:07]

What specifics do you need answers to from komoot, I will ping them and ask.

ts [2020-09-20 16:58:46]
Specifically the available *scopes* via the API, <@U945NT4K0>.I have seen _profile_ so far but not much else has worked. The only docs I can find are one page.

pepijn [2020-09-21 04:07:48]
<@U012F84BCV9>

pepijn [2020-09-21 04:08:57]
that page lists `profile` and `tour-upload`. I don't think there are any other scopes since that covers pretty much their entire api

cary [2020-09-21 06:57:21]
Let me know if that covers it, I will reach out today if not.

ts [2020-09-21 07:50:16]
Should be all set with that resource <@UA6CC3MT5> linked, thanks <@U945NT4K0>

julian [2020-09-21 10:21:05]
Thanks fellers!

ts [2020-09-22 10:09:45]
I forgot to follow up on my previous question re: any admin dashboard/console for the Omata “app” with komoot. Either we need access to something like that or they need to set some variables for us to complete the integration.

ts [2020-09-22 10:11:06]
For example, here is what Strava shows:

ts [2020-09-22 10:11:46]
And Cycling Analytics:

ts [2020-09-22 10:12:15]
Specifically we need the callbackUrl for komoot to be: ``

cary [2020-09-22 10:12:27]
Can you email me a screen shot of this I will send to them.

cary [2020-09-22 10:12:35]
Driving. Thanks

ts [2020-09-22 10:12:44]
Sorry for all the back and forth, they don’t have a whole lot of documentation around this haha

ts [2020-09-22 10:12:47]
For sure

julian [2020-09-22 10:15:06]

If I remember correctly I set this up once on Strava's end as part of the 3rd party integration "flow" or procedure or whatever, and that was that. But, I've never gone back to this page since then.

julian [2020-09-22 10:16:44]
It was less an App console than something I went to as administrator and plugged in the parameters. Then in the App, the kit I used for the OAuth and some other bit lets iOS know that our app is the listener for any callbacks from the specified URL. That's all set up in the App, or more directly in the..I think it's the Info parameters in Xcode that then bake it into the App..

julian [2020-09-22 10:16:58]
..something like this. It's a bit arcane but very standard, as I recall.

ts [2020-09-22 10:26:04]
Yeah, yeah. The OAuth2 stuff is set and straightforward but with some of those parameters unknown to us, komoot just won't send a token our way.

julian [2020-09-22 10:27:47]
Do you know what they need from us? (I really hate OAuth2 and the hoops you need to jump through, btw..)

ts [2020-09-22 10:28:11]
Yeah, it's crusty

julian [2020-09-22 10:28:13]
Isn't there typically a developer's portal where you configure these things on their side?

ts [2020-09-22 10:28:44]
Precisely

ts [2020-09-22 10:29:23]
Portal is probably the word I should have used instead of dashboard/console

ts [2020-09-22 11:39:15]
Actually was able to get komoot authorizing via `curl` and then was able to uncover a configuration change to get it working in app. :sob:

julian [2020-09-22 12:49:49]
amazing..persistence, eh? good stuff!

pepijn [2020-09-24 04:57:06]

pepijn [2020-09-24 04:57:56]
Slowly making some progress. These are the raw temperature and pressure readings coming from the sensor (disregard the chart titles; those are wrong). You can see quite some jitter on those already and that's going to cause jitter on the altitude readout as well since that's computed directly from these values. Low-pass filtering to the rescue :smile:

pepijn [2020-09-24 04:59:36]
results from my reference loop which is conveniently located outside my house :wink:

julian [2020-09-24 07:53:50]
Are the graphs without the filtering?

cary [2020-09-24 08:33:41]
<@U012F84BCV9> see reply from Kamoot. Cary, I'm Lukas a backend developer here at komoot caring about our partner integrations. We currently are not having such a portal. But we are also not yet enforcing the callback domains, so right now you can redirect to any website you specify in the URL (see redirect_uri parameter in the authorize step here). However, we are having plans for enforcing this, so it would be nice if you would share the final redirect URL you are using in prod. Does this answer your questions?

julian [2020-09-24 12:12:58]
Note from a customer with encouraging results from sensor pairing.

julian [2020-09-24 12:14:43]
Hrm..I wonder what App this is and whether its reading raw FIT data. There was a moment when I was working on a FIT data visualizer that I thought might go along as a listener App that could consume FIT files..

ts [2020-09-24 13:12:45]
It's Cyclemeter I believe

ts [2020-09-24 13:13:00]
I purchased it ~5/6y ago

ts [2020-09-24 13:13:16]
Never really used it to be honest

julian [2020-09-24 13:41:58]
Check..

pepijn [2020-09-25 08:01:50]

pepijn [2020-09-25 08:01:53]
inching closer :smile:

pepijn [2020-09-25 08:02:39]
<@U08B65RM0> I feel like I'm rebuilding that kalman filter tutorial. This is the alpha filter step and you can see the lag effect it introduces as you increase alpha.

julian [2020-09-25 09:06:21]
Oh wow. What poles are you using for the filter?

julian [2020-09-25 09:06:28]
Where does the noise come in?

pepijn [2020-09-25 09:07:39]
Where the noise comes in... tough question

pepijn [2020-09-25 09:09:55]

The firmware is configuring the sensor to do averaging on the sensor itself. It maintains a rolling average of 16 temperature samples and 128 pressure samples. I would have to look up the sampling rate in the datasheet again. Not 100% sure.

pepijn [2020-09-25 09:10:18]
The firmware polls the relevant registers at 1Hz

pepijn [2020-09-25 09:12:01]
The timestamps in the logs are coming in at ~2Hz though. Not entirely sure where the difference is coming from there.

pepijn [2020-09-25 09:13:43]
You can see some noise in the cyan line above. That type of noise is present in both the temperature signal and the pressure signal. Since barometric altitude is derived from those two values you see the same kind of noise in the altitude signal.

pepijn [2020-09-25 09:19:20]
I have to admit at this point I'm just messing around without any clear strategy :smile:

pepijn [2020-09-25 09:19:36]
Just trying to get my head around how to best process this signal without really having the necessary expertise.

pepijn [2020-09-25 09:21:51]
Like I mentioned yesterday I was messing around with an FFT analysis, but I gave up on that and just fudged the alpha value by plugging some approximate values into the formulas from .

pepijn [2020-10-01 11:12:02]
<@U08B65RM0> if you look around long enough you can find code for pretty much anything on the internet: That looks pretty much exactly like what we need.

julian [2020-10-01 12:10:19]
Wow. That says it all. Curious project!

julian [2020-10-01 13:34:53]
I mean..someone had the same question or issues..

pepijn [2020-10-01 23:33:20]
Oh sure, I've found many papers on the subject. Most of them use accelerometers as secondary sensor (which I don't think the omata has). This is the first one I've found that's an exact match for what we need.

julian [2020-10-02 09:00:05]
We actually do have an accelerometer on the PCB. AFAIK it’s used as a kind of “bump” sensor I believe — to come out of auto-pause with a bit of motion.

julian [2020-12-21 07:21:42]
Oof. Been awhile since I posted here. Just a note and an update from the software workstation on this side..I've been working with a friend on doing conversions from FIT files to GeoJSON and GPX and the like to create dynamic maps. He's been working for awhile on a mapping application for embedding

maps in narratives and we've talked over the last couple of months of doing something with the FIT files that come from omata and other devices. Right now, as it turns out, I'm on an old backup laptop as my main one is in the shop, otherwise I'd post and point to some of the work. But, I wanted to mention this before I forget. The dynamic maps are pretty cool and essentially run on top of Mapbox. The map shows the route unfurling over time, so it's more than just a static map of a route. The guy from @loopieroutes is also interested in collaborating. Actually we were supposed to talk about stuff ages ago, but it never happened. Anyway..hope everyone is safe and thriving and all that!

julian [2020-12-21 07:51:14]
Here was the simple page we created on his maps platform (all beta) //

julian [2021-02-12 10:19:46]
Say <@UA6CC3MT5> — I got a question that just came to mind as I was talking to a customer who has the ‘broken switch’ issue such that now the device won’t go into CONNECT. WIth what you may have learned from the firmware side of things do you think it would be possible to have the device go into CONNECT mode for, like..some period of time when it is turned to ‘OFF’? Like..for 15 seconds it goes into CONNECT before going into the ‘OFF’ state?

pepijn [2021-02-13 01:09:22]
Definitely feasible

pepijn [2021-02-13 01:09:45]
The whole thing is modelled as a big state machine. Button presses trigger state changes.

pepijn [2021-02-13 01:10:34]
You could make the off button go to connect state, start a 15s timer to really go to off, and cancel the timer if someone connects in the meantime

pepijn [2021-02-13 01:11:18]
Finding the time to implement that, that’s a different matter. I haven’t had a chance to continue the altitude stuff I wanted to do either

julian [2021-02-21 12:09:42]
<@UA6CC3MT5> — what do you think it would take to compensate you for the time to do this bit of work? I don’t necessarily expect that you will be able to at all, so please keep that in mind. I know you have a young family and a normal, human job. I’m just wondering before I perhaps dive into the code, which I’m sorta intrigued to do — but maybe isn’t the best use of my time at the moment, as stimulating as it would be to dig into it.

shaun.au [2021-04-29 10:50:03]
<@UAB70RB37> has joined the group

julian [2021-04-29 10:56:40]

julian [2021-04-29 10:57:12]
Some more examples of translating OMATA FIT files (or any FIT file) into a dynamic Relive-like map.

julian [2021-04-29 10:57:36]
Possibly something to integrate into the App or as a share point for rides that then delivers the video relive via email or some such.

cary [2021-04-29 11:08:32]
Looks really good.

shaun.au [2021-04-29 11:45:20]
Hi everyone! I'm San Jose, CA based UX designer who's here to help out with App UX. Nice to meet everyone here. :spock-hand:

cary [2021-04-29 11:49:22]
Welcome..stoked to have your help.

shaun.au [2021-04-29 12:13:45]

shaun.au [2021-04-29 12:14:34]
This is the Omata App UX heuristic board I created. This is where I collect all of the Omata App UX thoughts. I can add you to this board

shaun.au [2021-04-29 12:18:51]
This is an Axure prototype I created based on the thoughts I had on the Miro board. Now this is highly conceptual, but it addresses some of the UX problems in the App. Click Omata icon on the home screen to view the prototype. There're 3 versions. One grey(MPH), One white(KPH), One pink(Rapha edition). You can jump to different screens on the left menu, activated by clicking top left menu icon. You can also leave comments on the right panel.

ts [2021-12-21 10:52:57]
<@UA6CC3MT5> I can’t recall much about the elevation changes you were working on but I’ve relocated from Seattle to the mountains in Utah and my Omata elevation is rather impressive all the sudden! If you’re still around and kicking the can let me know! Happy to test

pepijn [2021-12-23 05:06:02]
I haven't had a chance to continue work on the altitude signal processing beyond the couple of small improvements I made to the existing code. That mainly had to do with retaining as much precision of the input signal as possible. Fusing barometer and gps signals is still just an idea.

ts [2022-06-10 16:40:27]
Just added some basic env/scheme config to the utility app so I can have unique builds running simultaneously like:

ts [2022-06-10 16:41:06]
Also pushed the rudimentary 3rd party service support I was playing with a long time ago.

ts [2022-07-11 19:10:54]
Hard to find any of the OG screenshots with the elevation profile you had <@U08B65RM0>, but I pulled this together a little bit

julian [2022-07-12 06:31:02]
Oh man — I’m sure I have some somewhere!

julian [2022-07-12 06:31:25]
Oh, also — damn. I owe you an insert don’t I. Crap. Just got lost in things.

julian [2022-07-12 06:34:24]
Also I was talking to my friend Fabien who has that relive-like (better tho..) API to create video maps..could be cool to integrate that as well. He’s totally down for that if you want me to make introductions.

ts [2022-07-12 06:39:44]
I played with that a few times when you linked it awhile back. Super cool and way more “our speed” it seems

julian [2022-07-12 06:40:14]
Plus it’s a good friend we collaborated on creating that concept while playing with maps and such.

ts [2022-07-12 06:40:43]
Awesome. It's all web based, yeah?

julian [2022-07-12 06:40:59]
Do you want to find time to catch up one of these days? No rush — just a passing thought. (Like..a video chat kinda thing..)

julian [2022-07-12 06:41:35]
Yeah, it’s all web based. I _think_ there’s a kinda..asynchronous API now so you throw a bunch of data over to the API and then some minutes later it has cooked up a video. I don’t know if there’s a callback but maybe.

julian [2022-07-12 06:41:44]
(There should be..)

ts [2022-07-19 16:15:28]

ts [2022-07-19 16:16:06]
“rename” and “un-pair”

julian [2022-07-19 22:50:34]
Oh man…

julian [2022-07-19 22:50:38]
Amazing!

ts [2022-07-21 13:41:51]
<@UA6CC3MT5> definitely let me know if the repo gives you any issues when you stand up your dev environment. It’s been pretty seamless for me save for one CocoaPods related issue that easily solved (once I finally landed on that solution haha)

pepijn [2022-07-21 13:45:20]
I took my Omata out for a ride last week and noticed my distance hand wasn't moving. Thought it might be busted, but when I checked the fit file the distance was indeed being recorded as zero. I have a dev build of the firmware on mine from 2 years ago when I was tinkering on it. Must have messed something up there at some point. I'm trying to get that compiled now first. M1 and the ARM embedded GCC toolchain aren't cooperating.

pepijn [2022-07-21 13:45:56]
It's actually that code that does all the heavy lifting regarding ANT+ btw. BLEKit just sends a couple of small requests.

ts [2022-07-21 13:46:02]
Oooh, I haven’t rebuilt firmware on my machine yet now that I think of it

ts [2022-07-21 13:46:42]
<@U08B65RM0> just joined that Apple Silicon life

pepijn [2022-07-21 13:47:05]
that's the branch I was messing around in. I've been meaning to get back to this for a while now.

pepijn [2022-07-21 13:53:28]
Are both of you on an Apple silicon machine then? If so, I'll update the scripts to make sure things can be setup and built fine on those.

ts [2022-07-21 13:54:59]
Yes sir!

pepijn [2022-07-21 14:36:25]
I got the MCU and nRF52 firmware images to compile, CLion is happily indexing the project. Main branch should be good to go.

ts [2022-07-21 14:40:06]
Awesome! I need to do that again. I ended up going back to the last public firmware after I moved from Seattle to the mountains in Utah and every ride would net me thousands of extra meters when uploaded

ts [2022-07-21 14:40:54]
I’ve got two devices now so I could do some more involved testing if that might help

daniel [2022-07-22 08:42:03]
<@U03Q388MTE3> has joined the group

joni [2022-07-22 10:28:47]
<@U03QL8LHHPE> has joined the group

pepijn [2022-07-25 05:17:34]
Has any of you seen the omata write a 0kb sized activity file? Had that happen to me last weekend. I'm not sure if that's due to my firmware hackery or something that already happened every now and then with the current firmware. Syslog seems to be chopped off as well, so that's not much help.

ts [2022-07-25 06:32:48]
I haven't seen that one myself but I've been on the public fw for a bit. Planning on compiling today though

pepijn [2022-07-25 10:30:01]

Just did a short test walk and the fit file was written correctly. I wonder if my omata is suffering from the intermittent MMC errors others have been seeing as well.

pepijn [2022-07-25 10:39:05]
<@U08B65RM0> is there a way to 'fake' button presses of the bezel with the bezel removed? I'm looking for microswitches, but not seeing them right away.

julian [2022-07-25 11:55:05]
Yes, I've seen that. I don't have 100% conclusive evidence but I believe it's a faulty memory card. But you said it was write correctly??

julian [2022-07-25 11:57:38]

julian [2022-07-25 11:57:38]

julian [2022-07-25 11:57:38]

julian [2022-07-25 11:57:38]

julian [2022-07-25 11:58:22]
These are some close-ups during a repair where you can see some of them broken

julian [2022-07-25 11:58:51]
Whenever I'm able to do hardware changes I'd probably rework this design somehow.

julian [2022-07-25 12:00:04]
We have otherwise perfectly fine devices that don't go into BLE mode because the switch is broken.. :disappointed:

julian [2022-07-25 12:01:01]
Maybe there's a firmware that will automatically go into BLE mode after a timeout or no movement for a period of time. I haven't thought it through completely.

pepijn [2022-07-25 12:02:46]
One fairly easy option would be to abuse ride mode when USB is connected.

pepijn [2022-07-25 12:03:11]
i.e. if you connect USB in idle and then go to ride mode that it enables the BLE mode instead of starting a ride.

julian [2022-07-25 12:16:00]
Huh. So shoving the USB cable while in RIDE could kick it into BLE mode, just to say it differently? Could be a work-around that might make the "broken switch" devices work. But let me think - can we flash firmware on devices that can't go into BLE?

pepijn [2022-07-25 12:20:43]
I think it's possible using DFU mode, but that's cumbersome to say the least

pepijn [2022-07-25 13:49:54]

<@U08B65RM0> dang it; might have fritzed my test device. I accidentally got the movement to disconnect from the board. Carefully reattached the zif connector, but now I'm getting no response from the device at all. Is there some kind of hardware reset switch I can try? and all of a sudden it jumped back to life... :man-shrugging:

julian [2022-07-25 14:20:59]
There's a long watchdog type reset that probably kicked in..

julian [2022-07-25 14:22:10]
But also - not a very good board design for flashing or hardware reset. Something I want to fix wheb the PCB can be redesigned…

pepijn [2022-07-25 14:22:43]
I already unscrewed the PCB to see if I could find something on the backside :smile: not much there. I noticed the battery is soldered on, so couldn't disconnect that easily either.

julian [2022-07-25 14:25:39]
And that's another thing on the list - zif or some other simple connector would save assembly time and replacement. Annoying…

pepijn [2022-07-25 14:26:34]
Probably the SD on this device that's acting up as well. It's been acting weird and just hung again when I made it go into mass storage mode.

pepijn [2022-07-25 16:31:32]
<@U08B65RM0> I was able to flash the firmware fairly easily using the homebrew version of dfu-util. Using I ran `boot2dfu` in the nuttx shell. Once in DFU mode, the device showed up right away ```pepijn@Kerel ~ % dfu-util -l dfu-util 0.11 Copyright 2005-2009 Weston Schmidt, Harald Welte and OpenMoko Inc. Copyright 2010-2021 Tormod Volden and Stefan Schmidt This program is Free Software and has ABSOLUTELY NO WARRANTY Please report bugs to Found DFU: [0483:df11] ver=2200, devnum=16, cfg=1, intf=0, path="2-1.4", alt=2, name="@DATA Memory /0x08080000/2*8Ke", serial="A29EA1306D66" Found DFU: [0483:df11] ver=2200, devnum=16, cfg=1, intf=0, path="2-1.4", alt=1, name="@Option Bytes /0x1FF80000/1*32 e/0x1FF80080/1*8 e", serial="A29EA1306D66" Found DFU: [0483:df11] ver=2200, devnum=16, cfg=1, intf=0, path="2-1.4", alt=0, name="@Internal Flash /0x08000000/2048*256 g", serial="A29EA1306D66"``` Flashed the firmware using ```dfu-util -a 0 -R -D ~/Projects/OmataFirmware/manu-mcu-firmware/nuttx/nuttx.dfu``` and finally got the device to boot again ```dfu-util -a 0 -s 0x08000000:leave``` Just leaving this here for future reference.

julian [2022-07-25 20:47:38]
Here are the instructions I have used, alongside of what you found <@UA6CC3MT5>, for the record & reference..

julian [2022-07-25 20:50:01]
I also have instructions for writing to the EEPROM to configure parameters for the device such as serial number and whether it is Imperial or Metric

pepijn [2022-07-26 03:31:34]
Lol. Lots of code digging later I just came to the conclusion that the SD card slot either does not support card detection or the driver doesn't implement it :man-facepalming: No surprise then that the logic to detect reinsertion and remount the filesystem doesn't work.

pepijn [2022-07-26 05:40:22]
```[946753739.755]emmc_check_if_already_mounted: Can't read from target dir /media (5). eMMC was removed [946753739.765]emmc_switch_to_mode: switching to mode filesystem (reinit: 1) [946753739.765]emmc_check_if_already_mounted: Can't read from target dir /media (5). eMMC was removed [946753739.765]emmc_remount: No card detected in SD slot. Reinitializing...```

pepijn [2022-07-26 05:40:24]
Success!

pepijn [2022-07-26 05:41:19]
The logic is not perfect, but now the Omata will actually check that the SD card is still usable and if not reinit the whole thing. This makes the filesystem accessible again without having to actually reboot the device.

pepijn [2022-07-26 06:10:48]
<@U08B65RM0> with the changes I just pushed for this I can yank the SD card, reseat it, and then if you go from off to either ride or connect the firmware will detect the SD card is no longer properly initialised and reinit it. Keeps on chugging along now no matter what kind of abuse I throw at it. If I understand it correctly, the underlying technical reason that this didn't work is that the SD card is hooked up directly to the SPI bus. This only supports rudimentary interaction with the SD card. Might be mistaken here though, but it definitely doesn't seem to be implemented in the nuttx code. Additionally the firmware was validating the mount by simply calling opendir/closedir. Because there was no (dis)connect notification the fat32 driver thought everything was still fine and didn't report an error. I added an extra readdir call into that sequence. That does report EIO which is what now triggers the reinit logic.

julian [2022-07-26 07:20:25]
So no other interface element to the engine. The firmware simply does raw SPI interactions to read the filesystem?

pepijn [2022-07-26 07:21:07]
Of that part I'm sure

pepijn [2022-07-26 07:21:25]
Found some basic information via google

pepijn [2022-07-26 07:21:35]
I haven't dug into the actual SDC/MMC spec yet

julian [2022-07-26 07:23:12]
Copy that. Well - what it seems is that your changes will make things more robust.

julian [2022-07-26 07:23:57]
I don't entirely understand what your fixes will do? If there is an error does it just try to remount the filesystem?

pepijn [2022-07-26 07:24:05]
yep
```

pepijn [2022-07-26 07:24:47]
Without this fix, the VFS layer basically thinks everything is just fine, but every operation you try to do with the filesystem will fail.

julian [2022-07-26 07:25:01]
With the occasional error that I only fixed by telling people to try again ir if they lose a ride, are these synptoms possibly related to the underlying issue your fix addresses? (I suppose there's no simple answer of course..)

pepijn [2022-07-26 07:25:18]
With the fix, the Omata specific part of the MCU firmware (manu_main.c) will notice the problem and remount the filesystem.

pepijn [2022-07-26 07:26:08]
> are these synptoms possibly related to the underlying issue your fix addresses That's my hunch. I had a similar issue last weekend, which is what triggered me to dig a bit deeper into this code.

pepijn [2022-07-26 07:26:43]
That being said, if the SD card gives up halfway during a ride this still won't help.

pepijn [2022-07-26 07:28:05]
A further enhancement I've been thinking of adding is to sprinkle an fsync in there every so often to make sure as much of the activity actually lands on disk as possible. Currently the firmware never actually does that. I haven't checked yet when the fat32 implementation decides to flush to disk and update dir entries.

pepijn [2022-07-26 09:25:10]
Alright, next big change ready to test :smile: After every 2kb (just a random magic number at this point; I need to get an idea of how much elapsed time that would correspond to) worth of activity data the activity file will get fsynced. If at any point we get write failures during a ride, the activity file will be reopened and rewound to the latest position that was successfully fsynced. If all goes well, writing will restart from there.

pepijn [2022-07-26 09:25:38]
The end result is that (assuming the code all works as intended) you may end up losing a chunk of your ride rather than having nothing at all.

ts [2022-07-26 09:27:01]
Amazing! I want to get this compiled after the dogs get a walk. Which branch? main or the altitude one?

pepijn [2022-07-26 09:27:47]
I merged all my altitude bits over to the main branch already

pepijn [2022-07-26 09:27:59]
I'll put this work on a new branch since it's still 100% untested

ts [2022-07-26 09:28:14]
Okay cool

pepijn [2022-07-26 09:30:47]

I'm planning on taking a walk after dinner with my gutted test omata

pepijn [2022-07-26 09:31:06]

pepijn [2022-07-26 09:31:09]
poor thing's taking quite the beating :smile:

ts [2022-07-26 09:32:05]
I can take one omata with the test fw and one without on my ride later if that's of any additional help

pepijn [2022-07-26 09:33:28]
You're welcome to test this already. To actually force the new code to kick in you'll probably have to crack it open like in the photo above and remove and then reinsert the SD card. Not very practical when riding on a bike.

pepijn [2022-07-26 09:39:33]
Rats, hold off with trying this code <@U012F84BCV9>. Can't get the omata to boot now. Back up and running, but there's clearly still some work to be done :smile:

julian [2022-07-26 10:10:31]
Does the code not take hold with the firmware update procedure? Why does the SD card need to be cycled in and out?

julian [2022-07-26 10:14:54]
Also <@U012F84BCV9> just a note on removing the movement from the clips — they are pretty strong so not a huge chance of snapping them off. There’s a bit of wiggle once the bezel has been removed (that is the more likely procedure that can result in catastrophic damage, so if you’re unsure let me know. I have a video somewhere) so I generally nudge the movement to one direction so the adjacent clips only have to be offset/bent a tiny bit. I use a very small screwdriver and quite delicately move a clip out of the way a bit until I can pop the movement up, being careful to not strain the flexi cable underneath. As <@UA6CC3MT5> reveals in that photo, it is possible to get to the SD card without fully removing the movement flexi cable. The SD card adapter has a small metal retaining clip to keep the SD card from falling out and ensure it seats well. With some deft work by a fingernail you can simultaneously depress that clip and slide the card out.

pepijn [2022-07-26 11:24:50]

pepijn [2022-07-26 11:25:08]

pepijn [2022-07-26 11:25:57]
There's an O ring inside the bezel. I snapped the one I had on this test device by accident. You want to be very gentle when twisting past the ride notch and not turn too far. Just far enough for the bezel to come off.

ts [2022-07-26 11:26:23]
:exploding_head:

pepijn [2022-07-26 11:26:29]

pepijn [2022-07-26 11:26:50]

This dentist like tool is a metal spudger from my ifixit kit. Works perfectly as a lever.

pepijn [2022-07-26 11:27:17]
As you can probably see in the video, this procedure is not for the faint of heart :wink:

ts [2022-07-26 11:27:53]
Reminds me of basically every Apple Watch I've ever been in…

pepijn [2022-07-26 11:29:37]
When loosening the mechanism I do the bottom two clamps first, then the one at 11 o'clock very carefully. The ribbon connector for the mechanism is just behind the one at 2 o'clock, so best to do that one last.

pepijn [2022-07-26 11:30:28]
That being said... no need for you to go through all this hassle. I'll get the code tested and working first. Removing the SD card while a ride is being recorded is intended as a brutal stress test.

julian [2022-07-26 12:06:10]
I've got some spares — a few left. It's not a mission critical piece, fwiw, although you'll want to watch for moisture ingress. Happy to send you one or two!

pepijn [2022-07-26 12:51:11]

pepijn [2022-07-26 12:51:34]
<@U08B65RM0> that kind of setup, is that something I could solder on to the regular device I have here?

pepijn [2022-07-26 12:52:13]
I'm having some trouble getting the omata to boot reliably, but the issue seems to be before the USB console is brought up. Stabbing in the dark...

julian [2022-07-26 13:11:39]
Yeah, Haltian made that. They basically connected directly to the serial lines on the device. I haven't looked at it in ages having been out of the studio for nearly a year.

julian [2022-07-26 13:11:44]
I never had to use it, tbh..

pepijn [2022-07-26 13:19:45]
Any idea which pins those are?

pepijn [2022-07-26 13:33:11]
Hmm I think this might simply be an issue with getting out of DFU mode. Seems to be waiting for a timeout or something. Without being able to see the bootloader console I'm just guessing of course.

julian [2022-07-26 13:41:16]
Hmmm..

pepijn [2022-07-26 14:00:08]

I'm giving a BLE based MCU firmware update a go to see if that restarts faster or not. Takes a while to upload of course.

julian [2022-07-26 14:06:51]
I'm looking at the schematic and trying to remember how to connect USB.

julian [2022-07-26 14:07:15]
I'm kinda guessing to be honest. I should look if I can find that thing. Might be in the storage unit, actually.

julian [2022-07-26 14:08:18]
I think it'd go to D+ and D-

julian [2022-07-26 15:22:23]
Hey <@U012F84BCV9> so I fetched and merged with your latest commits. I forget — should I do a `pod update` before anything else?

ts [2022-07-26 15:56:38]
Nope. Just `pod install`

ts [2022-07-26 15:58:59]
I haven't bothered updating the dependencies in there as I'm actively removing them as I replace them with native and some SwiftUI views. I've got a branch using SwiftPM instead of CocoaPods running too

ts [2022-07-26 16:05:39]
Xcode will probably complain about the signing of the pods too. It's a quick fix.

pepijn [2022-07-26 16:10:45]
:cry: dfu-util stopped between erase and download and then decided to reset the device. I think it's game over for this little guy.

julian [2022-07-26 16:11:08]
:bricks:?

pepijn [2022-07-26 16:11:28]
I think so

julian [2022-07-26 16:11:51]
Dang..

pepijn [2022-07-26 16:12:14]
I've been trying to get to the hw reset pads, but those are really impossible to get to

julian [2022-07-26 16:12:38]
It's a bummer that R&D took the FBUS interface out.

julian [2022-07-26 16:12:54]
Well, let me know. I'll send you another one to work with.

pepijn [2022-07-26 16:13:43]

I found the USB pins in the meantime. I'll see if I can get anything out of that.

julian [2022-07-26 16:14:23]
Roger that.

pepijn [2022-07-26 17:02:07]
Patient resuscitated

pepijn [2022-07-26 17:02:29]
Now to put Humpty Dumpty back together again

julian [2022-07-26 18:54:05]
Oh dear. What's going :eyes:

pepijn [2022-07-26 23:43:05]
The operation was a complete success. I figured out from the Hlatian schematics how to get the device to reboot into dfu mode. The connections for the reset buttons that were omitted are still there; there's simply no button soldered on to them. By shorting `boot0` and `flash` (boot to dfu) and then shorting `flash` and an unlabelled pad `m-rst`, the device reset itself and the bootloader went into dfu mode. After that I was able to flash the firmware on to the device again. So why the funky setup? Well those pads are on the backside of the board and hidden behind the black plastic element that holds the PCB. The battery is glued into the case and the wires connecting it to the PCB are very short. I also needed to have the usb-c cable connected to check for dfu mode, but the usb-c connector is only attached with a flimsy flex cable. This contraption geld everything properly in place so that I could short those two connections.

pepijn [2022-07-26 23:45:48]
One thing that has me completely stumped though is the whole firmware flashing process. I grabbed an older firmware image that Harri uploaded and flashed that with dfu-util. Oddly enough his dfu file contained 6 distinct chunks instead of just one. Once the image was flashed the device restarted, but to my surprise it was now running the latest firmware I built myself; not the one I had just flashed. Quite the mystery.

pepijn [2022-07-27 03:57:15]
<@U08B65RM0> do you happen to know which bootloader code Haltian used for the Omata? I found the nrf52 bootloader code in the project, but couldn't find the equivalent for the STM32 MCU

pepijn [2022-07-27 04:14:29]
I think answered my question. Preprogrammed by ST in ROM; not modifiable. describes the DFU mode.

julian [2022-07-27 06:43:30]
This is the craziest thing to wake up to! You mirrored all the things I was experiencing with trying to revive devices down to the shorr battery cables (hence my note to put on a quick connector) - only you were able to successfully reboot the device!

julian [2022-07-27 06:45:04]
I was studying the schematic and noticed the pads but didn't think much further as I was looking for JTAG which I always put on my hobby boards back in the day. I didn't think about boot0 and the rest. My oversight!

pepijn [2022-07-27 06:47:13]
for the short cables, I carefully cut open the yellow wrapping around the battery and cables to give me some more slack

pepijn [2022-07-27 06:48:02]
what kind of instrument do you use to short those connections? I very fine needle nose tweezers. Really finicky.

julian [2022-07-27 07:13:56]
Super finnicky. You can imagine after working on even just a dozen devices I was going nuts with the battery cables! I never shorted the pads but something as you describe or a short bit of copper wire. Ideally a simple purpose-built tool or jig.

julian [2022-07-27 07:14:39]
It’s a big complaint to myself that I didn't push further to make the device more serviceable. I have a pile of notes somewhere I think in my day notes..

julian [2022-07-27 07:15:26]
(Someday I hope to actually format and print those out and bind them properly so I remember all the efforts over the 8 years!)

pepijn [2022-07-27 07:16:17]
On a positive note, the firmware image I built with the fsync bits seems to be running fine now. Boots right up. The annoying part is that I don't really understand why the device was acting up so much.

pepijn [2022-07-27 07:17:10]
I've been trying to really understand the whole boot process, but it's a lot to study and learn.

pepijn [2022-07-27 07:17:48]
For instance, the base address for the firmware image is `0x08008000`, while the default for the MCU is `0x08000000`. No idea why the `8000` offset is there.

pepijn [2022-07-27 07:18:24]
I found out in the meantime that the boot address can be customised via the STM32's option bytes, still trying to read out the current values to verify what it's actually set to

julian [2022-07-27 07:25:42]
There was some Python script that did something that sounds vaguely like this..to set the EEPROM. Perhaps there are some twists and turns that can read/write other more like…system parameters and options and such.

pepijn [2022-07-27 07:26:59]
```Found DFU: [0483:df11] ver=2200, devnum=5, cfg=1, intf=0, path="2-1.4", alt=2, name="@DATA Memory /0x08080000/2*8Ke", serial="A29EA1306D66" Found DFU: [0483:df11] ver=2200, devnum=5, cfg=1, intf=0, path="2-1.4", alt=1, name="@Option Bytes /0x1FF80000/1*32 e/0x1FF80080/1*8 e", serial="A29EA1306D66" Found DFU: [0483:df11] ver=2200, devnum=5, cfg=1, intf=0, path="2-1.4", alt=0, name="@Internal Flash /0x08000000/2048*256 g", serial="A29EA1306D66"``` Seems to be readable/writable via DFU as well. See alt 1.
```

pepijn [2022-07-27 07:27:22]
I pulled down the data, but couldn't make sense of it right away

julian [2022-07-27 07:28:06]
Well…looks undescipherable at first and second glance..

pepijn [2022-07-27 07:29:44]
That's part of the memory map for the MCU from the spec sheet. Looks like the correct region at least.

pepijn [2022-07-27 08:12:24]
Figured it out!

pepijn [2022-07-27 08:12:56]

pepijn [2022-07-27 08:14:45]
I made a full dump of the flash section. In the 0x0000-0x8000 portion, there seems to be a bootloader by Haltian based on the `thingsee` names. Again based on the names I'm seeing there, this is the bit of code that writes the update.oci image to flash. Rather essential part of the device, but for that we don't have the source code. Never ever ever overwrite or erase that portion of the flash!

ts [2022-07-27 11:58:35]
This is fascinating to follow!

ts [2022-07-27 12:04:36]
I compiled the nrf firmware but got some error on the MCU build. Haven’t looked into it yet so I’ll update after my ride today

pepijn [2022-07-27 13:00:57]
back to square one here :disappointed:

pepijn [2022-07-27 13:01:13]
I must be doing something wrong with the firmware flashing process

pepijn [2022-07-27 13:01:58]
I've rolled back my latest changes on main until I can figure out what's going wrong and can properly test everything

julian [2022-07-27 13:17:40]
I think you have the sections you need but if it helps, here’s the complete schematics

gwpowell [2022-07-27 13:17:53]
<@UAEU4CWJ1> has left the group

naveen.molloy [2022-07-27 13:18:05]
<@U018TH78V6V> has left the group

robdjonas [2022-07-27 13:18:08]
<@UG8N3GAMU> has left the group

shaun.au [2022-07-27 13:18:12]

<@UAB70RB37> has left the group

pepijn [2022-07-27 13:22:04]
Aha! Many manuals later, I think I finally figured it out. I think when I was flashing via DFU and sending the 'leave' command that the MCU was jumping to the wrong address. Basically it was skipping the thingsee bootloader. I tweaked my script a bit and now I've been able to flash a couple of times and reboot the device correctly. :crossed_fingers:

julian [2022-07-27 13:29:08]
What's the `dfu-util` incantation you use again?

julian [2022-07-27 13:30:20]
After `boot2dfu` I do this `dfu-util -d 0483:df11 -a0 -D ./nuttx.dfu -s :leave`

julian [2022-07-27 13:30:40]
(That was given to me by Haltian back in the day, fwiw..)

pepijn [2022-07-27 13:35:58]
I'm chasing people away with my detailed information dumps already :smile: Last one, I promise. I was reading the earlier today. It mentions that if you don't specify an address explicitly in the leave command that the address of the last write is used instead. The DFU images I'm compiling start at 0x08008000. The bootloader starts at the default boot address of 0x08000000. I've adapted my flash shell script to now send a leave with an explicit address and that seems to do the trick. ```#!/usr/bin/env bash MY_DIR=$(readlink -f $(dirname $(readlink -f "${BASH_SOURCE[0]}"))) dfu-util -a 0 -D ${MY_DIR}/manu-mcu-firmware/nuttx/nuttx.dfu dfu-util -a 0 -s 0x08000000:leave``` Script is in the firmware repo as well

julian [2022-07-27 13:36:48]
:heavy_check_mark:

pepijn [2022-07-27 14:42:58]
<@U012F84BCV9> I've been able to do some basic testing with the fsync enhancement in the meantime. I haven't been able to test the rewinding of the file to the last sync point yet, but the regular recording of the activity still seems to work correctly. I'll upload the DFU file here.

pepijn [2022-07-27 14:44:01]

pepijn [2022-07-27 15:08:11]
I was scrolling through <#C5U8TGFJN|> to see what else in the firmware warrants a closer look. Next up I think is timekeeping. The firmware currently uses the MCU's internal clock for this. Rather silly since it's probably not a very accurate timekeeper and we have a high precision time based sensor available in the GPS. I'm going to have a look and see how hard it would be to use GPS time.

pepijn [2022-07-27 23:30:02]
Short update on the time sync thing: there's logic in place to sync the clock with the gps time signal already. ~As far as I can tell this is only used after the device has been reset and the clock has not been configured yet. What I would propose is to do this sync'ing more often so that we can avoid clock drift as much as possible.~ I reread the code after a good night's sleep and it turns out the clock is actually already being synced all the time. The code lets the system clock drift up to 3s ahead or behind the GPS clock before setting it to the received GPS time. That makes the timing problems described in <#C5U8TGFJN|> rather surprising then. Shouldn't be happening as far as I can tell.

ts [2022-07-28 05:57:49]
That timing issue isn't one I've ever reproduced or seen.

pepijn [2022-07-28 06:42:10]
What the code does today is mix the usage of the MCU's RTC and the GPS time information. The RTC is set to GPS time when it drifts too far causing it to either jump ahead or rewind by 3s (the current threshold) or more. That's not really optimal since it can lead to jumpiness in the timestamps of the FIT records. I've restructured the code a bit to avoid this. The GPS time (which is always available anyway) is now passed through in the events and this is the only source of information that's used when writing to FIT files. The firmware will still sync the RTC with the GPS clock, but that's really only used for whatever time reporting the OS needs to do itself and to help in obtaining the initial GPS fix.

pepijn [2022-07-28 06:42:46]
In the process I'm getting rid of quite a bit of nasty global state access. Makes the data flow in the code easier to follow.

ts [2022-07-28 07:13:01]
You are an absolute beast, <@UA6CC3MT5>!

pepijn [2022-07-28 07:13:24]
Havin' a blast :smile:

pepijn [2022-07-28 07:13:35]
Tinkering on this embedded stuff is a lot of fun

pepijn [2022-07-28 07:14:49]
My day job at the moment is architecting an enterprise NAS data migration solution in Java. Switching gears to programming an MCU in C feels exciting.

pepijn [2022-07-28 07:15:32]
I just hope I'm not breaking too much stuff in the process :grimacing: Releasing these changes to the public is going to be a case of ice cold feet. There's no test suite whatsoever, so ad hoc manual testing is all we've got.

ts [2022-07-28 07:34:50]
“Manual testing” is just an extension of the Omata ethos so everything checks out :joy:

ts [2022-07-28 07:35:29]
Excited to try and help test!

pepijn [2022-07-28 08:54:56]

pepijn [2022-07-28 08:56:22]
Changes since last version: • All FIT timestamps now originate directly from the GPS time signal • Fixed a regression I introduced where the FIT file type was incorrectly set to 'device' for all FIT files • Added additional SD card recovery logic triggers in various code paths that access the filesystem • Added `-f` support to the `umount` shell command to be able to force unmounting

pepijn [2022-07-28 08:57:14]

I went out for a short walk just now, checked that the fsync gets triggered, reseated the SD card, and started walking again. Everything recovered perfectly.

pepijn [2022-07-28 08:58:21]
I think this is ready for testing if you're feeling brave <@U012F84BCV9> and <@U08B65RM0>.

pepijn [2022-07-28 08:58:39]
Here's the OCI version of the same build. I haven't tested that update path myself in a while. Rename to `update.oci` and put it on the SD card to get it to flash.

pepijn [2022-07-28 08:59:15]

ts [2022-07-28 10:18:39]
I'll do that to my imperial now!

pepijn [2022-07-28 10:23:58]
There's one more change coming up. When the activity file is reopened, the firmware will rewind to the last known synced position. At that point you need to set the file length as well. Problem was/is that the version of nuttx that the firmware was based on did not support truncate yet in its VFS. Luckily the upstream version did support it, so I backported (fancy words for copy/pasted the code) the VFS, libc and FAT32 bits.

pepijn [2022-07-28 10:24:37]
This only really matters when the SD card recovery logic kicks in in the middle of a ride so should be fine to test without it as well.

ts [2022-07-28 10:25:16]
Haha, I'm going to sound like a broken record but you are a legend!

pepijn [2022-07-28 10:25:36]
I've been doing this NAS stuff for about 7 years now. I know a thing or two about filesystems and how to correctly program them :smile:

ts [2022-07-28 10:25:46]
I "understand" what you're doing because you're great at explaining it and I know just enough low level stuff to be dangerous.

ts [2022-07-28 10:26:07]
So thank you <@UA6CC3MT5>!

ts [2022-07-28 10:28:20]
Updated smoothly here!

ts [2022-07-28 10:29:35]
I'll take both on my ride today and share the files!

pepijn [2022-07-28 10:52:54]

pepijn [2022-07-28 10:53:08]
Strava says 'no' for a rewound file. :disappointed:

pepijn [2022-07-28 10:53:12]
Time for some more debugging.

ts [2022-07-28 10:55:10]
Interesting. Always some hidden arbitrary stuff over there at Strava it seems…

pepijn [2022-07-28 10:55:39]
My own FIT parser from OmataBLEKit seems to think it's fine...

pepijn [2022-07-28 10:59:48]
The CRC is incorrect according to a little validation tool that comes with the FIT SDK. I must be doing something wrong in resetting that.

pepijn [2022-07-28 11:00:01]
Time for some QT with the kids now first

julian [2022-07-28 11:30:12]
Should we summon the test-team? I can also do an email blast if no one is surfacing?

pepijn [2022-07-28 11:44:58]
Changes: • When rewinding FIT files, the file is now truncated to the correct length • When rewinding FIT files, the CRC is restored to the correct value. • Fixed a regression where the FIT session message timestamp was set to the session start time instead of the end time

pepijn [2022-07-28 11:47:55]
If it's not too late, you'll want to use this version <@U012F84BCV9>. The previous one will write FIT files that may be considered corrupt because of the session timestamp thing.

pepijn [2022-07-28 11:49:13]
Just as an FYI, the FIT SDK tool is reporting a couple of other issues that we can still fix, but those aren't new regressions.

julian [2022-07-28 11:52:08]
Parenthetically, <@UA6CC3MT5> what was your reboot-my-bricked-omata procedure? I may want to try that on some long-dead devices that I marked as “DOA” because I couldn’t get them to boot. Part of me suspects that the factory never properly flashed them.

julian [2022-07-28 11:52:26]
Did you short boot0 and something? Tie it to ground?

julian [2022-07-28 11:52:57]
(I probably won’t be able to try for a bit as I don’t have access to my bench on a routine basis..still displaced from the backyard studio..)

pepijn [2022-07-28 11:56:16]

pepijn [2022-07-28 11:57:24]
You want to connect boot0 to vdd_sys first. That's the 'boot to DFU trigger'. Then connect m_rst to vdd_sys as well; keeping boot0 connected.

pepijn [2022-07-28 11:58:25]
I got that from

julian [2022-07-28 11:58:27]
Jenga..

pepijn [2022-07-28 11:59:18]

pepijn [2022-07-28 11:59:51]

julian [2022-07-28 11:59:58]
Man, I wish those buttons were still on there..a nice little super slim microswitch would be super slick.

julian [2022-07-28 12:00:33]

pepijn [2022-07-28 12:01:29]
Same. I was almost at the point where I was going to solder some wires to the test points because it's such a pain to get to the back of the PCB. J1002 and J1003 are especially hard to reach because they're hidden behind the plastic PCB mount..

julian [2022-07-28 12:01:34]
What did you use? A fork or, like..?

pepijn [2022-07-28 12:02:02]

julian [2022-07-28 12:02:07]
Check..

pepijn [2022-07-28 12:02:09]
iFixit kit to the rescue again

julian [2022-07-28 12:02:19]
Those are conductive?

pepijn [2022-07-28 12:02:32]
They are. Checked that with my multimeter first :smile:

julian [2022-07-28 12:02:40]
Copy..

julian [2022-07-28 12:02:59]
Did that watchdog protocol go into effect? The 30 minute dead device thing?

pepijn [2022-07-28 12:03:23]
Sometimes it did, sometimes it didn't. 30 minutes is a long time to wait :smile:

julian [2022-07-28 12:04:02]
Indeed..

pepijn [2022-07-28 12:04:44]
With the DFU leave address tweak to my flash script I haven't had any more issues rebooting. Works like a charm and it's faster than the OCI bootloader path.

julian [2022-07-28 12:05:28]
When you did that reset what state is the device in? STM DFU bootloader?

pepijn [2022-07-28 12:05:56]
Indeed. You boot to the system bootloader from ROM.

julian [2022-07-28 12:08:02]
And then you can you do the commands here?

pepijn [2022-07-28 12:08:14]
OMG! OMG! OMG! It works! :tada: Walked up and down the street, yanked the SD, walked a bit further. A non-corrupt FIT file came out on the other end. And Strava accepts it, no problems at all.

ts [2022-07-28 13:22:31]
Random q for you <@U08B65RM0>, regarding ride titles. Should we be doing “RideOmata……” (unless manually renamed) still? I definitely “broke” that when I threw the new ride syncing stuff. Only asking in case you’d rather have it be something different altogether

ts [2022-07-28 13:22:34]

julian [2022-07-28 13:29:22]
I’d like to keep it like that for the time being until we can give it some more thought. More a ‘branding’ thing at the moment.

ts [2022-07-28 13:29:58]
100%

pepijn [2022-07-28 14:01:38]
<@U08B65RM0> FYI, I got to the bottom of the time difference thing that Richard Aresnault was complaining about. Basically much ado about nothing. The difference is due to what the Omata firmware and Strava consider to be 'stationary'.

pepijn [2022-07-28 14:05:07]
Strava even has a FAQ page about this kind of thing

julian [2022-07-28 14:38:35]
Copy. Yeah. I figured. Everyone wants an absolute truth…

julian [2022-07-28 14:38:47]
Thanks for checking into that..

ts [2022-07-28 15:26:40]
<@U08B65RM0> is it simple to add someone to crashlytics as a viewer or something?

julian [2022-07-28 15:53:43]

Probably…

julian [2022-07-28 15:55:49]

julian [2022-07-28 15:58:44]

ts [2022-07-28 16:04:11]
That was quick! Thank you sir

julian [2022-07-28 18:59:42]
Let me know if I broke something…

pepijn [2022-07-29 00:20:30]
Is there a new test flight build of the app coming up? I would be happy to try out your work as well <@U012F84BCV9>.

ts [2022-07-29 05:42:24]
There will be, yup! Anything on `master` should compile too.

pepijn [2022-07-29 05:44:56]

pepijn [2022-07-29 05:45:07]
FYI, I'm getting CI builds set up for the firmware images

pepijn [2022-07-29 05:45:43]
Trying to get to a point where we can build releases using github actions

ts [2022-07-29 05:50:05]
That would be amazing

pepijn [2022-07-29 07:09:49]

pepijn [2022-07-29 07:10:08]
pushing a tag starting with `v` will trigger a release build

pepijn [2022-07-29 07:10:39]
still need to tweak this a bit so that the non debug images get built as well

julian [2022-07-29 07:17:31]
It's like we're a real operation! :smiley:■:skateboard:

julian [2022-07-29 07:18:02]
Just an fyi that I'll be on GMT next week in the UK..not that it matters really.

julian [2022-07-29 07:18:16]
(Flying Saturday/Sunday)

ts [2022-07-29 07:41:27]

I feel like the app just has the firmware version check (and update?) hard coded in. Should be pretty simple to lean on the CI <@UA6CC3MT5> is working on and make that a bit smarter

pepijn [2022-07-29 08:55:28]
Success!

pepijn [2022-07-29 08:56:32]
if you build locally, the version is going to be `<year>.<month>.<day>.<git short commit hash>_Manu_Development(_Debug).<format>` while the release builds will be `<year>.<month>.<day>.<git short commit hash>_Manu_Release(_Debug).<format>`

julian [2022-07-29 08:57:35]
Amazing…

julian [2022-07-29 08:58:56]
I won't be able to do much practical testing until I get back from my trip, fyi. I wish I could bring a bike but I'm just hoping to make it over without getting stuck somewhere!

pepijn [2022-07-29 08:59:43]
The non-release builds are retained by github as well btw. See 'Artifacts' at for instance.

pepijn [2022-07-29 08:59:57]
Those get deleted automatically after 90 days according to the github docs

ts [2022-07-29 09:08:42]
So much cool stuff!

pepijn [2022-07-29 09:09:36]
Prepping to release to the public :smile:

pepijn [2022-07-29 09:09:42]
(or the test team at least)

pepijn [2022-07-29 09:10:14]
My own next proper test ride is planned for this weekend

ts [2022-07-29 09:21:43]
Just resolved the funny fatal crash that's most reported in Crashlytics. Basically anyone who tries to "Logout" will crash the app _unless_ they sign in AND logout before the app shuts down.

ts [2022-07-29 09:32:38]
I've spent absolute zero time looking through the stuff TestFlight has now that we're not using. But this stuff could be cool to explore:

pepijn [2022-07-29 09:46:56]
Do you guys know if there are any particularly popular ant+ sensors that don't work at the moment?

ts [2022-07-29 09:47:48]
None that I've ever tried have failed to pair, but that's far from exhaustive

ts [2022-07-29 09:49:14]
I took both OMATA ones with me to the Salt Lake Criterium a couple weekends ago and got so many comments/questions. I let people pair it with their stuff and ride around with it. Didn't run into anything weird there either

ts [2022-07-29 09:50:21]
I've got a todo item to start collecting anonymous metrics/metadata for stuff like that from the app

ts [2022-07-29 09:51:22]
I uploaded a build from `master` as `0.8.5` and the three of us should automatically get the build in TestFlight I think

ts [2022-07-29 09:51:24]

ts [2022-07-29 09:52:46]
Mostly a shakeout of the process. I still want to tie up the separate schemes I started so that you can easily have omata, omata (dev), and omata (testflight) on a device simultaneously.

ts [2022-07-29 10:11:11]

pepijn [2022-07-29 10:14:34]

pepijn [2022-07-29 10:21:11]

pepijn [2022-07-29 10:21:17]
Pooch pic sharing time :smile:

pepijn [2022-07-29 10:21:27]
Need to remember to take my omata with me on our next walk

julian [2022-07-29 10:39:55]

pepijn [2022-07-29 10:44:01]
<@U08B65RM0> you mentioned you still had some spare rubber rings lying around (the thin one that was just too small on the initial production run). Would you mind sending me one or two of those. I think I'll no longer have to crack open my imperial omata so often going forward. Would be nice to get rid of the bezel jiggle. Absolutely no rush BTW. It's only a test device and my limited edition kickstarter one is still in perfect condition.

pepijn [2022-07-29 10:53:43]
Do you happen to have technical drawings of the PCB with measurements as produced? The would save me some a lot of work with the slide measure to figure out the size for the 3d printed reset tool.

julian [2022-07-29 11:40:08]
Hmmm..I'm trying to remember where the STEP files are. The CAD for the PCB is largely Gerber files..

julian [2022-07-29 11:40:11]
Hold on a sec..

julian [2022-07-29 11:42:35]

All of the engineering drawings are for the mechanical parts — bezel, hands, etc.

pepijn [2022-07-29 11:45:08]
I'll see if I can scale the test points schematic down to actual scale and then see how well that matches reality.

julian [2022-07-29 11:48:29]
What tools are you using for CAD? I have STEP files of it, which may help?

pepijn [2022-07-29 11:49:29]
All I've ever used is OpenSCAD :smile:

pepijn [2022-07-29 11:49:33]
I'm a programmer

pepijn [2022-07-29 11:49:49]
My wife knows VectorWorks, but that's more an architect's tool

julian [2022-07-29 11:49:49]
See if it can open either one of these..

julian [2022-07-29 11:50:27]
One is an OBJ file the other is a STEP file. When I import them into various CAD programs they work — I may need to configure units but surprisingly they come in to scale.

pepijn [2022-07-29 11:52:03]
The .obj should work. I made a couple of measurements using a slide measure so I should be able to scale that correctly.

julian [2022-07-29 11:52:56]
It should just work, hopefully. I was skeptical, but when I was doing renders of the PCB (even populated!) from the original CAD data, it just worked properly..

pepijn [2022-07-29 11:56:33]
Just remembered my wife also has a sketchup license from her course this year. I should be able to put something together quickly with that.

pepijn [2022-07-29 12:38:50]
What kind of conductor would you use for a tool like this Julian?

pepijn [2022-07-29 12:39:22]
I'm think of some kind of contraption that you can slide over the side of the pcb until it makes contact with the test points.

pepijn [2022-07-29 12:39:44]
I think I need something fairly soft to avoid scratching the pcb.

pepijn [2022-07-29 12:40:03]
But it needs to be firm enough to stay in plac as well.

pepijn [2022-07-29 12:40:42]
Maybe sufficiently thick copper wire?

pepijn [2022-07-29 12:41:40]

pepijn [2022-07-29 12:42:24]
The notches can serve as positioning guides and there's nothing in the way from the edge of the pcb to the test point, so sliding over the pcb seems sufficiently safe

julian [2022-07-29 12:42:42]
Yeah, a relatively large gauge? Maybe banged flat so its more like a flat bar?

pepijn [2022-07-29 12:45:10]
Ideally I want to make something that avoids the need to flip over the pcb, because of the short wires that make that so difficult. Going to try and see if I can come up with something that you could squeeze between the pcb and the black plastic holder..

ts [2022-07-29 13:18:56]
I got 5009 feet of vert on my 27 minute <2mi walk with the dogs and the Omata :hot_face:

ts [2022-07-29 13:26:55]

pepijn [2022-07-30 05:28:48]
File looks good. ```pepijn@Kerel ~ % java -jar ./Downloads/FitSDKRelease_21.84.00/java/FitCSVTool.jar -t ~/Desktop/220729173447.fit FIT CSV Tool - Protocol 2.0 Profile 21,84 Release Running FIT verification tests... Message Count: 1486 FileId Message Exists - Level: REQUIRED Status: PASSED FileId Message Is First - Level: REQUIRED Status: PASSED FileId Message Type Is Activity - Level: REQUIRED Status: PASSED FileId Message Manufacturer Id Exists - Level: REQUIRED Status: PASSED FileId Message Time Created Exists - Level: REQUIRED Status: FAILED Time Created is null. Activity Message Exists - Level: REQUIRED Status: PASSED Activity Message Timestamp Exists - Level: REQUIRED Status: PASSED Activity Message Local Timestamp is Valid - Level: REQUIRED Status: FAILED Local Timestamp is null. Activity Message total_timer_time is Equal to the Sum of Session Messages total_timer_time Values - Level: REQUIRED Status: FAILED Activity Message contains a null total_timer_time Activity Message Session Count Is Equal To Actual Session Count - Level: OPTIONAL Status: PASSED Session Message Exists - Level: REQUIRED Status: PASSED Session Message Timestamps are Valid - Level: REQUIRED Status: PASSED Session Message Start Time Is Valid - Level: REQUIRED Status: PASSED Session Message Total Timer Time and Total Elapsed Time are Valid - Level: REQUIRED Status: PASSED Session Message First Lap Index and Num Laps are Valid - Level: REQUIRED Status: SKIPPED No Session messages exist and/or no Lap messages exist. Session Message Total Timer Time Is Equal To Sum of Lap Messages Total Timer Time - Level: REQUIRED Status: SKIPPED No Session messages exist and/or no Lap messages exist. Session Message Total Elapsed Time Is Equal To Sum of Lap Messages Total Elapsed Time - Level: REQUIRED Status: SKIPPED No Session messages exist and/or no Lap messages exist. Session Message Sport Exists - Level: REQUIRED Status: PASSED Session Message Sub Sport Exists - Level: OPTIONAL Status: WARNING One or more Session messages contain a null Sub Sport value. Set Sub Sport value to 'generic' if unknown. Session Message Are Sequential and Abut - Level: REQUIRED Status: SKIPPED Check requires two or more Session messages, found 1. Session Message Valid Message Index - Level: REQUIRED Status: FAILED One or more Session messages contain a null Message Index value. Lap Message Exists - Level: REQUIRED Status: FAILED Lap Message Valid Message Index - Level: REQUIRED Status: SKIPPED Lap Message Start Time and Timestamp are Valid - Level: REQUIRED Status:

SKIPPED Lap Message Are Sequential and Abut - Level: REQUIRED Status: SKIPPED Check requires two or more Lap messages, found 0. Record Message Timestamps Fall Within Session Message Times - Level: REQUIRED Status: PASSED Record Messages Are in Chronological Ascending Order - Level: REQUIRED Status: PASSED Device Info Message Timestamps are Valid - Level: REQUIRED Status: SKIPPED Device Info Message Device Index is Valid - Level: REQUIRED Status: SKIPPED Device Info Message Manufacturer Id is Valid - Level: OPTIONAL Status: SKIPPED```

pepijn [2022-07-30 05:30:38]
These are the 'failures' that were already present in the current firmware. I'll need to reread the ANT+ specs for these. Should be easy enough to add the missing fields ```FileId Message Time Created Exists - Level: REQUIRED Status: FAILED Time Created is null. Activity Message Local Timestamp is Valid - Level: REQUIRED Status: FAILED Local Timestamp is null. Activity Message total_timer_time is Equal to the Sum of Session Messages total_timer_time Values - Level: REQUIRED Status: FAILED Activity Message contains a null total_timer_time Session Message Sub Sport Exists - Level: OPTIONAL Status: WARNING One or more Session messages contain a null Sub Sport value. Set Sub Sport value to 'generic' if unknown. Session Message Valid Message Index - Level: REQUIRED Status: FAILED One or more Session messages contain a null Message Index value. Lap Message Exists - Level: REQUIRED Status: FAILED```

julian [2022-07-30 05:30:39]
Were you guys climbing up El Cap?

julian [2022-07-30 08:02:59]
Stumbled across this from like..2018. A kinda..mechanics diagnostic script I had when I thought it’d be cool to be able to have an evaluation procedure as part of general service.

ts [2022-07-30 08:05:31]
So cool

julian [2022-07-30 08:07:27]
Yeah, I can’t remember if this was using my old fashioned desktop App (way back in the day when I was creating a mess of BLE code..) or if it was something pre-Rx App (the diagnostic App that’s also a scheme in the current OmataUtilityApp Xcode, like..code. I don’t know if it’s a safe thing to add as a diagnostic to the current consumer App. I think it’s be more a fiddle-factor thing than anything else. (Just random morning musings..)

pepijn [2022-07-30 08:12:18]
Want me to program that into the BLE protocol?

pepijn [2022-07-30 08:13:07]
The routine can be done by the firmware. App can ask for it via a BLE request.

pepijn [2022-07-30 08:13:39]
I do remember Harri saying you had to be careful to not drive the motors too hard

ts [2022-07-30 08:14:29]

ts [2022-07-30 08:14:38]
Is this the serial number 0 issue?

julian [2022-07-30 09:51:12]
Looks like the SN0 problem…

julian [2022-07-30 09:51:53]
We _think_ it is because of a card read issue, if memory serves.

julian [2022-07-30 09:52:35]
I end up replacing the card when this happens.

pepijn [2022-07-30 09:57:39]
99% sure it’s a card read issue

pepijn [2022-07-30 09:57:58]
That information is read from the device fit file if I remember correctly

pepijn [2022-07-30 09:58:13]
If it can’t be read you’ll get sn 0

ts [2022-07-30 11:19:37]
I feel like a real part of the club now!

ts [2022-07-30 11:22:36]
I took it on my ride just now anyway and it behaved like one would expect.

pepijn [2022-07-30 11:26:06]
I’ll double check the firmware code later this evening. Familiar enough with it in the meantime that I can trace the BLE request all the way through the code.

pepijn [2022-07-30 12:45:21]
Confirmed that the serial number is obtained by reading the device.fit file. BLEKit treats a failure to read that file as non-blocking and will leave the serial number blank. You should see a debug level message in the log when this happens.

pepijn [2022-07-30 12:45:51]
It's a silent failure on the firmware side though. I'll add debug output for that.

pepijn [2022-07-30 12:47:41]
With the latest firmware changes, the SD card should be getting verified when the device enters connect mode. You wouldn't expect to see this kind of error anymore. I'll get that firmware side debug logging in place. That way you should at least see something in syslog.

ts [2022-07-30 12:49:45]
Sounds good to me. Does this mean I need/get to take this little guy apart?

pepijn [2022-07-30 12:55:09]
shouldn't be necessary

pepijn [2022-07-30 12:55:18]
let's see what error is being reported first (if any)

pepijn [2022-07-30 12:57:15]
<@U012F84BCV9> you can use this build once it's complete

ts [2022-07-30 13:21:04]
I should’ve paid more attention while you two were going over basically this, but do I use DFU? I don’t think this device is mounting via USB

julian [2022-07-30 13:30:52]
I think you’ll want to do this via the arcane `dfu-util` command.

pepijn [2022-07-30 14:04:56]
<@U012F84BCV9> you can install dfu-util using homebrew

pepijn [2022-07-30 14:06:14]
To flash the device, you’ll need to use a serial terminal application to boot the device into dfu mode. I use for this

pepijn [2022-07-30 14:07:55]
There’s one setting you need to change related to beeline interpretation. I don't remember the exact wording, but it’s a checkbox along the lines of “treat newline as carriage return”. Without this enabled the output will look weird.

pepijn [2022-07-30 14:08:33]
Once you have the terminal setup, hit enter a couple of times and you should get an `nsh>` prompt.

pepijn [2022-07-30 14:09:51]
From there you can enter the command `boot2dfu`. That reboots the device into the dfu bootloader. If you then run `dfu-util -l` you should see three lines for different regions of the flash memory.

pepijn [2022-07-30 14:11:03]
You can then flash the firmware. There’s a script in the OmataFirmware repo `flash_firmware.sh` that you van use for this or you can get the relevant commands from there and execute them manually of course.

ts [2022-07-30 14:15:31]
Sounds simple enough!

pepijn [2022-07-30 14:28:34]
Rebooting the device might make the problem disappear of course. Heisenbug…

ts [2022-07-30 15:17:18]
It totally did. Shows up in the app with the correct serial now. Missing the last two rides but that’s probably expected?

ts [2022-07-30 15:21:05]
Updating to the build the robot made now!

ts [2022-07-30 15:22:56]
Successfully updated to `2022.7.30.0 0`

ts [2022-07-30 19:23:38]
Some small ui polish for the 3rd party services

pepijn [2022-07-31 02:48:02]
Something seems to be off when the omata auto-pauses

pepijn [2022-07-31 02:48:31]
Time for some syslog inspection

pepijn [2022-07-31 03:14:28]
The state the app gets stuck in

pepijn [2022-07-31 03:15:01]
What the firmware sees ```[1659262453.918]ble_connect_state: EVT_BLE_MSG [1659262453.928]ble_msg_handler: 0x01 [1659262453.928]ble_api_get_fit_file_listing: -> [1659262453.928]ble_api_get_fit_file_listing: tmp_file create failed -2 [1659262453.938]send_ble_nack: msg: 0x01, status: FILE_NOT_FOUND (2) [1659262453.938]ble_connect_state: EVT_ACK [1659262453.948]ble_connect_state: ack - msg: EVT_ACK [1659262453.978]ble_connect_state: EVT_BLE_MSG [1659262453.988]ble_msg_handler: 0x05 [1659262453.988]ble_api_get_aiding_exp: -> [1659262453.988]ubgps_aid_get_file_info: -> [1659262453.998]ubgps_aid_get_file_info: assist file missing '/media/GPS/MGA.DAT' [1659262453.998]send_ble_nack: msg: 0x05, status: NO_AIDING_DATA (4) [1659262454.008]ble_connect_state: EVT_ACK [1659262454.008]ble_connect_state: ack - msg: EVT_ACK```

pepijn [2022-07-31 03:17:30]
What BLE kit sees ```Omata_DBA23C4967DE> activities 2022-07-31 12:17:17.155216+0200 OmataCLI[44319:16059814] [omata] Request 'Get FIT file listing' (1 bytes) 2022-07-31 12:17:17.198685+0200 OmataCLI[44319:16061266] [omata] Received nack response 'File not found' Unexpected error: fileNotFound.```

pepijn [2022-07-31 03:20:25]
<@U012F84BCV9> what happened on my device is that for whatever reason the SD card did not get mounted properly. There's still some error handling missing in the firmware code which I need to add. The SD card is mounted at `/media`. When a ride starts, the firmware checks the `/media/Activities` directory and creates it if necessary. Because the SD card was not mounted, that directory got created on the small root filesystem of the device. Because there's now a directory inside `/media`, further mounting of the SD card fails :man-facepalming:

pepijn [2022-07-31 03:20:38]
In other words, the firmware is getting itself into a bad state and can't recover.

pepijn [2022-07-31 03:21:34]
If you connect with the omata app at that point it gets stuck in the state you can see above. The error for the FIT file listing doesn't seem to be getting handled correctly by the app. AFAICT from the firmware log and OmataCLI, the firmware is sending the error back correctly.

pepijn [2022-07-31 03:26:15]
The good news is my fsync stuff seems to have worked. My activity did end up on the SD card (at least to a certain extent). The summary file is missing though and the firmware doesn't contain the necessary

bits to recreate it on demand.

pepijn [2022-08-01 12:43:40]
<@U08B65RM0> I've been trying to get my omata to misbehave in a controlled setting but no luck so far. Do you know what kind of torture test Haltian put the device through. Starting to wonder if it's cobblestones combined with a carbon frame that's causing the af card to get bad connections or something like that.

pepijn [2022-08-01 12:47:02]
Thinking of tying an rpi with a battery to my bike and then hooking that up to the omata for the ride so that I can capture syslog output on an external device. Since the debug logging is recording to the sd card and the sd card is acting up it's rather hard to capture diagnostic info.

julian [2022-08-01 13:29:12]
We did drop and tumble tests but that was entirely mechanical - not functional. Resulted in small CAD changes to the case and such. But nothing comprehensive beyond that. (Although someday remind you to tell you a story..)

julian [2022-08-01 13:29:57]
It could be as you describe - the flash card cage being wonky?

julian [2022-08-01 13:30:25]
Makes me wonder about replacing that with soldered-on flash someday.

julian [2022-08-01 13:34:20]
What's an rpi?

julian [2022-08-01 13:34:58]
Oh :cherries::pie:..

julian [2022-08-01 13:35:08]
But raspberry..

julian [2022-08-01 13:35:28]
I mean - that sounds reasonable to try tbh..

julian [2022-08-01 13:36:54]
BTW <@U012F84BCV9> - my pal Fabien will reach out this week to discuss integration with his as another "3rd party" integration.

pepijn [2022-08-02 00:09:15]
Got an even better idea thanks to morning shower inspiration :smile: My son's bored during the summer holiday and he likes to tinker. Going to ask him to make a rattle rig with his mindstorms set. Couple that with a GPS location simulator (just going in circles the whole time for instance) and I should have everything I need.

julian [2022-08-02 01:28:23]
Hahahahaha!

julian [2022-08-02 01:28:49]

Awesome. 2 birds with one stone, as they say!

pepijn [2022-08-02 04:28:06]
I was reading up on how many erase/flash cycles the internal flash memory of the MCU is rated for. Order of magnitude is 1000 :grimacing: Going to have to be a little bit less eager in reflashing the devices.

pepijn [2022-08-02 05:24:08]
It's a day full of inspiration today. I think I finally figured out how to model a very simple altitude Kalman filter. Only took me 3 years :joy:

pepijn [2022-08-02 05:26:42]
The gist of it is that we can use a single variable Kalman filter for the GPS altitude value itself (which is essentially an adaptive low-pass filter then) and then use the barometric altitude change for the state prediction. I.e. if barometric altitude changes from `b` to `b'`, then we feed the vector `(b' - b)` into the Kalman filter to predict the next altitude value.

pepijn [2022-08-02 05:27:08]
That should be sufficiently simple in terms of number of computations that needs to happen that the MCU should be able to handle it.

pepijn [2022-08-02 06:38:42]
<@U012F84BCV9> <@U08B65RM0> For this issue we would need to add a notion of local timezone or timezone offset to the device settings. Is that something you would like to consider? ```Activity Message Local Timestamp is Valid - Level: REQUIRED Status: FAILED Local Timestamp is null.```

ts [2022-08-02 06:41:48]
I vote yes and will happily do whatever we need for the app side of things to assist. I think things like that Will fit swimmingly with the ideas I have for organizing the settings/profile section

pepijn [2022-08-02 06:42:28]
For context, timestamps in FIT files are all in UTC. That local timestamp is used to translate the UTC timestamps to whatever timezone you're in.

ts [2022-08-02 06:44:15]
I know my omata remembered the last location when I moved from Seattle to Utah and all my rides gave me +5000ft just for turning it on. So having timezone and the “ground zero” for the device confirmed in app seems nice

pepijn [2022-08-02 06:44:42]
The ground zero thing is something I'm going to fix next. It's already fixed in the dev firmware in the sense that it's no longer a one time thing, but done for every ride.

ts [2022-08-02 06:45:03]
You're on fire!

pepijn [2022-08-02 06:45:52]
But the general approach of taking the first GPS altitude as base altitude and then using the barometer from that point on for deltas is kind of a poor approach. That's what the Kalman filter thing is about.

ts [2022-08-02 06:47:24]
I feel lucky watching you work through this stuff. Learning a lot from afar.

pepijn [2022-08-02 06:48:04]
Thanks for the kind words

ts [2022-08-02 06:49:05]
You mentioned the pi the other day and I pulled out a box of stuff and tinkered all day yesterday! Got a pi hole running on my private vpn so I can block stuff on my phone too. Even got a few esp32 things added to HomeKit!

pepijn [2022-08-02 06:51:56]
> when I moved from Seattle to Utah and all my rides gave me +5000ft just for turning it on Going on vacation to Austria up in the mountains next week. Curious to see what will happen to my altitude measurements now as well :joy: Belgium is essentially at sea level just like Seattle.

pepijn [2022-08-02 08:50:42]

pepijn [2022-08-02 08:50:52]
Veggie harvest, that's a sport too, right?

pepijn [2022-08-02 11:56:01]
```pepijn@Kerel OmataBLEKit % java -jar ~/Downloads/FitSDKRelease_21.84.00/java/FitCSVTool.jar -t 220802184809.fit FIT CSV Tool - Protocol 2.0 Profile 21,84 Release Running FIT verification tests... Message Count: 303 FileId Message Exists - Level: REQUIRED Status: PASSED FileId Message Is First - Level: REQUIRED Status: PASSED FileId Message Type Is Activity - Level: REQUIRED Status: PASSED FileId Message Manufacturer Id Exists - Level: REQUIRED Status: PASSED FileId Message Time Created Exists - Level: REQUIRED Status: PASSED Activity Message Exists - Level: REQUIRED Status: PASSED Activity Message Timestamp Exists - Level: REQUIRED Status: PASSED Activity Message Local Timestamp is Valid - Level: REQUIRED Status: FAILED Local Timestamp is null. Activity Message total_timer_time is Equal to the Sum of Session Messages total_timer_time Values - Level: REQUIRED Status: PASSED Activity Message Session Count Is Equal To Actual Session Count - Level: OPTIONAL Status: PASSED Session Message Exists - Level: REQUIRED Status: PASSED Session Message Timestamps are Valid - Level: REQUIRED Status: PASSED Session Message Start Time Is Valid - Level: REQUIRED Status: PASSED Session Message Total Timer Time and Total Elapsed Time are Valid - Level: REQUIRED Status: PASSED Session Message First Lap Index and Num Laps are Valid - Level: REQUIRED Status: PASSED Session Message total_timer_time is Equal to the Sum of Lap Messages total_timer_time Values - Level: REQUIRED Status: PASSED Session Message total_elapsed_time is Equal to the Sum of Lap Messages total_elapsed_time Values - Level: REQUIRED Status: PASSED Session Message Sport Exists - Level: REQUIRED Status: PASSED Session Message Sub Sport Exists - Level: OPTIONAL Status: PASSED Session Message Are Sequential and Abut - Level: REQUIRED Status: SKIPPED Check requires two or more Session messages, found 1. Session Message Valid Message Index - Level: REQUIRED Status: PASSED Lap Message Exists - Level: REQUIRED Status: PASSED Lap Message Valid Message Index - Level: REQUIRED Status: PASSED Lap Message Start Time and Timestamp are Valid - Level: REQUIRED Status: PASSED Lap Message Are Sequential and Abut - Level: REQUIRED Status: SKIPPED Check requires two or more Lap messages, found 1. Record Message Timestamps Fall Within Session Message Times - Level: REQUIRED Status: PASSED Record Messages Are in Chronological Ascending Order - Level: REQUIRED Status: PASSED Device Info Message Timestamps are Valid - Level: REQUIRED Status: SKIPPED Device Info Message Device Index is Valid - Level: REQUIRED Status: SKIPPED Device Info Message Manufacturer Id is Valid - Level: OPTIONAL Status: SKIPPED
```

FIT binary file 220802184809.fit decoded to 220802184809*.csv files.```

pepijn [2022-08-02 11:56:13]
:+1: from the FIT SDK tools

pepijn [2022-08-02 11:56:26]
I'm going to tackle local time offset as a separate issue

ts [2022-08-02 12:07:19]
Well done! Harvest looks good too!

pepijn [2022-08-02 13:02:10]
<@U08B65RM0> another very low-level question. The ublox GPS receiver supports a number of dynamic models that tweak the internal logic. At the moment this is set to automotive. For a bicycle, I think pedestrian is more appropriate. Do you remember ever discussing this with Haltian?

pepijn [2022-08-02 13:03:36]
A bicycle can accelerate quite a bit faster than a person on foot of course.

pepijn [2022-08-02 13:05:57]
As an alternative to switching to pedestrian, the (motor)bike variant might be more appropriate. The turn radius of a motorbike is going to be much closer to that of a bicycle than an automobile.

pepijn [2022-08-02 13:10:49]
Scratch the bike idea; not supported by the receiver

pepijn [2022-08-02 13:21:08]
:man-facepalming: I was looking at the wrong config file. It's actually set to the 'Portable' profile.

ts [2022-08-02 13:21:52]
At least we’re clear for 300+ m/s!

pepijn [2022-08-02 13:22:05]
:joy:

pepijn [2022-08-03 01:15:08]
Looks like I burned through the available CI credits very quickly :grimacing:

pepijn [2022-08-03 01:15:51]
To make my life easy I set up the CI job to run on macOS, but macOS CI minutes count for 10 Linux CI minutes. Probably best to get a build setup working on Linux as well.

pepijn [2022-08-03 03:51:48]
I've been experimenting with timekeeping a bit further. Some interesting results:
```[1659522347.149]__manu_session_begin: Started at 2022.08.03 10:25:46.999559765
[1659522347.149]__manu_session_begin: timer 1970.01.01 02:10:19.753750000
[1659522347.159]__manu_session_begin: offset 0052.07.02 08:15:27.245809765``` The `Started at` value here is time as received from the GPS. `timer` is the system clock's 'uptime' timer. `offset` is the gap between the two. This is logged when the ride starts. The during the ride I'm seeing these values. `Current` is calculated using the initial start time and the system's 'uptime' timer. `GPS` is the time
```

coordinate received from the GPS. What's interesting here is that there seems to be a lag of a couple of seconds in the beginning of the ride that then reduces to about .1s. Why does all this matter? Since I'm going to try merging the GPS and barometer/thermometer inputs I need to make sure the times are properly synced. That's going to be an interesting challenge :smile:
```[1659522348.039]__manu_session_set_time: Current 2022.08.03 10:25:51.689559765
[1659522348.049]__manu_session_set_time: GPS 2022.08.03 10:25:47.999559822
[1659522348.109]__manu_session_set_time: Current 2022.08.03 10:25:51.769559765
[1659522348.109]__manu_session_set_time: GPS 2022.08.03 10:25:48.999559882
[1659522348.209]__manu_session_set_time: Current 2022.08.03 10:25:51.879559765
[1659522348.219]__manu_session_set_time: GPS 2022.08.03 10:25:49.999559952
[1659522348.259]__manu_session_set_time: Current 2022.08.03 10:25:51.929559765
[1659522348.269]__manu_session_set_time: GPS 2022.08.03 10:25:50.999560018
[1659522348.309]__manu_session_set_time: Current 2022.08.03 10:25:51.979559765
[1659522348.319]__manu_session_set_time: GPS 2022.08.03 10:25:51.999560082
[1659522349.179]__manu_session_set_time: Current 2022.08.03 10:25:52.849559765
[1659522349.189]__manu_session_set_time: GPS 2022.08.03 10:25:52.999560145
[1659522350.219]__manu_session_set_time: Current 2022.08.03 10:25:53.889559765
[1659522350.229]__manu_session_set_time: GPS 2022.08.03 10:25:53.999560205
[1659522351.179]__manu_session_set_time: Current 2022.08.03 10:25:54.849559765
[1659522351.189]__manu_session_set_time: GPS 2022.08.03 10:25:54.999560267
[1659522352.179]__manu_session_set_time: Current 2022.08.03 10:25:55.839559765
[1659522352.189]__manu_session_set_time: GPS 2022.08.03 10:25:55.999560359
[1659522353.179]__manu_session_set_time: Current 2022.08.03 10:25:56.849559765
[1659522353.189]__manu_session_set_time: GPS 2022.08.03 10:25:56.999560398
[1659522354.219]__manu_session_set_time: Current 2022.08.03 10:25:57.889559765
[1659522354.229]__manu_session_set_time: GPS 2022.08.03 10:25:57.999560457```

**pepijn [2022-08-03 04:48:45]**
Thought you might like this Julian :grin:

**pepijn [2022-08-03 04:50:10]**
For your archive

**pepijn [2022-08-03 04:58:12]**

**ts [2022-08-03 07:54:57]**
<@UA6CC3MT5>! Hahahaha, that is the coolest thing!

**pepijn [2022-08-03 08:17:39]**
Starting on my altitude filter experiment again. Blue is the raw GPS altitude signal. Orange/brown is the computed value from the barometer.

**pepijn [2022-08-03 08:17:59]**
GPS gets absolute sort of correct eventually, barometer gets relative change spot on.

**pepijn [2022-08-03 08:20:27]**

**pepijn [2022-08-03 08:20:53]**
The gray line here is what the Omata records today. First GPS value sticks and barometer is used for deltas from that point on.
```

pepijn [2022-08-03 08:22:40]

pepijn [2022-08-03 08:23:12]
This is Strava's corrected altitude. Matches the barometer well but the absolute values are offset ~50m

ts [2022-08-03 08:29:52]
That matches my experience using the 2020 fw I think. I generally get a 20% increase in elevation Omata data / Strava correction

ts [2022-08-03 08:29:54]

ts [2022-08-03 08:30:24]
Those are just cherrypicked from recent rides here

pepijn [2022-08-03 12:06:44]

pepijn [2022-08-03 12:06:48]
Look what I found tucked away in the firmware code. I tinkered a bit with the drive frequencies for maximum effect.

ts [2022-08-03 12:45:26]
:star-struck:

ts [2022-08-03 12:58:58]
Hey <@UA6CC3MT5> would the new 2022 firmware give me any issues trying to update aiding data? I'm tackling right now and am running into a separate issue where I can update the aiding data on one Omata but not on the other. The MGA.dat request goes through both times.

ts [2022-08-03 12:59:13]
This is where I've tracked it to:

ts [2022-08-03 13:00:13]
(not that it's a bug, just the last place I can get before that `OmataError` is returned)

pepijn [2022-08-03 14:02:34]

pepijn [2022-08-03 14:02:57]
<@U012F84BCV9> if you're using the previous build from GitHub, you probably want to upgrade to this one. There was a regression in one of the FIT file messages that caused the recorded times to be off.

pepijn [2022-08-04 04:45:05]
Ready for longevity testing. I implemented a rudimentary GPS simulator. Pretends your cycling around the equator at speeds varying between 21 and 28 km/h.

pepijn [2022-08-04 04:54:20]
And we're off for a trip round the world!

ts [2022-08-04 05:31:55]
Bon voyage!

julian [2022-08-04 05:40:45]
<@UA6CC3MT5> what's ?

pepijn [2022-08-04 05:42:41]
I noticed this when I was walking around with my Omata. There's some code in the location event handling that forces the speed value to be set to 0 the moment two consecutive location events have an identical lon/lat value. I got this when I went from open road into a forest. Probably got a noise spike on the GPS signal and all of a sudden you see the speed hand drop to 0 only to climb back up a little bit later.

pepijn [2022-08-04 05:43:21]
With this change, the firmware just trusts whatever speed value it got from the GPS NAV-PVT message as long as you're riding. This doesn't disable the stationary location detection BTW; that's a distinct bit of logic.

julian [2022-08-04 07:22:53]
Beast mode!

ts [2022-08-04 08:03:07]
This is so exciting, <@UA6CC3MT5>! I have plenty of GPS noise/tree interference here so I'm excited to try this out! I might have to rethink my "second OMATA in the bidon caddy" idea just so I can watch both hands simultaneously!

ts [2022-08-04 12:04:33]
Have I ever told you all about the Github notifications I get constantly? Anytime any public repo types `@ts` into a Github text field I get a notification and email about it :sob:

ts [2022-08-04 12:05:11]
I can assure you Typescript grew in popularity HEAVILY over the last few years

ts [2022-08-04 17:10:31]
If you decide to take the debugging mobile I wonder if you could use one of these little things usb-c to usb-c

ts [2022-08-04 17:10:49]

pepijn [2022-08-05 07:15:38]
I had a look at timezone support in the meantime. It's probably feasible, but the tz database is pretty big. Probably better to keep the smarts in the app and send utc offset over to the device. The only downside is that you don't get automatic dst switching.

pepijn [2022-08-05 07:16:12]
Or alternatively maybe we could download just the timezone rules that you're actually using down to the device.

ts [2022-08-05 07:20:11]
Yeah, I'm sure we could do some eager checking and make it seem "automatic" for the user regardless

ts [2022-08-05 12:13:22]

I’m like 99.9% certain this power meter is the issue and not the OMATA, but look at the power I got (or rather, did not get) on this mornings 80km:

ts [2022-08-05 12:14:04]
Irony is that the HRM is the same brand and almost 10y older than the PM. I’ve got a big email to write to them

ts [2022-08-05 12:18:51]
Speaking of “indelibility” <@U08B65RM0>… In adding a feature to delete all ride from an OMATA, I noticed that the regular delete only cleared local activity summary FIT and JSON files but not a locally downloaded FIT. Was it intentional?

ts [2022-08-05 12:19:47]
It’s simple to go either way, but I wanted to bring it up after I kept running into inconsistent behavior

julian [2022-08-06 03:31:48]
Hrm…I actually don't recall…

julian [2022-08-06 03:32:41]
May've been an oversight or maybe just in a rush to get something done, probably in the category of convincing myself that “delete” is a feature for down the road..

ts [2022-08-06 09:10:24]
Gotcha, that’s kind of what I was guessing. It explains a weird issue I’ve had with my daily driver OMATA where I’m always told there are 5 rides (4 that can’t be resolved) after every ride. It doesn’t affect anything functionally so I just ignore it. Now I’ve got a better idea what’s happening so fixing it should be easy

ts [2022-08-06 10:20:42]
Hey <@UA6CC3MT5>, I just now realized that my ride from the test firmware OMATA didn’t record the whole thing and the file name on disk is `220805~1.FIT`

ts [2022-08-06 10:25:19]

ts [2022-08-06 10:31:03]

ts [2022-08-06 10:31:30]
And this is the file from the other one if that matters at all

pepijn [2022-08-06 13:35:48]
I need to dig a bit deeper into this `~` stuff when I get back home. Couldn't get much from the syslog from looking at it on my phone.

ts [2022-08-06 14:05:30]
You mean 28MB of plain text isn’t ideal? :rolling_on_the_floor_laughing:

julian [2022-08-07 08:31:13]
I feel like I’ve occasionally come across the ~ nonsense but as an exception that occurs for unknown reasons. Not sure - just a slight haunting feeling of it having had happened in the past. I’m a bit out of my depth but perhaps something down in the fdisk code? I remember lots of hassles in that department

and vaguely of having to fork the source to get something to work? And there was all of this stuff with garbage getting on the disk when mounted on macOS and having a utility to clean it off. (I still use it on my mbp years later for other things.)

julian [2022-08-07 08:38:04]
Oh. Just read your reply <@UA6CC3MT5> - yeah, that nuttx fat32 code. It was a bit of a nail-biter I remember. You have much better eyes for it but just to say there was lots to do in there. I'm not entirely sure how well tested it was nor if there was an actual fork. But I do remember <@U0DDJ0QSY> and I scrolling through forum posts puzzling through some disk related issues. He ultimately figured something out around this garbage being left on the disk by macOS (those annoying index files related to spotlight search or some such). May not at all be related to the ~ issue - I may be babbling about the olden tymes when we all shod our own horses and brushed our teeth with tooth powder.

ts [2022-08-07 08:47:52]
Oh the lovely `.DS_Store`

julian [2022-08-08 10:35:32]
Also - <@UA6CC3MT5> let me know if you need any support for that idea about the flashing jig! Might be able to pull on some help for that. I really want to try the idea out. Sadly still away from my proper workstation / studio / lab for probably another month..

ts [2022-08-08 10:55:42]
<@U08B65RM0> do you have the ability to export a list of the users in a specific channel? I want to get the TestFlight group synced up with the people in the <#C5U8TGFJN|> channel. We have 49 in TestFlight and 80+ in there

julian [2022-08-08 11:09:45]
Um….

julian [2022-08-08 11:09:54]
Maybe..

julian [2022-08-08 11:11:13]
Slack is notoriously bad at giving back my data.

julian [2022-08-08 11:11:56]
I still would like a full chronological dump of everything from every channel but haven't managed to figure out how to do that.

julian [2022-08-08 11:12:33]
There's a list of members in the channel but it's not an export as best as I can tell but a list of user names on a screen.

ts [2022-08-08 11:24:32]
No sweat

pepijn [2022-08-08 13:41:00]

pepijn [2022-08-08 13:41:53]

The counters on the main screen seem to rest themselves to zero whenever you do a sort of semi navigation to another app

ts [2022-08-08 13:42:20]
They always have

ts [2022-08-08 13:42:31]
Any multi tasking too.

ts [2022-08-08 13:42:45]
Haven't spent a second checking into it

pepijn [2022-08-08 13:43:07]
Ok, known issue then

pepijn [2022-08-08 13:45:16]
Stupidly forgot to flash the non gps sim firmware before I left for Austria. I wanted to track our mountain walk today and omata went off at a brisk pace of 25km/h :man-facepalming:

ts [2022-08-08 14:35:11]
Oh no!

ts [2022-08-08 14:35:25]
That's frustrating I'm sure

julian [2022-08-10 07:49:36]
Jeff Teda (on <#C5U8TGFJN|>) going to try and repair a busted switch! Works in electronics so he’s game to give it a whirl. Sent him a link for the switch.

julian [2022-08-10 07:50:17]
This is another thing I’d fix when there’s a chance to redo the PCB CAD. And if the battery were more easily disconnected it’d make repairs a bit less annoying, at least to get to where you can get in and do some handwork..

ts [2022-08-10 09:01:03]
I love this!

ts [2022-08-10 09:01:40]
I’d like to “mod” mine someday just for fun

pepijn [2022-08-10 09:16:49]
Went out for a MTB ride in the mountains. After the long climb uphill we started a great single track downhill only to get a snake bite 2km in. Long long walk of shame to the closest cabin lift because we all forgot to bring a repair kit :disappointed:

pepijn [2022-08-10 09:17:36]
I had a close encounter with a groundhog on the way down. Shot across the track 2m in front of me.

ts [2022-08-10 09:30:45]
Yikes x2!

julian [2022-08-10 10:41:07]
Jeepers.

ts [2022-08-10 16:54:45]
This might just make my week:

ts [2022-08-10 16:54:48]

julian [2022-08-11 08:54:48]
Whoa..

ts [2022-08-11 09:26:03]
It “worked” but also didn’t. I’m so fed up with CocoaPods, I started a new branch this morning to migrate over to Swift Package Manager.

ts [2022-08-11 09:49:53]
Thanks <@UA6CC3MT5>!!

ts [2022-08-11 10:09:11]
This should be fun:

ts [2022-08-11 10:09:15]

ts [2022-08-11 12:36:47]
Wow, okay, I expected that to be a bigger nightmare altogether but it wasn’t too painful. Utility app now builds without CocoaPods. I’m going to get Rx building now too just so I can push this stuff rather than sit on it.

ts [2022-08-11 12:37:15]
lol…

ts [2022-08-11 12:54:31]
I already removed all Material from the main app, might as well take out the trash in Rx too

julian [2022-08-11 12:54:54]
Copy that.

ts [2022-08-11 12:55:36]
And to be clear, I only did since we never really leaned on anything it provided and UIKit was easy to slot in

ts [2022-08-11 12:56:12]
I think it was a couple buttons and two snackbar messages, and the rando `MDCTypography` stuff

ts [2022-08-11 13:10:49]
Okay, maybe not _right now…_

ts [2022-08-11 13:10:53]

julian [2022-08-11 15:10:55]
Oh yeah…I used that button for every button. The design pattern was just so straightforward…

julian [2022-08-11 15:11:25]
Do you think a refactor to SwiftUI would be a pain?

ts [2022-08-11 17:53:34]

julian [2022-08-12 08:18:41]
That's all SwiftUI is it?

ts [2022-08-15 15:40:20]
That's actually UIKit still. After going back and forth (way too much) between splitting the Xcode project into "rx app" and "utility app" I got kind of annoyed at everything and decided to get both targets using Swift Package Manager and dump Cocoapods entirely.

ts [2022-08-15 15:44:13]
I've got a few actions to wire back up after rooting out the older dependancies but everything builds from the same `.xcodeproj` now and Xcode handles packages. The only thing that might give either of you a hiccup if you build is getting your SSH keys set up so Xcode can access the `OmataBLEKit` repo privately

julian [2022-08-16 17:28:16]
Confidential packaging explorations. Playing with emboss, flat, deboss. The tone-on-tone isn't quite there. Trying out how to integrate the Silca mark somehow.

ts [2022-08-16 17:37:25]
oh so pretty

ts [2022-08-16 17:38:09]
I save packaging. Like, almost all of it. And I definitely misplaced my og OMATA box a couple moves ago

ts [2022-08-17 11:44:46]
Welp! No idea what happened but my Kickstarter OMATA wiped it's card today along with all my rides and totals :confused:

pepijn [2022-08-20 06:06:57]
One wiggle too many. Time to fire up the soldering iron.

ts [2022-08-20 11:04:45]
Oh shhhhhh!

pepijn [2022-08-20 11:57:56]
the poor thing is taking quite the abuse...

pepijn [2022-08-20 11:58:25]
My brother in law works in electronics. He can probably help me get it back to life.

pepijn [2022-08-20 12:01:51]
In more pleasant news, I was able (I think) to backport the most recent changes of the NuttX FAT32 implementation. Spotted a couple of bugfixes in there. :crossed_fingers: that this solves at least some of the problems we've been seeing.

pepijn [2022-08-21 10:57:05]
Rats, still got some kind of deadlock with the fat32 update. Back to the drawing board.

julian [2022-08-21 13:27:47]
Say <@U012F84BCV9> - is the latest code base using Cocapods or Swift Package Manager?

julian [2022-08-21 13:28:25]
I just did a `git fetch` and I'm going to try and build and muscle memory had me type pod update..

ts [2022-08-21 13:28:31]
All Swift PM now

julian [2022-08-21 13:29:03]
Okay. What's the incantation? Do I need to do anything? Should I checkout the repo in a fresh directory or anything?

ts [2022-08-21 13:29:13]
Are you using Xcode beta or no? The only thing I think incompatible is the OMATA symbol set

ts [2022-08-21 13:29:29]
Xcode will resolve and pull the packages for you!

julian [2022-08-21 13:29:50]
Ah. Good question. What version are you running? I think I downloaded something new back around WWDC, possibly? I'm also on a new-ish laptop so I haven't done much..

ts [2022-08-21 13:29:58]
And there's just the `.xcodeproj` now and no `.xcworkspace`

ts [2022-08-21 13:30:20]
I've been in one of the betas mostly. Looks like Version 14.0 beta 4 (14A5284g)

ts [2022-08-21 13:31:00]
It's worth it for the "sticky headers" alone haha

julian [2022-08-21 13:31:33]
beta 5 seems to be the latest. I'll download that..

ts [2022-08-21 13:33:37]
I'll download that now too I suppose!

julian [2022-08-21 13:43:06]
BTW, question (bear with me..) <@UA6CC3MT5> - so I'm writing a note to an old customer who sent in his device for a repair cause of the goddamn broken switch thing? Most often it is the case that the device won't go into BLE mode. Can you guys think of any firmware hack that would be a

kinda..watchdog to allow devices with broken switches to still switch into BLE mode in some fashion. With only one active switch there are only two possible modes, of course: off and ‘ride’. Is it a bad idea to have, say..the device go into ‘connect’ mode if it is in ride mode with no signal ack after, say, 4 minutes? And then leave that mode if there’s no BLE connect after 1 minute? Sounds super complicated, but I’m just trying to think out of the normal mode of things at this point mostly because I’ll be sending this back to the guy and otherwise it’s a perfectly fine beautiful thing..that simply can’t go into this mode because of a broken $1. switch.

pepijn [2022-08-21 13:46:16]
I did put that hack in that made the ride mode behave as connect when a usb cable is connected. Perhaps that's an easier to use option?

pepijn [2022-08-21 13:47:00]
It's controlled by the compile time option `CONFIG_MANU_RIDE_IS_CONNECT_WHEN_USB_CONNECTED` at the moment. No way to enable/disable at runtime.

julian [2022-08-21 13:51:16]
Oh. Huh. So with that compile time option when I connect a USB cable it’ll go into connect and is that USB connect or OTA connect kinda thing? (I’ve never tried it..)

pepijn [2022-08-21 13:53:38]
With a USB-C cable plugged into the back of the device when you twist the bezel from off to ride, the firmware will go into connect state instead of ride.

pepijn [2022-08-21 13:53:55]
If the cable is not connected it'll go into ride mode as usual

julian [2022-08-21 13:54:02]
Holy Baby Jesus..I did not know that.

pepijn [2022-08-21 13:54:23]
I added that a while back when we had a very similar discussion :smile:

julian [2022-08-21 13:54:44]
I’ve got too many things on my plate. Sorry! That just slipped by me.

pepijn [2022-08-21 13:54:49]
no worries

pepijn [2022-08-21 13:55:39]
it's still very much a kludgey solution, but I think using usb connected/disconnected as a pseudo button is simpler to explain to people than a certain amount of elapsed time.

julian [2022-08-21 13:56:03]
Agreed!

julian [2022-08-21 13:57:19]
Um..okay. So, new M1 MBP..what’s my toolchain to build the firmware. I’m all toolchain guy today finally with a bit of a break from other stuff.

julian [2022-08-21 13:57:30]
Should I just follow the instructions on the repo?

pepijn [2022-08-21 13:57:40]
yep, that should be all you need to do

pepijn [2022-08-21 13:57:58]
i.e. run the `setup_macos.sh` script and you should be good to go

julian [2022-08-21 13:58:12]
Okay. Maybe I'll wait for Xcode to finish in case there are any dev tools it's mucking with during the install.

pepijn [2022-08-21 14:12:56]
FYI, I just backed out the FAT32 stuff from the main branch again. Still doesn't seem quite stable. It's a huge pain to debug this stuff though. There seems to be an issue with switching to mass storage mode, but that disables the USB console.

julian [2022-08-21 14:13:14]
Check..

pepijn [2022-08-21 14:13:57]
I'll probably have to get me a USART/USB adapter cable and solder that on to the board. I think that's what Haltian made for you as well.

julian [2022-08-21 14:14:47]
I'm fairly certain that's what that is.

julian [2022-08-21 14:15:08]
I still don't have it in front of me. I think I put it in the storage unit.

julian [2022-08-21 14:15:46]
What are the issues with the FAT32 code that are causing hassles?

pepijn [2022-08-21 14:19:16]
The device deadlocks. I was able to figure out one cause of that already. I had debug logging in the FAT32 implementation on. When syslog gets suspended when you switch to mass storage mode, the syslog output would get flushed out. That triggered calls to the FAT32 code which then again tried to write to syslog. There are non reentrant mutex acquires along the way in both the syslog and the FAT32 code that were causing hangs.

pepijn [2022-08-21 14:20:15]
Today I took the device with me on a hike. At the end of the hike the hands were frozen. Back home the device would not respond to input on the USB console. Make me suspect something similar happened.

pepijn [2022-08-21 14:21:28]
The backport of the most recent FAT32 code from the NuttX repo is an attempt to fix the `SYSLOG~1.TXT`, `SYSLOG~2.TXT`, ... problem I saw every now and then. As far as I can tell that should not be happening.

julian [2022-08-21 17:26:04]

julian [2022-08-21 19:02:34]
<@UA6CC3MT5> What's your build platform? Seems the latest and greatest from Apple struggles to find the python interpreter right at the end of the MCU FW build I can run python (python3) fine, but that is at /usr/bin/python3 not /usr/bin/python, and trying to symlink /usr/bin/python to /usr/bin/python3 gets a complaint as I guess now /usr/bin/ is a read-only filesystem. (No amount of SIP disabling, etc., or mounting it as -rw seems to do anything.) I don't want to muck too much with the build chain. ocimage-convert.py appears in Visual Code with a ton of errors, most all of which are about indentation when I try to run it by hand with python3. I think I should stop mucking about until I hear your thoughts or we compare build platforms. I'm on Apple Silicon, on 12.5

julian [2022-08-21 19:18:40]
Maybe meant to be python2, which of course I'm having trouble installing..

ts [2022-08-21 19:50:32]
Lemme try building it on my machine. Update: nrf worked. And mcu built as well.

julian [2022-08-22 08:11:57]
<@U012F84BCV9> Maybe let's try to connect later today to catch up and chit-chat..

pepijn [2022-08-22 12:56:05]
Cheers <@U08B65RM0>

pepijn [2022-08-22 12:56:27]
Did you see "Tales from the loop" by any chance?

pepijn [2022-08-22 12:56:46]
Foto is reminiscent of the artwork that inspired that series

julian [2022-08-22 12:56:57]
Are you kidding me? I backed both/all of his projects on Kickstarter after I saw some of his illustrations. Yes. Totally. Totally inspired.

julian [2022-08-22 12:57:57]

pepijn [2022-08-22 12:58:50]
Your kite turbines remind me of that too. Slightly less melancholic colour palette there though :grin:

julian [2022-08-22 12:59:08]
Yes, more California than, like..Sweden or Finland..

pepijn [2022-08-23 03:38:17]
New toys :grin: I had been eyeing one of these for quite some time. :crossed_fingers:that I don't fry the PCB.

pepijn [2022-08-23 03:39:14]
Some reviews said the colour scheme was too Japanese. I like it though; much better than gray, black or beige.

julian [2022-08-23 15:14:37]
Oh yeah. I looked at one of those once. I got something not as nice and trashed it.

julian [2022-08-23 15:15:35]
I may get the JBC setup I had but returned (they had a 30 day trial that I dragged out to over a year without even really using it..of course now I would like to get back to electronics..)

julian [2022-08-23 15:16:07]
Wait - iron or desolder?

pepijn [2022-08-24 11:45:40]
Dev omata is back from the dead. It's the omata with nine lives :cat:

ts [2022-08-24 15:03:39]
Just finished a rough 91km and ~2200m and despite what the OMATA hands and the app say the file is not whole lol

ts [2022-08-24 15:25:42]
…and apparently mass storage mode won't work either :disappointed:

ts [2022-08-24 15:32:44]

ts [2022-08-24 15:33:01]
This is going to be a fun one <@UA6CC3MT5> :sob:

ts [2022-08-24 15:37:45]
Based on that view, I miiight be able to save the ride as it seems to continue further down

pepijn [2022-08-24 23:03:24]
The second half of the records look like garbage though

pepijn [2022-08-24 23:04:01]
Which fw version is that <@U012F84BCV9> ?

ts [2022-08-25 06:18:08]

ts [2022-08-25 07:31:21]
None of the fit to csv tools I've tried will give me the data after the garbage but I'm determined to save this one haha

ts [2022-08-25 09:13:01]
Wellllll this whole thing just got more (or less?) interesting. I just happened to be testing the app on an iPhone 8 (ios13) and decided to pair the OMATA in question and download that latest ride. First weird thing is the elevation graph drew correctly (this didn't happen after successful download on my daily phone).

ts [2022-08-26 12:26:57]
Unrelated but part of me wishes this System Profiler pane displayed the real serial number:

ts [2022-08-26 12:27:00]

julian [2022-08-26 12:40:03]
So, a couple of people volunteering to be part of the test team. Doesn't seem like it'll be as "robust" as the early days, but let's see. I'll invite them in to the test-team channel and we can sorta..ad-hoc figure out a plan.

ts [2022-08-26 12:42:57]
Where are all the Instagram influencers at?! They post enough coffee shop content. They love apps, right?!

ts [2022-08-26 15:33:02]
<@U08B65RM0> is the GPS quickfix expiry a random thing or specific for a reason? And on those lines is there an advantage to being able to do that anytime you're connected to an OMATA? Can it "get better data now vs <before>"?

ts [2022-08-26 15:35:48]
Just grafting over the last few pieces of the `AppSettingsViewController` into the `SettingsView` and wondered why that was always enabled when connected whereas MCU & BLE were "update only" vs "update anyway"

julian [2022-08-26 15:48:38]
Not entirely sure how to answer…the GPS signal acquisition is faster. It's a 2 week almanac so I don't know if it helps to get it every day. And I'm trying to stay under ublox radar (I negotiated with them and explained we're a small operator) as they sell subscriptions to the data (which was a change from when I first started) and like…it's enterprise scale stuff - like.."for enterprises with 10,000 deployed devices" is their lowest tier or something crazy. So they're selling the data to huge IoT operators or some crap like that..Hertz and trucking/logistics outfits.

julian [2022-08-26 15:49:20]
Oh - the expiry itself is derived from the GPS. It's not ramdom.

julian [2022-08-26 15:49:27]
*random

julian [2022-08-26 15:49:47]
(From the radio hardware if my memory serves..)

julian [2022-08-26 15:51:50]
I mean..I suppose it could be pulled anytime and so long as I've updated it it would get new data, if that's what you mean?

ts [2022-08-26 15:54:01]
Okay cool! Yeah, that's what I was looking for basically. Just rather understand than blindly port from the existing stuff.

julian [2022-08-27 07:13:33]
I'll start asking folks on IG who are posting directly..

pepijn [2022-08-28 09:51:26]

pepijn [2022-08-28 09:52:02]
Sorry for butchering your device :grimacing: finally got the serial console up and running thanks to my brother-in-law. Slightly less elegant than what Haltian was able to put together. I guess you can tell I'm a software guy :joy:

ts [2022-08-28 14:35:22]
Third ride and third failure

pepijn [2022-08-28 14:38:14]
Pulling my hair out here trying to figure out why the firmware keeps hanging. I'm at the point where I'm starting to think I might need to roll all the way back to retail FW and retrace my steps :disappointed:

ts [2022-08-28 14:47:16]
This one was new to me. ~45km into 80km the distance, time and elevation all reset while speed stayed where it was. I turned it off when I noticed and it kinda went back to where it was but reset again immediately

ts [2022-08-28 14:47:57]
The resulting ride on the app is only what recorded after that. I'm not sure if I can get syslog off without mass storage but I'll try

pepijn [2022-08-29 13:26:36]
Switched the CI jobs over to Ubuntu. Build time is down to 2m now. That'll be much easier to keep within the CI minutes budget.

pepijn [2022-08-29 15:08:11]
Latest iOS 16 beta. App overlaps with the top strip/notch.

ts [2022-08-29 15:09:18]
Yup, that’s how they work by default without `navigationBar`

ts [2022-08-29 15:09:56]
(of which, we’ve never had any haha)

ts [2022-08-29 15:10:43]
It only does because you scrolled though, the view is aware of the notch/navbar area

pepijn [2022-08-29 15:11:03]
I have a little 12 mini. Always scrolls :smile:

ts [2022-08-29 15:11:20]
12 mini here too :slightly_smiling_face:

pepijn [2022-08-29 15:11:50]
sad to see them getting discontinued (if the rumours are to be believed)

ts [2022-08-29 15:12:51]

I believe it so much I’m going to order a 13 mini this week before the announcement and get a rebate when they lower the price haha

pepijn [2022-08-29 23:57:56]
Hard crash this morning when pressing the activity rename menu item (and reproducible)

pepijn [2022-08-30 00:01:15]
<@U012F84BCV9> do you get crash logs automatically via test flight or do I need to get you some more information?

ts [2022-08-30 14:49:13]
Just completed a ride on the `main` firmware with no issues <@UA6CC3MT5>

pepijn [2022-08-30 15:00:08]
Dang multi-threaded output pipe code. I've been working on backporting the reworked syslog plumbing from upstream nuttx that would allow us to get rid of that pipe pump thread and eliminate the possibility of this dealock entirely.

ts [2022-08-30 20:45:36]
Haven’t looked into this at all but free hours to try stuff is fine by me

julian [2022-08-31 06:31:12]
Oh yeah. I got that but my free time yesterday was spent rendering stuff. What’s going on there?

pepijn [2022-08-31 06:32:09]
At a glance, GitHub Actions equivalent by Apple. Probably tailored to iOS/macOS/... development and without GH's 10x macOS penalty.

pepijn [2022-08-31 06:33:16]
The fine print regarding 25 free compute hours/month is important here though: > Free through December 2023, then US$14.99 per month if you choose to subscribe at that time.

pepijn [2022-08-31 07:07:21]
FWIW, I think we could set up CI jobs for the utility app on github as well, but those will have to run on macOS out of necessity. Given the breakneck speed of the swift compiler, that'll probably end up burning through the free compute minutes on github rather quickly.

ts [2022-08-31 07:08:00]
I haven’t had a chance to really focus on the sensor pairing stuff but I’m feeling a strong pull in that direction as I’ve been unable to get any data out of my powermeter for the last month or so. Could be 4iiii but the utility app is allowing/completing the pairing process, so who knows.

pepijn [2022-08-31 09:04:15]
<@U08B65RM0> if you have a moment, would you mind adding me as admin to the OmataBLEKit repo and <@U012F84BCV9> to the utility app one? That'll let us rename the master branches to main. You can do that on the github website under Settings -> Collaborators and teams

ts [2022-08-31 09:10:28]
I’m just trying the same thing to see what breaks. Let’s pop out to the channel

ts [2022-08-31 09:11:00]
I deleted the `OmataBLEKit` dependency and added it again to “update”

pepijn [2022-08-31 09:11:45]

pepijn [2022-08-31 09:11:45]
I think that might do the trick (based on the answer here)

ts [2022-08-31 09:14:11]
Does that do _all_ packages?

pepijn [2022-08-31 09:14:55]
I got errors on Firebase, Google stuff, etc. so maybe this is indeed the sledgehammer solution

ts [2022-08-31 09:15:43]
Hahaha, yeah that would give me PTSD after all the CocoaPods stuff. I’ll leave those for later Tyson to deal with

ts [2022-08-31 09:16:05]
I’m trying to add the package with a specific commit hash now

pepijn [2022-08-31 09:16:49]
says the same thing FWIW

pepijn [2022-08-31 09:17:04]
Let me add a tag so we can use that instead of the branch name

ts [2022-08-31 09:17:20]
Okay cool

pepijn [2022-08-31 09:17:52]
Ok to drop the pod stuff right?

ts [2022-08-31 09:18:34]
Absolutely

ts [2022-08-31 09:23:04]
Mine just picked up the `ad6ce4` rev

ts [2022-08-31 09:23:29]
Probably super aggressive caching in SPM/Xcode

ts [2022-08-31 09:30:10]
I’ve put off dealing with _`StartSensorScanViewController.swift`_ as long as I possibly could I guess haha :expressionless:

pepijn [2022-08-31 09:32:52]
:face_with_symbols_on_mouth: getting xcode to cooperate is infuriating

ts [2022-08-31 09:41:10]
Sure is! That was a big part of the motivation to drop CocoaPods. It’s twice the work fighting Apple sometimes haha

ts [2022-08-31 09:43:32]
I’ve noticed this in the past when testing sensor pairing, but I tend to lose the bluetooth connection to the OMATA way more often when scanning for sensors. It’s always some form of this:
`omataManager(_:didDisconnect:error:) "The connection has timed out unexpectedly."`

ts [2022-08-31 09:54:36]

ts [2022-08-31 09:55:31]
This whole view controller should be rebuilt so I’m just doing the bare minimum to restore existing functionality at the moment.

pepijn [2022-08-31 10:21:02]
BLE and ANT+ are both handled by the nRF52. Maybe enabling both causes radio interference?

pepijn [2022-08-31 10:24:28]
Did a quick google search. They’re both in the 2.4-2.5GHz range.

ts [2022-08-31 10:55:01]
I wondered about that. Makes sense.

ts [2022-08-31 12:04:19]
I’m doing the update/migration to Swift 5 syntax because I started down the rabbit hole already. Shouldn’t be many waves

pepijn [2022-08-31 12:26:42]
A was looking at the nrf sdk earlier. It has some settings to control ant+ and BLE coexistence. Might be something worth investigating further.

pepijn [2022-08-31 12:27:40]

pepijn [2022-08-31 12:28:29]
I think we use a different soft device though. Research capabilities on my phone are limited :grin:

pepijn [2022-08-31 13:07:26]
<@U012F84BCV9> I'm getting compiler errors like this now. Is that due to the Swift 5 changes?

ts [2022-08-31 13:07:56]
Yeah

ts [2022-08-31 13:08:21]
Should’ve cleaned all those up. Did I miss some?

pepijn [2022-08-31 13:10:16]
These were all in OmataRideDataTableViewController

ts [2022-08-31 13:11:02]

You should be able to rebase from master if you've got changes in there

pepijn [2022-08-31 13:11:22]
No changes on my end

pepijn [2022-08-31 13:11:50]
I pushed a commit that fixes those remaining errors just now

ts [2022-08-31 13:11:54]
I swept all the errors and 99% of the warnings in 920a1d

pepijn [2022-08-31 13:12:17]
except that one file :smile:

ts [2022-08-31 13:12:17]
Ahh!

ts [2022-08-31 13:12:34]
Yes, I stashed that file for some reason

ts [2022-08-31 13:13:04]
I shall rebase now :partying_face:

pepijn [2022-08-31 13:13:07]
No worries. I was having some local build issues and just wasn't sure if this was a local problem or due to the swift 5 change. Easy enough to fix.

ts [2022-08-31 13:16:39]
Just pushed the housekeeping I'd stashed of OmataRideDataTableViewController

pepijn [2022-08-31 13:18:59]
Ready for sensor pairing testing here

pepijn [2022-08-31 13:19:08]
my trusty high-tech rig

pepijn [2022-08-31 13:25:02]
interesting... never realized there's no way to unpair sensors

ts [2022-08-31 13:25:56]
The only way is being in range of it again and getting the button to show up on top of the stack haha

ts [2022-08-31 13:26:22]
I had 4 power meters paired until I tested the factory reset stuff

pepijn [2022-08-31 13:31:16]
```2022-08-31 22:30:22.955369+0200 omata (dev)[3053:826635] [manager] [A561C8B0-8AF3-25F3-11D2-B237B79AD19C] Unexpected connection loss (Connected) error (The connection has timed out unexpectedly.) 2022-08-31 22:30:22.956 [Debug] [omataBleRx] [OmataBluetoothModel.swift:82] omataManager(_:didDisconnect:error:) > ==========>
```

Disconnected from Optional("Omata_DBA23C4967DE")```

pepijn [2022-08-31 13:31:27]
got the same error you were mentioned earlier

pepijn [2022-08-31 13:32:42]
Those are coming from `centralManager(_ central: CBCentralManager, didDisconnectPeripheral peripheral: CBPeripheral, error: Error?)`. Basically CoreBluetooth saying the connection went poof.

ts [2022-08-31 14:04:27]
Yeah, I figured you'd see it so I mentioned it. Probably not a huge deal. I seem to get by with my bike and OMATA across the room when pairing sensors usually

ts [2022-08-31 14:05:04]
The "error" is the same if you simply turn on the OMATA while the debugger is running

pepijn [2022-08-31 14:05:16]
I can understand why you haven't touch the sensor pairing view controller yet :grin:

ts [2022-08-31 14:05:19]
I just imagine the app pouting

pepijn [2022-08-31 14:05:38]
Doing some basic cleanup to get it to behave a bit better

pepijn [2022-09-01 14:02:34]
if we add timezone support, would you expect the activity file names to still be in UTC or in local time?

ts [2022-09-01 14:06:29]
I'd probably stick to UTC but have no strong feelings either way

pepijn [2022-09-02 05:54:07]
<@U08B65RM0> I was looking into the mass storage mode issues a bit. Upstream in NuttX there have been quite a few bugfixes in this area. I can have a go at backporting those changes like I did for the FAT32 implementation. The downside is that the nuttx code is slowly becoming a poorly defined mix of various versions of the code. Not really ideal. We could consider updating the entire OS codebase so that we're on a consistent version, but that's a much larger undertaking. Do you have any strong opinions about this? Go for piecemeal backport? Hold off to stay on a somewhat consistent version? ...?

pepijn [2022-09-02 12:56:33]
I was thinking just now how I was going to test the ANT+ sensor stuff with my wired omata and got another interesting idea. :slightly_smiling_face: I'm going to see if I can make an indoor riding mode, source speed from my speed sensor and compute distance based on that. Just test code of course; I can monitor the serial console with my bike on the trainer

pepijn [2022-09-02 12:58:10]
<@U012F84BCV9> I'm going over the relevant code, but that has indeed not been touched since the intial commit

pepijn [2022-09-03 04:06:01]
<@U08B65RM0> would you have any objections to using ANT+ speed sensors as an alternative source for the speed dial? From a user pov this would pretty much be entirely transparent. If you happen to have paired a speed sensor or a combined speed/cadence sensor we would use that. Otherwise the GPS data is used as it is today.

pepijn [2022-09-05 00:15:58]
Interesting find in the ANT+ code today. If I'm reading this correctly, we're actually configuring the stack in "wildcard" mode which means it will pick up readings from any nearby power meter.

pepijn [2022-09-05 00:16:31]
Don't try getting meaningful power readings in a peloton in other words :slightly_smiling_face:

ts [2022-09-05 07:30:37]
That's …interesting. I've sometimes wondered if it was doing that on rides over the years since sensor pairing dropped. Never looked into it much.

pepijn [2022-09-05 08:35:40]
<@U012F84BCV9> would you mind doing one more test run? I cleaned up a bunch of logic on the nRF side related to ANT+. contains those improvements. You'll need to update both the STM and nRF firmware.

pepijn [2022-09-05 08:39:11]
The STM firmware now also supports 'extended ANT+ device ids'. See for the details on what that's all about. BLEKit has support for that now as well. Utility app will need a small update to fill in the 'transmission type' field in `BikeProfile` and `HrmProfile` as well to make use of this.

pepijn [2022-09-05 11:04:19]
Since we already have support for multiple bike profiles in the Omata, I'm going to extend those with sport/sub-sport fields. We can use that to populate the corresponding values in the activity files, but also to toggle between an indoor/outdoor mode. In indoor mode the GPS will not be used. Speed and cadence then come from the sensors instead which can also be used to compute distance. Good idea? I'm trying to think of a relatively simple way to support this without having to add too many setting knobs and levers in the utility app.

pepijn [2022-09-06 12:05:35]
I had the mysterious missing serial number issue today by chance in the CLI. Not sure what caused this; it wasn't the SD card… Looks like a bug in blekit

pepijn [2022-09-07 01:42:03]
<@U08B65RM0> do you remember if there was some kind of mechanism in place to ensure a compatible MCU (STM32) and BLE (nRF52) firmware version are being used?

pepijn [2022-09-07 01:57:03]
<@U012F84BCV9> I don't think there was anything in place. I've added a semver like check in the firmware already. If there's a major version mismatch communication with the nRF will be aborted. I'll see if I can add the necessary information to the BLE protocol as well so that the app can report on it.

pepijn [2022-09-07 02:01:09]
:thinking_face: rats that's not going to be possible of course. The nRF handles BLE communication. If we abort setting up the nRF there's no way to connect from the app either :man-facepalming:

pepijn [2022-09-07 02:12:07]
I made a small tweak to this. Only ANT+ stuff (ride mode) is going to be disabled. I put a bit of a hack in place (setting the high order bit of one of the version number components) to report compatibility issues without changing the protocol. Walking the tightrope here to ensure the firmware remains forward compatible.

pepijn [2022-09-07 02:45:06]
<@U012F84BCV9> I'm going to need some more help testing/validating sensors :smile: I've moved all the derived value calculations (e.g. ANT+ CAD sensors provide a revolution count and time value; you need to derive RPM from that yourself) over to the nRF52 soc. The firmware code for that component was already doing this, but only for logging. The STM32 was then doing the same thing. By moving the calculations over to the nRF the workload for the STM is reduced a bit. The derivation logic is essentially still the same, but I might have made a mistake somewhere and testing is all manual as you know.

julian [2022-09-07 07:15:02]
Hey guys - quick question. I have an early customer who's device has the busted switch. I could send it back to him as is (his request) or put a cut of the firmware that has the broken switch work-around. Any thoughts? I still haven't got my build chain working (I got distracted..) - would either one of you be able to build at that commit? Or - do you think I should just not bother? Or - is it worth the risk because otherwise there's not much he can do with it?

ts [2022-09-07 11:27:26]
Nice looking face on this new model…

pepijn [2022-09-08 06:57:46]
<@U012F84BCV9> just FYI, I moved the indoor mode bits off to the `indoor` branch while I'm helping Julian revive a device with a broken connect mode button. He needs to ship that back to the owner and I don't feel comfortable with shipping those changes already. If you take a build from `main` it will not have all the ANT+ changes.

julian [2022-09-08 07:09:11]
<@U012F84BCV9> I couldn’t get OmataRx to build. Are you or is it not ready? I had an error in ActivityIndicator.swift on line 16 (’common has been renamed to ‘RunLoopMode.commonModes’ but when I change it to RunLoopMode.commonModes, I still get a build error And then an error showed up but mysteriously vanished in reference to OmataReset being somehow out of scope.

julian [2022-09-08 07:10:41]
When I ‘fix’ hat issue in ActivityIndicator.swift, then I get a gang of errors in StartSensorScanViewController

julian [2022-09-08 07:11:08]
Could be an issue in my configuration, just to say. I’m on the Xcode beta, and maybe there’s a new beta after yesterday so mostly fwiw/fyi.

ts [2022-09-08 07:17:35]
Rx was building 100% until we added support for multiple profiles last week. I’m deeeeeeeeeep in the architecture of the app lifecycle/data model smashing race conditions atm but it shouldn’t take much to get that building again. Let me dig in real quick

julian [2022-09-08 07:18:55]
Yeah, don’t break yourself..I don’t need it emergency-like as I could confirm we’re good with the existing retail version, which is what our guy Paul would be using anyway..

ts [2022-09-08 07:22:30]
Not a problem, looks like just a handful of Swift changes to clean up

ts [2022-09-08 07:31:28]
Built Rx and connected to both devices here. `master` should be good to go

julian [2022-09-08 08:10:05]
It’s going off to a hotel in Philadelphia where his some reason so we can avoid the hassles of overseas shipment..

ts [2022-09-08 20:24:39]
That did the trick! Thanks. In case you don’t get notified automatically (can’t see the github channel on Slack) you need to run: ```git branch -m master main git fetch origin git branch -u origin/main main git remote set-head origin -a```

pepijn [2022-09-09 00:03:06]
<@U08B65RM0> who inspired who? :grin:

julian [2022-09-09 07:55:08]
Someone in my Discord community (happy to send you guys an invite if you’re curious) posted it in a kinda of solarpunk channel and then I got obsessed with trying to model them and render them over Los Angeles, so I sent my drone up in the backyard and took a photo and went a little crazy one weekend. I even used it in a proposal to the LA County Museum (which didn’t get accepted, but I did get a cool photo!)

pepijn [2022-09-09 08:32:16]
I'm curious if ~they're~ Altaeros is still pursuing this idea. Seems to have completely disappeared off the radar.

julian [2022-09-09 08:34:18]
I can imagine how it isn’t especially technically efficient, just on a naive engineering perspective..

pepijn [2022-09-09 11:51:19]

pepijn [2022-09-09 11:51:28]
Trainer mode :white_check_mark:

pepijn [2022-09-09 11:52:12]
I haven't validated the readings just yet but seems plausible

pepijn [2022-09-09 11:54:58]
Barefoot test on ultegra pedals :grimacing: I'll do a proper training ride with shoes, cycling clothes and a fan next.

pepijn [2022-09-10 01:54:57]

<@U08B65RM0> found a bug in the firmware you used for the device with the broken connect mode. When a ride is finished, the totals file will not get updated. I pushed a fix to `main` already, but that does mean we'll have to get this person a newer firmware build. Shouldn't be a big deal using the "update.oci on usb drive" method now.

ts [2022-09-10 07:46:40]
<@UA6CC3MT5> Should I put `main` on my test device today or is that still in ad-hoc support mode atm?

pepijn [2022-09-10 07:48:04]
I merged indoor stuff again, but noticed my latest changes broke some of the dev field parsing stuff

pepijn [2022-09-10 07:48:19]
Kind of in limbo at the moment in other words

ts [2022-09-10 07:48:52]
Cool, that’s kind of what I figured but wanted to check

pepijn [2022-09-10 11:03:01]
Gotta love embedded C code. The FIT SDK uses `void*` here and there and I had one `&` too many. No compiler warnings of course.

ts [2022-09-10 11:03:47]
So frustrating!

pepijn [2022-09-10 11:07:57]
Issue pinpointed and fixed

pepijn [2022-09-10 11:08:03]
`main` should be ok to use again now

ts [2022-09-10 11:11:44]
Nice, I’m waiting out the nasty wind here before riding. I’ll flash the test device after I walk the dogs!

pepijn [2022-09-10 11:13:51]
Hmm... I can see the page 18 data (crank-based power sensor) coming in, but cadence isn't being derived from that. Not sure why that might be happening.

pepijn [2022-09-10 11:15:46]
older firmware version from the looks of the output format

pepijn [2022-09-10 11:17:46]
odd, I don't really see anything wrong in the log output <@U012F84BCV9>

pepijn [2022-09-10 11:20:13]
<@U012F84BCV9> be sure to use . Flash both the nRF and STM firmware.

pepijn [2022-09-10 11:21:57]
Oh wait a minute! ```[1662753094.371]fit_insert_msg: writing message body failed
[1662753094.381]fit_insert_record_msg: error writing compressed message

[1662753094.381]manu_location_event: [ride/location] failed to write to activity file; reopening
[1662753094.401]emmc_check_if_mounted: /media seems to be mounted
[1662753094.401]fit_reopen_activity_file: Reopening /media/Activities/220909013400.fit
[1662753094.411]fit_file_rewind: Rewinding 220909013400 to 14406 bytes```

pepijn [2022-09-10 11:30:19]
I've added some extra logging in this area in Might shed some more light on what's going on

pepijn [2022-09-10 11:33:11]
<@U012F84BCV9> you're getting ENOSPC. Disk full in other words.

ts [2022-09-10 11:34:09]
That’s crazy! This is my test device* with only like one ride on it. I am transcribing this from my watch on a walk by the way.

pepijn [2022-09-10 11:36:01]
For whatever reason the FAT32 implementation thinks it's out of space. Might be a good idea to reformat the SD card.

ts [2022-09-10 11:36:32]
Sounds good!

pepijn [2022-09-10 11:37:14]
I don't have a better explanation for you I'm afraid. We can turn on debugging in the fat code as well, but that's very very verbose.

ts [2022-09-10 11:48:16]
No problem not trying to cause extra work. Just find any issues if I can.

ts [2022-09-10 14:30:38]
Today’s ride went well with the CI build. File looks right and hrm/bpwr are there

pepijn [2022-09-11 02:07:08]
I had a look at the possible origins of the ENOSPC error yesterday. I'm the FAT32. Ode that can come from 5-6 different points in the code. I’ll add some extra unconditional debug output where that error code is returned. Not a solution, but at least we’ll have a better idea of what conditions are triggering this if/when it reoccurs.

pepijn [2022-09-11 02:08:52]
Could you send me your syslog for your latest ride <@U012F84BCV9>? I would like to double check the ANT+ related output.

pepijn [2022-09-11 12:04:24]
```[1662837471.350]ant_bpwr: dev: 0xFB48, mask: 0x48 [1662837471.350]ant_bpwr: p18 ec: 166, ca: 78, ti: 91, pd: 5571, at: 3088 [1662837471.360]ant_bpwr: calc pw: 165, ca: 76, ct: 11, wh: 65535, wt: 4294967295``` Excellent!

pepijn [2022-09-11 12:04:58]
Let me break this down for you guys ```dev: 0xFB48, mask: 0x48``` Device ID and a bitfield indicating which data pages have been updated ```p18 ec: 166, ca: 78, ti: 91, pd: 5571, at: 3088``` Page 18 is the
```

raw detailed sensor information for crank based torque sensors. See the BPWR profile for what each of these fields means ```calc pw: 165, ca: 76, ct: 11, wh: 65535, wt: 4294967295``` This is the interesting bit. The nRF is now caluclating these values based on the subsequent page 18 updates. `pw` is the derived power value in watts `ca` is crank cadence in rpm, `ct` is total crank revolutions for the session `wh` is wheel 'cadence' in rpm, `wt` is total wheel revolutions for the session You'll either see ca/ct or wh/wt being populated depending on the power sensor type. My kickr for instance gives wheel info.

ts [2022-09-11 13:28:31]
That’s amazing <@UA6CC3MT5>!

ts [2022-09-11 13:29:27]
Just finished another successful ride with the latest CI build. Here’s the latest syslog:

pepijn [2022-09-12 12:00:32]
Starting to feel more confident about the state of the firmware. Finally!

pepijn [2022-09-14 09:33:34]
<@U08B65RM0> just saw the firmware question on <#C5U8TGFJN|> WDYT? Do we want to give people the opportunity to kick the tires?

pepijn [2022-09-14 11:10:49]
<@U012F84BCV9> I got the aiding data download loop as well. On the firmware side of things there's a missing data packet. It asks for a retransmit, but the app doesn't seem to respond in a timely fashion and when it does rewind, it's not rewinding to the correct packet.

pepijn [2022-09-14 11:12:44]
It's always happening right at this point at sequence number 311. ```[947610511.330]ble_sm_event: [file_rx/ble_msg] [947610511.330]ble_file_rx_state: seq: 310, len: 18, left: 56142 [947610511.340]ble_sm_event: [file_rx/ble_msg] [947610511.340]ble_file_rx_state: invalid sequence number: 325, expecting: 311 (0x0137) [947610511.350]nrf52_send_ble_retransmit: seq: 0x137 [947610511.360]ble_sm_event: [file_rx/ble_msg] [947610511.360]ble_file_rx_state: invalid sequence number: 326, expecting: 311 (0x0137) [947610511.370]ble_sm_event: [file_rx/ble_msg] [947610511.370]ble_file_rx_state: invalid sequence number: 327, expecting: 311 (0x0137) [947610511.380]ble_sm_event: [file_rx/ble_msg]```

pepijn [2022-09-14 11:13:23]
and here you can see the rewind to the wrong position ```[947610513.990]ble_file_rx_state: invalid sequence number: 979, expecting: 311 (0x0137) [947610514.000]ble_sm_event: [file_rx/ble_msg] [947610514.000]ble_file_rx_state: invalid sequence number: 343, expecting: 311 (0x0137) [947610514.010]ble_sm_event: [file_rx/ble_msg]```

pepijn [2022-09-14 11:15:03]
Same thing is happening with the latest app version fwiw. Either a blekit, corebluetooth in iOS 16, or firmware problem.

pepijn [2022-09-14 11:16:25]
I have a sneaking suspicion this has to do with the transfer throttling mechanism. The OS is supposed to signal when the transmit buffer has room for more data. If that's not working correctly we'll end up dropping outgoing packets and then all kinds of weird stuff happen.

pepijn [2022-09-14 11:17:08]

From OmataCLI, which uses the exact same code, I was able to upload the nRF firmware (~500kb) just fine for instance. Only difference is iOS vs macOS.

pepijn [2022-09-14 11:45:42]
I went through the BLEKit code again. On macOS the 'ready' signalling callbacks are simply not used. I remember now that those proved to be very unreliable on macOS at the time. Perhaps we should do the same for iOS. That does end up reducing throughput quite a bit unfortunately.

pepijn [2022-09-14 11:47:06]
Another thing I'm wondering is if the firmware simply can't keep up with the upload due to excessive logging. Might simply be a buffer overflow case on that side. I'm going to see what happens if I disable receive logging.

pepijn [2022-09-14 11:53:51]
Yep, that fixed it right away. Smooth upload with retail firmware.

pepijn [2022-09-14 11:57:35]
That makes perfect sense. The BLE transfer is an unacknowledged transfer with no flow control whatsoever. The signalling we're getting from iOS/macOS is informing the app about the iOS/macOS transmit buffer, but doesn't say anything about the state of things on the receiving end.

pepijn [2022-09-14 13:13:35]
<@U012F84BCV9> latest blekit commit should improve retransmits a bit. When a retransmit is detected, we'll wait 1s to give the omata a chance to catch up before sending more data. While I was at it I switched the code over to Swift Atomics. This replaces the OSAtomic wrapper I was using before.

ts [2022-09-15 07:24:49]
We have a new kid on the block: `tmp.txt` :joy:

ts [2022-09-15 07:24:52]

pepijn [2022-09-15 07:30:37]
interesting that that wasn't cleaned up

pepijn [2022-09-15 07:30:48]
Whenever you upload a blob to the device it gets written to that location

ts [2022-09-15 07:41:16]
You spying on this <@U08B65RM0>: ?

ts [2022-09-15 09:00:37]
I did a thing I said I would not do. I succumbed to a larger than mini iPhone… We'll see how much regret I'm filled with tomorrow. Interestingly, after having only "black" or "Space Grey" iPhones since forever, I opted for Deep Purple :joy: :man-shrugging::skin-tone-2:

pepijn [2022-09-15 11:31:59]
FYI, I was able to get USB capturing on macOS sort of working, but the dissection capabilities seem to be very limited. Not much that I could learn from that.

ts [2022-09-16 14:21:03]

Paired `main` fw with a friend's power meter mid-ride today. Power recorded just fine and looks right. It doesn't have cadence but I'm not familiar with his unit so I'll do some digging

ts [2022-09-16 14:33:32]
Say <@U08B65RM0>, you don't happen to have files for the OMATA k-edge inserts do you? Said buddy has a 3d printer at work and I've only got one legit mount. The other one I carved up a wahoo insert to make it work :rolling_on_the_floor_laughing:

ts [2022-09-16 14:34:05]
Or even those garmin/omata combos I suppose?

julian [2022-09-17 08:25:42]
I do. The combos as well but they are not very good. They were done by "eye" and not to specifications or data, although I heard the data is available somewhere..

ts [2022-09-17 08:26:23]
Happy to tinker with whatever you wanna share!

julian [2022-09-17 08:28:15]
3D print would probably be fine. The dimensions are quite tiny so I imagine it would depend quite a bit on the printer and its resolution and stuff.

julian [2022-09-17 08:28:44]
I'll have to dig out the stl when I'm at the computerZ

julian [2022-09-17 08:29:16]
I can also send you some k-edge inserts..I have a bag of them.

ts [2022-09-17 08:29:50]
Got a regular pro team brewing over here :joy:

julian [2022-09-17 08:30:08]
But if you want the data to just muck about I can send that too.

ts [2022-09-17 08:31:31]
Both would be amazing really

ts [2022-09-17 08:32:41]
I've been riding to the local cross races during the week as my girlfriend races quite a bit still. Basically a one man expo with an OMATA on my bars haha

julian [2022-09-19 09:59:32]
Hey <@U012F84BCV9> I got a box of stuff to send to you..can you double-confirm your shipping address?

ts [2022-09-26 17:05:57]
Smooth sailing so far reviving #1845 with 2022 fw

julian [2022-09-26 17:06:23]
Sweet!

julian [2022-10-05 08:26:45]
Customer self-repair of busted switches!

ts [2022-10-05 08:33:58]
This is relevant to me as I think #1845 has decided to ignore all bezel input haha

julian [2022-10-05 15:48:45]
Say - can we start enrolling people into testing the new App? (Just wondering..) Brett from Rapha says he's having problems downloading new rides on his new iPhone 14 which may have nothing to do with the phone I realize and maybe would cause more problems to try the new App..or something.

ts [2022-10-05 16:24:39]
Been meaning to sync up on that but yeah, I want to push something this week if only to see who's all using it haha. I've got a short punch list on my desk of "loose ends" I wanted to knock out.

ts [2022-11-01 08:01:35]

julian [2022-11-01 12:11:59]
Continuing to recruit to beta test the App!

ts [2022-11-01 13:01:47]
Yeah, I figured at this point I have a pretty clear idea of what is or isn't working and there's enough new stuff for people to start hammering it while it takes shape

julian [2022-11-01 15:13:13]
Do people need to be on the 2022 Firmware?

julian [2022-11-01 15:13:21]
Also here's a guy:

julian [2022-11-01 15:13:33]
Are you able to add him to Testflight ir do I do that?

ts [2022-11-10 17:31:30]
Say <@U08B65RM0>, I've always had my guesses as to what the "fraction for line"/ratio thing was meant to do. So I made it do something again:

ts [2022-11-10 17:31:36]

ts [2022-11-17 16:09:44]
How much experience (if any, lol) do you all have with the newer Garmin or any Wahoo head units with bluetooth?

ts [2022-11-17 16:10:44]
I know those do the whole "sync automatically" thing but I've only seen my partner use hers since the last Garmin I had was almost a decade ago.

ts [2022-11-17 16:11:38]

Not looking for specific info I guess, just trying to suss out the experience. It seems seamless and I think we can get there too. I wish the transfer rate were higher but alas

julian [2022-11-17 18:37:58]
Yeah, I don't have any experience with those, but I've heard about that kinda..auto-upload thing. I never really thought it was worth the effort, but that's balanced against everything else I had to do. I wouldn't dissuade you from looking into it though..I don't even know if they use WiFi to be honest..do they? Or is it Bluetooth to a device? I had one or two people wonder if the App should auto-upload. I was never a big fan of that, tbh. I personally kinda like the ritual of actually doing it. I also have an immediate allergic reaction to anything that uses the word "seamless"..just reminds me of silicon valley a bit much.

ts [2022-12-15 06:05:39]
Uh oh <@UA6CC3MT5>…

pepijn [2022-12-15 06:06:10]
Yeah saw that one this morning. So long dear friend :cry:

ts [2022-12-15 06:07:49]
I feel for you even having never used it. It's heartbreaking losing a familiar tool :smiling_face_with_tear:

pepijn [2022-12-15 06:09:03]
I don't use it that often tbh. Just easier than learning Xcode properly.

julian [2022-12-15 11:22:29]
:christmas_tree:

julian [2022-12-22 09:04:30]
Happy Holidays fellers

ts [2022-12-22 09:05:01]
Same to you and yours!

julian [2022-12-22 09:05:26]
What's the plan for the holidays?

pepijn [2022-12-22 23:04:22]
Happy holidays to you all as well!

pepijn [2022-12-22 23:06:09]
> What's the plan for the holidays? Cooking Christmas lunch for my family this year. Coq-au-vin for 10 adults and something more accessible for 11 kids :sweat_smile: Besides that nothing but relaxing.

julian [2023-01-01 09:20:39]
Happy New Year fellers! :confetti_ball: :clinking_glasses: :fried_egg:

ts [2023-01-01 09:21:40]
Cheers dudes!

ts [2023-01-26 15:25:34]
Next distraction I didn't need but also kind of did:

julian [2023-01-26 20:37:33]
Oh dang!

julian [2023-01-26 20:37:42]
CREST

ts [2023-01-26 20:38:32]
It’s always been on my short list, and even though this is too big I’m pretty pumped haha

ts [2023-01-26 20:39:24]
The paint is in ooookayyyy shape, but it’s legit SN indicates #46 of 300

julian [2023-01-26 21:15:12]
Dang!

ts [2023-01-29 17:24:08]
Currently stripping the black anodization off of one of my OMATA out front mounts so I can polish it up for this build :sunglasses:

julian [2023-01-31 22:26:33]
Whoa! Pics?

pepijn [2023-02-12 02:53:10]
Are you planning on riding it or just a collectible?

ts [2023-02-12 07:48:49]
I want to build as if I’d ride it often just to see how comfortable/fun I can make it for me. If it’s just way too big I’ll probably sell it and try to find a smaller one :sob:

ts [2023-02-12 07:49:26]
It’s been fun seeing what modern parts I can use but kind of stick to the “spirit” of the original

pepijn [2023-02-12 07:52:33]
The chain looks like it’s way beyond it’s usable wear level on that picture :smile: Seems to be floating over the front chain ring.

ts [2023-02-12 07:54:10]
Yup! That’s an 11s wheel set shoved in the rear triangle moments after delivery :rolling_on_the_floor_laughing:

pepijn [2023-02-12 07:54:58]
Cool frame btw. I like the 80s styling.

ts [2023-02-12 07:55:03]
Since the Shimano 600 tricolor stuff wasn’t original I just listed most of it cheap on eBay. The shifters and rear mech have already been rehomed!

ts [2023-02-13 17:10:47]

I’ve been mostly hunting and not buying for this build but I did get the risky bottle cages I found. Turns out they’re real and way cooler than I hoped

ts [2023-02-13 17:11:11]

ts [2023-02-13 17:11:45]
Late nineties titanium for no reason!

ts [2023-03-11 16:13:27]

ts [2023-03-11 16:13:54]
One of the OG units just out of reach for me atm

ts [2023-04-25 15:40:33]

julian [2023-04-25 17:23:18]
Huh….

ts [2023-04-25 17:24:08]
Just added the lot that have appeared in analytics

ts [2023-04-27 16:28:48]
I’m about to fly to LA for a couple days and I was curious how far I could get just making the “Odomata” gauges from memory in swiftui. This is going to be fun

ts [2023-04-27 16:28:52]

julian [2023-04-30 15:07:11]
Wait, are you in LA?

ts [2023-05-03 14:54:45]
Not sure what’s changing, if anything but I’ll look into it

ts [2023-05-07 09:39:57]

ts [2023-05-07 09:40:44]
This experiment is making me wish I paid better attention in maths but it’s proving to be very flexible!

pepijn [2023-05-07 11:42:50]
If you need any help with the sines and cosines I’m happy to help out :grin:

ts [2023-05-17 19:43:27]
Just pushed a build with everything up until I kinda stopped working on it. Which is kind of a lot for people using the app store version I guess

julian [2023-05-18 07:17:49]
I saw!

julian [2023-05-18 07:18:46]

I was trying to delete the old omata devices in the settings page but some got stuck. You think I should try deleting the App and reinstalling via Test Flight?

pepijn [2023-05-18 07:34:37]
Was it something I said? :rolling_on_the_floor_laughing:

julian [2023-05-18 07:34:51]
Eh?

pepijn [2023-05-18 07:34:53]
Any idea what might have caused this?

julian [2023-05-18 07:35:19]
Weird. Maybe <@U012F84BCV9> accidentally bumped into a lever somewhere in the data room?

julian [2023-05-18 07:35:39]
(I haven't thrown levers in quite some time…I'm sure it was an accident of some description..)

pepijn [2023-05-18 07:36:24]
I'll see what I can find out in the developer console later today. Curious to check out the state of things.

ts [2023-05-18 07:44:46]
Weird! Unaware of anything but who knows with the dev portal haha

ts [2023-05-18 07:45:03]
Which email? ?

ts [2023-05-18 07:48:34]
Should be all good <@UA6CC3MT5>. You were listed in there with a role but I had to check a box :man-shrugging::skin-tone-2:

pepijn [2023-05-18 07:53:21]
Test flight app seems a bit obtuse. Still showing removed here. Could you remove and add my account again? Maybe a fresh invite will fix things.

ts [2023-05-18 07:54:31]
I did that and added you to one of the public groups to see if that kicked one through

julian [2023-05-18 07:55:26]
Just added and I'm getting a hard crash right as it opens.

ts [2023-05-18 07:55:48]
Amazing start!

julian [2023-05-18 07:56:21]
Let me delete and reinstall…

julian [2023-05-18 07:56:39]
Same thing…

julian [2023-05-18 07:56:42]
:man-shrugging::skin-tone-4:

ts [2023-05-18 07:56:50]
Thierry Stoll is having issues too according to testflight

julian [2023-05-18 07:56:57]
Copy..

ts [2023-05-18 07:57:10]
Which iOS / phone are you on

ts [2023-05-18 07:58:54]
Okay I can get it to crash on a fresh device

ts [2023-05-18 07:58:57]
WTF

pepijn [2023-05-18 08:01:09]
I needed to explicitly stop testing and then redeem the invite.

pepijn [2023-05-18 08:01:23]
App launches here, but it’s not a fresh install of course

ts [2023-05-18 08:03:30]
I think I found the issue after mine crashed. Testing on device now

ts [2023-05-18 08:11:27]
Build 3835 works for me

ts [2023-05-18 08:11:36]
Wanna try that <@U08B65RM0>

pepijn [2023-05-18 08:13:12]
Fresh install seems to have some kind of cpu usage issue. Sluggish as heck when the app is open and the app switcher stutters into view

ts [2023-05-18 08:14:29]
There’s definitely something in the rides view when only a demo omata is present

ts [2023-05-18 08:14:56]
But I rebuilt that screen already so I haven’t chased it down in the current one

pepijn [2023-05-18 10:40:58]
Time to fire up the profiler. I’ve never done that on iOS; time to learn something new.

julian [2023-05-18 10:41:21]
I did that once ages ago…I think the instrumentation was actually useful, if memory serves!

ts [2023-05-18 10:41:36]
Only if you want to!

pepijn [2023-05-18 10:41:58]
A programming challenge? And you're asking if I want to? :joy:

pepijn [2023-05-18 11:06:55]
When run with Instruments the app is crashing on startup

pepijn [2023-05-18 11:07:12]
I'll try a plain release build next without Instruments. Debug build seems to launch just fine.

ts [2023-05-18 11:07:29]
Yeah I didn't push the one line change before I ran off this morning

ts [2023-05-18 11:07:48]
Switch UploadsClient.live to .mock

ts [2023-05-18 11:07:57]
In AppEnvironment.swift

pepijn [2023-05-18 11:09:50]
Still in development code being used instead of a stub?

pepijn [2023-05-18 11:11:26]
Where did all the code go <@U012F84BCV9>? :smile: Looks like you've done some serious cleanup work.

ts [2023-05-18 12:18:53]
I've got so much more in various stages of completion. Was much easier when I wasn't working a dumb job every weekday haha

pepijn [2023-05-18 12:23:23]
Steep learning curve here with Instruments

pepijn [2023-05-18 12:23:57]
It's confirming "yes, things are slow". ~300ms frame render times.

pepijn [2023-05-18 12:24:30]
Can't quite figure out how to trace why that is just yet

ts [2023-05-18 12:25:22]
Interesting!

ts [2023-05-18 15:23:57]
Probably the most installs we've had in a few years, so that's something!

pepijn [2023-05-19 00:01:29]

Got a crash on activity download. I'll check it out in the debugger.

pepijn [2023-05-19 00:03:39]
What would you prefer @ts? Direct push of fixes to main or PRs?

pepijn [2023-05-19 03:42:08]
Main issue I'm seeing is that the app doesn't seem to autoconnect to the paired Omata. I need to repair every time to get it to connect. Without doing that I can't download rides after restarting the app.

pepijn [2023-05-19 04:07:28]
I took the liberty of fixing the crash already on main. Location records that did not have an altitude value (e.g. no 3d fix yet) where causing this.

pepijn [2023-05-19 04:08:49]
I also massaged Silhouette a bit. The rendering wasn't really working the way it's supposed to AFAICT. I've tweaked it so that the X range (distance) is mapped to the full range of the view. The Y range (altitude wrt mean sea level) is as well.

pepijn [2023-05-19 04:09:17]

pepijn [2023-05-19 04:10:21]
I think that's what we're going for. This ride does look way more spectacular than it was now though. Altitude difference between min and max is 50m at most.

pepijn [2023-05-19 04:13:36]
Strava for comparison

pepijn [2023-05-19 04:19:08]

pepijn [2023-05-19 04:20:30]
That's better. The difference in background color does make things a bit harder to read. Perhaps we should offset the profile upwards so that it fills the whitespace between the hamburger button and the text?

pepijn [2023-05-19 04:22:55]
On a side note, does XCode have a proper Git UI or is the "Commit" dialog all you get to work with?

julian [2023-05-19 07:23:24]
Just a note on the App update — we don't want to launch anything on the App Store without Silca's approval, just fyi. I don't know where there head is at at the moment, tbh. I haven't heard anything from them for weeks.

julian [2023-05-19 07:25:24]
I'll try to get their attention and mention that you've been working on the App and we are talking about pushing it to the App Store. Just that it's technically their responsibility, etc., and they'd want to think how to respond if customers begin to wonder about product availability. (I don't get a clear sense from them that they are actively working on things, although they were doing packaging last I talked to them but I know for a fact that they haven't manufactured PCBs and there was some issue with ordering batteries.)

ts [2023-05-19 07:25:48]
Totally understand. Ideally someone over there will take one look and be like “oh, yeah, do that” when the time comes, haha

ts [2023-05-20 11:25:43]
Re: Thierry. I’ve reached out many times but never gotten a response. He’s on an iPhone 7 but on iOS 15+ so it’s hard to guess from afar

pepijn [2023-05-20 11:44:50]
FYI, <@U012F84BCV9> I tinkered a bit on the BluetoothOmata stuff today. Auto connect isn’t quite working –I think I figured out why– and I cleaned up that code a bit while fixing the issue.

pepijn [2023-05-20 11:45:08]
I’ll try to push that later today

ts [2023-05-20 11:45:25]
You’re like the guardian angel I never deserved :joy:

pepijn [2023-05-20 11:45:51]
Thank you for doing the heavy lifting of converting everything to swift

pepijn [2023-05-20 11:46:04]
Much easier to find my way around the app now

ts [2023-05-20 11:46:48]
I’ve been selfish and tried to use every opportunity as a working learning example.

ts [2023-05-20 11:47:07]
But all for the love of the Omata

ts [2023-05-20 12:19:30]
Totally unrelated! I’ve been installing a workbench in my garage all morning.

ts [2023-05-20 12:20:37]

pepijn [2023-05-22 08:08:10]
I fixed that one already on `main`. I wasn't sure what the correct way to do this was so I simply increased the hardcoded height a bit.

ts [2023-05-22 08:09:13]
Awesome!

pepijn [2023-05-23 22:13:35]

pepijn [2023-05-23 22:14:17]
I keep getting these emails. Any idea what could be causing that? As far as I can tell all the configurations are set to build debug symbols.

pepijn [2023-05-23 22:15:10]

I notice difficulties in getting Instruments to show resolved stack traces so maybe something's still misconfigured?

ts [2023-05-24 12:15:06]
Yeah, I've been ignoring those recently. I'm sure it's something small I can adjust I'm the deployment

julian [2023-05-27 13:47:27]
I get those as well and basically ignore them…

julian [2023-05-27 13:47:44]
(For years…)

julian [2023-05-30 19:24:26]
Say, I was just helping a guy calibrate hands and I noticed the version of the Rx app only wants to calibrate speed. Before I open Xcode, do you recall if this was TBD to have some feature to go to the other hands?

ts [2023-05-30 19:25:07]
Been so long since I've used Rx

pepijn [2023-06-01 13:22:16]

pepijn [2023-06-01 13:22:19]
Better?

pepijn [2023-06-01 13:24:32]
The altitude profile now gets centered vertically in the whitespace between the widgets at the top and the stats at the bottom. Depending on the altitude difference for the ride (using your ranges <@U012F84BCV9>) the profile gets scaled. At the extremes it will overshoot the whitespace bounding box slightly.

pepijn [2023-06-01 13:28:04]

pepijn [2023-06-01 13:28:40]
A really, really flat ride will still show some undulation. I think that's preferable to a completely straight line.

pepijn [2023-06-01 13:30:49]

pepijn [2023-06-01 13:31:36]
Same ride as the first one, but all the altitude values have been scaled by 50. 38km ascent! :muscle:

ts [2023-06-01 13:53:03]
This all is so awesome! I basically got it to the point where it could be thrown into the cells and then told myself I'd wait until some of the other refactoring was done

ts [2023-06-01 13:53:22]
But you are a legend! Thanks so much, <@UA6CC3MT5>!

pepijn [2023-06-03 02:03:22]

<@U012F84BCV9> you mentioned you had some additional features ready in various stages of completion. Are those parked on feature branches somewhere? It would be cool to make some of the extra firmware bells and whistles I made accessible.

pepijn [2023-06-03 02:05:46]
<@U08B65RM0> you mentioned that any public/official release would have to go through Silca. Reading between the lines I guess the whole kit and caboodle has been sold to them, is that correct? What does that mean for the test/beta users? Could we make a TestFlight build with the extra firmware features (along with the firmware image then of course) available to them or is that a no go?

julian [2023-06-05 08:00:57]
Yeah basically the business responsibilities are all theirs. I'm helping them figure manufacturing out. It's going very slowly because they have all kinds of stuff going on and a small team working part time on Omata. Tooling needs to be redone, vendors sorted out for some high tolerance parts. Etc.

julian [2023-06-05 08:09:10]
And it's still a big unknown as to what will happen. So pushing a new version of the App or firmware is a big deal: what does it signal to the marketplace? Suppose they aren't able to get manufacturing up? Does it create anticipation that then disappoints and reflects poorly on the Silca brand? Who do people call/email when something goes wrong? Who do they talk to when the App doesn't work on their phone or the firmware bricks their device? What does customer support say to Android users? Etcetera. There's no infrastructure or anything in place for that. And frankly I don't (cannot) do that as I have in the past for a variety of reasons, mostly that that's one of the reasons I sold to them. It's a heavy lift. So that's basically why the ball is in theor court and even if they said "go ahead", knowing that it's not that simple and that they haven't been trained on the contingencies means pushing anything before there's a plan and a dedicated team is a bad idea. When the responsibility was here I could be a bit more seat-of-the-pants. But now the responsibility is theirs. That said, they know about the dev work that's been going on and about you guys and I've mentioned that you all have been making significant progress. They have their own challenges - finding a domestic glass vendor for example sounds like it had been a real hassle.

julian [2023-06-05 08:10:08]
That all said maybe we can find some real edge of the envelope types who would be willing to test stuff. I can mention that certainly.

pepijn [2023-06-05 08:13:21]
Gotcha. That makes sense. The reason I was asking is because there's a TestFlight build out there with Tyson's work already. If we want to keep minor fixes to that releasable (like the green line striking through the text) without any more experimental features or features that require unreleased firmware builds, then we need to either feature gate those using the firmware version number or put stuff on a separate branch.

pepijn [2023-06-05 08:14:10]
I don't have anything concrete planned myself TBH, just wondering where I should/could put work that I might do so that it doesn't interfere with whatever plans might be out there.

ts [2023-06-13 06:59:08]
Just snagged this lil gem!

julian [2023-06-19 07:00:32]
Oh dang. Where!?

ts [2023-06-19 07:27:14]
eBay :sob:

julian [2023-06-19 07:33:12]
Cool!

julian [2023-09-23 15:34:03]
Woops. Seems I missed an email fron Apple and the dev account expired and then the App disappeared from the App Store.

julian [2023-09-23 15:34:40]
<@U012F84BCV9> - can we work together to get your version of the App up, do you think?

pepijn [2023-09-24 07:32:57]
Just as FYI, I did a longer ride with my beta firmware last week. Works like a charm. The only downside is that it's not compatible with the current retail app. And the extra features require the CLI to enable/disable them. First attempt was rather disappointing when I tried to use it in Denmark without access to a pc only to realise the device had an indoor mode bike profile enabled :man-facepalming:

julian [2023-09-25 16:40:01]
Should we try and get a new build of the App up? I have to reup the development account I'm pretty sure..

ts [2023-09-29 16:58:29]
Diving into this tonight/this weekend.

ts [2023-09-29 17:00:00]
I've also only recently been experiencing a weird issue where rides seem to glob together which confuses the app and then ends up not syncing at all. A bunch of the experiments i've got that separate the device data and the synced data solve that but it's a bummer for sure

julian [2024-01-05 19:44:26]
Happy New Year Fellas!

julian [2024-01-05 19:45:20]
I got some clues that maybe Silca is actually working on things – an email from Haltian asking if they had sent me the flashing jig, which they hadn't. Seems like Haltian is trying to help Silca get the PCBs manufactured, which is awesome. Definitely better them doing that than me!

julian [2024-01-05 19:45:28]
Hope you guys are doing well! Let me know!

ts [2024-05-31 12:21:18]
Added this from a coffee shop on vacation this morning. Excited to test it out!

pepijn [2024-05-31 14:12:29]
Did I spot bike profile support as well?

ts [2024-06-01 08:41:59]

Only got one try after our ride yesterday and the flyback did not delay :sob:

ts [2024-06-01 08:42:22]
```File ID type settings manufacturer 286 product 1 number 1 created at 2023-09-09 20:04:24 +0000 product name CL-G02 serial 365 Developer Data ID developerId [79, 77, 65, 84, 65, 73, 78, 83, 84, 82, 85, 77, 69, 78, 84, 83] applicationId [79, 77, 65, 84, 65, 73, 78, 83, 84, 82, 85, 77, 69, 78, 84, 83] manufacturerId 286 developerDataIndex 0 applicationVersion 1 Field Description field name ride_usb_connect field definition number 0 developer data index 0 fit base type uint8 Field Description field name flyback_delay field definition number 1 developer data index 0 fit base type uint8 Device settings time zone offset [nil, nil] flyback delay 9 Bike profile message index 0 name Bike 1 spdEnabled false cadEnabled false spdcadEnabled false powerEnabled true bikePowerAntId FB48 enabled true HRM profile enabled false Omata_EA95FD0195C4> ```

ts [2024-06-01 08:43:03]
I know it's being written to device `Settings.fit` ^^^

pepijn [2024-06-01 08:59:38]
I'll have to have a look at the firmware code. Not sure if there's debug logging related to the delay

ts [2024-06-01 09:02:17]
Haha! I actually just looked through for that exact reason and there appears to be logging. Going to pull the syslog now

ts [2024-06-01 09:14:37]
`[1717257569.462]manu_enter_state_idle: No flyback`

ts [2024-06-01 09:49:19]
So I just used the simulator while waiting for second coffee and after issuing the off command the flyback happened immediately but the console in Serial printed this:
`[1717260472.862]manu_enter_state_idle: Delay flyback by 22s`

ts [2024-06-01 09:50:05]
Which is the expected value as set by the app and the cli while I was verifying those all were talking nicely

ts [2024-06-01 09:57:13]
Stupid question of the year: Can we debug the firmware on device/live?

ts [2024-06-01 09:58:50]
I think we're printing the delay of the flyback before we actual try:

pepijn [2024-06-01 11:29:24]
Debug? If I remember correctly, no. The JTAG pins aren't exposed. Easiest way to debug is with the serial console attached and using the `manuctl` program.

pepijn [2024-06-01 11:29:48]
Along with the simulated GPS mode.

pepijn [2024-06-01 11:30:16]
That lets you fake going into ride mode, moving a bit and exiting ride mode again.
```

ts [2024-06-01 11:30:31]
Cool cool

pepijn [2024-06-01 11:31:03]
I don’t remember off the top of my head how I set things up to enable those. Via the config file somehow.

ts [2024-06-01 11:31:15]
That’s what I kind of figured

ts [2024-06-01 11:34:08]
I’m trying to build the mcu firmware again after a long while and keep running into dumb toolchain errors. Will keep at it after another ride!

pepijn [2024-06-01 12:56:23]
I just did a clean build based on the instruction in the README. Seems to work fine for me.

pepijn [2024-06-01 12:56:52]
Tested on an macOS 14.5 on an M2 based machine

pepijn [2024-06-01 12:57:43]
The retail-dbg config should have everything you need.

pepijn [2024-06-01 12:59:03]
`manuctl sim` and `manuctl gps` toggles between simulated and real GPS modes

pepijn [2024-06-01 12:59:40]
`manuctl ride` `manuctl off` and `manuctl connect` should trigger the same behaviour as twisting the bezel to the respective position

pepijn [2024-06-01 13:22:55]

pepijn [2024-06-01 13:23:05]
The delay code in question.

pepijn [2024-06-01 13:24:29]
Oh right, you linked to exactly that line :face_palm:

pepijn [2024-06-01 13:32:58]
Should work afaict. I moved that 'delay' debug line inside the `if != invalid` block and added an extra line after that `if`. Might make it a bit clearer what's going on.

ts [2024-06-04 17:44:30]
Did a couple rides with both Omatas using fresh firmware. No delay. My log is 420mb so I’ve not been able to pull it without either device disconnecting yet

pepijn [2024-06-05 13:28:00]
<@U012F84BCV9> I can confirm the delay is not working. Still a mystery why.

pepijn [2024-06-05 14:14:10]
well that was a :man-facepalming:

pepijn [2024-06-05 14:14:20]
the delay was simply in the wrong place

pepijn [2024-06-05 14:15:44]
I've made it so that the speed hand does go to zero right away. Then you get the configured flyback delay and after that the other hands do their thing.

ts [2024-06-05 17:30:36]
Works in my tests

ts [2024-06-09 10:31:24]
Not sure how I've ended up here but I have a device that will not listen to `manuctl`

ts [2024-06-09 10:31:31]
`Could not open message queue manu_ctl: 2`

pepijn [2024-06-10 00:01:42]
That's probably errno being printed. I think 2 is file not found. That would mean the main application did not create the message queue. A combination of the manuctl app with a retail config version of the manu app?

julian [2024-08-20 08:30:27]
Hey guys!

wcrtr [2024-08-20 08:30:38]
<@U5ZSJAD2S> has left the group

joni [2024-08-20 08:30:42]
<@U03QL8LHHPE> has left the group

daniel [2024-08-20 08:30:47]
<@U03Q388MTE3> has left the group

pepijn [2024-08-20 08:31:38]
:wave:

pepijn [2024-08-20 09:01:01]
lol that came across wrong. Not waving goodbye to those who left, but hello to you Julian :grin:

julian [2024-08-21 08:08:10]
Hello! yeah, I just pruned a few non-active accounts to clean things up.

julian [2024-08-21 08:08:34]
I'm wondering how things are going? Are you guys able to help Silca? I don't get any communications from them (not that I'm bothered..just curious..)

pepijn [2024-08-21 08:11:39]
I've been in touch with Andrew Truemper regarding the firmware. It's been interesting.

pepijn [2024-08-21 08:13:11]
A company named Indesign from Indianapolis was helping them with the PCBs. They had some questions regarding the firmware. Hopped on a call with them to answer those. I think they were under the impression that I wrote the entire thing since my name is on the first commit in github :grimacing:

pepijn [2024-08-21 08:13:34]
I think they got things up and running on their end. Didn't hear back from Indesign after that one call.

pepijn [2024-08-21 08:15:45]
Just recently Andrew had some questions about power meter compatibility. I did some testing with the pedals he was having issue with (my brother happened to have a set). I made some small changes to the indoor recording logic, and handling of both a crank based power meter and a cadence sensor being present and active that might fix the problem they were seeing; no confirmation yet.

pepijn [2024-08-21 08:16:19]
Last I heard Andrew was having trouble getting their test device to connect to a PC or mac. No idea what the cause of that problem is (firmware vs hardware problem).

pepijn [2024-08-21 08:17:26]
I've also warned Andrew about a couple of details he might have missed. • GPS aiding data script that pulls from ublox and uploads to S3 • The STM32 bootloader that handles firmware updating from the SD card for which the source code is not available (at least as far as I know Haltian never shared that).

pepijn [2024-08-21 08:18:12]
So in short, they're making progress but hitting some bumps in the road.

julian [2024-08-21 09:46:07]
Check. Got it.

julian [2024-08-21 09:46:35]
Yeah, I basically run that GPS aiding data script manually from here. (Reminds me... :rolling_on_the_floor_laughing: ..gotta run that now..)

julian [2024-08-21 09:47:03]
Putting that on some no-server instance somewhere to automate would be trivial. I just never got to it.

julian [2024-08-21 09:47:31]
(Somehow, I liked throwing the lever by hand..sorta retro feel to it..)

pepijn [2024-08-21 09:47:34]
I had a quick look at the service behind that. Am I correct in assuming it's pulling a file from AssistNow Offline using a 20k request/month capped free dev account?

julian [2024-08-21 09:48:51]
Sounds about right. I think the script is on github..or it should be if it isn't. It basically yanks from that AssistNow thing and tosses the file onto an endpoint on S3

pepijn [2024-08-21 09:49:18]
It would be trivial to make that a github action. Happy to do that if you like. The one bit of info I'll need though are the token for the AssistNow and an access key/secret for the S3 bucket. We can inject those into the script as 'github secrets'.

julian [2024-08-21 09:49:28]
They wanted to start charging but I had managed at the time (maybe...2 years ago?) to convince them that the user base was tiny and I was only requesting the file maybe once a week so they took mercy.

julian [2024-08-21 09:50:28]
Oh, a github action. Yeah, that would be awesome. I've never done one of those so I'd be curious how to do that. Every so often there's one guy/friend who pings me and reminds me that the aiding data has expired! :laughing: He's like the guy who opens the hatch and says, "yo! you okay down there? need any water?"

julian [2024-08-21 09:51:12]
Yeah, I have all the secrets in a config file. I'll get those to you when I get back to the studio.

julian [2024-08-21 09:51:56]
Thanks for that update. I'll ping Andrew at some point to check in as well.

julian [2024-08-21 09:51:59]
brb

julian [2024-08-21 11:29:53]
Eww..it seems I left the u-blox token in the requestMGA.js code..

pepijn [2024-08-21 11:34:31]
Yep just saw that

pepijn [2024-08-21 11:35:01]
Could you grant me access to that project? I'll add the secrets and create the job then.

julian [2024-08-21 11:35:48]
Oh, copy. I assumed you had access. Let me throw some levers and pull a few circuit breakers.

pepijn [2024-08-21 11:36:05]
Seems like I have read access, but I can't see the repo settings page

julian [2024-08-21 11:37:25]
Check now?

julian [2024-08-21 11:38:01]
There’s one other switch I may have to throw, but I believe because you’re part of the omata team you should now have access? (I also don’t have my glasses on…:rolling_on_the_floor_laughing:)

pepijn [2024-08-21 12:06:24]
All set. Script seems to be doing what it's supposed to.

pepijn [2024-08-21 12:07:31]
I have it set to run every Sunday at midnight. You can also manually trigger it from

ts [2024-08-21 14:59:20]
So dope!

julian [2024-08-21 16:43:29]
How’d you do that??

pepijn [2024-08-21 22:30:50]
You mean technically how it works?

julian [2024-08-22 07:06:27]
Yeah, that. And how did you set it up?

pepijn [2024-08-22 07:59:07]

pepijn [2024-08-22 08:01:59]
That file does all the work. The tokens are configured under the secrets section of the repository settings via the GitHub web ui. In the yaml file the `on: schedule` bit controls when the job runs. The job runs each step in the `steps` list sequentially. The steps are • checkout the repo • install node • install the necessary npm packages • run the “fetch mga.dat” script • run the “upload to S3” script That’s pretty much it

ts [2024-08-22 08:36:51]
<@U08B65RM0> do you know which region the S3 bucket is in?

ts [2024-08-22 08:38:06]
I noticed a deprecation warning for the `aws-sdk` and did a quick migration to v3 and everything works but it complains about the region not being specified

pepijn [2024-08-22 08:38:25]
normally the default is us-east1 if you don't specify anything

ts [2024-08-22 08:38:56]
I’ll try that real fast

pepijn [2024-08-22 08:43:28]
The v2 docs seem to also state that a region is not configured by default. Now I'm starting to wonder if the previous run actually worked or not.

pepijn [2024-08-22 08:44:52]
```> curl -v ... Last-Modified: Wed, 21 Aug 2024 19:01:56 GMT``` Seems like it did

ts [2024-08-22 08:54:36]
Yours did, mine however did not via the action :rolling_on_the_floor_laughing:

ts [2024-08-22 08:55:18]
I’ll revert until I can spend more than a train ride on the migration haha
```

pepijn [2024-08-22 08:56:07]
I have a moment right now. Will fix

pepijn [2024-08-22 12:19:17]
<@U012F84BCV9> script is working now with the v3 SDK :sweat_smile:

julian [2024-08-25 11:15:45]

julian [2024-08-25 11:15:55]
'Northern California'...natch....

julian [2024-08-25 11:16:55]
Amazing you guys! Thank you so much for your help!

pepijn [2024-08-25 12:25:46]
Interesting, I thought I saw a redirect to us-west-2 in one of the error logs which is Oregon. Northern California is us-west-1. Either way it'll work since the client SDK is configured to have global client redirects enabled. In other words, the request is sent to Oregon, that data center says "nope, not here; check back in California" and then the client does that transparently.

pepijn [2024-08-25 12:26:15]
I'll update the script to use us-west-1 instead though. Not much point in knocking on the wrong door every week.

pepijn [2024-08-25 12:29:04]
First scheduled run happened in the meantime. :smile:

ts [2024-08-26 06:13:07]
:clap::skin-tone-2:

julian [2024-11-04 11:52:22]
Hey fellers - have you been able to support Silca at all? I'm like…100% out of the loop more or less..it's pull rather than push. Curious to know if anything is happening! :man-raising-hand::skin-tone-4: :phone:

pepijn [2024-11-04 13:41:40]
<@U08B65RM0> still struggling with the ANT+ sensors. It took quite some effort to get the STM32 firmware upgraded. Once that was done it turned out the settings.fit file contained multiple bike profiles but none of them were marked as enabled so the sensor ids were not being used during the ride. I provided Andrew with instructions on how to get the settings updated using omatacli. Haven't heard back from him since.

julian [2024-11-04 14:10:20]
Copy that.

pepijn [2024-12-06 14:51:42]
Any news from Silca Julian? Just curious what they're up to.

julian [2024-12-08 11:49:16]
Not much. I had a short back and forth with Andrew their main engineering guy in Utah about the App development but nothing substantial. Sorta out of the loop. I'm still vaguely hopeful. They've invested

quite a bit at least from my modest perspective on these things..

pepijn [2024-12-25 08:54:33]
Got a mail from Andrew today asking about the “serial number: n/a” problem. Seems like it still isn’t fully resolved. We never did get to the bottom of that one, did we?

ts [2025-01-08 15:31:31]
I’m going to have a call with Andrew on Friday

pepijn [2025-01-09 00:13:44]
<@U08B65RM0> are you affected by the fires raging through LA? Hope you're ok.

pepijn [2025-01-09 00:17:20]
<@U012F84BCV9> last status update from my side is that Andrew was able to get ANT+ sensors working. There were a couple of issues we ran into in the firmware that I fixed for him: • Somehow the state machine that manages the interaction between the two microcontrollers got stuck in the wrong state. Only a reboot of the device could fix this. I wasn't able to reproduce this myself, but I did add some additional safety nets in the code to try and prevent this from happening. • The settings.fit file contained only a single bike profile with `enabled: false`. This was causing the firmware to ignore the bike profile. The phone app doesn't care about the enabled flag so it never tries to set this to true. I've made the firmware code more lenient so that this configuration still works as you would expect.

julian [2025-01-11 09:53:54]
Oh hey guys! We are not seriously affected by the fires but they are here just north of us with Santa Monica and half of Venice between us. It’s pretty bad. That said the danger is more removed than those closer to the Palisades and it seems the beach shore wind directions and slightly higher humidity is an advantage, it seems - although I’m not meteorologist, we thus far are managing. My car is packed though - I disconnected the NAS and the big computer and have all my drives in a go bag along with the carry bags for the pets, a case of bottled water, battery packs, and tins of mackerel! I’m hopeful it won’t come to that but if it does, we’re more or less prepared. Several friends lost their houses. It’s pretty bad. And it feels weird to go to the supermarket as if nothing is happening.

julian [2025-01-11 09:59:08]
Um…as far as the App on the store, I had an email with Andrew when I was busy/travelling and looked at it when my plate cleared a bit. I realized that the omata dev account expired and it’s probably a case of just renewing it. I proposed this to Andrew but it seemed like he wanted to wait on that. I get emails from current owners asking about it. (Technically I could just pay the fee but it isn’t really my company financially speaking and I’d rather they assume that responsibility, if you follow.)

julian [2025-01-11 09:59:37]
I may just have a chat and explain more directly.

ts [2025-01-11 10:00:35]
I kind of figured as much re: renewing, and felt like if I could take it off your plate that might be helpful also!

ts [2025-01-11 10:03:45]
I had a quick chat with Andrew yesterday and they’re ready to move forward which is exciting. I’ve agreed to more or less handle the initial relaunch and we’ll start talking about any additional stuff after that

julian [2025-01-11 11:21:09]
Oh amazing!

pepijn [2025-01-19 13:52:44]
<@U08B65RM0> do you still have any contacts at Haltian (e.g. <@U0DDJ0QSY>)? Andrew was asking about the STM32 firmware upgrade process and I had to explain to him how that part of the firmware (the STM32 bootloader) is unfortunately a binary blob that we don't have the code for. In the flash memory of the STM32, this is the first 8000 bytes. The STM32 firmware that we do have the source code for is flashed starting at byte offset 8000. So there's this magic, but rather essential, bit of code that bootstraps the microcontroller and handles firmware upgrades. Would be good to be able to compile that from source as well.

julian [2025-01-19 14:14:07]
I haven’t talked to them in quite some time but I could..but I think Andrew should because they had commissioned work from Haltian in these intervening years.

julian [2025-01-19 14:14:46]
Do you know if he’s tried to get Harri’s attention? Or Aimo at Haltian?

ts [2025-01-28 09:01:43]
<@UA6CC3MT5> I haven’t looked into this and have to run, but I just dfu flashed a device with the latest firmware from source and now I get `Could not open message queue manu_ctl: 2`

ts [2025-01-28 09:02:15]
I definitely configured for debug, but :information_desk_person::skin-tone-3:

pepijn [2025-01-28 09:02:16]
2 is an errno value. Let me check what that means.

pepijn [2025-01-28 09:02:48]
I'm guessing file not found, but not sure why you would get that.

pepijn [2025-01-28 09:02:59]
When do you get that message?

pepijn [2025-01-28 09:03:46]
```#define ENOENT 2 #define ENOENT_STR "No such file or directory"``` Lucky guess :smile:

ts [2025-01-28 09:03:46]
I entered `manuctl -mc` when the device showed back up in Serial

ts [2025-01-28 09:04:31]
I initially updated because of another issue I assumed was just a mismatch between app and firmware

pepijn [2025-01-28 09:04:58]
Could you check for `mq_thread: starting` in the syslog output?

pepijn [2025-01-28 09:05:11]
That's what the main firmware app logs when it's setting up the message queue
```

ts [2025-01-28 09:06:10]
Can I get the syslog without the device mounting via USB? :see_no_evil:

ts [2025-01-28 09:06:27]
I flashed via dfu _because_ I couldn't get it to mount lol

pepijn [2025-01-28 09:06:58]
The stuff that gets written to the serial console is the same

ts [2025-01-28 09:07:23]
Of course!

ts [2025-01-28 09:07:30]
Must need more than 2 coffees today

pepijn [2025-01-28 09:08:09]
All the manu_ctl mq handling stuff is in the functions `mq_init` and `mq_thread`, so anything with those prefixes is relevant output.

ts [2025-01-28 09:09:33]
I don't see anything with `mq_thread` in my output.

pepijn [2025-01-28 09:13:49]
Which build did you use?

ts [2025-01-28 10:18:28]
I built from source this morning. Interestingly the app reports lol

pepijn [2025-01-28 10:45:33]
That doesn't seem right

pepijn [2025-01-28 10:45:53]
version.h should be getting generated automatically and should reflect the build date

pepijn [2025-01-28 10:46:22]

pepijn [2025-01-28 10:46:30]
Could you give this one a try <@U012F84BCV9>?

ts [2025-01-28 15:30:04]
Flashing now!

ts [2025-01-28 15:31:41]
Back in business

ts [2025-01-28 15:32:01]
Now I'm wondering what on earth I flashed to it earlier haha

ts [2025-01-28 15:34:06]

In any case the original issue I was starting to look into was an endless stream of `fit_parser_find_msg_with_dev_fields: skipping message 20 (record)` in the syslog

pepijn [2025-01-28 22:22:36]
Sounds like a big activity file being parsed

ts [2025-01-29 12:46:43]
Might be. Haven't had a minute to dive into that one

julian [2025-03-20 11:01:34]
Are fun things happening? I see git commits!

julian [2025-03-20 11:02:16]
(btw still haven't figured out how to transfer ownership…nothing back from Apple. I think Silca guys should just pay the $99 to be honest..)

pepijn [2025-03-20 11:09:03]
Automating the release process

pepijn [2025-03-20 11:09:19]

pepijn [2025-03-20 11:09:41]
Picked some random trail names. Good choices?

julian [2025-03-20 13:03:10]
Love it. Brilliant!

ts [2025-04-23 08:17:58]
<@UA6CC3MT5> I wish I had been tagging releases via git like you started to with the fw

ts [2025-05-03 16:47:28]
I know I asked you both at least twice, but the sentiment stands and I still want to send you some Omata stuff for fun. The shirts I have are sometimes not always the best labeled size so you get measurements: Size small: 67x45 Size medium: 69x49 Size large: 74x54

ts [2025-05-03 16:48:11]

pepijn [2025-05-03 16:52:01]
Did you deconstruct an omata for that print too?

ts [2025-05-03 16:56:12]
Naw, it was easier to just ask Julian

ts [2025-05-03 16:57:27]
He could have almost a hundred dollars if I gave him one for every high resolution image he posted :innocent:

pepijn [2025-05-12 06:40:55]

pepijn [2025-05-12 06:41:04]
And we're off to a great start :grimacing:

pepijn [2025-05-12 06:41:30]
<@U08B65RM0> how were you handling troubleshooting of cases like this? Did you provide people copies of the debug firmware image? There's not much I can do without syslog output.

ts [2025-05-13 16:36:31]
Hey <@U08B65RM0>, was there a Zendesk (or whatever) for Omata? I haven’t ever seen/heard of one.

pepijn [2025-05-19 02:17:20]
<@U012F84BCV9> I was wondering this morning, since you’re comparing Garmin and Omata fit files, if you’ve had a chance to compare sensor recordings. Power, speed and cadence are all derived values from the raw sensor information. I don’t have a different head unit to use for comparison myself. Would be good to know if the calculations are correct or not.

ts [2025-05-19 04:47:48]
I’ve never really looked at that! I can definitely carry another head unit on some rides and gather some. Funny how little I think about power at all these days :joy:

pepijn [2025-05-19 04:49:58]
Same, it's not something I actually look at myself. I did some very rudimentary verification of cadence and speeds based on my very scientific measurements called feeling. It felt about right :smile:

pepijn [2025-05-19 04:50:38]
Seriously though, I can ask if one of my neighbor MTB buddies has a spare unit lying around that I can borrow.

ts [2025-05-19 04:56:47]
I actually have a drawer full of units that should still work so this will be interesting. I’m grateful for the minimalist aesthetic of the app because even calculating the basic metrics I am is sometimes way different than what Strava OR Cycling Analytics shows me using the same file :face_with_spiral_eyes:

ts [2025-05-19 04:57:21]
Alls well if you round up :joy:

pepijn [2025-05-19 04:58:37]
I saw 600+W in Simon Rich's activity file, but he said himself his wattage was pretty low nowadays. That's what got me doubting the correctness of the calculations. But we could sell it as a confidence booster feature indeed.

ts [2025-05-19 05:11:29]
I get relatively accurate averages based on feel but I’ve always ended up with insane peaks in power and assumed it was this power meter. I must’ve done at least a couple comparisons then

ts [2025-05-19 05:13:23]
I’m actually clipping the power max to 2500 in the app on my phone so I don’t see 7,189W on every other ride

pepijn [2025-05-19 05:14:21]
Might be something going wrong with the wrap around.

ts [2025-05-19 05:15:13]
I should send an Omata out with my partner on a training ride. She has a more reliable power meter and rides with a Wahoo and is still deep into power so she'd know if it seemed close

pepijn [2025-05-24 09:14:06]
<@U012F84BCV9> small app RFE. When the nrf firmware is an incompatible version, the high bit of the major version number gets set. Pretty sure that's what you're seeing here. The actual version is 0.0.22. `0x00 | 0x80 == 0x80 == 128`. It would be useful to OG Omata owners that we indicate this in the app. Clear the high bit of the major version number for display and version comparison, and allow them to upgrade the BLE firmware.

ts [2025-05-24 09:19:13]
Not sure I follow

pepijn [2025-05-24 09:19:30]
Sorry, I'm still in debug mode :wink:

ts [2025-05-24 09:19:45]
Is there a version check in the app that is erroneously blocking updates?

ts [2025-05-24 09:19:56]
Not unlike the one for the MCU haha

pepijn [2025-05-24 09:20:44]
So I was looking at Simon Rich's complaint about ANT+ sensors not working. In the old settings screen the BLE version showed up as `0.0.22`. In the new settings screen though he gets `128.0.22`. The actual current BLE version is `1.1.0`.

ts [2025-05-24 09:21:41]

pepijn [2025-05-24 09:22:01]
So what's this 128? Well that's coming from something the MCU firmware does. If it detects a BLE version that's actually not compatible with the MCU firmware version it will report the BLE version parts as `major | 0x80`, `minor`, `patch`.

ts [2025-05-24 09:22:03]
Looks like my Imperial unit is doing the same, yeah?

pepijn [2025-05-24 09:22:28]
That `| 0x80` part is a binary or that sets the highest order bit of the single byte 'major' version number field.

pepijn [2025-05-24 09:23:19]
The intention is to communicate to the app the the BLE version is incompatible. I snuck that information in the major field because I wanted to squeeze it into the existing message format.

ts [2025-05-24 09:23:42]

Awesome!

pepijn [2025-05-24 09:23:57]
Yep :disguised_face: indeed

ts [2025-05-24 09:25:01]

pepijn [2025-05-24 09:25:09]
yep that's it

pepijn [2025-05-24 09:25:23]
Is that in BLEKit or in the app?

ts [2025-05-24 09:25:28]
The app

ts [2025-05-24 09:25:36]
NM

ts [2025-05-24 09:25:40]
BLEKit

pepijn [2025-05-24 09:25:56]
Hmm, then where is that 128 in the app coming from :thinking_face:

ts [2025-05-24 09:26:08]
Xcode is finally really good at managing dependencies I forget when i switch!

pepijn [2025-05-24 09:26:42]
If you have some time, would you mind debugging how you're getting 128 as major version for your Imperial device?

pepijn [2025-05-24 09:27:35]
:man-facepalming:

pepijn [2025-05-24 09:28:25]

ts [2025-05-24 09:28:30]
This is the model. The app is printing the `ble_app_maj` on the screen in question. I have spent zero time looking at these data structures

pepijn [2025-05-24 09:28:32]
ahum, I'll see myself out

ts [2025-05-24 09:28:45]
Hahaha

ts [2025-05-24 09:28:57]
What-a-team!

pepijn [2025-05-24 09:31:56]
patch is on it's way

pepijn [2025-05-24 09:38:53]
OmataBLEKit tag `1.0.2` is ready for you

ts [2025-05-24 09:41:17]

pepijn [2025-05-24 09:41:25]
oh crud

pepijn [2025-05-24 09:41:37]
Let me fix that real quick.

ts [2025-05-24 09:41:51]
Haha, sorry!

pepijn [2025-05-24 09:42:08]
I was out all day with my son at his Ultimate tournament. Standing on the sidelines in the rain and the cold. Brain's still undercooled :smile:

ts [2025-05-24 09:43:11]
I miss the rain sometimes honestly.

pepijn [2025-05-24 09:43:46]
Come to Belgium, we usually get plenty

ts [2025-05-24 09:49:55]
There are tentative plans to head over there in December for cyclocross!

ts [2025-05-24 09:55:47]

pepijn [2025-05-24 09:58:15]
Now that I take a second look, you were getting `121.0.0`. No idea where that could come from.

ts [2025-05-24 09:58:46]
I missed that too!

pepijn [2025-05-24 09:59:38]
anyway, I've informed Simon that we were going to fix the 128 version number thing. He'll need that in order to be able to update the BLE firmware since the version comparison now (correctly) concludes that 128.0.22 is more recent than 1.1.0.

ts [2025-05-24 09:59:49]
Going to take that device out and pair it with Ashley’s power meter.

ts [2025-05-24 11:37:15]
I have some files for you <@UA6CC3MT5>

ts [2025-05-24 11:39:33]

ts [2025-05-24 11:43:38]
Same ride. 3 files from my sensors and 2 files from Ashley's

pepijn [2025-05-24 12:18:38]
Do you happen to have the syslog output from the omata as well?

ts [2025-05-24 13:01:59]
:face_with_spiral_eyes:

ts [2025-05-24 13:02:02]
Tryin!

pepijn [2025-05-24 13:05:22]
Oh boy that's going to take a while

pepijn [2025-05-24 13:06:07]
You could try using `tail` to only get the last chunk of the file

pepijn [2025-05-24 13:06:47]
I probably only need the last couple of megabytes

ts [2025-05-24 13:06:54]
I'll have to with that one. (Ashley ran the imperial)

ts [2025-05-24 13:07:17]
The other Omata's log is smaller (My file is from the metric)

ts [2025-05-24 13:19:08]

ts [2025-05-24 13:19:33]

ts [2025-05-24 13:23:40]
I don't remember which devices I have on debug/retail because I never remember the switch. I should just build that into the view so it's properly displayed. And support beta/alternate fw while I'm there

julian [2025-05-24 17:55:06]
Hey <@U012F84BCV9> - some guy is getting Test Flight sign up emails asking for a redeem code or something…not sure what I should tell them?

julian [2025-05-24 17:56:36]

ts [2025-05-24 18:59:09]
I haven't ever heard of anything like that?

ts [2025-05-24 18:59:39]
I think there is a public link generated for the TestFlight beta so I could get that and maybe it'd work?

ts [2025-05-24 19:00:31]

ts [2025-05-24 19:00:49]
That’s the Test Team invite. Has 99/100 slots open

pepijn [2025-05-25 04:26:14]
<@U012F84BCV9> looking at Ashley's ride and it seems all good. The spike here is recorded as 430W. Seems plausible still when you're getting things going from standstill.

pepijn [2025-05-25 04:27:07]
Unfortunately the wahoo only recorded the workout steps, not the actual performance numbers.

ts [2025-05-25 06:56:43]
Seemed the same for my files this ride also. I typically see spikes of 2500–8000 so I’ll keep carrying these other units

ts [2025-05-25 16:34:41]
“So I did all the stuff above. Removed app installing it through TestFlight. Went to sign in but I got a message saying my account was deleted possible. I tried to crest a new account but it didn’t seem to be working. I hit register but nothing happens.”

ts [2025-05-25 16:35:02]
This is a wild goose chase

pepijn [2025-06-01 03:16:04]
<@U012F84BCV9> if you want to get more familiar with the MCU firmware, is a good place to start. Still a work in progress, but I've consolidated all the processing logic for the various information feeds into `manu_session.c`. The functions that generate the FIT messages that end up in the activity file are now also there. Slow working my way towards having an activity recorder black box that's easier to understand (and hopefully test).

ts [2025-06-01 06:47:52]
Ooooh, thank you! I casually browsed some of the commits yesterday but I’ll totally dig into it a bit. Thanks for the heads up

ts [2025-06-02 17:21:59]

pepijn [2025-06-03 11:43:10]
<@U012F84BCV9> one `&` too many. Woops.

pepijn [2025-06-03 12:05:16]
Fix pushed

pepijn [2025-06-03 12:14:03]
BTW what was happening around 0:11 is that the device crashed due to an illegal memory access. It rebooted and sort of tried to get back into ride mode, but that doesn't seem to work well just yet. I.e. booting the device with the bezel set to ride doesn't do go through the correct steps.

ts [2025-06-03 14:37:00]

You’re such a saint for digging into these things AND explaining them so well to my novice brain

ts [2025-06-04 06:48:39]
Is this new: `manu_crashdump_to_file:`

ts [2025-06-05 10:49:10]
“Updates helped! GPS is back on track :+1:, thanks. System is still slow, but I can live with it. In the early days it was fast. How is Omata doing in general? Glad it is still alive. I was worried recently it would stop or give up. I'm into it since the very beginning, had a lot of exchange and testing with Julian; it is still the most beautiful device for bikes! :bouquet: Cheers from Switzerland Thierry”

ts [2025-06-05 10:49:18]
Love these messages

pepijn [2025-06-05 11:11:02]
What does he mean by “system is still slow”?

ts [2025-06-08 14:21:07]
Average speed is entirely calculated by the app as things stand

ts [2025-06-08 14:21:10]

ts [2025-06-08 14:22:32]
(cc: <@UA6CC3MT5> re John V’s ride)

pepijn [2025-06-09 00:49:12]
<@U012F84BCV9> another feature request for the app: multiple bike profile support :smile: The testers I'm talking to seem to have more than one bike with different sets of sensors. At the moment they have to repair by hand when switching bikes. The firmware supports multiple bikes profiles already, would be wonderful if the app was aware of this and let you toggle.

ts [2025-06-10 11:57:46]

ts [2025-06-10 18:11:19]
Got this working well enough to test. Not pretty underneath but it works!

julian [2025-06-16 12:18:02]
Anyone have a substantial .fit file from a ride? My device is still boxed away along with all of my bikes while this renovation is underway! I want to test this map maker thing..I noticed some much older rides (going back to 2020) had some weird FIT file anomolies (I think..) where there would be these big jump in time for a few tracks (like..going backwards by a day!) although the tracks (GPS locations) make perfectly good sense..

pepijn [2025-06-16 12:45:23]

pepijn [2025-06-16 12:45:30]
Longest one I have on my device

ts [2025-06-17 16:30:37]
Simon has been so nice to work with and brought up good points here.

ts [2025-06-17 16:31:53]
I haven’t been too deep in the FIT protocol stuff but I’d imagine all answers are “yes, a profile must be selected and no you cannot do it after a ride”

pepijn [2025-06-17 22:44:59]
Indeed, see my reply

pepijn [2025-06-17 22:45:58]
We could stick the bike profile on an activity after the fact, but it’s not much more than a label then. The reason you need to choose it before the ride is because all the sensor ids (except for hrm) are tied to the bike profile.

julian [2025-06-18 12:59:33]
Hey, so..this is what my little utility thing unboxed from that FIT file, just FYI/FWIW: ```› node ./fit-parser-complete.js ./200719073926.fit ■ Parsing FIT file: ./200719073926.fit ■ Record message field definitions: Field 253: timestamp (size: 4, type: 134) Field 0: position_lat (size: 4, type: 133) Field 1: position_long (size: 4, type: 133) Field 5: distance (scale: 100) (size: 4, type: 134) Field 2: altitude (scale: 5) (size: 2, type: 132) Field 6: speed (scale: 1000) (size: 2, type: 132) Field 7: field_7 (size: 2, type: 132) Field 3: heart_rate (size: 1, type: 2) Field 4: cadence (size: 1, type: 2) Field 13: temperature (size: 1, type: 1) Field 81: battery_soc (scale: 2) (size: 1, type: 2) ■■ Timestamp order issue at record 34: 964078801 < 964079282 (diff: -481) ■■ Timestamp order issue at record 66: 964078833 < 964079280 (diff: -447) ■■ Timestamp order issue at record 98: 964078865 < 964079312 (diff: -447) ■■ Timestamp order issue at record 130: 964078897 < 964079344 (diff: -447) ■■ Timestamp order issue at record 162: 964078929 < 964079376 (diff: -447) ■ Found 545 timestamp ordering issues in original data ■ DEBUG: Processing 17131 records for GeoJSON conversion ■ Records with timestamps: 17131 ■ Start timestamp: 964078769 (2020-07-19T07:39:29.000Z) ■ Using original file order to preserve GPS track continuity (not sorting by timestamp) ■■ Record 0: raw=964078769, fit_epoch=1595144369, elapsed=0s (nullmin), time=2020-07-19T07:39:29.000Z, lat=51.366271, lng=4.466928 ■■ Record 1: raw=964078786, fit_epoch=1595144386, elapsed=17s (0.3min), time=2020-07-19T07:39:46.000Z, lat=51.366274, lng=4.466859 ■■ Record 2: raw=964078803, fit_epoch=1595144403, elapsed=34s (0.6min), time=2020-07-19T07:40:03.000Z, lat=51.366268, lng=4.466779 ■■ Record 3: raw=964078821, fit_epoch=1595144421, elapsed=52s (0.9min), time=2020-07-19T07:40:21.000Z, lat=51.366254, lng=4.466690 ■■ Record 4: raw=964078840, fit_epoch=1595144440, elapsed=71s (1.2min), time=2020-07-19T07:40:40.000Z, lat=51.366237, lng=4.466613 ■■ Record 5: raw=964078860, fit_epoch=1595144460, elapsed=91s (1.5min), time=2020-07-19T07:41:00.000Z, lat=51.366215, lng=4.466534 ■■ Record 6: raw=964078881, fit_epoch=1595144481, elapsed=112s (1.9min), time=2020-07-19T07:41:21.000Z, lat=51.366195, lng=4.466454 ■■ Record 7: raw=964078903, fit_epoch=1595144503, elapsed=134s (2.2min), time=2020-07-19T07:41:43.000Z, lat=51.366182, lng=4.466369 ■■ Record 8: raw=964078926, fit_epoch=1595144526, elapsed=157s (2.6min), time=2020-07-19T07:42:06.000Z, lat=51.366168, lng=4.466279 ■■ Record 9: raw=964078950, fit_epoch=1595144550, elapsed=181s (3.0min), time=2020-07-19T07:42:30.000Z, lat=51.366147, lng=4.466189 ■■ Record 1000: raw=964079884, fit_epoch=1595145484, elapsed=1115s (18.6min), time=2020-07-19T07:58:04.000Z, lat=51.415176, lng=4.423899 ■■ Record 2000: raw=964081096, fit_epoch=1595146696, elapsed=2327s (38.8min), time=2020-07-19T08:18:16.000Z, lat=51.478070, lng=4.397607 ■■ Record 3000: raw=964082116, fit_epoch=1595147716, elapsed=3347s (55.8min), time=2020-07-19T08:35:16.000Z, lat=51.530076, lng=4.347342 ■■ Record 4000: raw=964083200, fit_epoch=1595148800, elapsed=4431s (73.8min), time=2020-07-19T08:53:20.000Z, lat=51.584663, lng=4.319743 ■■ Record 5000: raw=964083884, fit_epoch=1595149484, elapsed=5115s (85.3min), time=2020-07-19T09:04:44.000Z, lat=51.624440, lng=4.254387 ■■ Record 6000: raw=964085495, fit_epoch=1595151095, elapsed=6726s (112.1min), time=2020-07-19T09:31:35.000Z, lat=51.620127, lng=4.273903 ■■ Record 7000: raw=964086721,

fit_epoch=1595152321, elapsed=7952s (132.5min), time=2020-07-19T09:52:01.000Z, lat=51.638224, lng=4.371975 ■■ Record 8000: raw=964087285, fit_epoch=1595152885, elapsed=8516s (141.9min), time=2020-07-19T10:01:25.000Z, lat=51.687284, lng=4.418821 ■■ Record 9000: raw=964088774, fit_epoch=1595154374, elapsed=10005s (166.8min), time=2020-07-19T10:26:14.000Z, lat=51.694263, lng=4.439949 ■■ Record 10000: raw=964091477, fit_epoch=1595157077, elapsed=12708s (211.8min), time=2020-07-19T11:11:17.000Z, lat=51.683093, lng=4.444204 ■■ Record 11000: raw=964092681, fit_epoch=1595158281, elapsed=13912s (231.9min), time=2020-07-19T11:31:21.000Z, lat=51.644551, lng=4.509479 ■■ Record 12000: raw=964093840, fit_epoch=1595159440, elapsed=15071s (251.2min), time=2020-07-19T11:50:40.000Z, lat=51.606201, lng=4.516135 ■■ Record 13000: raw=964094741, fit_epoch=1595160341, elapsed=15972s (266.2min), time=2020-07-19T12:05:41.000Z, lat=51.571811, lng=4.517770 ■■ Record 14000: raw=964095801, fit_epoch=1595161401, elapsed=17032s (283.9min), time=2020-07-19T12:23:21.000Z, lat=51.526564, lng=4.520124 ■■ Record 15000: raw=964096453, fit_epoch=1595162053, elapsed=17684s (294.7min), time=2020-07-19T12:34:13.000Z, lat=51.478985, lng=4.527069 ■■ Record 16000: raw=964097505, fit_epoch=1595163105, elapsed=18736s (312.3min), time=2020-07-19T12:51:45.000Z, lat=51.422287, lng=4.503922 ■■ Record 17000: raw=964098621, fit_epoch=1595164221, elapsed=19852s (330.9min), time=2020-07-19T13:10:21.000Z, lat=51.367729, lng=4.468009 ■■ Record 17122: raw=964098836, fit_epoch=1595164436, elapsed=20067s (334.4min), time=2020-07-19T13:13:56.000Z, lat=51.364364, lng=4.467521 ■■ Record 17123: raw=964098860, fit_epoch=1595164460, elapsed=20091s (334.9min), time=2020-07-19T13:14:20.000Z, lat=51.364355, lng=4.467520 ■■ Record 17124: raw=964098885, fit_epoch=1595164485, elapsed=20116s (335.3min), time=2020-07-19T13:14:45.000Z, lat=51.364345, lng=4.467524 ■■ Record 17125: raw=964098596, fit_epoch=1595164196, elapsed=19827s (330.4min), time=2020-07-19T13:09:56.000Z, lat=51.364345, lng=4.467524 ■■ Record 17126: raw=964098601, fit_epoch=1595164201, elapsed=19832s (330.5min), time=2020-07-19T13:10:01.000Z, lat=51.364345, lng=4.467524 ■■ Record 17127: raw=964098607, fit_epoch=1595164207, elapsed=19838s (330.6min), time=2020-07-19T13:10:07.000Z, lat=51.364345, lng=4.467524 ■■ Record 17128: raw=964098614, fit_epoch=1595164214, elapsed=19845s (330.8min), time=2020-07-19T13:10:14.000Z, lat=51.364345, lng=4.467524 ■■ Record 17129: raw=964098622, fit_epoch=1595164222, elapsed=19853s (330.9min), time=2020-07-19T13:10:22.000Z, lat=51.364277, lng=4.467521 ■■ Record 17130: raw=964098631, fit_epoch=1595164231, elapsed=19862s (331.0min), time=2020-07-19T13:10:31.000Z, lat=51.364272, lng=4.467521 ■ Parsed 17131 GPS records ■ Records with timestamps: 17131/17131 (100.0%) ■■ GeoJSON features: 17131 ■ Device Information: Manufacturer: Unknown (286) Product: CL-G02 Serial: 287 ■ Activity Information: Created: 2126-02-06T06:28:15.000Z Sport: Cycling ■ Session Summary: Start: 2020-07-19T07:39:26.000Z Total Time: 19846 seconds Total Distance: 110.63 km Max Speed: 44.9 km/h ■ Time range: 2020-07-19T07:39:29.000Z to 2020-07-19T13:10:31.000Z ■■ Total elapsed time: 19862 seconds (331.0 minutes) ■ Battery data: 554 records, range 48% - 82% ■ Saved complete GeoJSON to: ./200719073926-complete.geojson ■ SUCCESS: All track points have accurate timestamps!```

omatahoover [2025-06-19 07:50:33]
<@U0927ATGA2W> has joined the group