



	Navigation
<hr/> <p>Copyright © 2014, Rondeau Research, LLC. All rights reserved.</p>	<ul style="list-style-type: none">• GRCon 2014• GR Tutorial• Examples• Links• About• Login
	<hr/> Posts <ul style="list-style-type: none">• GNU Radio Store Free Shipping• European Hackfest hosted by TU Delft• Release of 3.7.4• Update and 3.7.4• GRCon14 Agenda Posted• Release 3.7.3 and the WSR Hackfest• GRCon14 Announced!• FOSDEM• GNU Radio 3.7.2! New Logo! Anything else?!• GRCon13• Blog RSS

- [Examples RSS](#)
- [Home RSS](#)

Previous Conferences

- [GRCon 2013](#)
- [GRCon 2012](#)
- [GRCon 2011](#)

GNURadioWaves

- [Twitter](#)
-

Project Overview

GNU Radio is a free software development toolkit that provides the signal processing runtime and processing blocks to implement software radios using readily-available, low-cost external RF hardware and commodity processors. It is widely used in hobbyist, academic and commercial environments to support wireless communications research as well as to implement real-world radio systems.

Thursday
Oct232014

GNU Radio Store Free Shipping

THURSDAY, OCTOBER 23, 2014 AT 10:35AM

I've just been informed that the store we use for GNU Radio merchandise (in the US) is having free shipping next week on orders of \$30 or more. Check out the gear at [our store](#).

And if you see anything you like, here's the info on the free shipping promo:

- Free standard shipping for orders of \$30+
- Valid: October 27th – October 30th, 2014
- Coupon Code: VAMPIRE14
- Cannot be combined with other discounts or coupon codes
- [More details](#)

Or, this just in:

- **[20% off all orders of \\$30 or more](#)**
- **[from November 4th – November 11th, 2014](#)**

- [Coupon Code: 20EARLY](#)
- [Cannot be combined with other discounts or coupon codes](#)
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Monday
Jul282014

European Hackfest hosted by TU Delft

MONDAY, JULY 28, 2014 AT 7:25PM

If you follow GNU Radio at all, I'm sure you've heard about our [Hackfests](#). This is where a lot of GNU Radio developers get together for a few days to a week at a time and hack out GNU Radio code. We've found these fantastic ways to improve the project as it gives us time to plan, discuss specific topics, hang out and get to know each other, and code code code! A large amount of the code making up GNU Radio has either come directly from or been inspired by these events.

Mostly, we've done these in the US. Ettus Research has been a fantastic host to a number of our hackfests as has Virginia Tech. Just recently, Karlsruhe Institute of Technology hosted a mini hackfest right after the WSR and a full hackfest a few months later. These were our first events held in Europe, and though I personally missed the second one, the post-WSR hackfest was great fun and hugely successful.

Following up on this, I wanted to announce and give a pre-emptive thanks to TU Delft in the Netherlands who has agreed to host a hackfest early next year! The plan is to hold the hackfest on TU Delft campus during the last week of January so that we can go straight from Delft to Brussels for [FOSDEM](#) that weekend (partly

assuming that we have an SDR dev room at FOSDEM again this year). I think having these two events back-to-back is, pardon the Irish, going to be great craic.

Want to come to the hackfest? We certainly don't want to discourage anyone, but I also want to point out that the hackfests are usually smallish affairs of 10 to 20 developers, usually people heavily involved in either writing or using GNU Radio regularly. So the facilities are on the small side to fit us, and you're on your own for housing, food, transportation, etc. But, if this is something that excites you and you can make it to Delft, please let me know if you'd like to come. Just shoot me an email. And if you don't know my email address, then you probably haven't been using GNU Radio that much :p

<p>Tom Rondeau Comments Off Share Article</p> <p>tagged Delft Europe, TU Delft fosdem, hackfest</p> <p>in events</p>
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Monday
Jul212014

Release of 3.7.4

MONDAY, JULY 21, 2014 AT 6:05PM

Well, I mentioned it here a few weeks ago and last week we did it. **GNU Radio version 3.7.4** is now out and about. We're really happy with the release for a number of reasons. If you take a look at the [release notes](#), you can see not only a lot of new features we've added on, but also the huge number of contributors. So not only are we feeling really good about the project itself, we have a great community of users that are doing really neat things and helping us improve our code. So a huge hand and big thanks to everyone!

I think that the release notes give you the basic idea of what's going on in this version, including ZeroMQ blocks for improved connections between networked flowgraphs over the UDP or TCP sources/sink, better QTGUI handling, and some nice improvements to the GRC interface.

Also, as I mentioned in my last post, we now have our new **FEC API** concept included in gr-fec. Oh, and on that last note, we're very close to having some of the LDPC work done during last summer's GSoC integrated with the FEC API so we can all start to use it in our flowgraphs!

The good work is never done, though. We still have so much we can and want to do in this project, and so we've already started laying out some ideas and plans for **release 3.7.5**. There's some really fun work going on in GRC that I think everyone's going to love, and we're going to be one step closer to defaulting everything to QTGUI (don't worry! WXGUI will have a long lifetime as we migrate over!). We haven't made the full decision, yet, whether to switch the GRC defaults to QTGUI in this next release or wait until 3.7.6. I think we'll make that decision about midway through this release cycle to make sure we have enough time to get the development branch settled on that before the release.

Now, no guarantees, but I'm hoping we can get 3.7.5 out in time for **GRCon14**. That's a bit shorter than our normal time period between versions, but then again, we took a bit of extra time before 3.7.4. I think that it'd be nice going into the conference with a brand new version, plus a lot of features like some of the QTGUI and GRC updates are already done. We'll see what things look like by the end of August if it really makes sense to get 3.7.5 out the door by the conference.

Finally, I've said it elsewhere, and probably on other posts on this blog, but just a quick mention of 3.8. We have **started collecting some ideas** on what we're looking for with 3.8, but we haven't made any substantial efforts on it, yet. We're going to stick with 3.7 for a while longer because we feel like we're able to get a lot of work done with this API version without having to move on. In 3.8 we plan on updating our dependency list so we can be a little more free with features from our dependency libraries, and it'll help us fix a few holes we have in the runtime API that's causing some bugs that we've been tracking. But there's nothing really pushing us to

a new API, yet, unlike our previous few API releases where we had some big changes. Instead, all of our big changes are all coming in our "minor" releases. But the only thing minor about it is our version naming scheme!

[Tom Rondeau](#) | [Comments Off](#) | [Share Article](#)
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Tuesday
Jun242014

Update and 3.7.4

TUESDAY, JUNE 24, 2014 AT 7:08PM

It's been a while since I've provided an update. Lots of travel, both work and otherwise, has kept me from letting everyone know what's been going on in GNU Radio. So let me see if I can start to fix that.

I think that our most interesting and fun development was the success of the [ISEE-3 reboot](#) team, including our own [Balint Seeber](#) (ok, so he's technically with Ettus, but for all of his work with GNU Radio, I'll claim him; at least partially) and [John Malsbury](#). This was an incredibly cool and successful project, and Balint, John, and the rest of the reboot team have done and continue to do an amazing job. I'm not going to try and poorly rehash the work here. But there's been plenty of articles written on the effort and the links provided above here will give you a much better review of what happened and how.

In other news, we're close to releasing [GNU Radio 3.7.4](#). I was really happy with our 3.7.3 release a few months ago, and this next release continues to strengthen the project. We have a lot more support and have debugged a few issues with the message passing infrastructure. I see the use of the message passing system as a growing trend in GNU Radio, especially for control and updating parameters of blocks.

Another development is a massive update and

improvement to gr-atsc. While the original work here was great, it was based on GNU Radio ideas and capabilities from probably 10 years ago or so. Andrew Davis and Johnathan Corgan have done a wonderful job bringing this up to date and improving its speed and stability. This is part of a trend that we're working on (hopefully in the next version release) for more support of other digital TV standards, both transmitter and receiver code. Keep an eye out for gr-dtv in the near future.

A huge part of my work recently has been in the integration, development, documentation, and building examples for our new FEC API that is now a part of gr-fec. Historically, GNU Radio hasn't done a very good job with managing or allowing use of forward error correction (FEC) techniques. It's a difficult problem to solve to allow us to easily integrate different types of FECs in transmitters and receivers, either for streaming or packet-based communication links. Each FEC has different properties and conditions for use in the different types of comms links, and they can have different input/output data types that they are built to work with. The new FEC API that's been introduced allows us to handle these situations more seamlessly within a GNU Radio flowgraph.

The new gr-fec includes FEC encoders and decoders for a convolutional code ($K=7$, Rate= $1/2$, polynomials=[79, 109]) that has been highly optimized with SIMD (through VOLK), a repetition code that simply repeats each bit N times, and a dummy code that actually does no coding but provides a simple mechanism to use and study the API. We are also providing different blocks, called “deployments” in the FEC API, that allow us to make use of these encoders/decoders in streaming, tagged stream, and PDU message-passing flowgraphs. I was able to use the convolutional code FEC encoder and decoder in the gr-mac project for full network communications between multiple computers. This work can be found in the “fec_gmsk” branch of [my fork of gr-mac](#).

The GNU Radio manual covers the API and

deployments in a fair amount of depth. Obviously, you can always build the docs yourself with GNU Radio, but the [main manual page](#) on gnuradio.org will be updated to include this when 3.7.4 is released. Likewise, there are examples for the use of the codes and deployments that are distributed and installed with GNU Radio.

So that's just a brief review of what we've been up to the past few months. There are plenty of little fixes, tweaks, and additions that we've been making to the code base in this time that I've left out. But I'm really pleased with the progress and rate of progress we've been making lately. Lots of new, good stuff to help us fill a few gaps in capabilities we've had.

[Tom Rondeau](#) | [Comments Off](#) | [Share Article](#)
tagged [3.7.4](#), [FEC API](#), [ISEE-3](#), [gnuradio](#), [gr-fec](#) in
[development release](#)

Thursday
May082014

GRCon14 Agenda Posted

THURSDAY, MAY 8, 2014 AT 9:59AM

Earlier today, John Malsbury posted the following to the GNU Radio mailing list:

Greetings,

It's been a few weeks since our last update on GRCon14. Here's the latest:

Conference Agenda is Posted

I am happy and proud to announce that the agenda for GNU Radio Conference 2014 has been posted. We received an variety of great, high-quality proposals on topics ranging from wireless security to satellite communications and networking. Tom Rondeau and Michael Dickens spent a great deal of

time sorting through the presentations and assembling an agenda that is packed full of interesting and educational content. While some minor details may change, you can find an up-to-date agenda at the following link. If you are a presenter and need to modify your entry, please contact Michael Dickens to do so.

<http://gnuradio.squarespace.com/grcon14-agenda/>

Help Promote GNU Radio Conference

*On another note its worth mentioning that we have been keeping a pulse on registration. Based on the current run rate, we believe that this is going to be **the largest** GNU Radio conference, **by far**.*

With the conference agenda assembled and great forward momentum, we would like to ask this awesome community to help us promote this event. GRCon14 is on the verge of becoming one of the largest and most influential events with a focus on SDR and wireless implementation. With a community-driven effort, we could really put ourselves on the map this year and generate even more excitement with potential users and developers.

Whether you simply remind your fellow GNU Radio developer, or invite someone new to join us for this event, we think your enthusiasm for the event is the thing that will make the difference.

Register for the Event

If you would like to register for GRCon14, follow this link:

<http://grcon14.eventbrite.com/>

***We look forward to seeing you in
September!***

Best Regards,

John Malsbury

GNU Radio Conference Chair

<u>Tom Rondeau</u> Comments Off <u>Share Article</u>
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