



Getting Started with Consensys

v0.4.0

Nov 20th 2015



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INTRODUCTION

Consensys v0.4.0 is used with *Consensys Base6* during the creation of this guide.

Supported Hardware: *Shimmer Dock / Consensys Base6 / Consensys Base15 / all Shimmer3 Units.*

Supported Firmware: *SDLog / LogAndStream.*

The highlight of this release is the addition of “*Live Data*”; configuring Shimmers over Bluetooth and streaming data over Bluetooth to the PC.

To be expected in future releases: Recorded Data Visualisation; 9DoF Calibration.

Follow the links for more information on:

- *Consensys Software* – <http://www.shimmersensing.com/shop/consensys>
- *Consensys Base6* - <http://www.shimmersensing.com/shop/consensys-base6>
- *Consensys Base15* - <http://www.shimmersensing.com/shop/consensys-base15>
- *Documentation & Downloads* – <http://www.shimmersensing.com/support>

INSTALL HARDWARE & SOFTWARE (1/8)

STEP 1 – Download the *Consensys Software* from our [website](#)[†].

STEP 2 – Connect the AC adapter with the *Base*.

STEP 3 – Plug the power cable into the AC adapter and a mains power socket.

STEP 4 – Connect the USB cable from your computer to the *Base*.

STEP 5 – Windows will now install the drivers for the *Base*. Status feedback is given in Windows' system tray; right bottom corner of the screen:

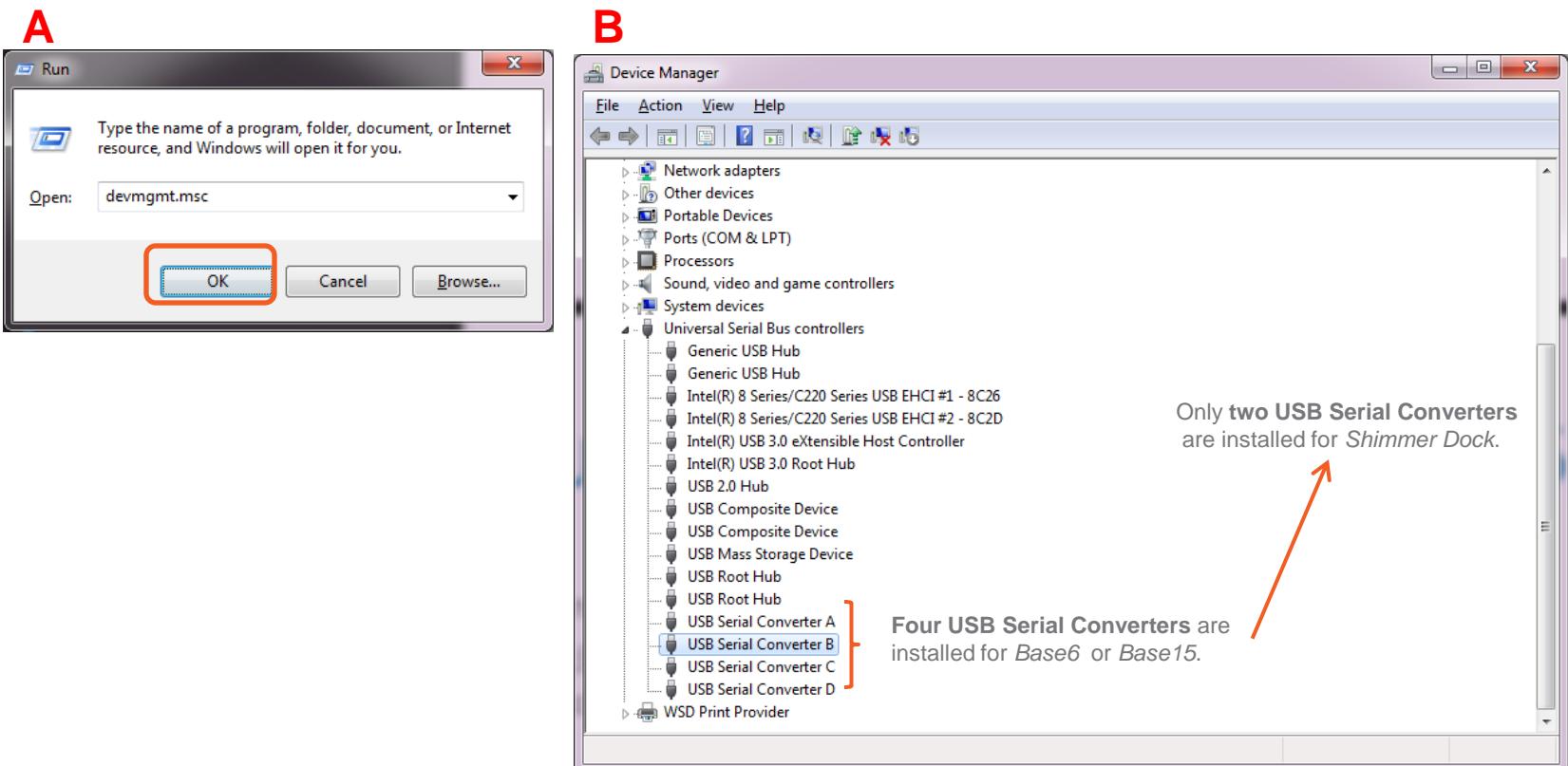


N.B. The driver installation can take up to a few minutes. In case you are not sure if the installation has finished, just go to the next STEP to verify the driver installation.

INSTALL HARDWARE & SOFTWARE (2/8)

STEP 6 – Verify driver installation:

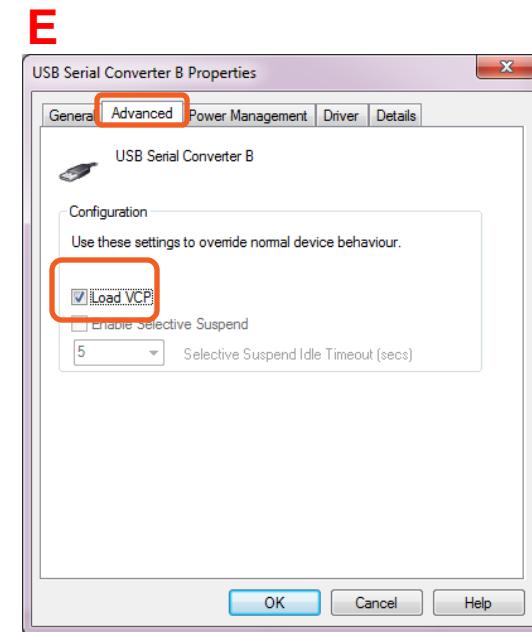
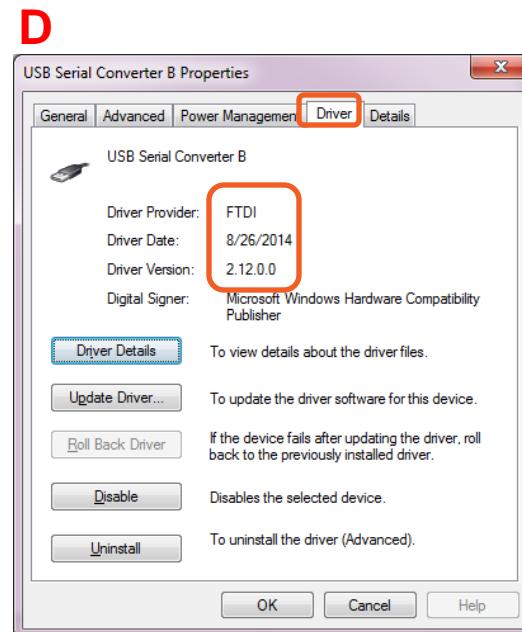
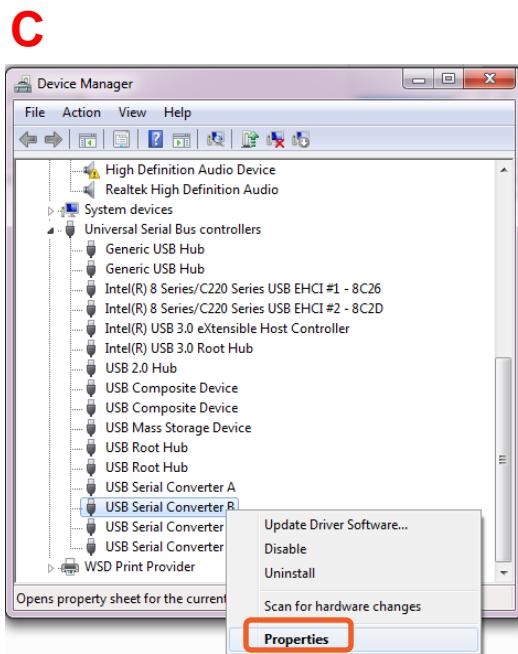
- Run the Device Manager: Press [Windows Key] + R; type *devmgmt.msc*; click “OK”.
- Go to Universal Serial Bus Controllers.



INSTALL HARDWARE & SOFTWARE (3/8)

STEP 6 – Verify driver installation - continued:

- C. Right-click on one of the USB Serial Converters; click **Properties**.
- D. Go to “Driver”; check if **FTDI Driver v2.12.0.0** or later is installed → **Correct Driver has been installed!**
- E. Go to “Advanced”; make sure **Load VCP** is checked.
- F. Repeat for the other USB Serial converters. Skip to STEP 9 if correct driver is installed for all USB Serial Converters.



INSTALL HARDWARE & SOFTWARE (4/8)

STEP 7 – Download the FTDI Driver:

- Go to <http://www.ftdichip.com/Drivers/VCP.htm>.
- Download the latest Windows “setup executable”.

A

B

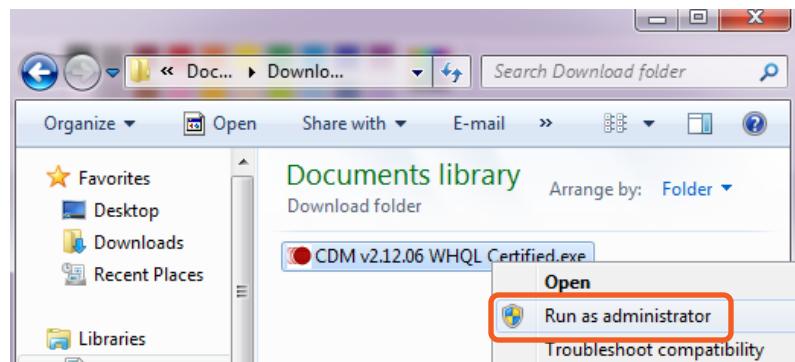
Currently Supported VCP Drivers:									
		Processor Architecture							
Operating System	Release Date	x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	Comments
Windows*	2015-07-28	2.12.06	2.12.06	-	-	-	-	-	2.12.06 WHQL Certified Available as <u>setup executable</u> Release Notes
Linux	2009-05-14	1.5.0	1.5.0	-	-	-	-	-	All FTDI devices now supported in Ubuntu 11.10, kernel 3.0.0-19 Refer to TN-101 if you need a custom VCP VID/PID in Linux
Mac OS X 10.3 to 10.8	2012-08-10	2.2.18	2.2.18	2.2.18	-	-	-	-	Refer to TN-105 if you need a custom VCP VID/PID in MAC OS
Mac OS X 10.9 and above	2015-04-15	-	2.3	-	-	-	-	-	This driver is signed by Apple
Windows CE 4.2-5.2**	2012-01-06	1.1.0.20	-	-	1.1.0.20	1.1.0.10	1.1.0.10	1.1.0.10	
		1.1.0.20			1.1.0.20				

INSTALL HARDWARE & SOFTWARE (5/8)

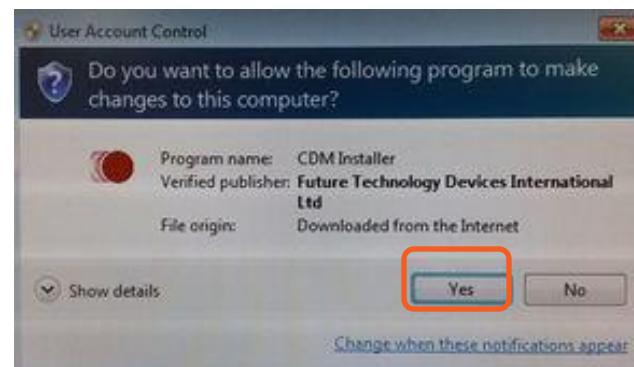
STEP 8 – Manual Driver installation:

Right-click the downloaded file;

“Run as administrator”:



Press “Yes” if this screen is shown:

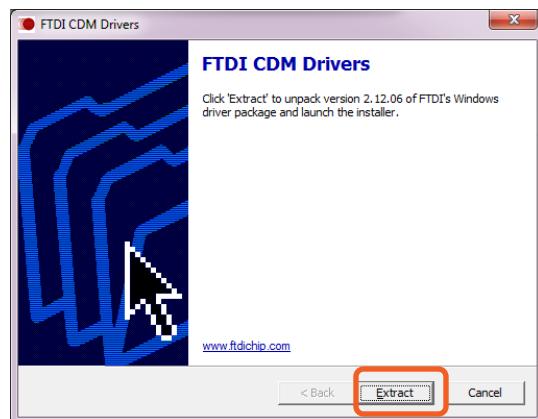


N.B. If a security warning pops up, click “Run”.

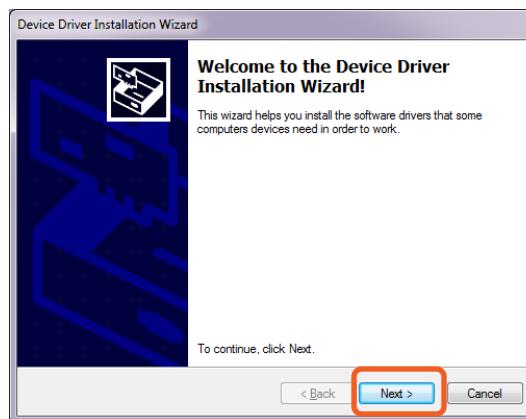
INSTALL HARDWARE & SOFTWARE (6/8)

STEP 8 – Manual Driver installation - continued:

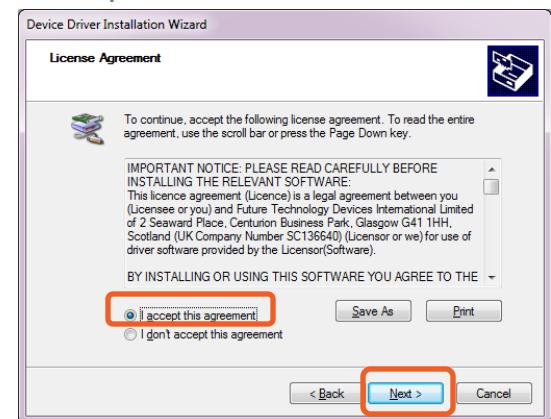
Click “Extract”:



Click “Next”:



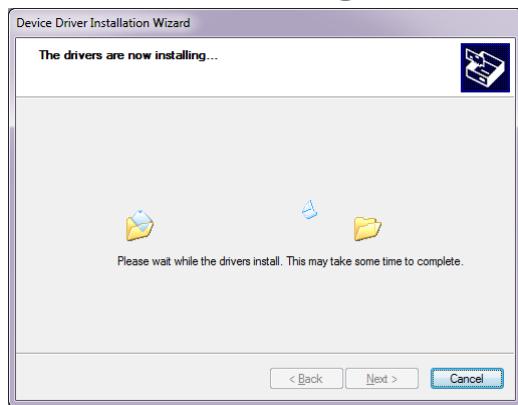
Accept and click “Next”:



INSTALL HARDWARE & SOFTWARE (7/8)

STEP 8 – Manual Driver installation - continued:

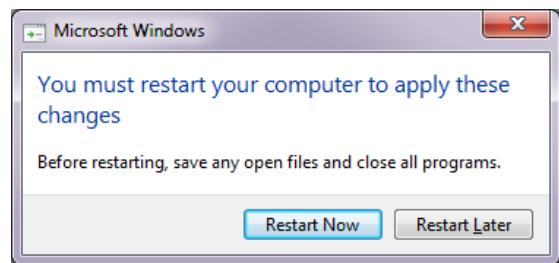
Drivers are installing:



Click "Finish":



Click "Restart Now":



N.B. Repeat STEP 6 before proceeding!

INSTALL HARDWARE & SOFTWARE (8/8)

N.B. Only continue with STEP 9 if the driver installation has been verified (STEP 6).

STEP 9 – Extract the zip-file downloaded at STEP 1.

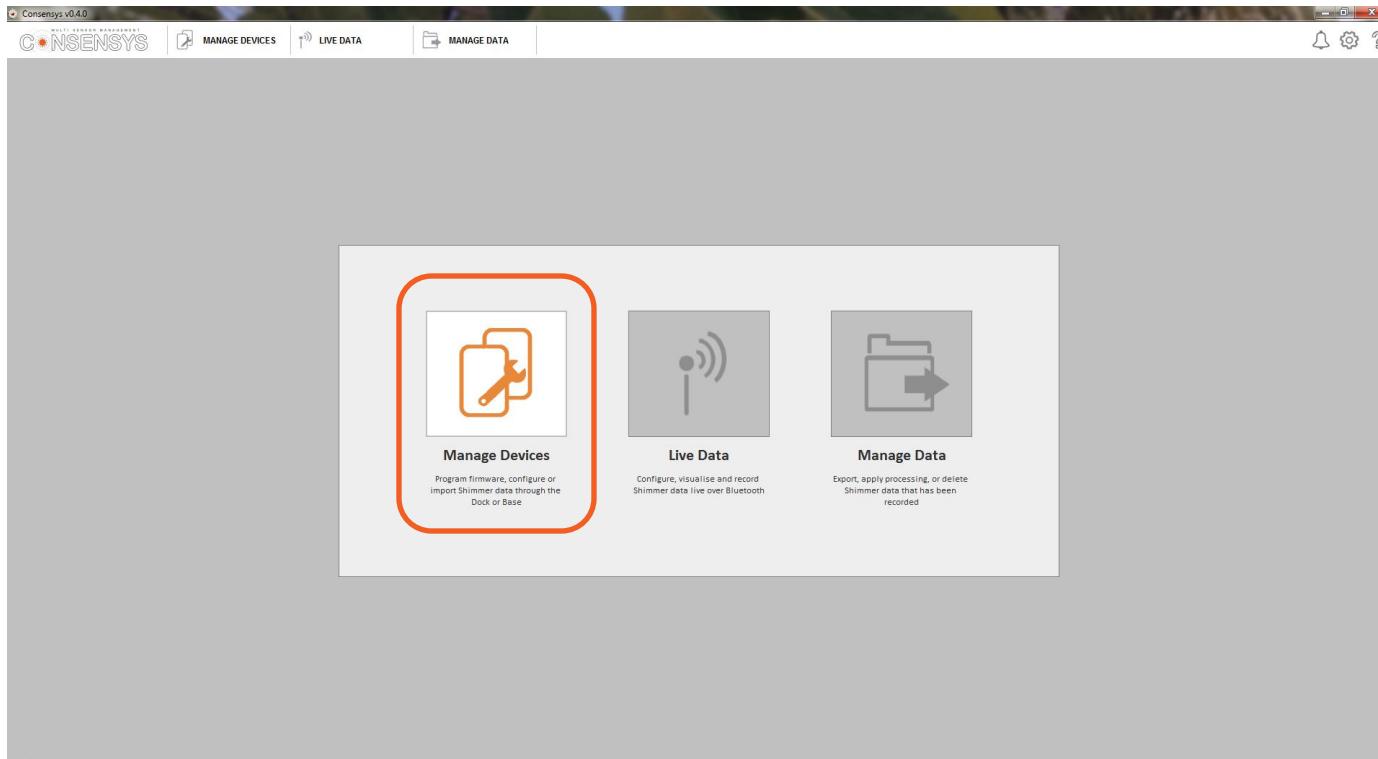
STEP 10 – Double-click “*setup.exe*” and follow the instructions.

STEP 11 – When the installation is complete, double-click the *Consensys* desktop icon to start.

PROGRAM FIRMWARE (1/3)

STEP 1 – Start *Consensys*.

STEP 2 – Click “MANAGE DEVICES”.

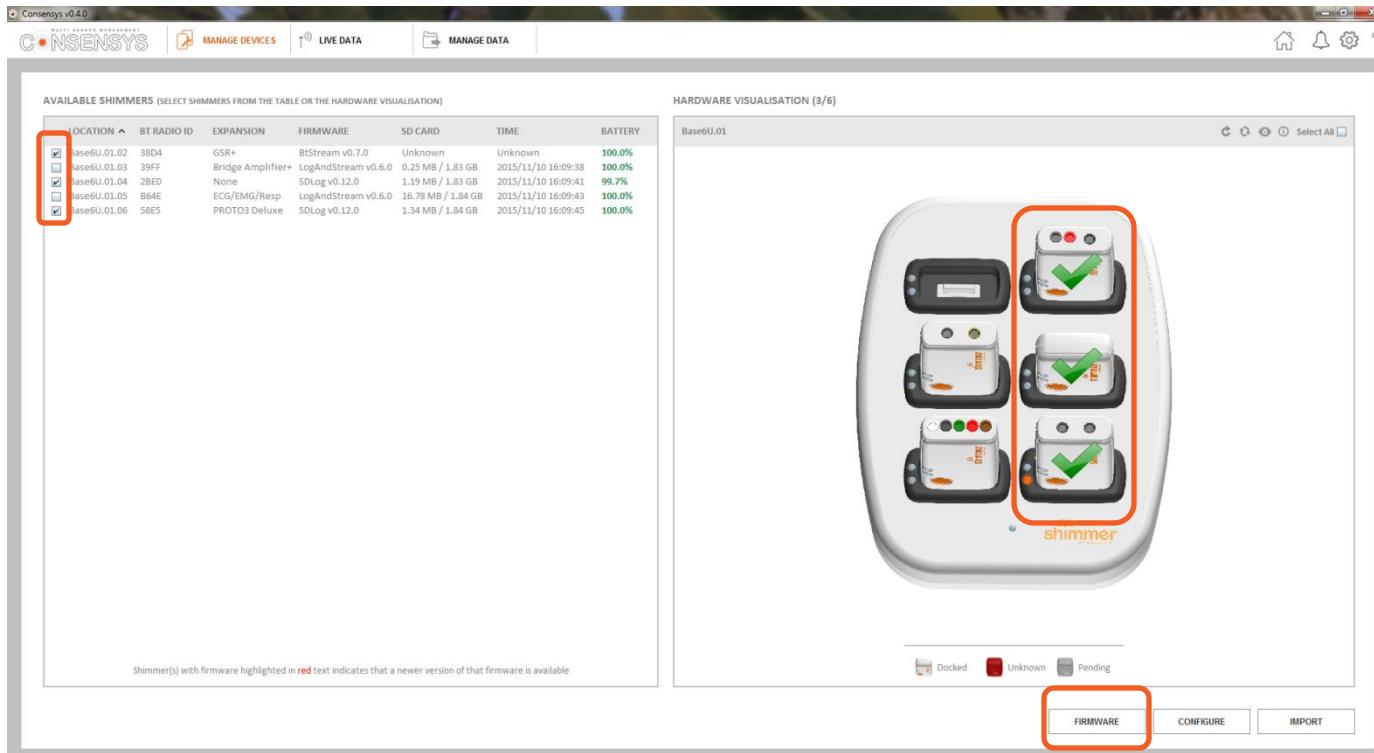


PROGRAM FIRMWARE (2/3)

STEP 3 – Switch on the Shimmer(s) and place in the *Base*.

STEP 4 – Click on the graphic or the device list to select/deselect the Shimmer(s).

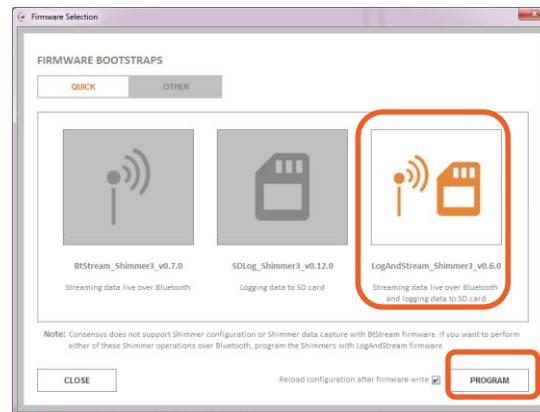
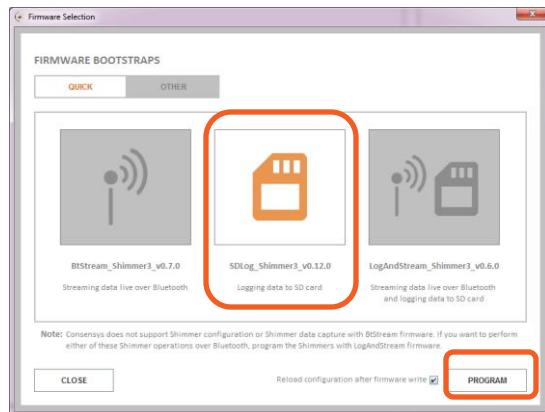
STEP 5 – Select one or more Shimmers and click on the “FIRMWARE” button.



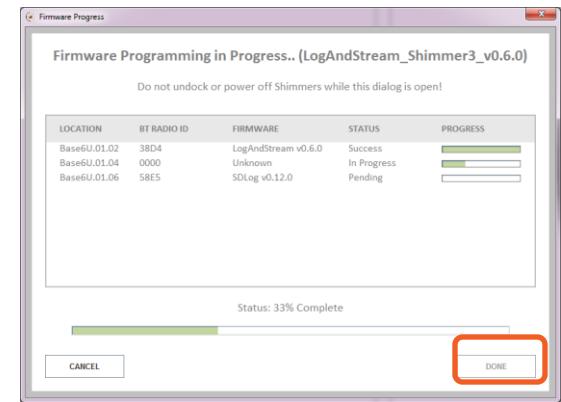
PROGRAM FIRMWARE (3/3)

STEP 6 – Program the Shimmer with *SDLog* or *LogAndStream*:

Select *SDLog* or *LogAndStream*, and click PROGRAM":



Click “DONE” when complete:



LOGGING

Logging data on the SD card(s) of one or multiple Shimmers.

In this section:

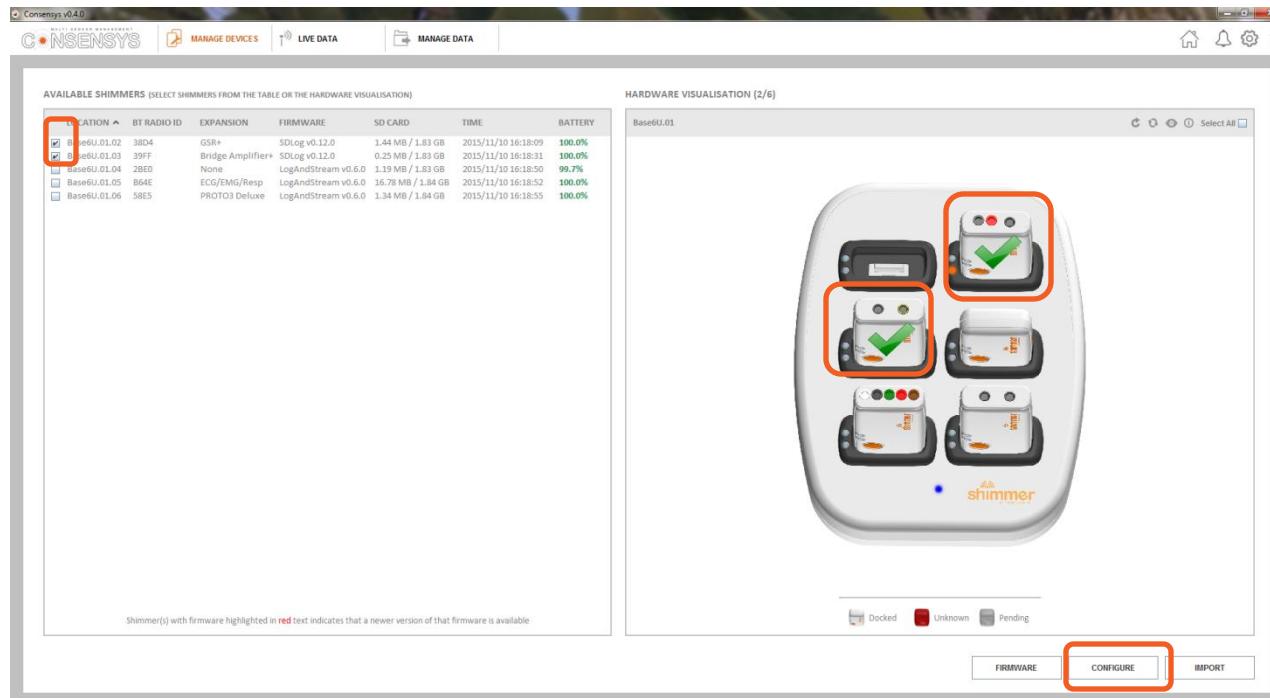
- [Configure Trial](#)
- [Capture Data](#)
- [Import Data](#)

N.B. To enable logging data to the SD cards Shimmers need to be programmed with *SDLog* or *LogAndStream* firmware – see [Program Firmware](#).

N.B. In the Logging section of this guide *SDLog* is used, which allows for synchronisation between multiple Shimmers when logging to the SD card. Synchronisation is not available for *LogAndStream*. The advantage of *LogAndStream* is that it can also be used to stream data over Bluetooth – see the [Streaming section](#) of this guide.

LOGGING – CONFIGURE TRIAL (1/5)

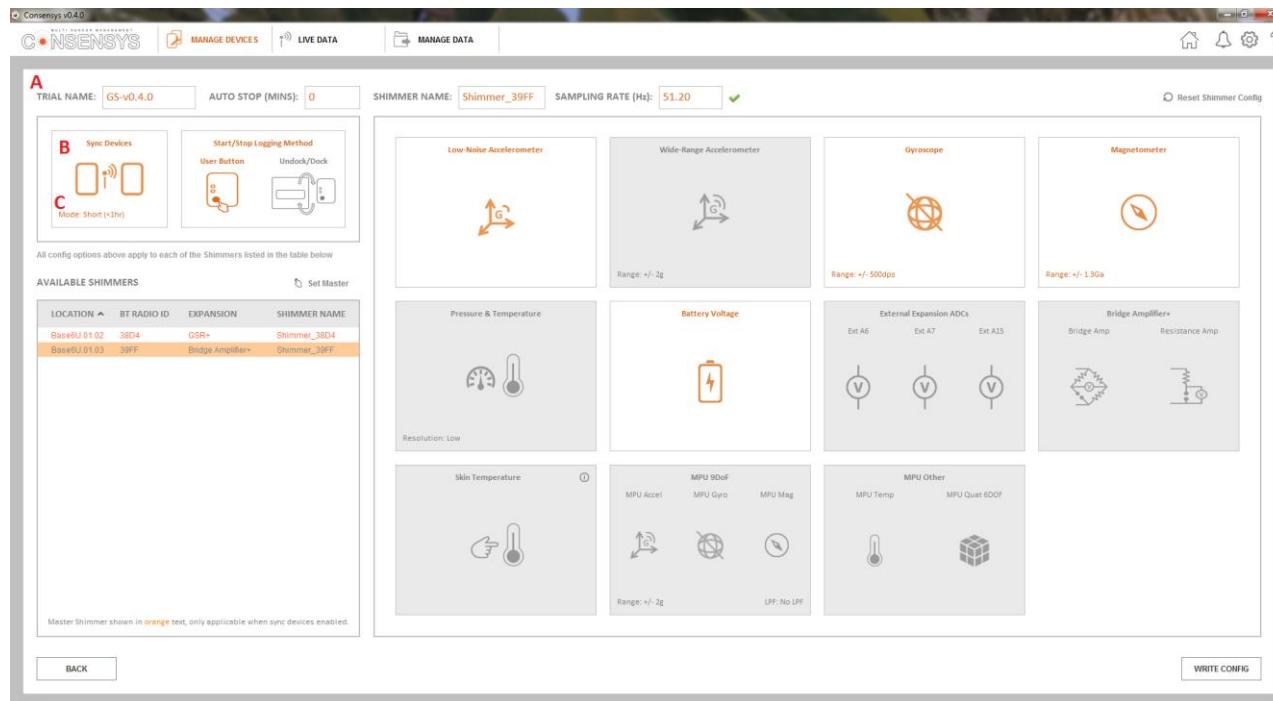
STEP 1 – Select one or more Shimmer(s) with the same firmware and click on “CONFIGURE”:



LOGGING – CONFIGURE TRIAL (2/5)

STEP 2 – Set TRIAL NAME & Sync Devices:

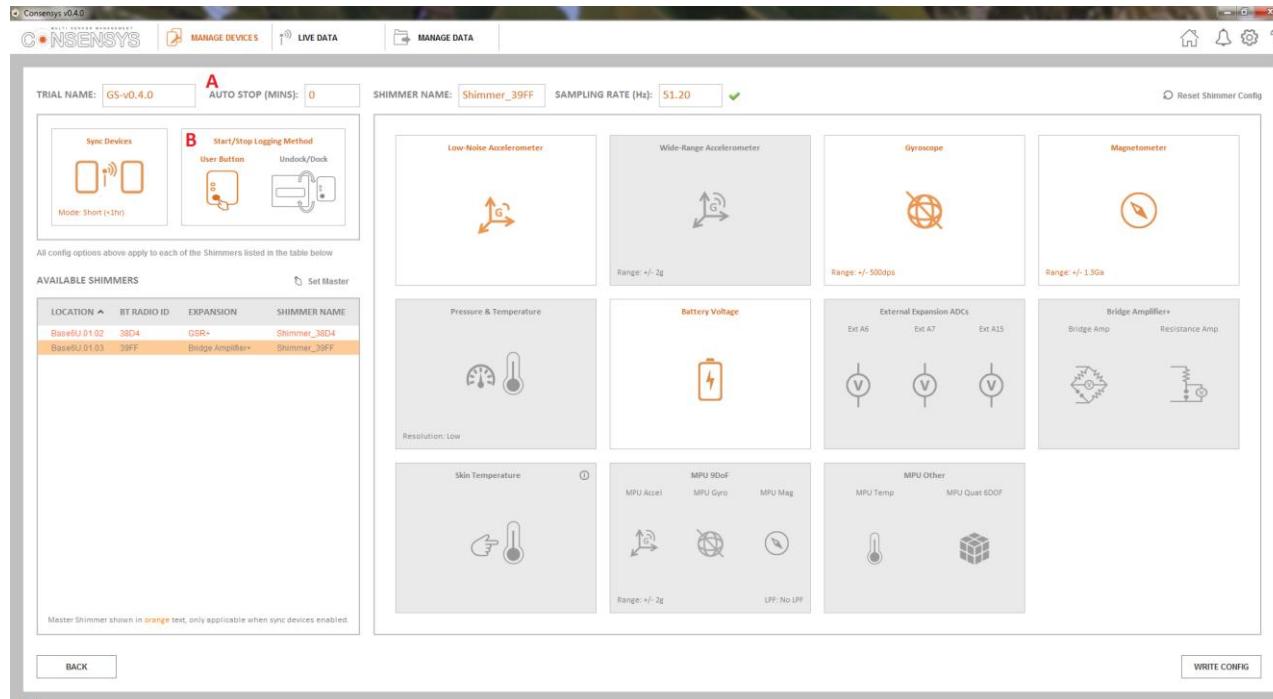
- Choose a TRIAL NAME.
- Click the *Sync Devices* tile to enable synchronised logging from multiple Shimmers (available for *SDLog* firmware only).
- Choose Mode based on estimated logging duration.



LOGGING – CONFIGURE TRIAL (3/5)

STEP 3 – Set AUTO STOP & Start/Stop Logging Method:

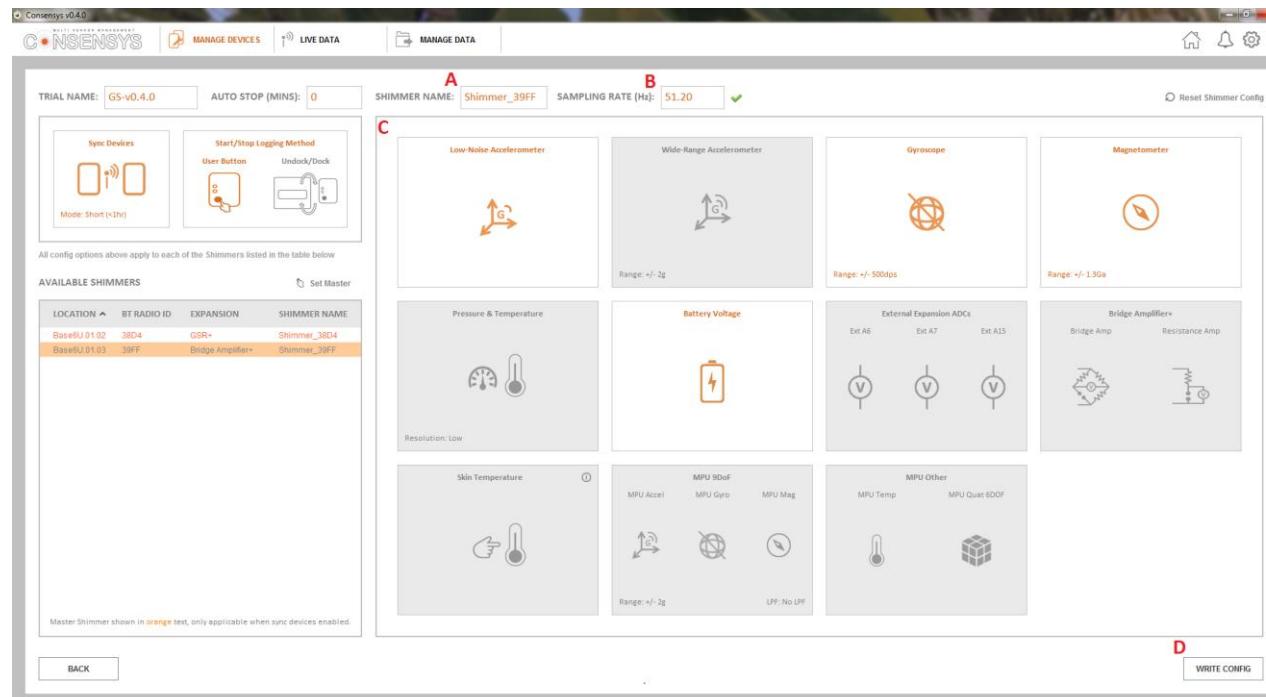
- To automatically stop logging, enter a value other than zero.
- Choose to start and stop logging with the User Button or by undocking/docking – User Button is used in this guide.
N.B. When using the Undock/Dock method, log for at least one minute to ensure a data file is created.



LOGGING – CONFIGURE TRIAL (4/5)

STEP 4 – Set parameters for each Shimmer.

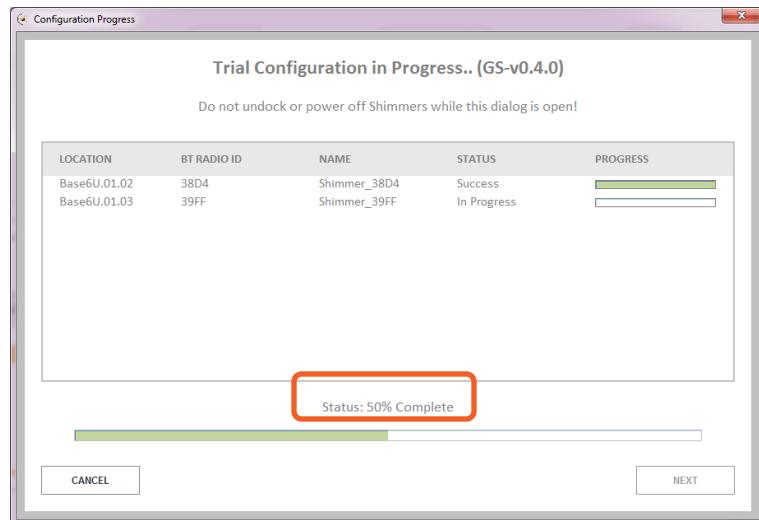
- A. Choose SHIMMER NAME.
- B. Choose SAMPLING RATE.
- C. Click on the tiles to enable and configure sensors.
- D. When all Shimmers are configured, click “WRITE CONFIG” to write the configuration to the Shimmers.



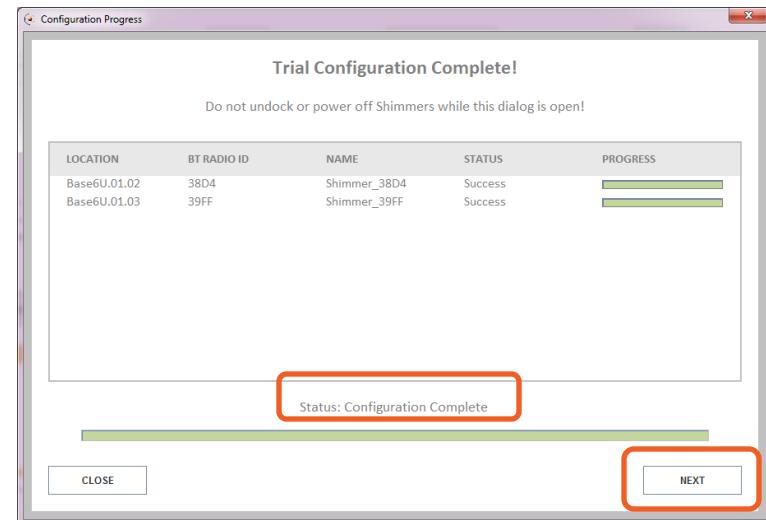
LOGGING – CONFIGURE TRIAL (5/5)

STEP 5 – WRITE CONFIG.

Wait until Trial Configuration is written:



Click “NEXT” to complete the configuration:



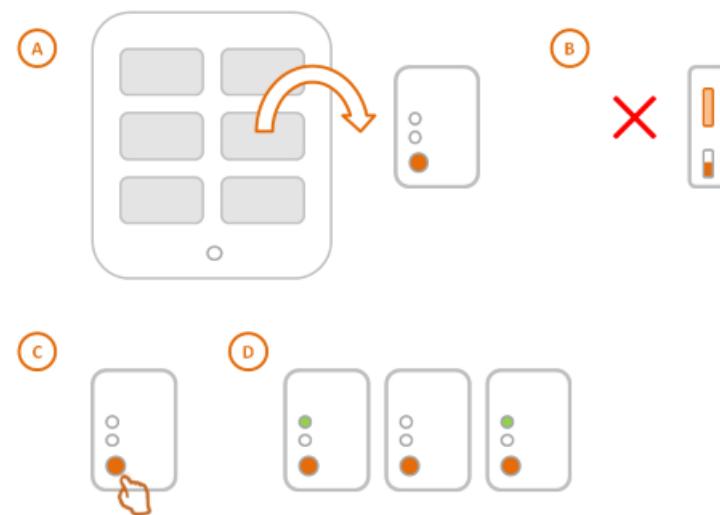
LOGGING - CAPTURE DATA (1/2)

STEP 1 – Undock the Shimmer(s). (A)

STEP 2 – DO NOT Power off the Shimmer. (B)

STEP 3 – Press the orange User Button on the Shimmer(s) to start data capture. (C)

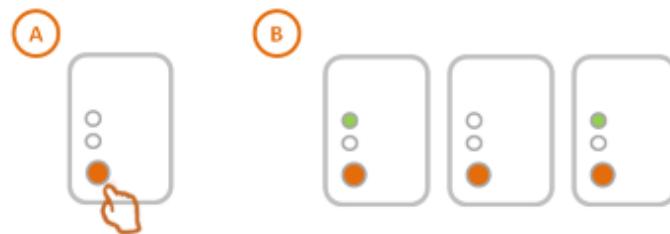
STEP 4 – The green LED will turn on and off at one second intervals when capturing data. (D)



LOGGING - CAPTURE DATA (2/2)

STEP 5 – Press the orange User Button again to stop data capture. (A)

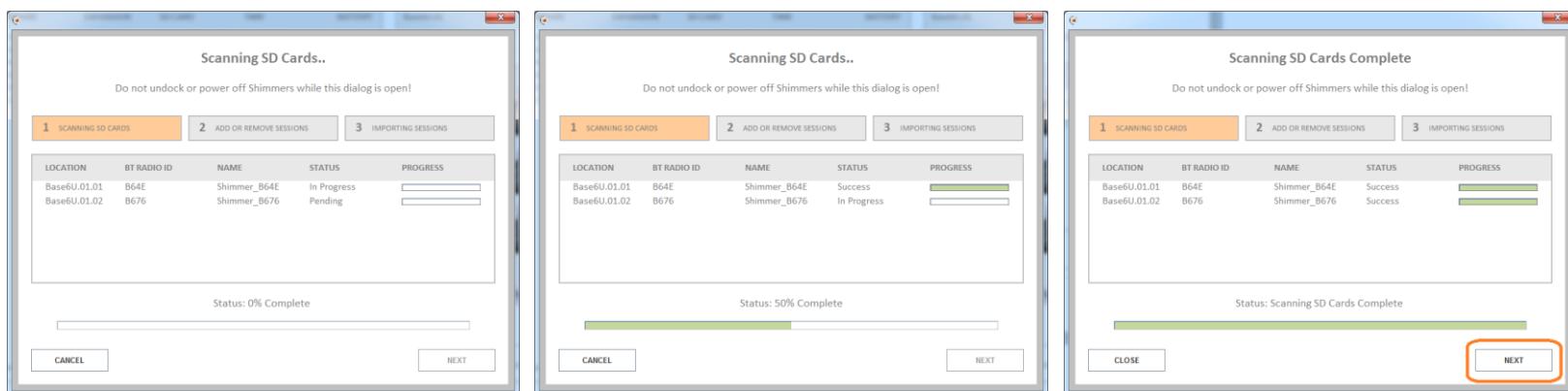
STEP 6 – The green LED will now turn on briefly once every two seconds. (B)



LOGGING – IMPORT DATA (1/6)

STEP 1 – Scanning SD Cards:

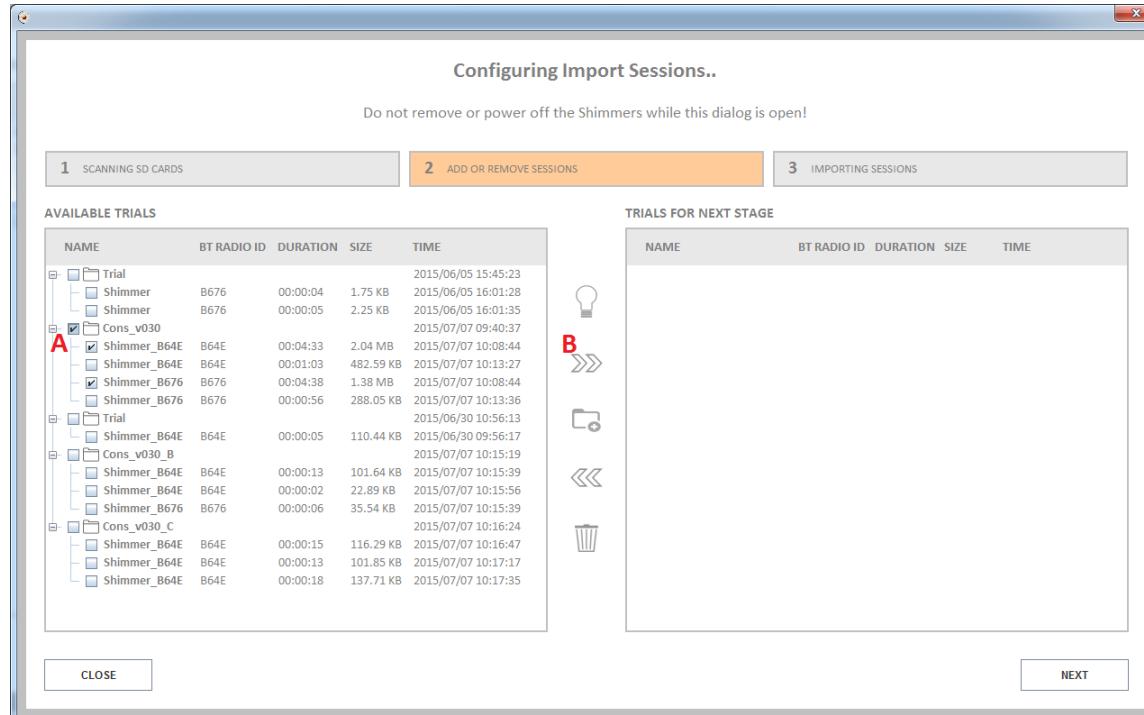
- A. Place the Shimmer(s) in the Base.
- B. Select the Shimmer(s) you want to import data from and click “IMPORT”.
- C. Hit “NEXT” when scanning is complete.



LOGGING – IMPORT DATA (2/6)

STEP 2 – Configuring Import Sessions:

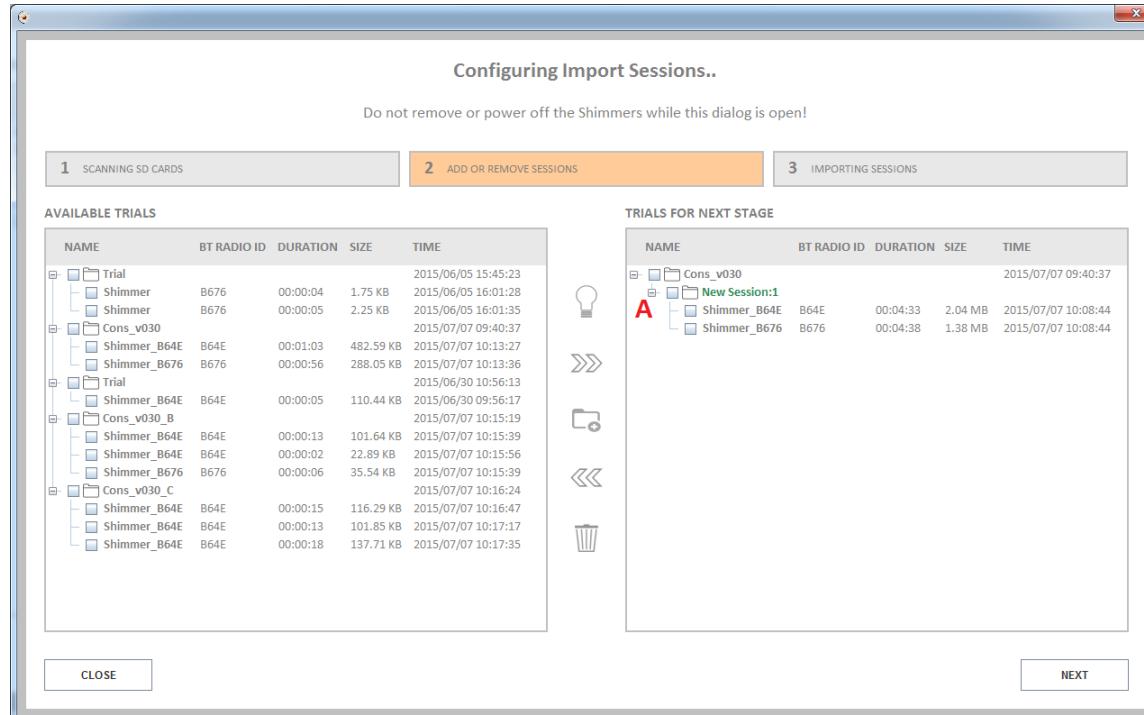
- A. Select data from one or more Shimmers.
- B. Click the button to add the data as new session to the list for the next stage.



LOGGING – IMPORT DATA (3/6)

STEP 2 – Configuring Import Sessions – continued:

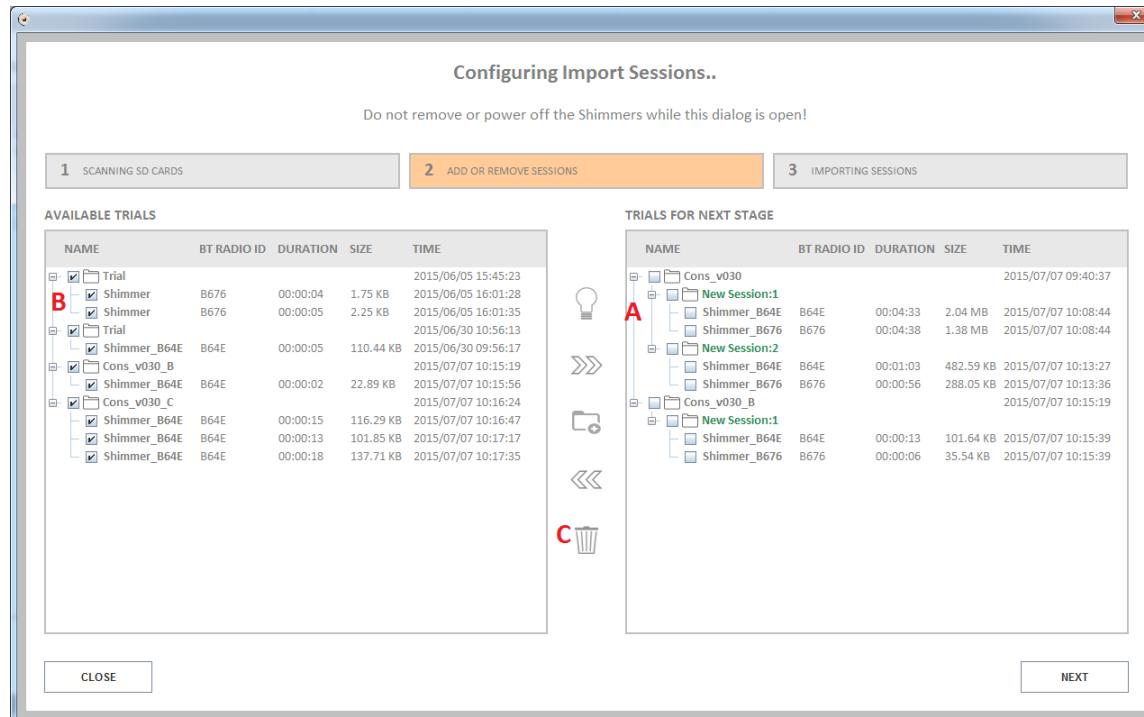
- A. For trial “Cons_v030” the data is added to “New Session:1”.



LOGGING – IMPORT DATA (4/6)

STEP 2 – Configuring Import Sessions – continued:

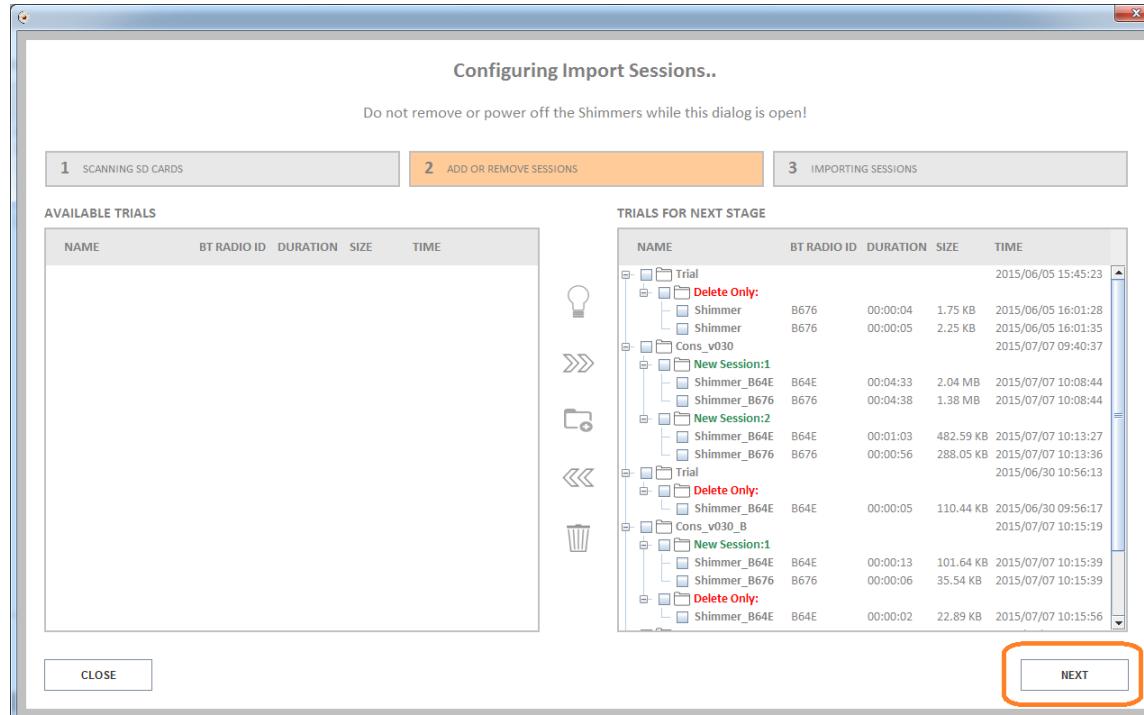
- A. In the same way data is added as “New Session:2” of trial “Cons_v030” and “New Session:1” of “Cons_v030_B”.
- B. The remaining data on the SD cards of the selected Shimmers is selected.
- C. Clicking this button will mark the data selected in AVAILABLE TRIALS (B) to be deleted in the next stage.



LOGGING – IMPORT DATA (5/6)

STEP 2 – Configuring Import Sessions – continued:

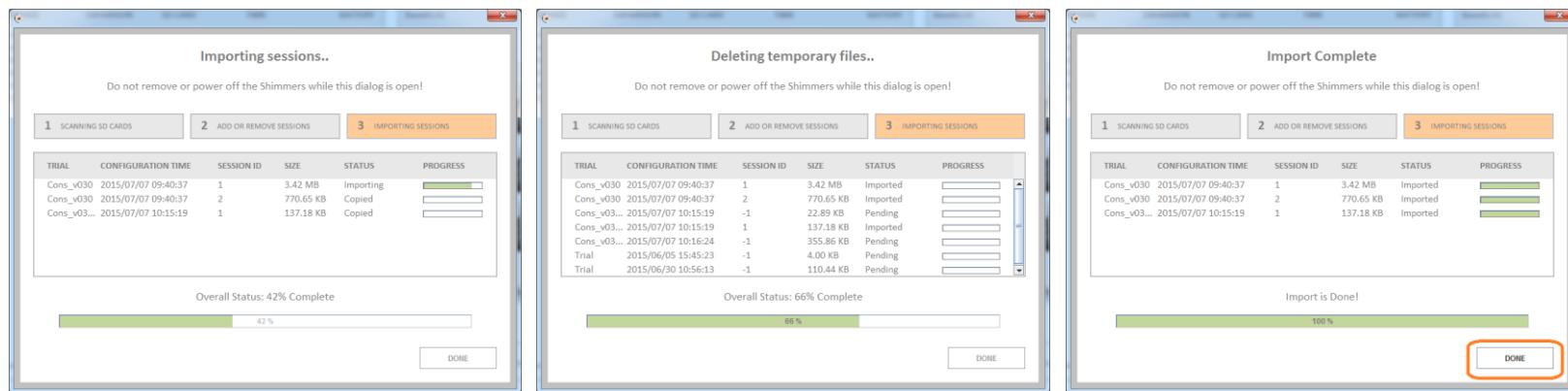
- A. Data not to be imported in the next stage is now listed to be deleted – marked “Delete Only”.
- B. Hit “NEXT” to continue to the next stage (and hit “YES” to confirm).



LOGGING – IMPORT DATA (6/6)

STEP 3 – Importing sessions:

- A. The data selected for import is now being imported into the database.
- B. Data marked to be deleted is now being deleted.
- C. Hit “DONE” when Import is complete to go to “MANAGE DATA”.



N.B. Skip to Manage Data for instructions on accessing the imported data.

STREAMING

Streaming data from one or multiple Shimmers to the PC over Bluetooth.

In this section:

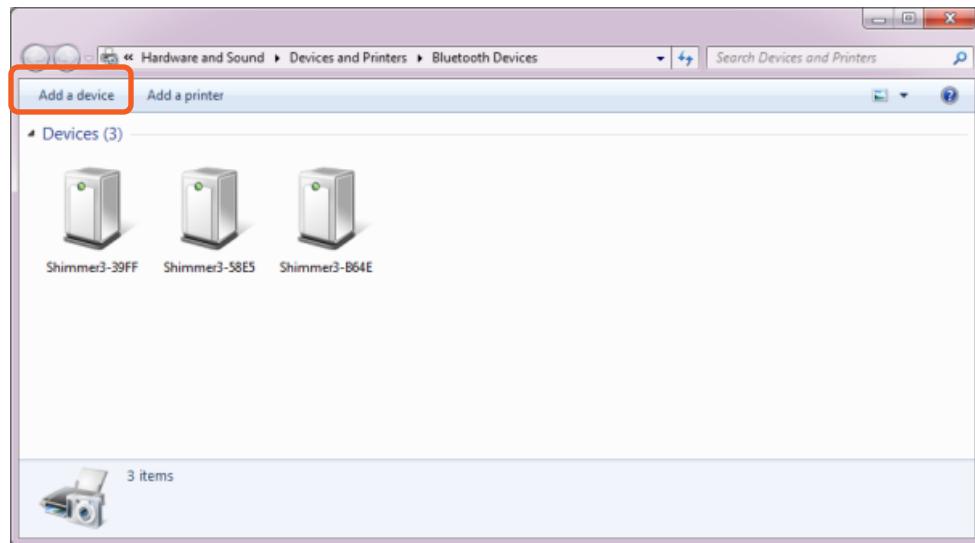
- [Pair Shimmer](#)
- [Connect](#)
- [Configure Trial](#)
- [Stream & Plot](#)
- [Record](#)

N.B. The PC needs to be equipped with a Bluetooth Adapter to allow streaming over Bluetooth.

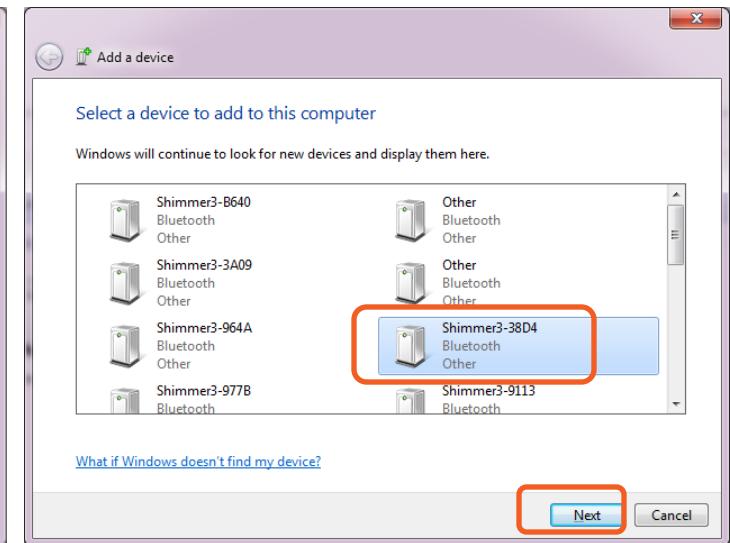
N.B. Shimmers need to be programmed with *LogAndStream* firmware - see [Program Firmware](#).
BtStream firmware is not supported in *Consensys v0.4.0*.

STREAMING - PAIR SHIMMER (1/2)

Click “Add a device” in Bluetooth devices in Control Panel:

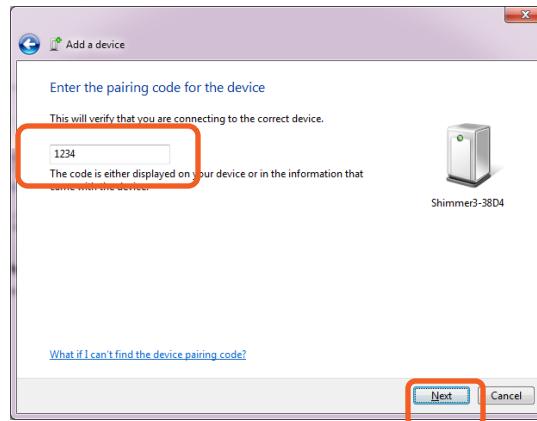
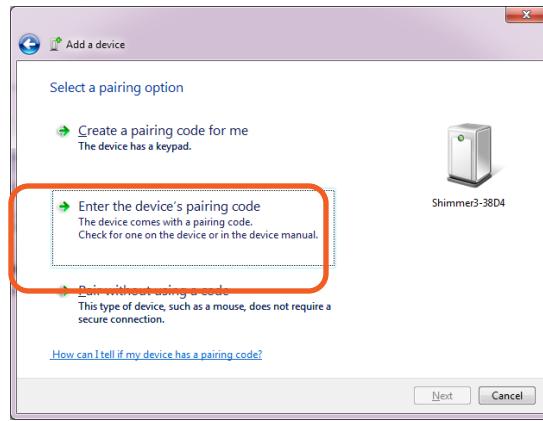


Select Shimmer, click “Next”:

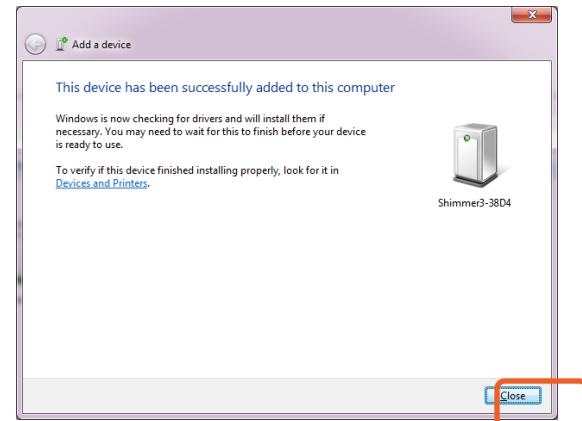


STREAMING - PAIR SHIMMER (2/2)

Enter the pairing code: “1234” and click “Next”:

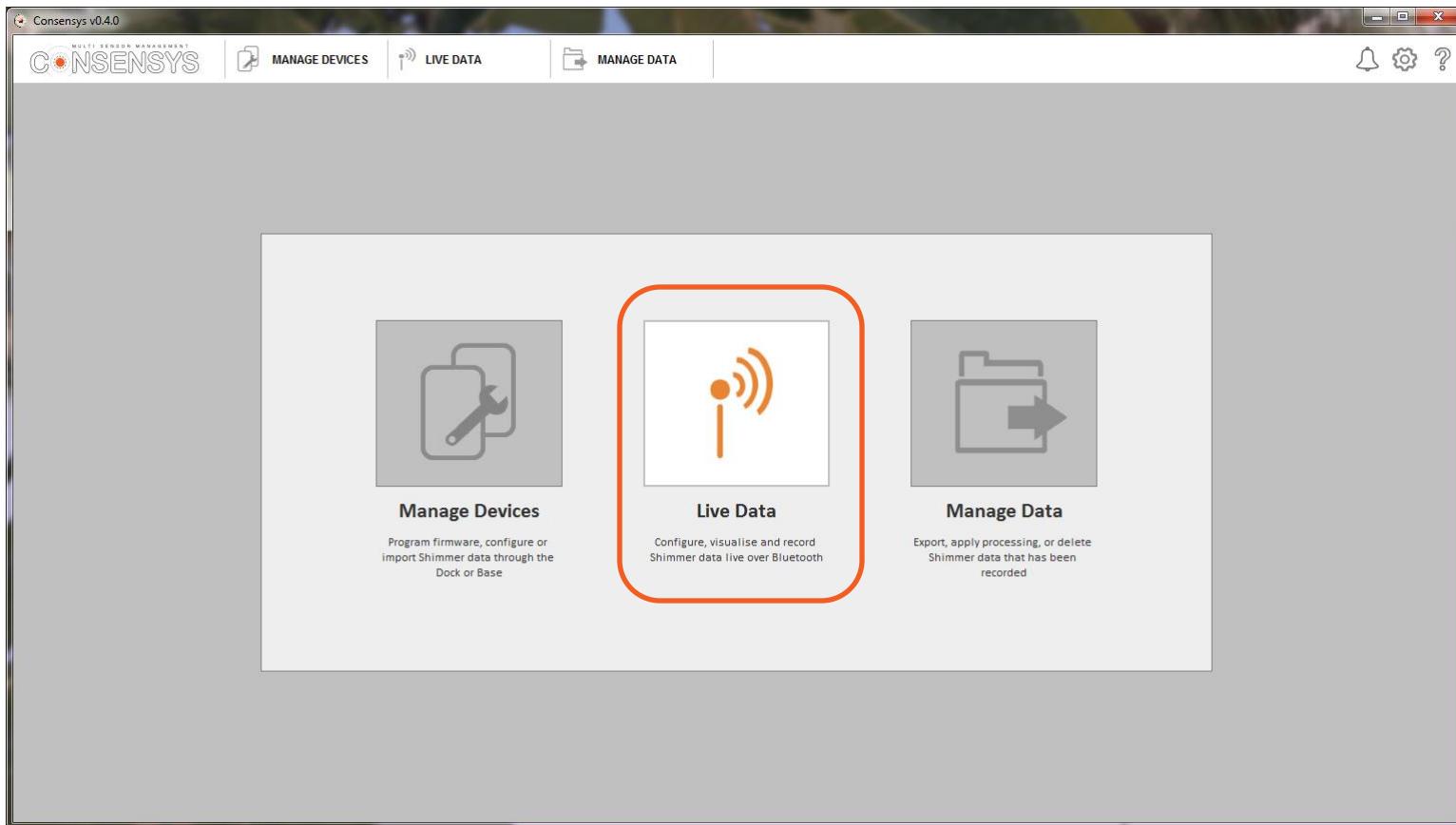


Click “Close”:



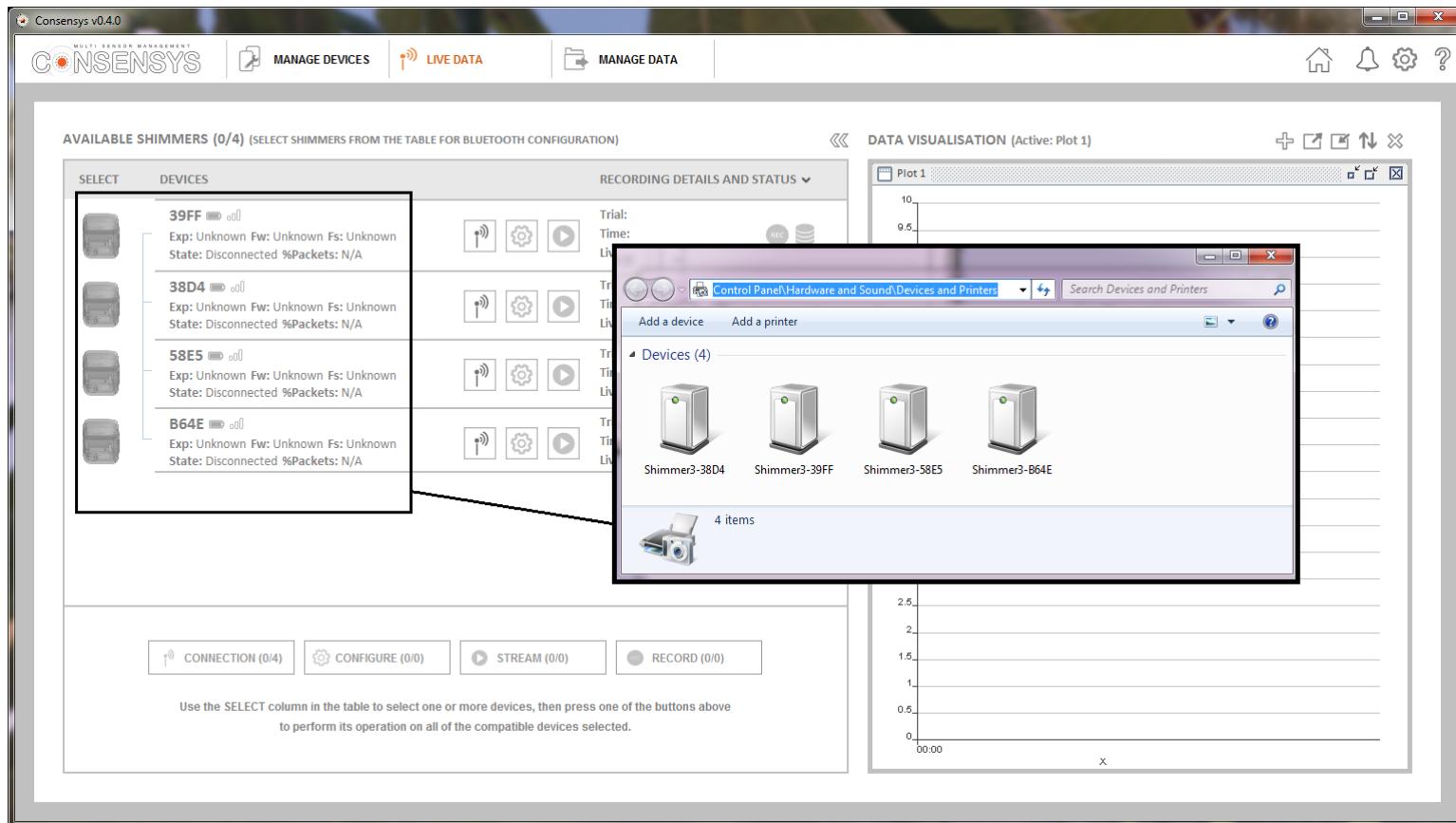
STREAMING – CONNECT (1/5)

STEP 1 – Go to “LIVE DATA”:



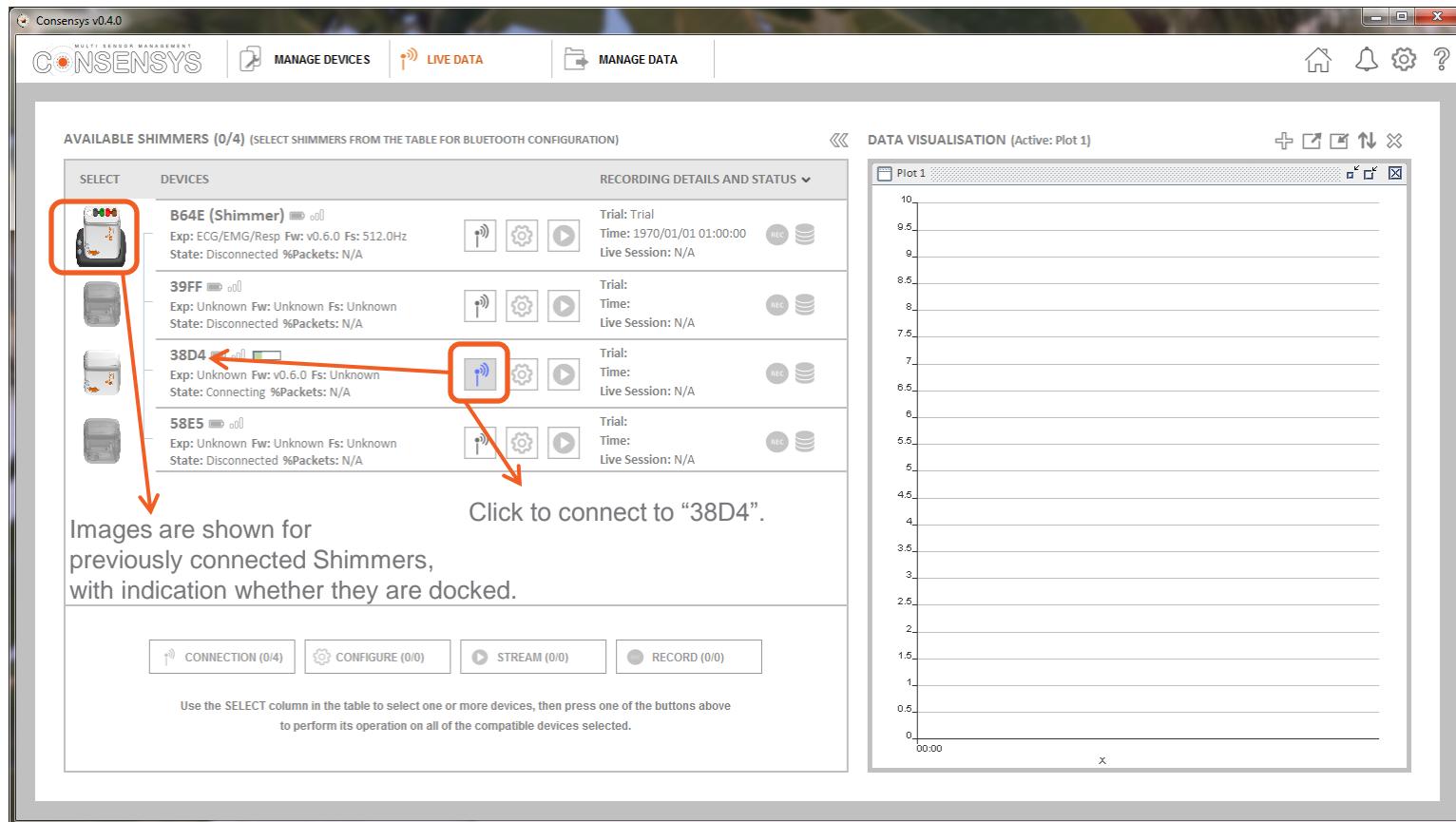
STREAMING – CONNECT (2/5)

STEP 2 – Note all Shimmers listed in “Devices and Printers” show up in “LIVE DATA” :



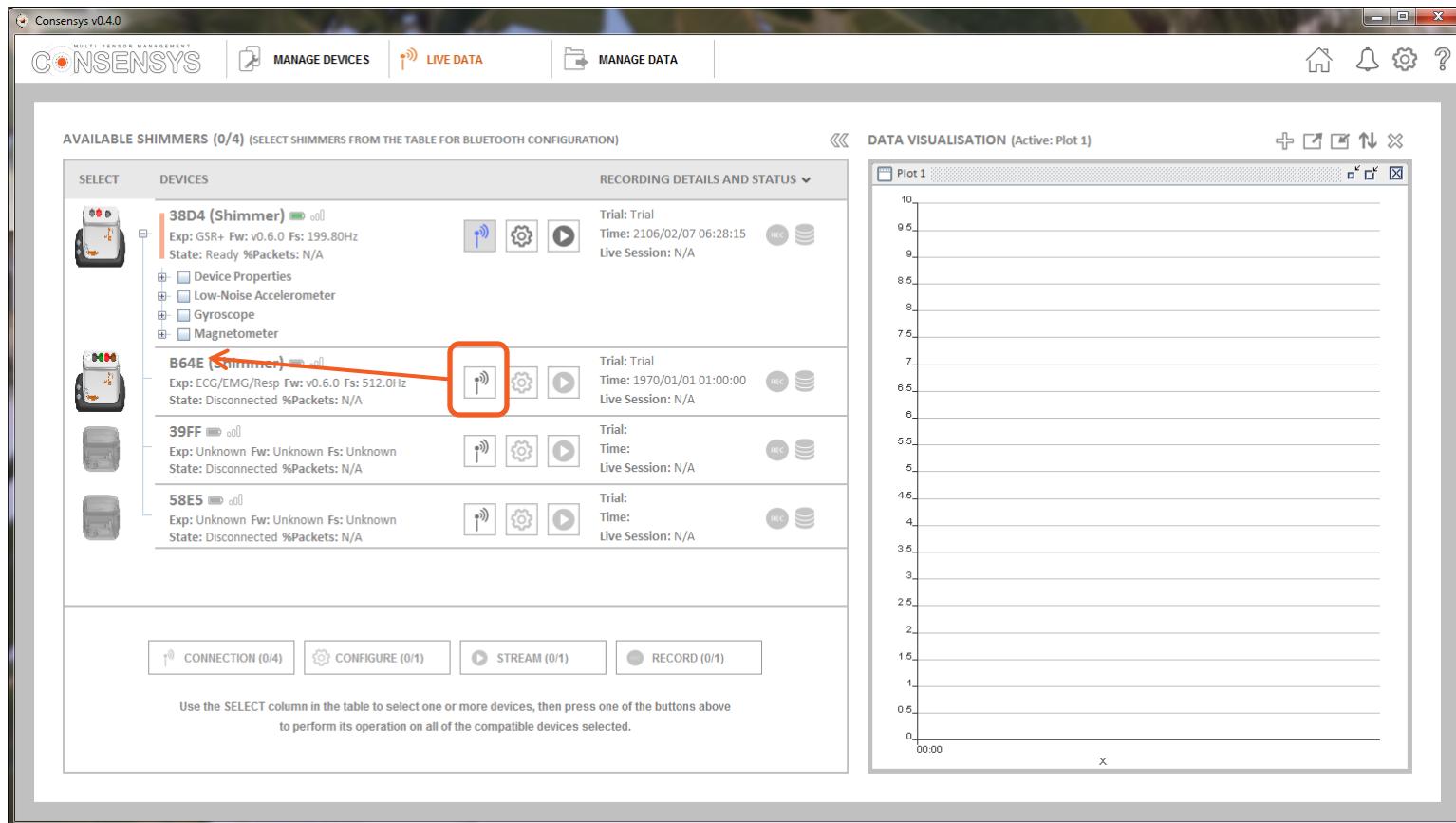
STREAMING – CONNECT (3/5)

STEP 3 – Connect to Shimmer (“38D4” in this example):



STREAMING – CONNECT (4/5)

STEP 4 – Connect to another Shimmer (“B64E” in this example):



STREAMING – CONNECT (5/5)

STEP 5 – Find both connected Shimmers at the top of AVAILABLE SHIMMERS:

The screenshot shows the Consensys v0.4.0 software interface. On the left, the 'AVAILABLE SHIMMERS (0/4)' section displays four devices:

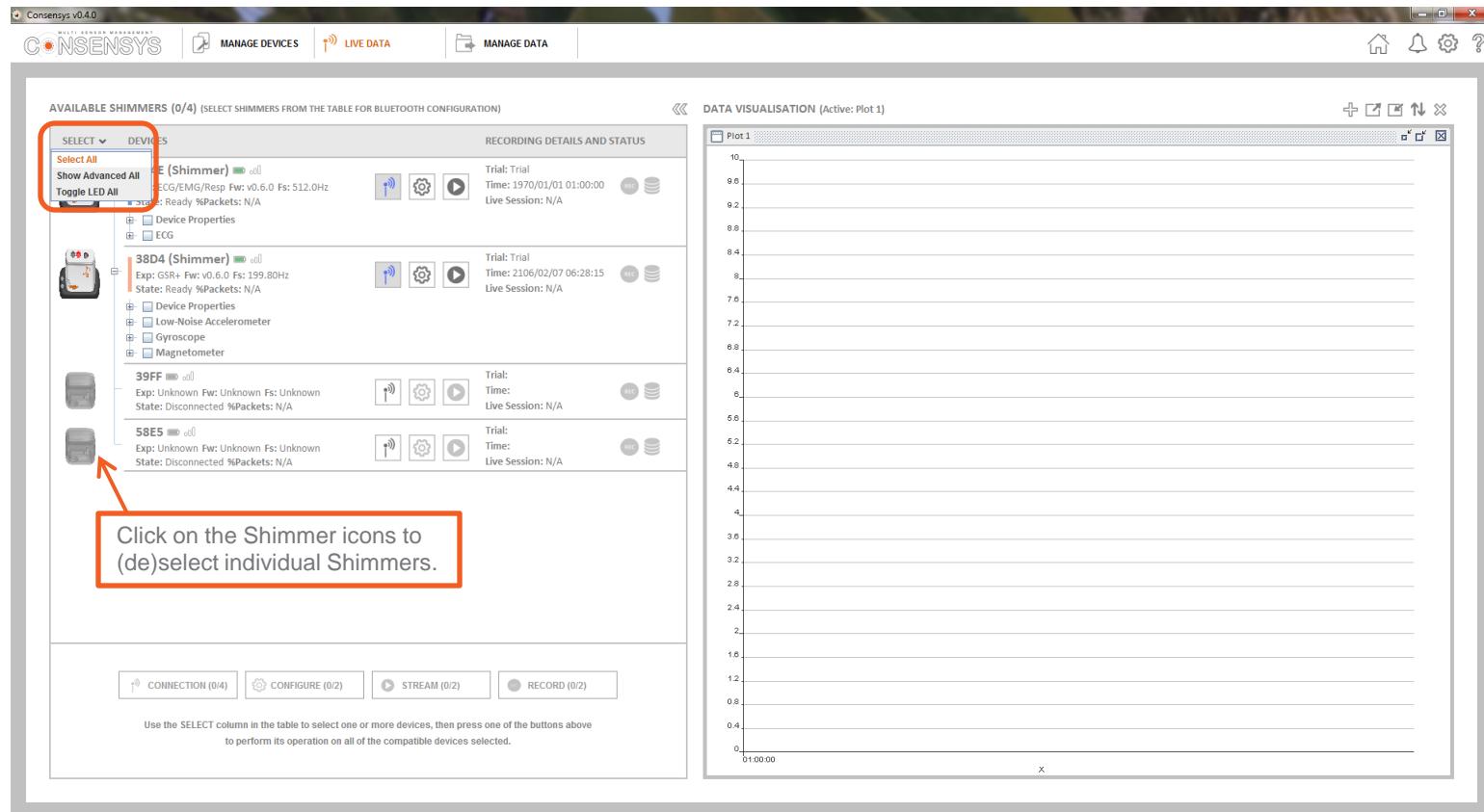
- B64E (Shimmer)**: ECG/EMG/Resp Fw v0.6.0 Fs: 512.0Hz. Status: Ready. Packets: N/A. Includes Device Properties, ECG, and a Trial section.
- 3BD4 (Shimmer)**: GSR+ Fw v0.6.0 Fs: 199.80Hz. Status: Ready. Packets: N/A. Includes Device Properties, Low-Noise Accelerometer, Gyroscope, and Magnetometer.
- 39FF**: Unknown Fw. Status: Disconnected. Packets: N/A.
- 58E5**: Unknown Fw. Status: Disconnected. Packets: N/A.

A red oval highlights the first two entries. Below the table are buttons for CONNECTION (0/4), CONFIGURE (0/2), STREAM (0/2), and RECORD (0/2). A note at the bottom says: "Use the SELECT column in the table to select one or more devices, then press one of the buttons above to perform its operation on all of the compatible devices selected."

On the right, the 'DATA VISUALISATION' section shows a blank plot titled 'Plot 1' with a Y-axis ranging from 0 to 10 and an X-axis labeled '01:00:00'.

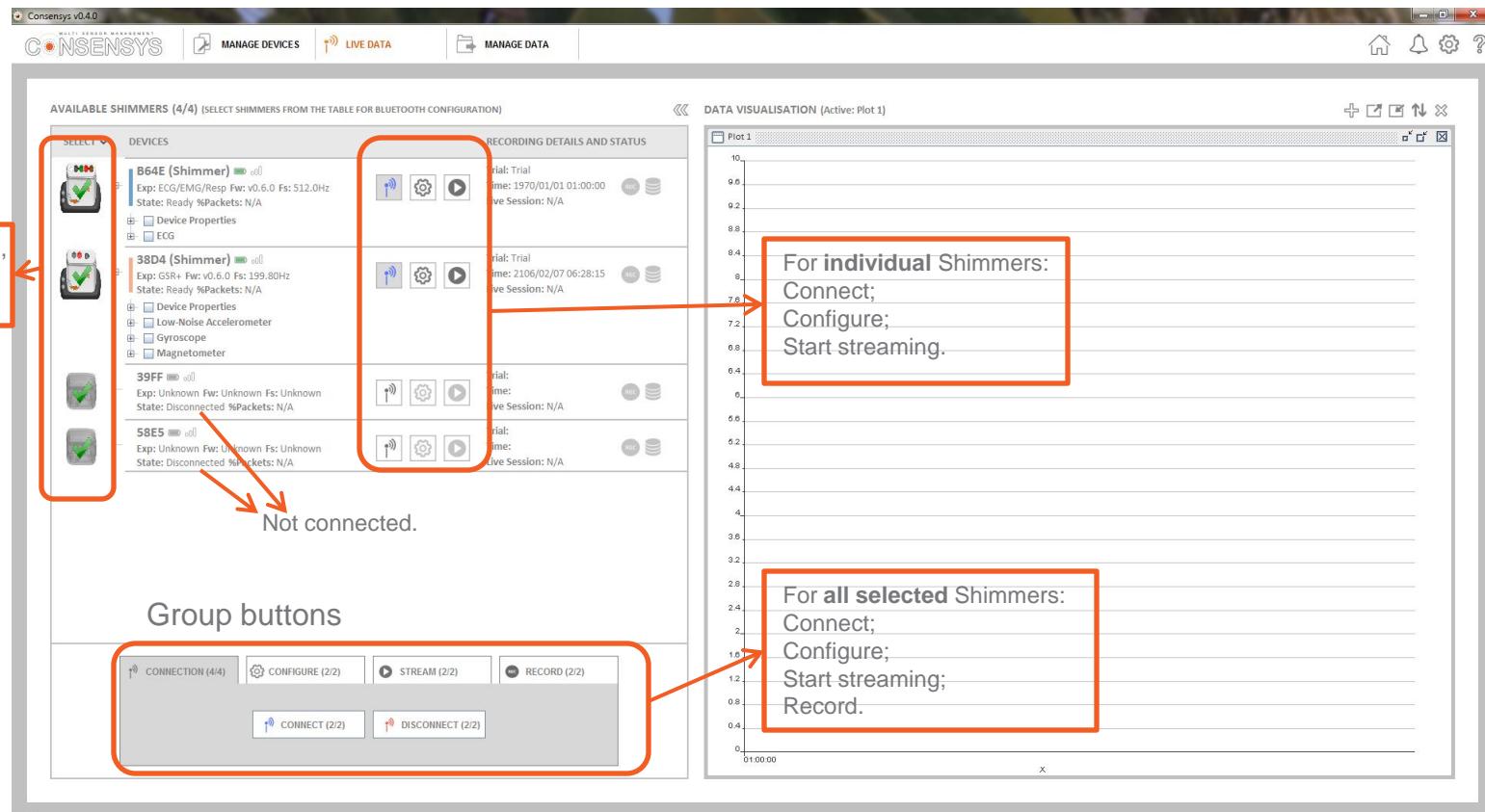
STREAMING - CONFIGURE TRIAL (1/7)

STEP 1 – Select Shimmers – e.g. by right-clicking on “SELECT”, press “Select All”:



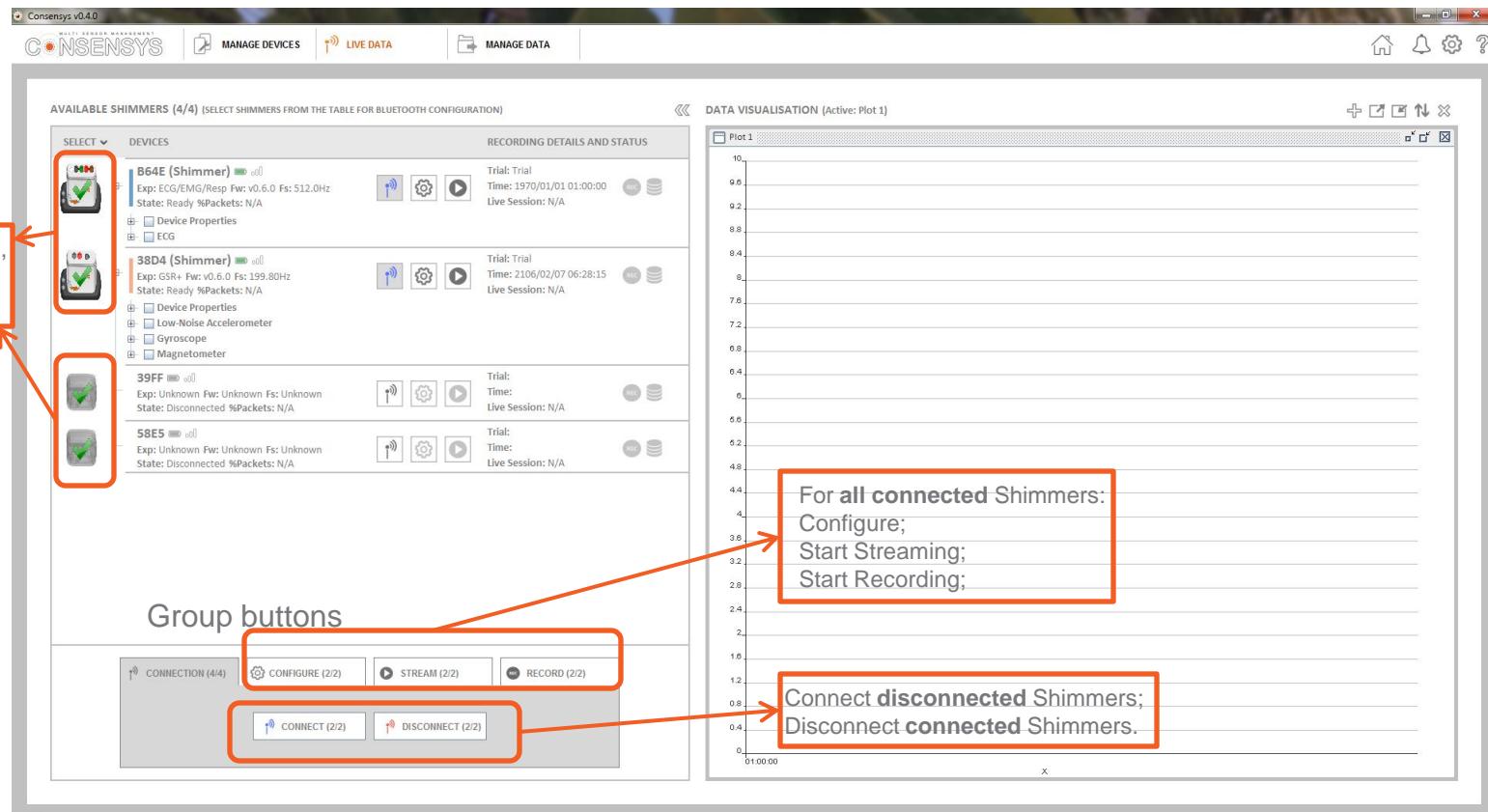
STREAMING - CONFIGURE TRIAL (2/7)

STEP 2 – Selecting Shimmers enables Group Buttons:



STREAMING - CONFIGURE TRIAL (3/7)

STEP 2 – Selecting Shimmers enables Group Buttons – continued:



STREAMING - CONFIGURE TRIAL (4/7)

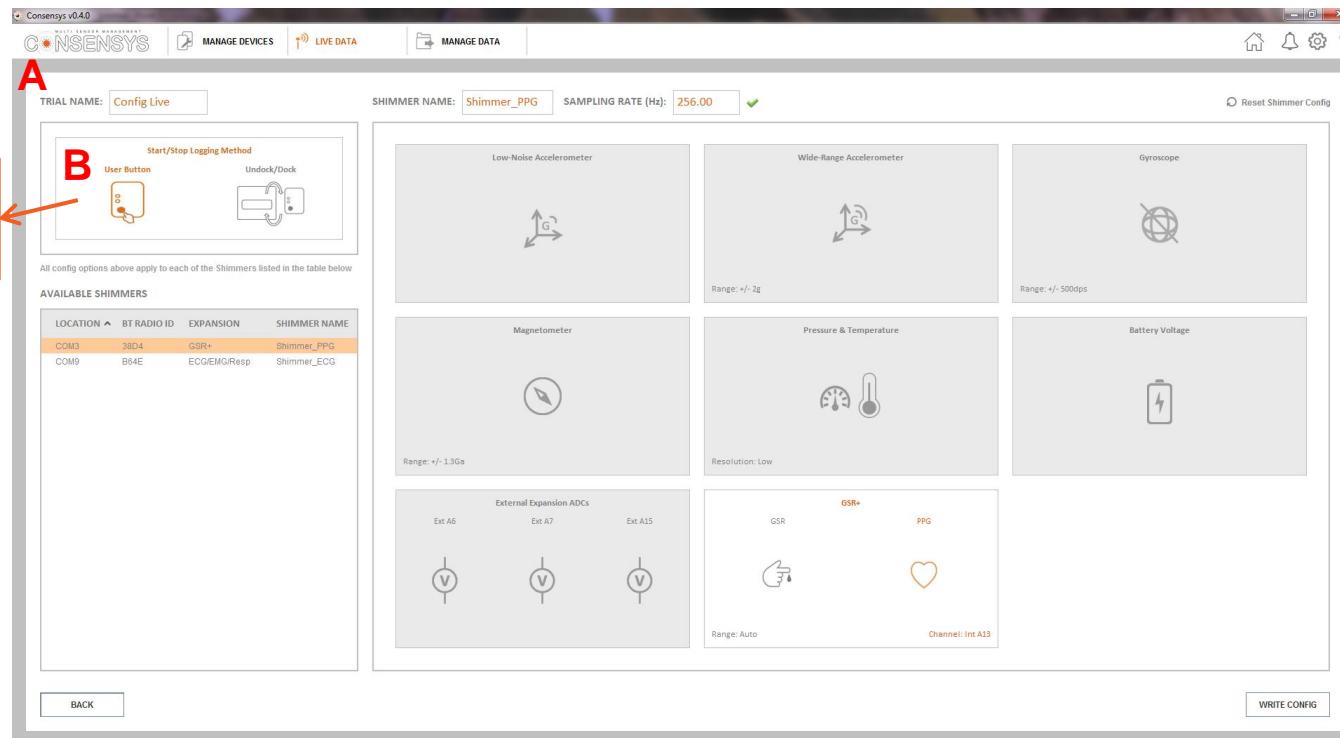
STEP 3 – Configure the connected Shimmers – click “Configure tab”:

The screenshot shows the Consensys v0.4.0 software interface. On the left, the 'AVAILABLE SHIMMERS (4/4)' list displays four entries: B64E (Shimmer), 38D4 (Shimmer), 39FF, and 58E5. The B64E and 38D4 entries are highlighted with orange arrows pointing to them from a callout box containing the note: 'N.B. Colour identification is different for Shimmers that NOT belong to the same Trial.' The 38D4 entry has a green checkmark icon next to its name. The 39FF and 58E5 entries have grey checkmark icons. On the right, the 'DATA VISUALISATION' section shows a blank plot titled 'Plot 1' with a y-axis ranging from 0 to 10 and an x-axis labeled '01:00:00'. A red box highlights the text: 'N.B. Only Shimmers configured simultaneously belong to the same trial and have the same colour identification.' At the bottom, a navigation bar includes buttons for CONNECTION (4/4), CONFIGURE (2/2) (which is highlighted with a red box), STREAM (2/2), RECORD (2/2), CONNECT (2/2), and DISCONNECT (2/2).

STREAMING - CONFIGURE TRIAL (5/7)

STEP 4 – Set TRIAL NAME:

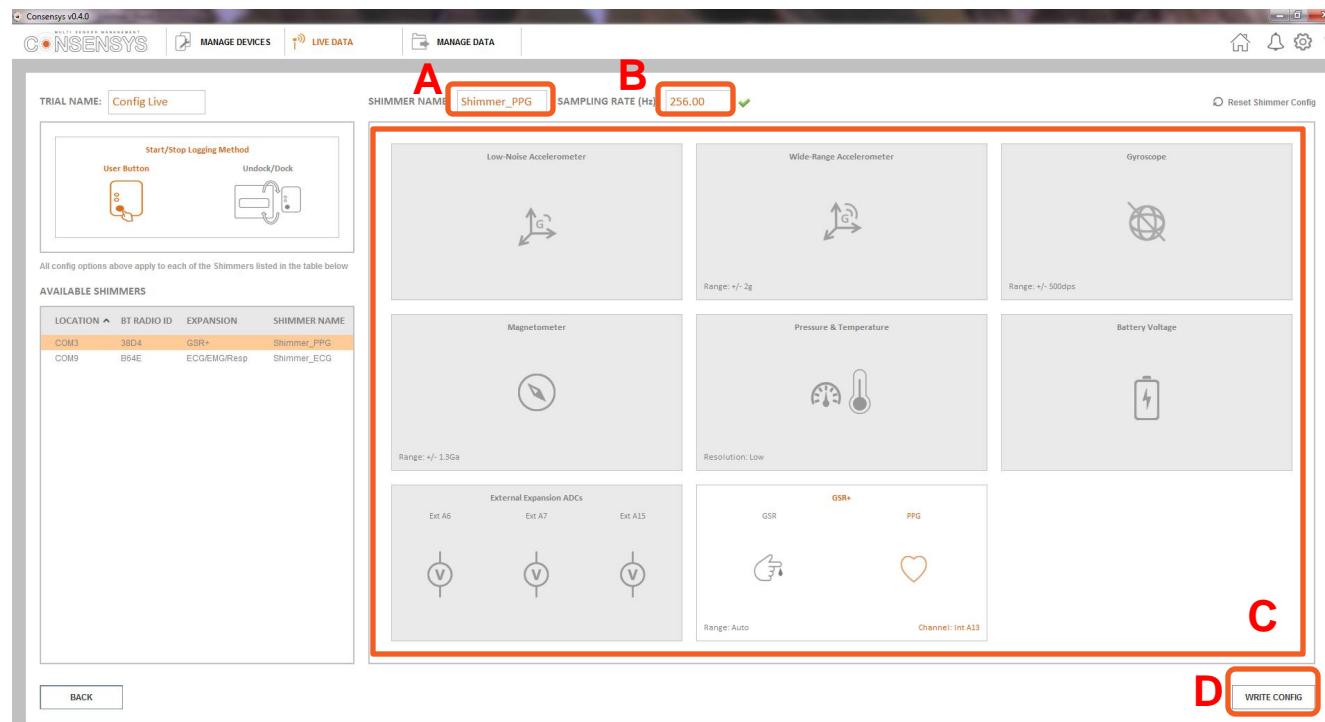
- Choose TRIAL NAME.
- Start/Stop Logging Method cannot be changed when connected over Bluetooth.



STREAMING - CONFIGURE TRIAL (6/7)

STEP 5 – Set parameters for each Shimmer:

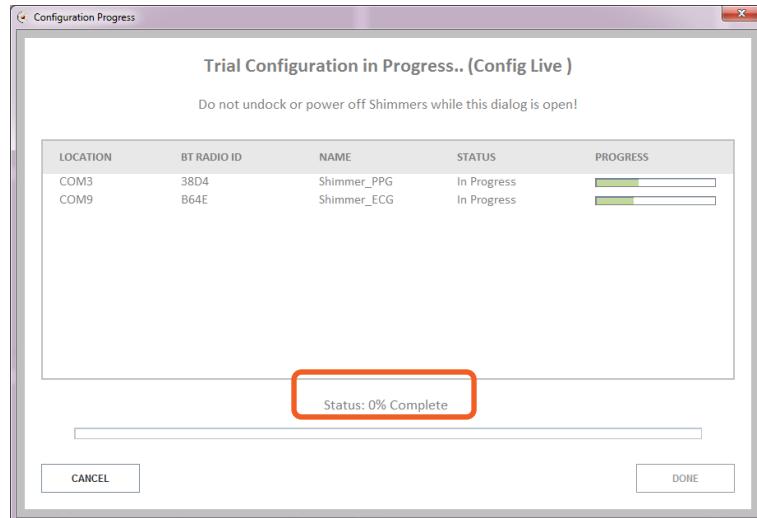
- A. Choose SHIMMER NAME.
- B. Choose SAMPLING RATE.
- C. Click on the tiles to enable and configure sensors.
- D. When all Shimmer are configured, click “WRITE CONFIG” to write the configuration to the Shimmers.



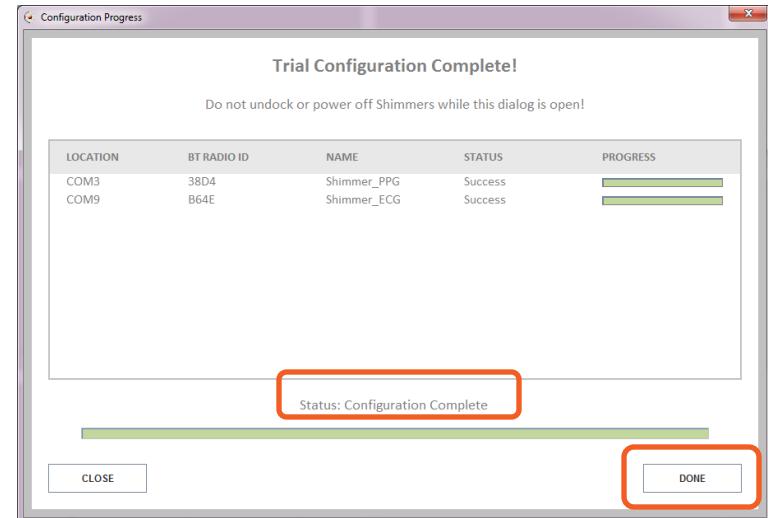
STREAMING - CONFIGURE TRIAL (7/7)

STEP 6 – WRITE CONFIG.

Wait until Trial Configuration is written:

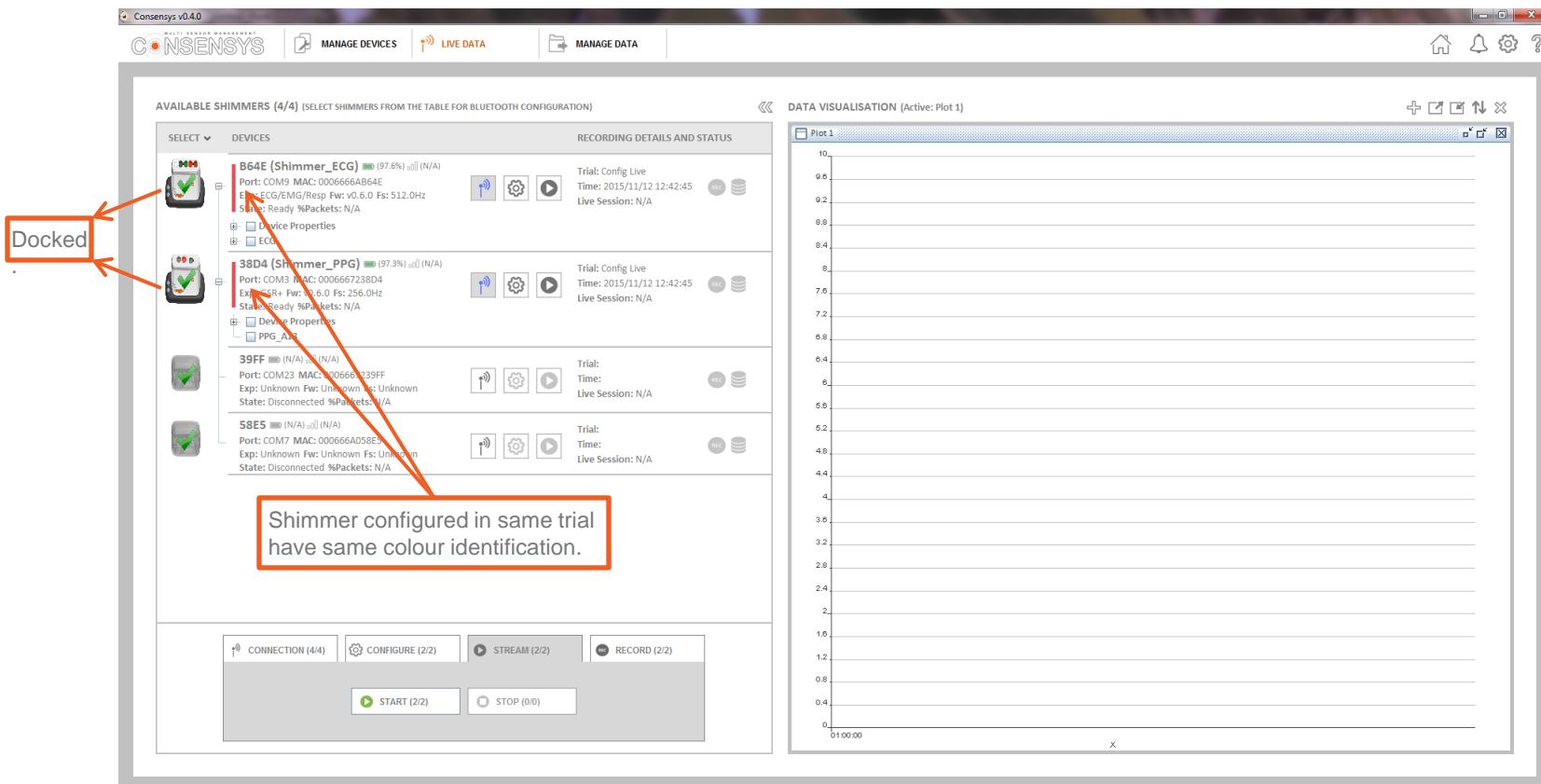


Click “NEXT” to complete the configuration:



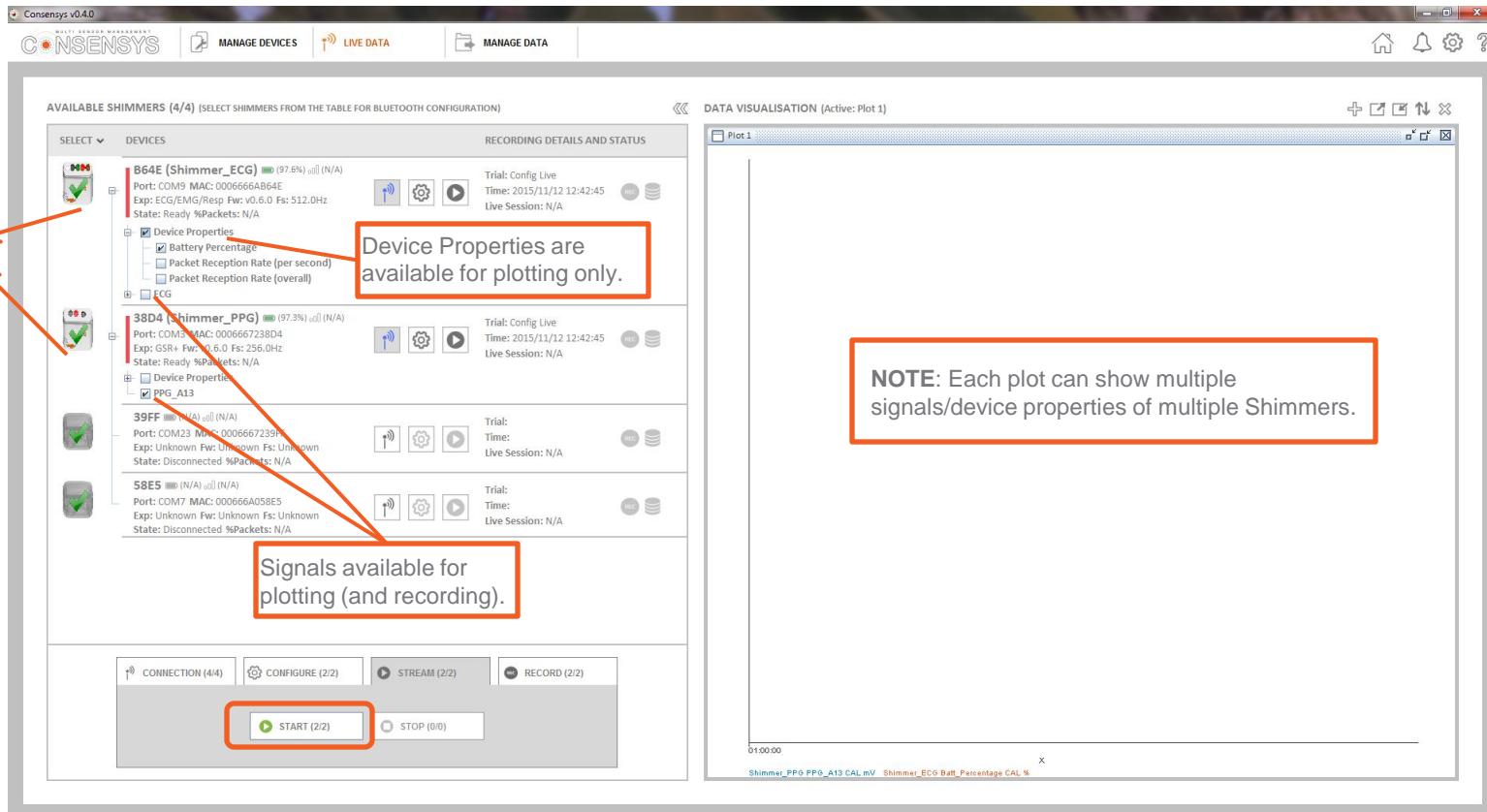
STREAMING - STREAM & PLOT (1/5)

STEP 1 – Undock Shimmers before streaming:



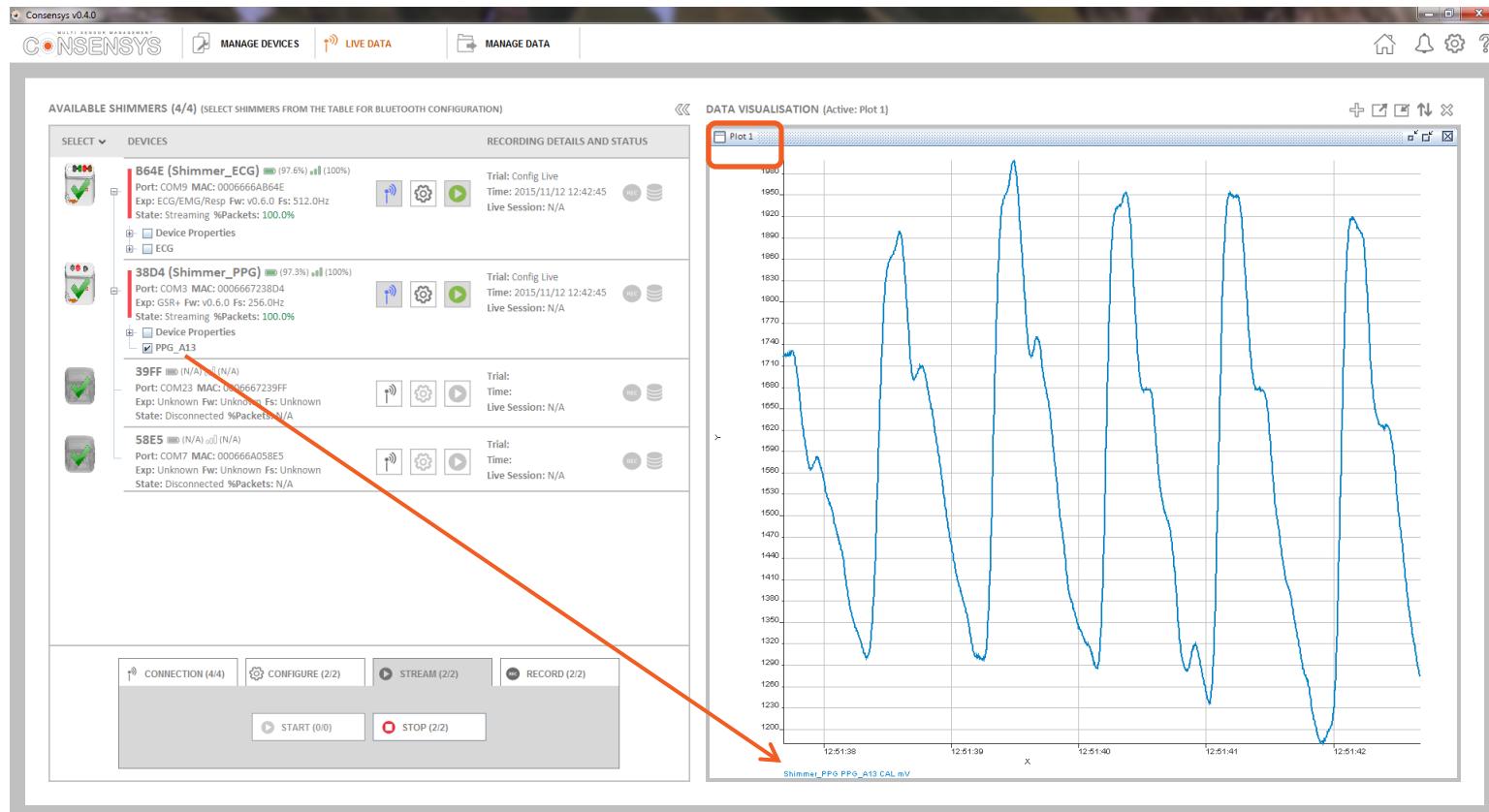
STREAMING - STREAM & PLOT (2/5)

STEP 2 – Select signals to plot and press “START” to start streaming:



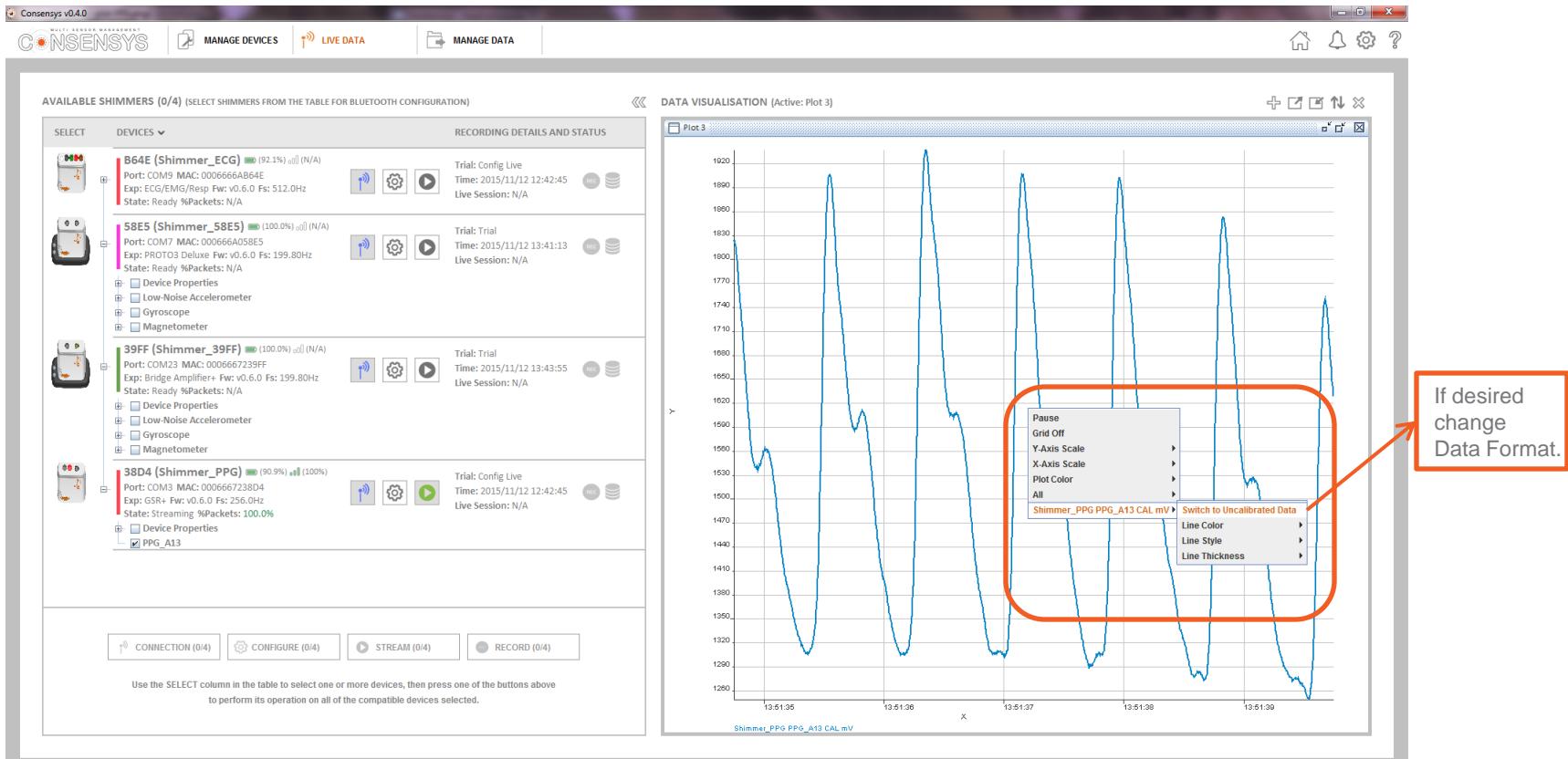
STREAMING - STREAM & PLOT (3/5)

Example: Signal “PPG_A13” is plotted in “Plot 1”:



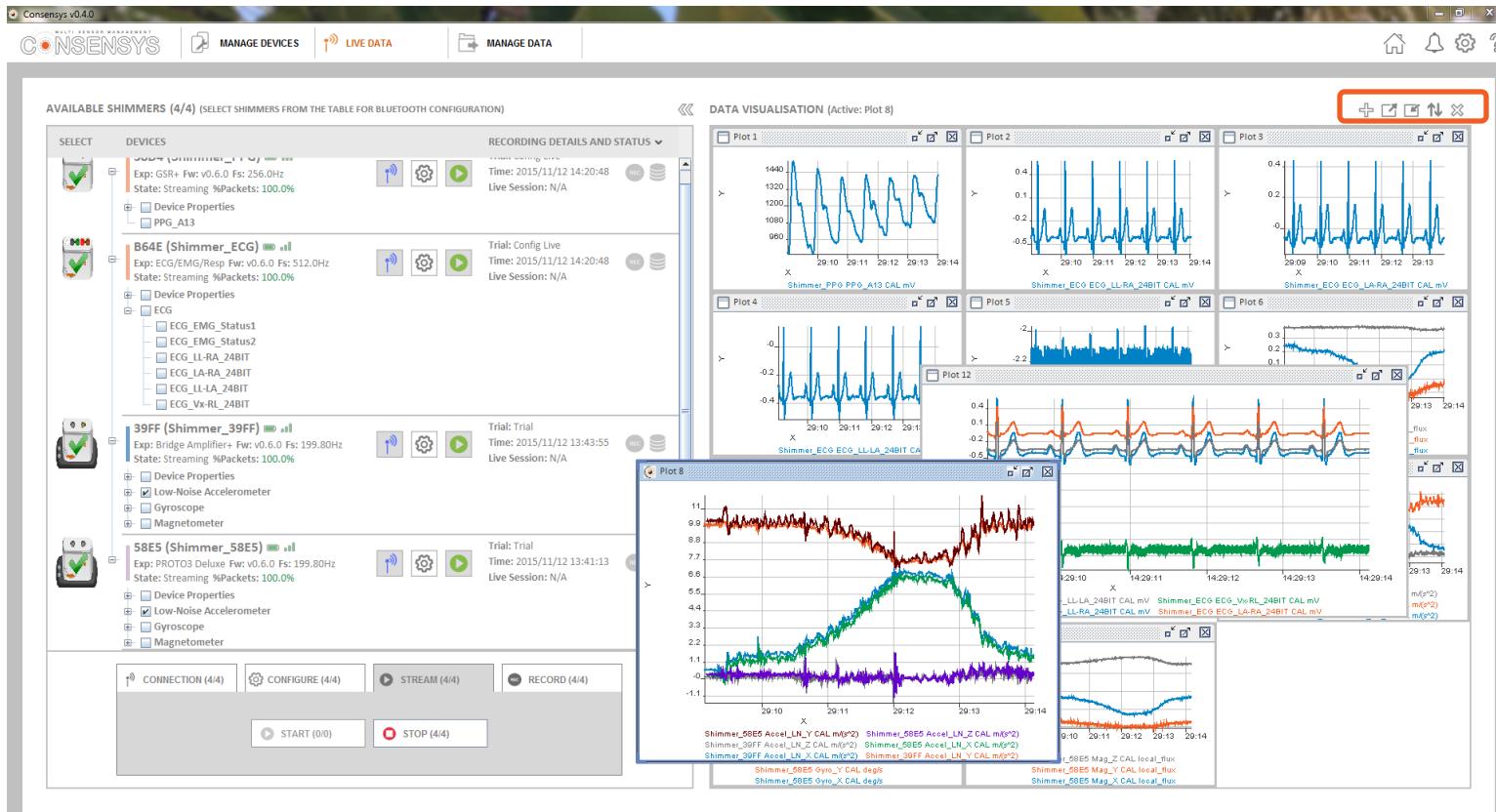
STREAMING - STREAM & PLOT (4/5)

STEP 3 – Right-click in a plot window to change its properties:



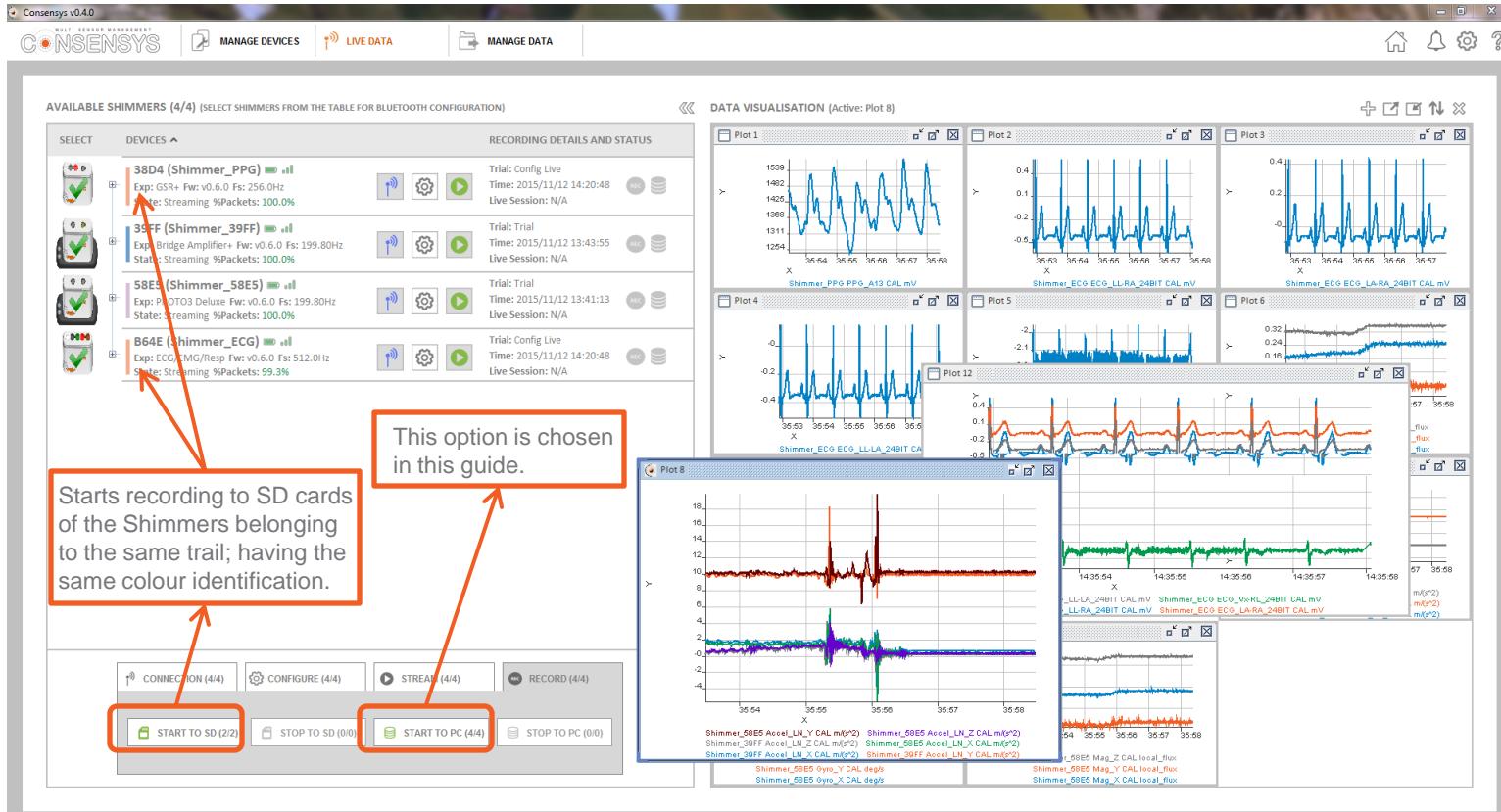
STREAMING - STREAM & PLOT (5/5)

STEP 4 – Use plot tools to add, pop in/out, sort and close plots:



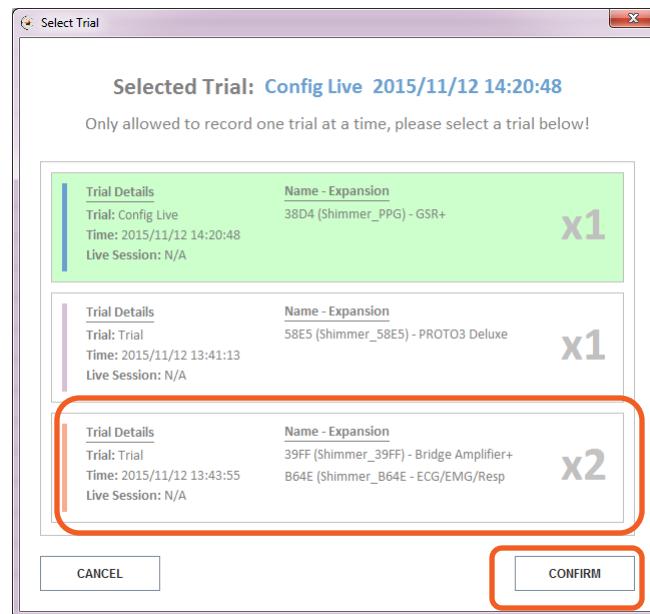
STREAMING - RECORD (1/4)

STEP 1 – Press buttons on “RECORD” tab to start recording – Choose “START TO PC”:



STREAMING - RECORD (2/4)

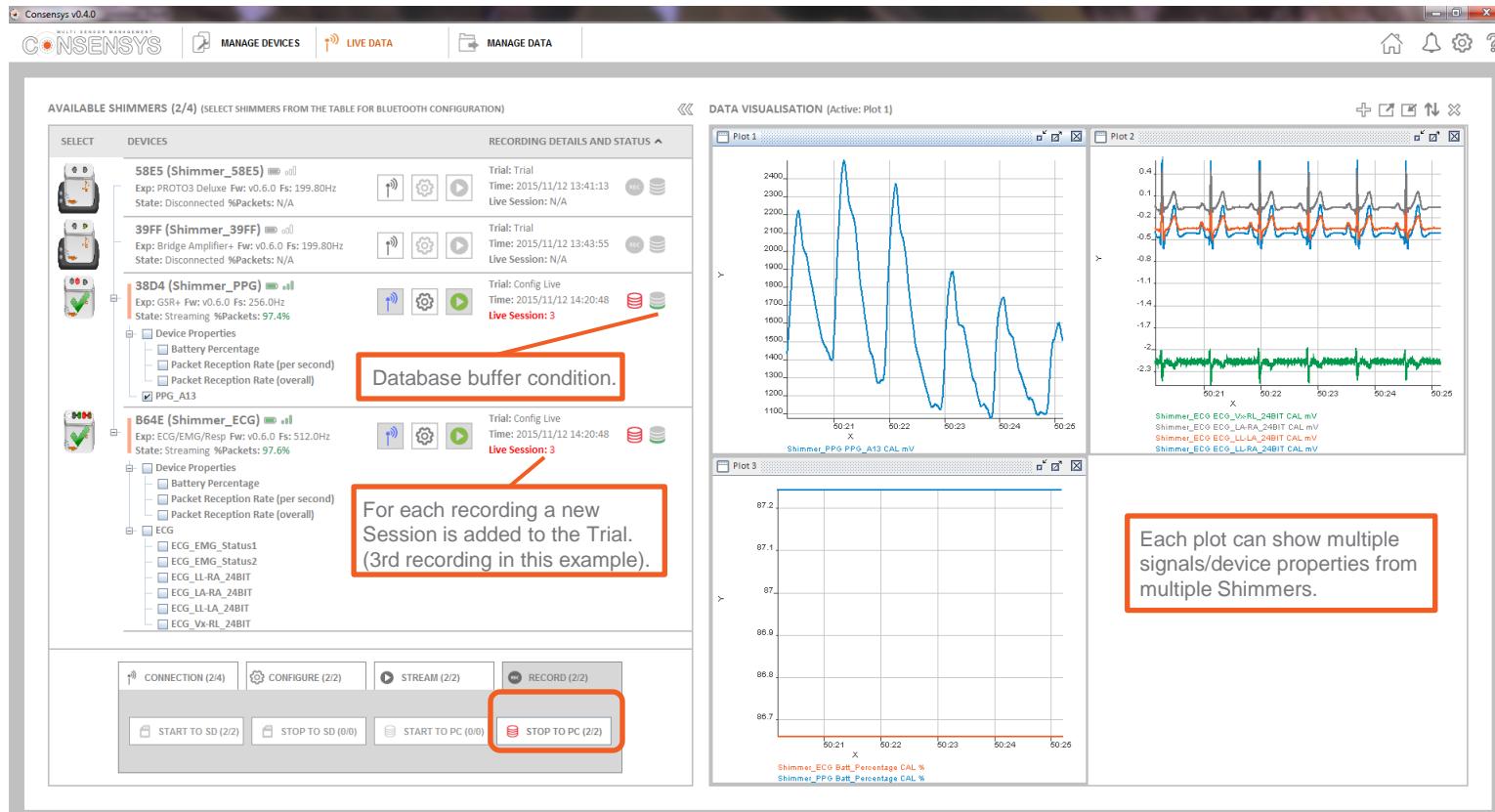
STEP 2 – Select the trial for recording and press “CONFIRM”:



N.B. This dialog only shows up when Shimmers across multiple trials have been selected.

STREAMING - RECORD (3/4)

STEP 3 – Press “STOP TO PC” to stop recording to PC:



STREAMING - RECORD (4/4)

STEP 4 – To record simultaneously to SD and PC:

The screenshot shows the Consensys v0.4.0 software interface. On the left, the 'AVAILABLE SHIMMERS (2/4)' section lists four devices: 58E5 (Shimmer_58E5), 39FF (Shimmer_39FF), 38D4 (Shimmer_PPG), and B64E (Shimmer_ECG). The 38D4 device is selected, indicated by a green checkmark icon. A red box highlights the 'Recording to PC, SD or both.' button under its device properties. Another red box highlights the text 'For each recording to PC a new Session is added to the Trial. Recordings to SD need to be imported first. See "Logging Import Data".' At the bottom, a red box highlights the 'START TO SD (2/2)' and 'STOP TO SD (0/0)' buttons. On the right, the 'DATA VISUALISATION' section shows three plots: Plot 1 displays PPG data with a blue line; Plot 2 displays ECG data with multiple colored lines; and Plot 3 displays battery percentage data with a blue line. A red arrow points from the 'Record to SD AND PC:' text in the bottom right to the 'START TO SD' button.

Recording to PC, SD or both.

For each recording to PC a new Session is added to the Trial.
Recordings to SD need to be imported first. See "Logging Import Data".

Record to SD AND PC:
1) Start Streaming.
2) Start Recording to SD.
3) (Streaming pauses briefly.)
4) Start Recording to PC.

MANAGE DATA

“MANAGE DATA” – Interfaces with Consensys’ database.

Consensys’ database holds:

- **SD-Recordings**: imported data from Shimmer SD cards – see [Logging – Import Data](#).
- **PC-Recordings**: recorded data streamed to the PC – see [Streaming – Record](#).

In this section:

- [General](#)
- [Export](#)
- [Delete](#)
- [Process](#)

MANAGE DATA – GENERAL

AVAILABLE DATA (SELECT A SINGLE TRIAL AND MULTIPLE SESSIONS AND/OR DEVICES FOR EXPORT OR PROCESSING)

NAME	SYNC	RTC	TIME	DURATION	SIZE
Config Live			2015/11/12 14:20:48	00:07:51	422.35 KB
SD Recording			2015/11/12 14:48:35	00:00:43	422.35 KB
Session 2			2015/11/12 14:48:49	00:00:35	N/A
Session 1			2015/11/12 14:48:49	00:00:35	N/A
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:49:43	00:00:11	N/A
Session 4			2015/11/12 14:49:43	00:00:11	N/A
Session 2			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_PPG - 256.0Hz - 99%			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_ECG - 512.0Hz - 99%			2015/11/12 14:49:43	00:00:11	N/A
Session 1			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:49:43	00:00:11	N/A
GS-v0.4.0			2015/11/12 14:55:10	00:06:21	N/A
PPG			2015/11/12 14:55:10	00:06:21	N/A
Sample9DoF_R			2015/11/12 14:55:10	00:06:21	N/A
Sample9DoF_W			2015/11/12 14:55:10	00:06:21	N/A
SampleECG			2015/11/12 14:55:10	00:06:21	N/A
SampleEMG			2015/11/12 14:55:10	00:06:21	N/A
SampleGSRPPG			2015/11/12 14:55:10	00:06:21	N/A
SampleSync_SD			2015/11/12 14:55:10	00:06:21	N/A
SD Recording			2015/11/12 14:55:10	00:06:21	N/A
Session 1			2015/11/12 14:55:10	00:06:21	N/A
Shimmer_36AD - 102.0Hz - 98%			2015/10/02 16:08:05	00:02:25	2.17 MB
Shimmer_38DA - 1024.0Hz - 98%			2015/10/02 16:08:05	00:02:00	1.06 MB
Shimmer_2BE0 - 1024.0Hz - 98%			2015/10/02 16:08:14	00:02:00	1.06 MB
			2015/10/02 16:08:31	00:01:59	1.05 MB

DATA DESCRIPTIONS (INSERT DESCRIPTIONS FOR TRIALS AND SESSIONS)

Config Live - 2015/11/12 14:20:48

Trial information can be added here. Trial "Config Live" is configured during the creation of this instruction document and a few recordings are have been made as specified in the session info below.

SD Recording - Session 2

SD Recording - Session 1 has been deleted.

For Session 2 the RTC (Real Time Clock) has been set for both Shimmers.

PC Recording - Session 1

For this session the data of both Shimmers have not been synchronised yet. The User can synchronise the data of both Shimmers by clicking on the icon with the circular arrows in the SYNC column; the data icons will be the same as for session 4 when the data have been synchronised.

PC Recording - Session 2

For this session the data cannot be synchronised, because the recording lasted only 11 seconds.

PC Recording - Session 4

CHANNELS

Channels with a * after their name have been calibrated using default calibration parameters

EXPORT

PROCESS

DELETE

File Format: .csv

File Delimiter: tab (t)

Timestamp Format: Unix

Data Format: Calibrated

MANAGE DATA – EXPORT (1/2)

STEP 1 – EXPORT – Select data and format:

- Select one or more sessions from one trial.
- Select “File Delimiter”, “File Format”, “Timestamp Format”, “Data Format”.
- Hit “Export” to export the selected data to a file in the requested format.

A

B

C

AVAILABLE DATA [SELECT A SINGLE TRIAL AND MULTIPLE SESSIONS AND/OR DEVICES FOR EXPORT OR PROCESSING]

NAME	SYNC	RTC	TIME	DURATION	SIZE
Config Live			2015/11/12 14:20:48	00:07:51	422.35 KB
SD Recording					
Session 2					
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:48:35	00:00:43	422.35 KB
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:48:35	00:00:43	54.04 KB
PC Recording					
Session 1					
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:48:49	00:00:35	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:48:49	00:00:35	N/A
Session 2					
Shimmer_PPG - 256.0Hz - 99%			2015/11/12 14:49:43	00:00:11	N/A
Shimmer_ECG - 512.0Hz - 99%			2015/11/12 14:49:43	00:00:11	N/A
Session 4					
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:55:10	00:06:21	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:55:10	00:06:21	N/A
GS-v4.0					
PPG			2015/11/11 12:34:37	00:01:38	67.25 KB
Sample9Dof_R					
Sample9Dof_W			2015/10/15 09:07:35	00:00:03	N/A
SampleCG					
SampleMG			2015/06/26 17:17:14	00:01:00	766.82 KB
SampleSRPPG					
SampleSync_SD			2015/06/26 16:58:14	00:01:00	774.54 KB
SD Recording					
Session 1					
Shimmer_36AD - 1024.0Hz - 99%			2015/06/25 15:38:46	00:02:00	1.84 MB
Shimmer_BBIO - 1024.0Hz - 99%			2015/06/26 12:35:33	00:02:00	420.93 KB
Accel_WR_X(-2g, 1344.0Hz)			2015/06/23 14:17:28	00:02:00	183.84 KB
Accel_WR_Y(-2g, 1344.0Hz)					
Accel_WR_Z(-2g, 1344.0Hz)					

Channels with a * after their name have been calibrated using default calibration parameters

DATA DESCRIPTIONS [INSERT DESCRIPTIONS FOR TRIALS AND SESSIONS]

Config Live - 2015/11/12 14:20:48

SD Recording - Session 2

PC Recording - Session 1 has been deleted.

For Session 2 the RTC (Real Time Clock) has been set for both Shimmers.

PC Recording - Session 1

For this session the data of both Shimmers have not been synchronised yet. The User can synchronise the data of both Shimmers by clicking on the icon with the circular arrows in the SYNC column, the data icons will be the same as for session 4 when the data have been synchronised.

PC Recording - Session 2

For this session the data cannot be synchronised, because the recording lasted only 11 seconds.

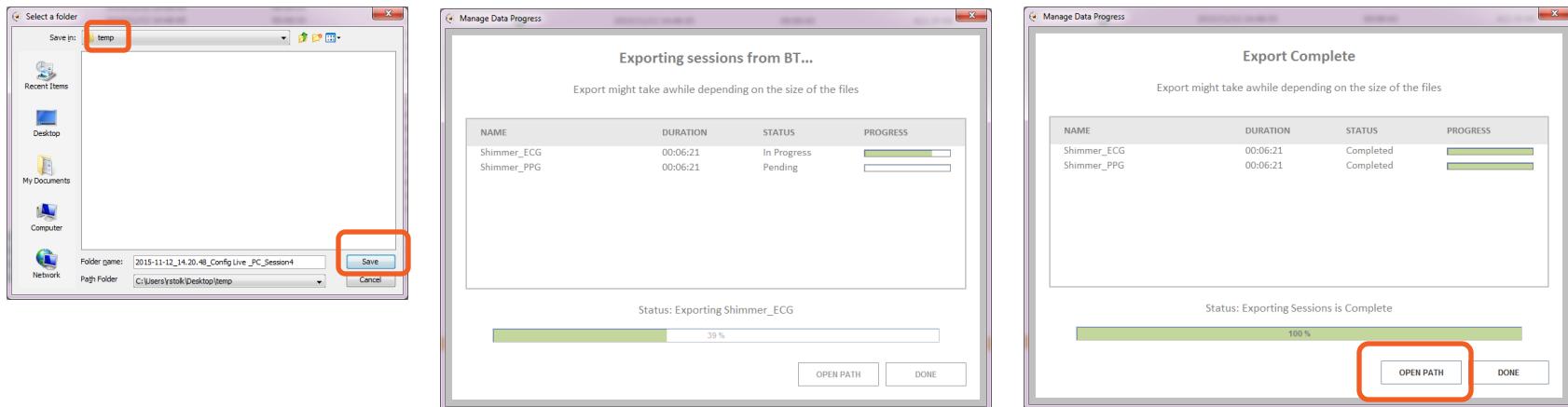
RTC Recording - Session A

EXPORT

MANAGE DATA – EXPORT (2/2)

STEP 2 – EXPORT – Export the data:

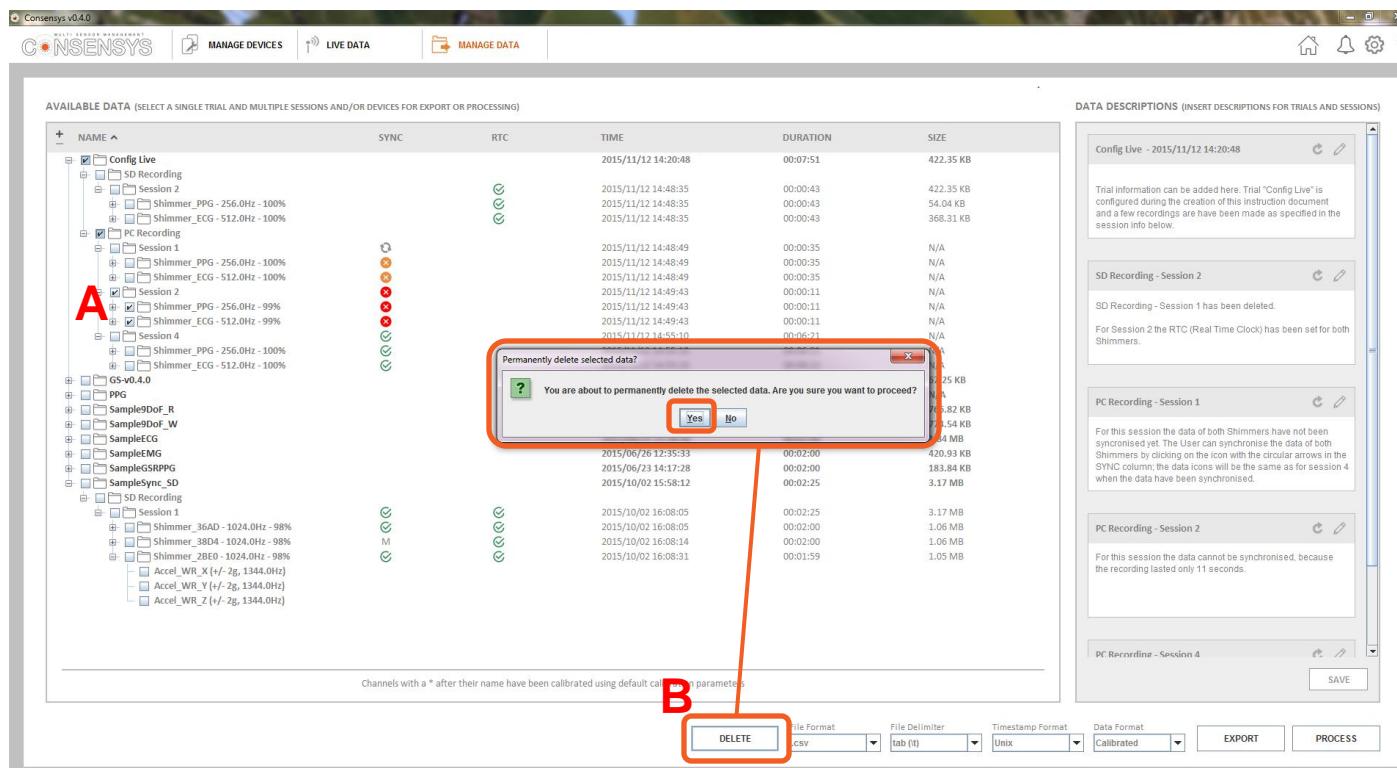
- A. Select a folder and hit “Save”.
- B. When Export is complete, click “OPEN PATH” to navigate to the exported file(s).
- C. Open the file with a spreadsheet application, or with for example MATLAB.



MANAGE DATA – DELETE (1/3)

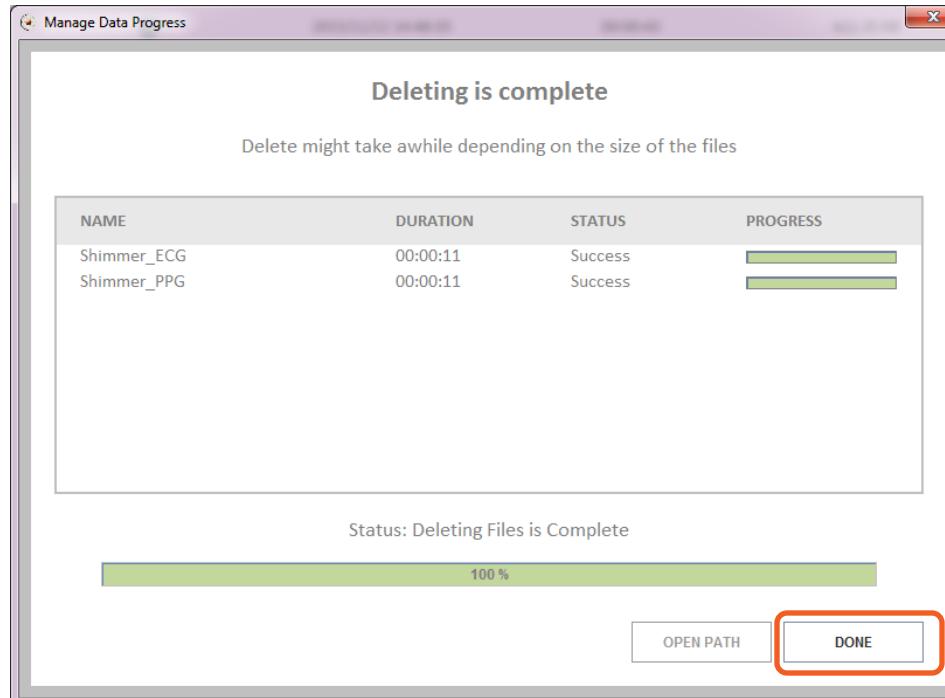
STEP 1 – DELETE – Select and delete data:

- Select data to be deleted – this can.
- Hit “DELETE” to delete the selected data from the database (and hit “YES” to confirm).



MANAGE DATA – DELETE (2/3)

STEP 2 – DELETE – Click “DONE” when Deleting Files is Complete:



MANAGE DATA – DELETE (3/3)

STEP 3 – DELETE – Confirm data has been deleted:

Before deleting:

AVAILABLE DATA (SELECT A SINGLE TRIAL AND MULTIPLE SESSIONS AND/OR DEVICES FOR EXPORT OR PROCESSING)

NAME	SYNC	RTC	TIME	DURATION	SIZE
Config Live			2015/11/12 14:20:48	00:07:40	422.35 KB
SD Recording					
Session 2			2015/11/12 14:48:35	00:00:43	422.35 KB
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:48:35	00:00:43	54.04 KB
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:48:35	00:00:43	368.31 KB
PC Recording					
Session 1			2015/11/12 14:48:49	00:00:35	N/A
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:48:49	00:00:35	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:48:49	00:00:35	N/A
Session 4			2015/11/12 14:55:10	00:06:21	N/A
Shimmer_PPG - 256.0Hz - 100%			2015/11/12 14:55:10	00:06:21	N/A
Shimmer_ECG - 512.0Hz - 100%			2015/11/12 14:55:10	00:06:21	N/A
GS-v0.4.0					
PPG			2015/11/12 14:48:49	00:00:35	N/A
Sample9Df_R			2015/10/15 09:07:35	00:00:03	N/A
Sample9Df_W			2015/06/26 17:17:14	00:01:00	766.80 KB
SampleECG			2015/06/26 16:58:14	00:01:00	774.54 KB
SampleEMG			2015/06/25 15:38:46	00:02:00	1.84 MB
SampleGSRPPG			2015/06/26 12:35:33	00:02:00	420.93 KB
SampleSync_SD			2015/06/23 14:17:28	00:02:00	183.84 KB
SD Recording			2015/10/02 15:58:12	00:02:25	3.17 MB
Session 1			2015/10/02 16:08:05	00:02:25	3.17 MB
Shimmer_36AD - 1024.0Hz - 98%			2015/10/02 16:08:05	00:02:00	1.06 MB
Shimmer_38D4 - 1024.0Hz - 98%		M	2015/10/02 16:08:14	00:02:00	1.06 MB
Shimmer_2BE0 - 1024.0Hz - 98%			2015/10/02 16:08:31	00:01:59	1.05 MB
Accel_WR_X (+/- 2g, 1344.0Hz)					
Accel_WR_Y (+/- 2g, 1344.0Hz)					
Accel_WR_Z (+/- 2g, 1344.0Hz)					

DATA DESCRIPTIONS (INSERT DESCRIPTIONS FOR TRIALS AND SESSIONS)

No Trial Selected!

Select a trial or a session from the table to view/edit descriptions

DELETE File Format: .csv File Delimiter: Tab (T) Timestamp Format: Unix Data Format: Calibrated EXPORT PROCESS

MANAGE DATA – PROCESS (1/5)

STEP 1 – Select data:

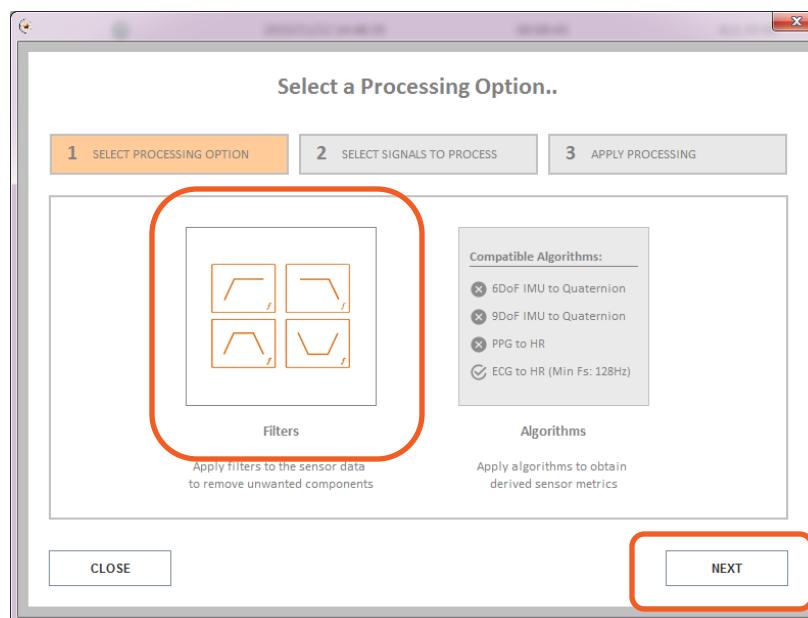
- Select data to process – e.g. “ECG_LA_RA_24BIT” from Shimmer called: “Shimmer_ECG”.
- Click “PROCESS”.

The screenshot shows the Consensys v0.4.0 software interface. The main window is titled "Manage Data". On the left, there's a tree view of "AVAILABLE DATA" with sections for "Config Live", "SD Recording", "PC Recording", "GS-v6.4.0", and "PPG". Under "Config Live", there are sessions for "Shimmer_ECG" and "Shimmer_PPG". Under "SD Recording", there are sessions for "Shimmer_ECG" and "Shimmer_PPG". Under "PC Recording", there are sessions for "Shimmer_ECG" and "Shimmer_PPG". Under "GS-v6.4.0", there are sessions for "Shimmer_ECG" and "Shimmer_PPG". Under "PPG", there are sessions for "Shimmer_ECG" and "Shimmer_PPG". The right side of the interface has a "DATA DESCRIPTIONS" section with four panels: "Config Live - 2015/11/12 14:20:48", "SD Recording - Session 2", "PC Recording - Session 1", and "PC Recording - Session 4". The "PC Recording - Session 1" panel has a red box around the "PROCESS" button at the bottom. At the very bottom of the interface, there are buttons for "DELETE", "File Format: csv", "File Delimiter: |", "Timestamp Format: Unix", "Data Format: Calibrated", "EXPORT", and a red box around the "PROCESS" button.

MANAGE DATA – PROCESS (2/5)

STEP 2 – Select a Processing Option:

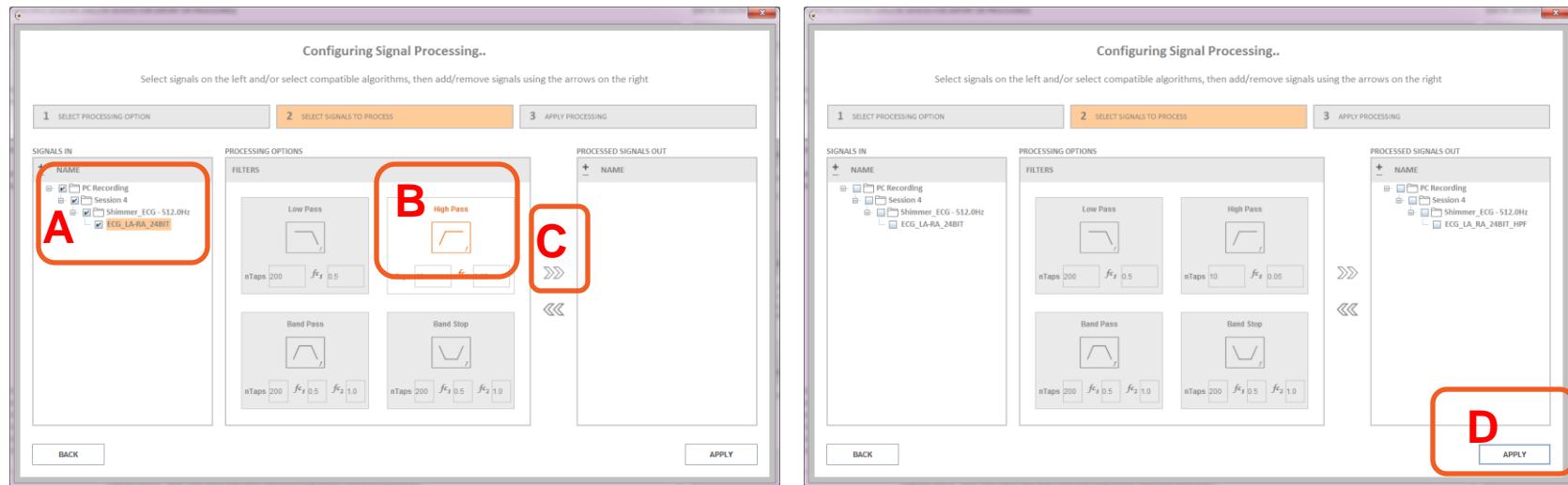
- A. Select **Filters** or **Algorithms** – only algorithms compatible with the selected data can be selected.
- B. Note that **Filters** only applies one filter operation to the selected signal(s). Follow STEPS 1 to 3 on the processed signal(s) to apply a successive filter operation.
- C. Click “NEXT”.



MANAGE DATA – PROCESS (3/5)

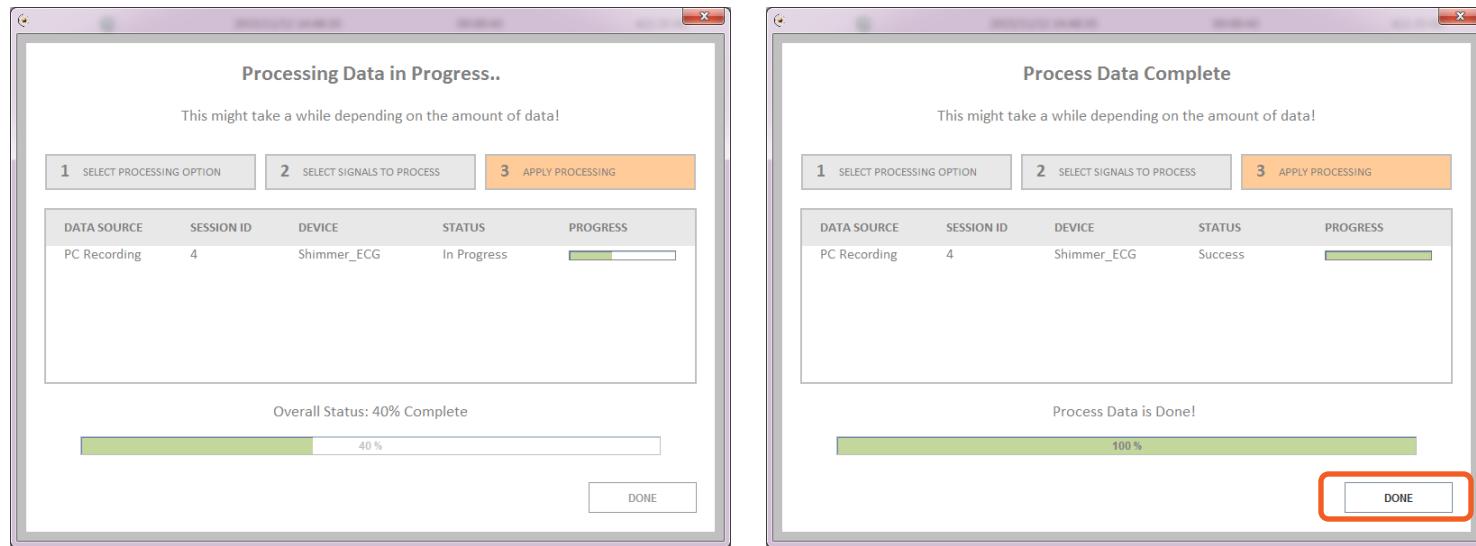
STEP 3 – Configuring Signal Processing:

- A. Select signals to process. (In this example only one signal was selected, so there is nothing else to select.)
- B. Select filter parameters.
- C. Add to the “PROCESSED SIGNALS OUT” list for the next stage.
- D. Hit “Apply”.



MANAGE DATA – PROCESS (4/5)

STEP 4 – Processing Data in Progress – Click “DONE” when complete:



MANAGE DATA – PROCESS (5/5)

STEP 5 – Confirm processing has been applied:

AVAILABLE DATA (SELECT A SINGLE TRIAL AND MULTIPLE SESSIONS AND/OR DEVICES FOR EXPORT OR PROCESSING)

NAME

SYNC RTC TIME DURATION SIZE

Config Live

- SD Recording
 - Session 2
 - Shimmer_PPG - 256.0Hz - 100%
 - Shimmer_ECG - 512.0Hz - 100%
- PC Recording
 - Session 1
 - Shimmer_PPG - 256.0Hz - 100%
 - Shimmer_ECG - 512.0Hz - 100%
 - Session 4
 - Shimmer_PPG - 256.0Hz - 100%
 - Shimmer_ECG - 512.0Hz - 100%
 - ECG_EMG_Status1
 - ECG_EMG_Status2
 - ECG_LA_RA_24BIT
 - ECG_LA_RA_24BIT_HPF
 - ECG_LL_RA_24BIT
 - ECG_Vx_RL_24BIT

“ECG_LA_RA_24BIT_HPF” has been added to the session.

GS-v0.4.0

- PPG
- Sample9Dof_R
- Sample9Dof_W
- SampleCG
- SampleEMG
- SampleSRPPG
- SampleSync_SD
 - SD Recording
 - Session 1
 - Shimmer_36AD - 1024.0Hz - 98%
 - Shimmer_38D4 - 1024.0Hz - 98%
 - Shimmer_2BEO - 1024.0Hz - 98%
 - Accel_WR_X (+/- 2g, 1344.0Hz)
 - Accel_WR_Y (+/- 2g, 1344.0Hz)
 - Accel_WR_Z (+/- 2g, 1344.0Hz)

Channels with a * after their name have been calibrated using default calibration parameters

DATA DESCRIPTIONS (INSERT DESCRIPTIONS FOR TRIALS AND SESSIONS)

Config Live - 2015/11/12 14:20:48

Trial information can be added here. Trial “Config Live” is configured during the creation of this instruction document and a few recordings are have been made as specified in this session. Info below.

SD Recording - Session 2

SD Recording - Session 1 has been deleted.

For Session 2 the RTC has been set for both Shimmers.

PC Recording - Session 1

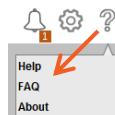
For this session the data of both Shimmers has not been synchronised yet. The User can synchronise the data of both Shimmers by clicking on the icon with the circular arrows in the SYNC column; the data icons will be the same as for session 4 afterwards.

PC Recording - Session 4

Insert Session Description Here.

DELETE File Format .csv File Delimiter tab (t) Timestamp Format Unix Data Format Calibrated EXPORT PROCESS

THINGS YOU MIGHT NEED TO KNOW

- The **green** and **blue** LED (in LED location B) are **blinking rapidly**.
 - Start *Consensys* and connect *Shimmer Dock or Base*.
 - Place the Shimmer in the *Shimmer Dock or Base*.
 - The Real Time Clock (RTC) of the Shimmer will be set.
 - The blinking stops after the RTC has been set.
- RTC:** If the “Real Time Clock” on the Shimmer is set, a relationship between “real-world time” and the local clock on the Shimmer is established, enabling synchronisation to a “common clock” among multiple Shimmer and external devices. **N.B.** Switching off Shimmers results in losing the RTC information.
- Check out the Frequently Asked Questions (**FAQ**)  for solutions to the most common problems.
- Session:** A dataset containing data from one or more Shimmers belonging to the same **Trial**, i.e. configured at the same time.

THINGS YOU MIGHT NEED TO KNOW

- To access the SD Card of a Shimmer inserted in a *Consensys Base*, right-click the Shimmer visualisation in MANAGE DEVICES; press “Open SD”:



- All **User Manuals / User Guides** for Shimmer hardware and software is available for download from our website. It is highly recommended that all new Shimmer users read the *Shimmer User Manual*. (<http://www.shimmersensing.com/support>)