modtool, foo, toolkit

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FOSDEM January 2016

Outline

A clean slate

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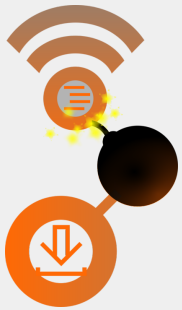

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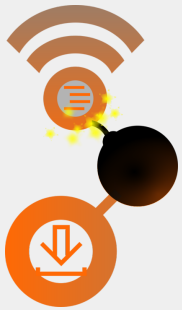
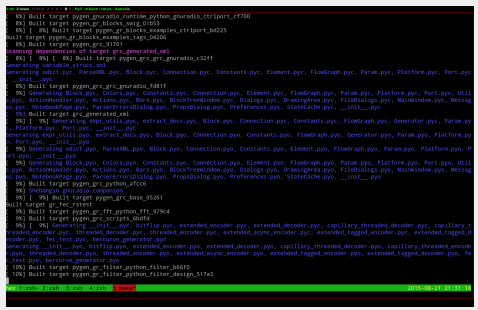


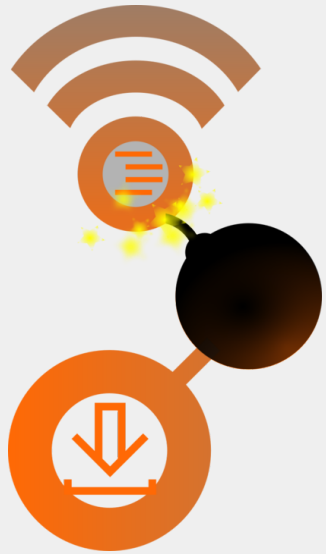


PyBOMBS — The apt-get of GNU Radio

- Installs GNU Radio, Hardware Drivers and OOTs for you!
- Sets up environment variables etc. for you!
- Currently available at:
  `http://gnuradio.org/pybombs`
- Modules are added by PyBOMBS maintainers in form of lightweight recipes
- PyBOMBS 2.0 just released!

PyBOMBS 2.0

- Still Fresh
- New Features:
  - Installable
  - Multiple prefixes, each with its own configuration
  - Multiple recipe remotes, per system, per user or per prefix
  - Easy cross-compiling
- Action happening at:
  `github.com/gnuradio/pybombs2`



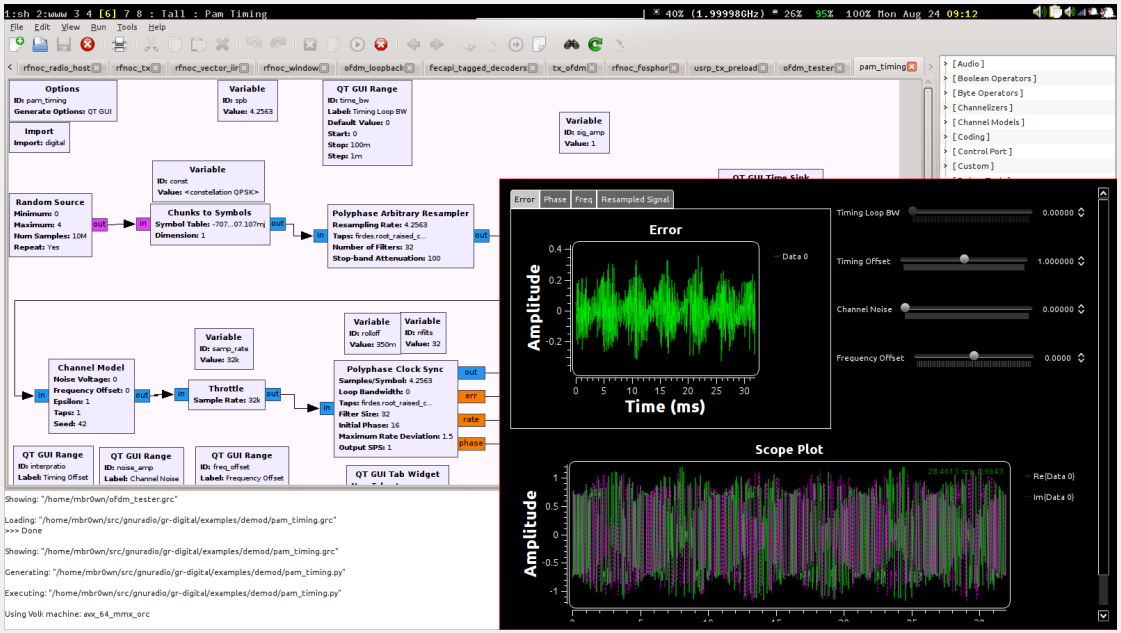
Source Builds

- Useful for development on GNU Radio itself
- Requirements:
  1. Install all dependencies (Boost, UHD, QT, . . .)
  2. Run `cmake && make && make install`
  3. Et Voilà! You're done! (or not)

Outline

GNU Radio Companion

- Graphical front-end for GNU Radio (its face)
- Powerful graphical widgets for live inspection of signals/data
- Ignore GRC at your own peril



CGRAN

- Spiritual Cousin of CTAN, CPAN...
- Recently rewritten by the CGRAN Special Forces (main contributors: Nathan + Ravi)
- Easy access to the entire free & open software radio ecosystem
- Automatically generated website listing most OOT modules
- Between CGRAN and PyBOMBS, finding and installing modules should be a simple task

First Steps: Guided Tutorials

- Gentle introduction to GNU Radio (and even some DSP)
- Find these online on our wiki
- Comes with a free set of codes: `gr-tutorial`

Where do I learn about these blocks?

- Read our fine manual!
  - `http://gnuradio.org/doc/`
- All blocks are browsable through several paths, and searchable
- GRC provides docs, too

Outline

gr_modtool — The Swiss Army Knife of modules

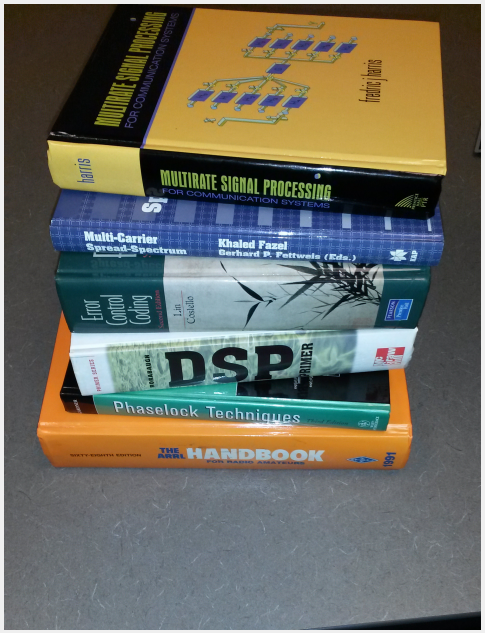
- Modify and create your OOTs from the command line
  - Unfortunately, only the command line at this time
- Create, remove, disable, enable blocks
- Never write any boilerplate code again!

Writing blocks: A core skill of developing SDR

- `gr_modtool` tries to make this as easy as possible
- Languages available:
  - Python, for fast & easy dev
  - C++, for highest performance

Where do I learn how to use all these blocks?

- Where do I learn how to do all this wireless communications stuff?
- Which codez do I put into my
  `<+ do signal processing here +>`?



Getting Help — Interacting with other People

- discuss-gnuradio, usrp-users mailing lists
- Very responsive!
- IRC: #gnuradio on Freenode
- Join the discussions!
- But first, read the wiki page on reporting errors, etc.!

Outline

Improving GNU Radio

- You've found a bug? Something's bothering you?
- Fix it!
  - Actual bugs
  - Missing features
  - Bad docs
  - Unintuitive coding

Outline

The Community

- There's a big community, join it!
- Buy shirts: `gnuradio.spreadshirt.de`
- There's the conference, and also local meetings, hackfests...

Conclusion

- SDR is a very hard topic
- But GNU Radio is there to make it easier
- Getting started with GNU Radio, writing first blocks etc. is well documented at this point
  - (and if it's not, maybe you can help us improve it!)
- And after that, we have a great community