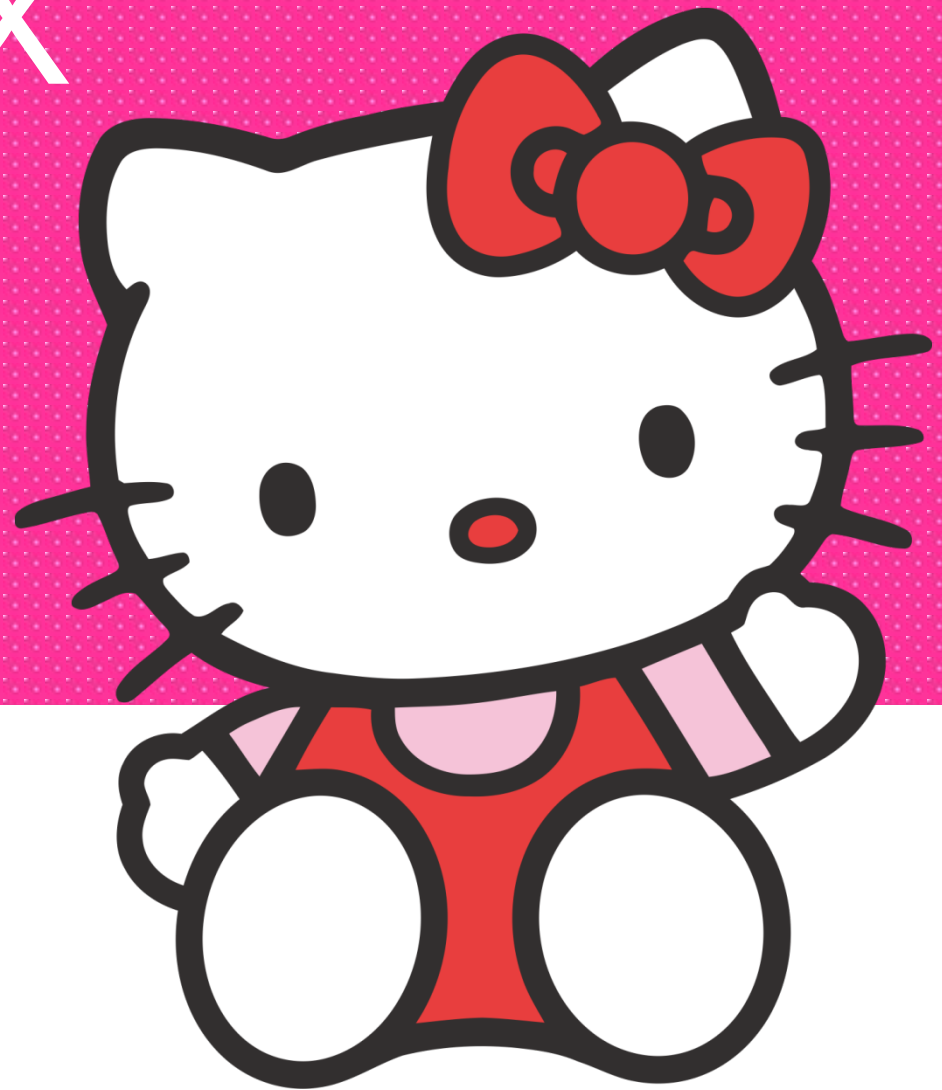


# Open Source DVB-S2/X GNU Radio



2018 Open Source  
CubeSat Workshop



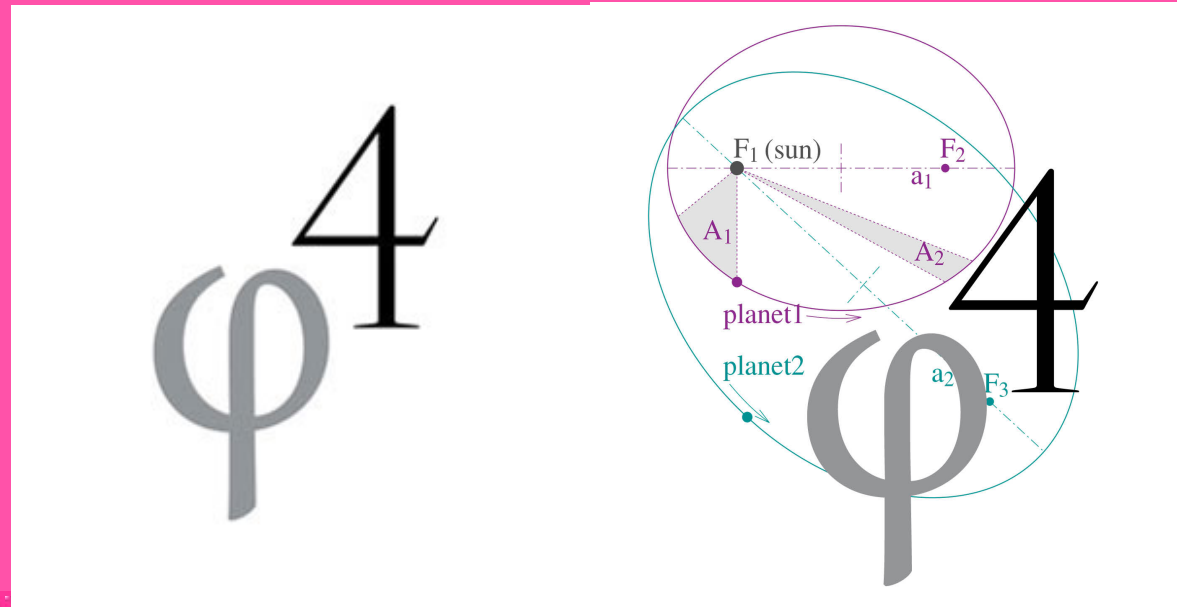
## Who are you?

- W5NYV
- MSEE Information Theory from USC
- Active in IEEE Information Theory Society
- Co-founder of Open Research Institute
- Lead of Phase 4 Ground
- DVB-S2 and DVB-S2X are central technologies
- The receivers will be in GNU Radio!
- The hardest part is considered to be LDPC decode



# Who are we?

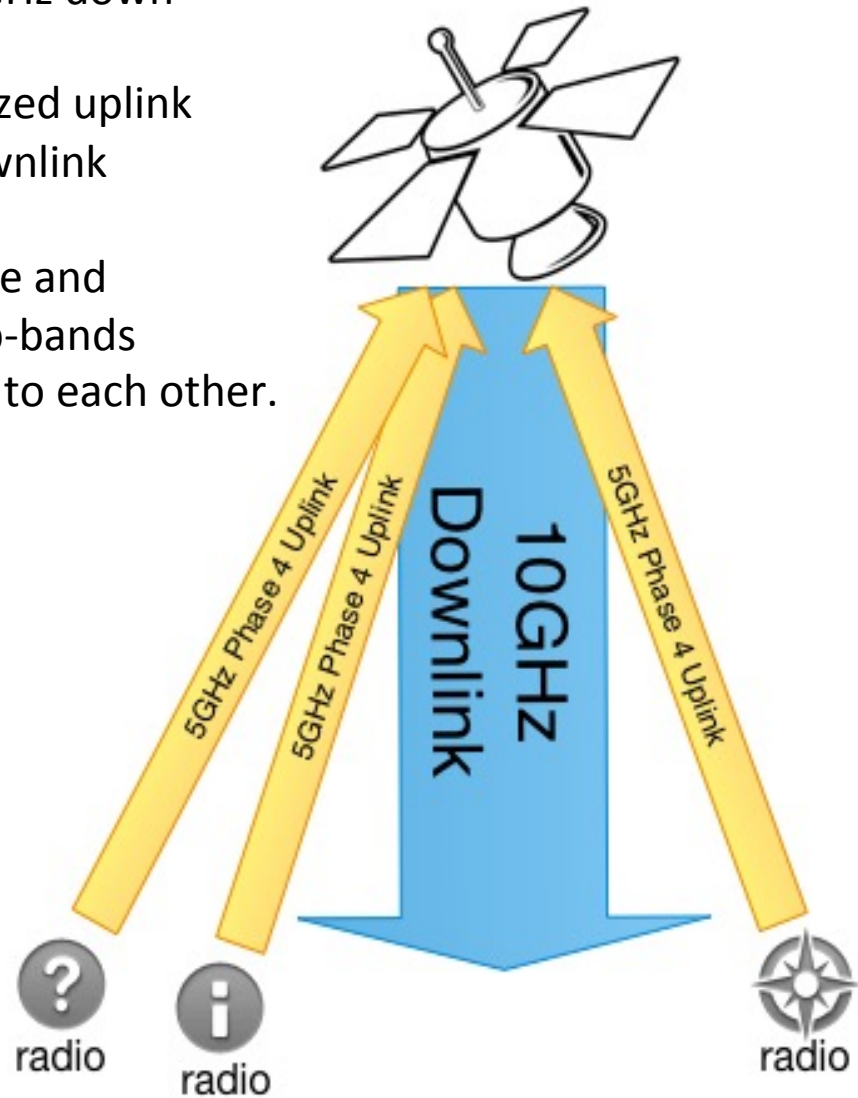
- Open Research Institute, Inc. (ORI) is a non-profit research and development organization which provides all of its work to the general public under the principals of Open Source and Open Access to Research.
- Phase 4 Ground
- Phase 4 Space
- Open Cars
- Open Codecs



5.645-5.655 GHz up  
10.45-10.46 GHz down

MSK channelized uplink  
DVB-S2/X downlink

Amateur space and  
terrestrial sub-bands  
are right next to each other.

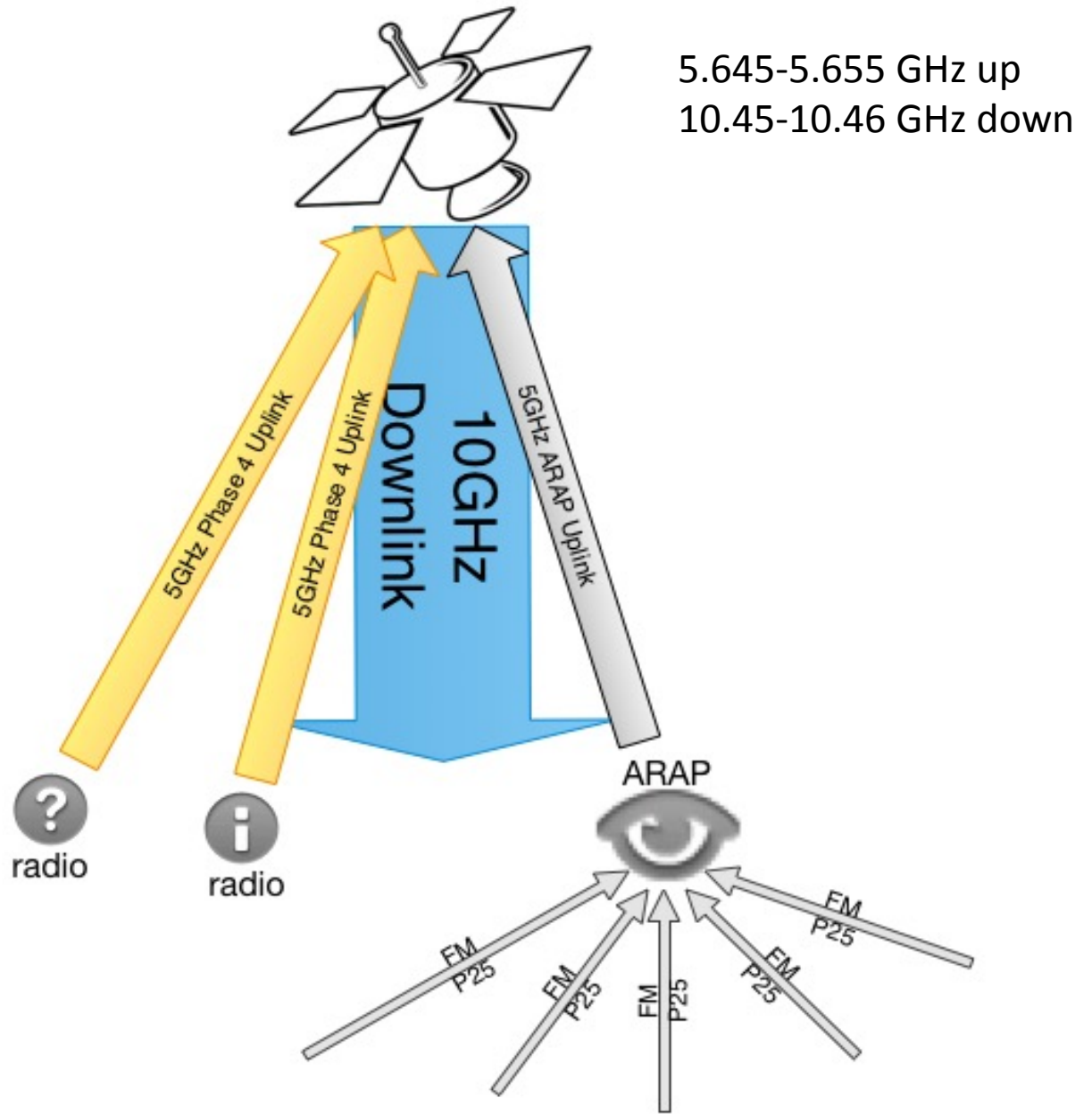


Phase 4 Ground radios



# What is the team doing?

- RTP IP Multicast SDR innovations (Phil Karn)
- DVB correlator (fixing gr-corr\_est, new work by Manolis)
- Open Source LDPC decode, GPU to FPGA (and MATLAB)
- Dual Band Feed, 5GHz and 10GHz
- GSE published work (wireshark dissector, gr-dvbgse)
- Filters! 5GHz amps!
- ARAP demonstrations\*
- Having tons of fun – everyone welcome!
- Buying every SDR dev board we can find (we can help test them!)



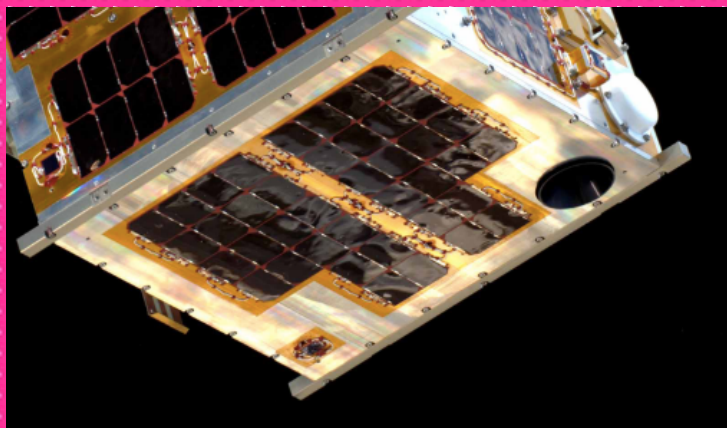
## ARAP Demo

Microwave Update 2018

October 11-14, Dayton, Ohio



Dayton  
Hamvention®



multiday hackfest and workshop  
multiday hackfest and workshop  
multiday hackfest and workshop  
multiday hackfest and workshop  
multiday hackfest and workshop  
multiday hackfest and workshop

DVB-S2/X  
Block Party  
GRCCon2018

Build and Test  
DVB-S2 and DVB-S2X  
Receivers in GNU Radio  
ready to start now?

contact: @abraxas3d  
wsnyv@yahoo.com



## How to find us?

- <https://github.com/phase4ground>
- <https://openresearch.institute>
- Slack
- Mailing list (at [openresearch.institute](https://openresearch.institute))
- @abraxas3d



**Thank You.**  
Terimakasih

