



AMATEUR RADIO DIGITAL COMMUNICATIONS

ARDC + 44net Community Call

10 October 2020

Agenda

- Housekeeping
- Introductions: ARDC Board, GAC, and staff
- Discuss grants made to-date
- Review results of ARDC Grantmaking Feedback Survey + Ideas from 44net
- Q+As!
- What's next?

Housekeeping

- This video is being recorded!
- Moderators: John Hays (K7VE) & Bob McGwier (N4HY)
- Q+A: Type Questions in the chat window
- This presentation is available at: [link]
- All materials + will be posted after the call

Introductions

Meet ARDC

Board of Directors

President

Phil Karn — *KA9Q*

Treasurer

Bdale Garbee — *KBoG*

Secretary

John Gilmore — *WoGNU*

Director

kc claffy - *KC6KCC*

Grants Advisory Committee

Chair

John Hays — *K7VE*

Members

Hank Magnuski — *KA6M*

Robert McGwier — *N4HY*

Tim Požár — *KC6GNJ*

Jann Traschewski — *DG8NGN*

Staff

Executive Director

Rosy Wolfe — *in training*

AMPRnet Administrator + ARDC IT

Chris Smith — *G1FEF*



Mission

To support, promote, and enhance digital communication and broader communication science and technology, to promote Amateur Radio, scientific research, experimentation, education, development, open access, and innovation in information and communication technology.

ampr.org/about/mission



Grants!

Granting Goal:

> \$5 million / year*

** beginning 2021, ongoing*

Grants

Year	Qty	Amount
2019	2	\$120,000
2020*	16	\$1,929,516
2020* (approved, pending)	3	\$454,065
Totals	21	\$2,503,581

** so far :)*

ampr.org/grants



2019 & 2020* Grantees

ARISS

ARRL Foundation

Foundation for Amateur Radio

GNU Radio Project

Karuk Tribe

NTPsec project

Open Research Institute

Outreachy

Reproducible Builds

Software Freedom Conservancy

TAPR Inc

UC San Diego Foundation

Yasme Foundation

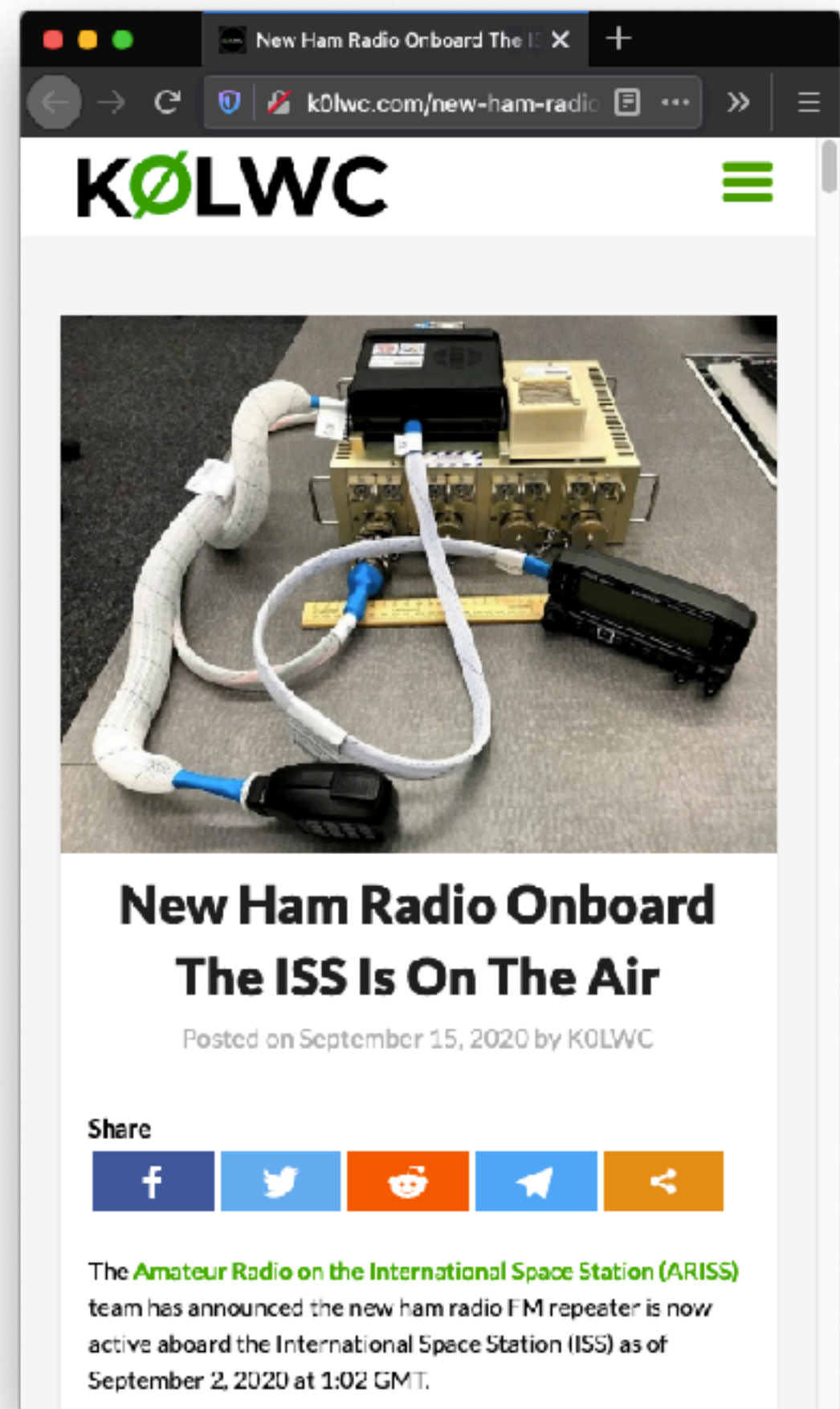
Yurok Tribe

** so far :)*

ampr.org/grants

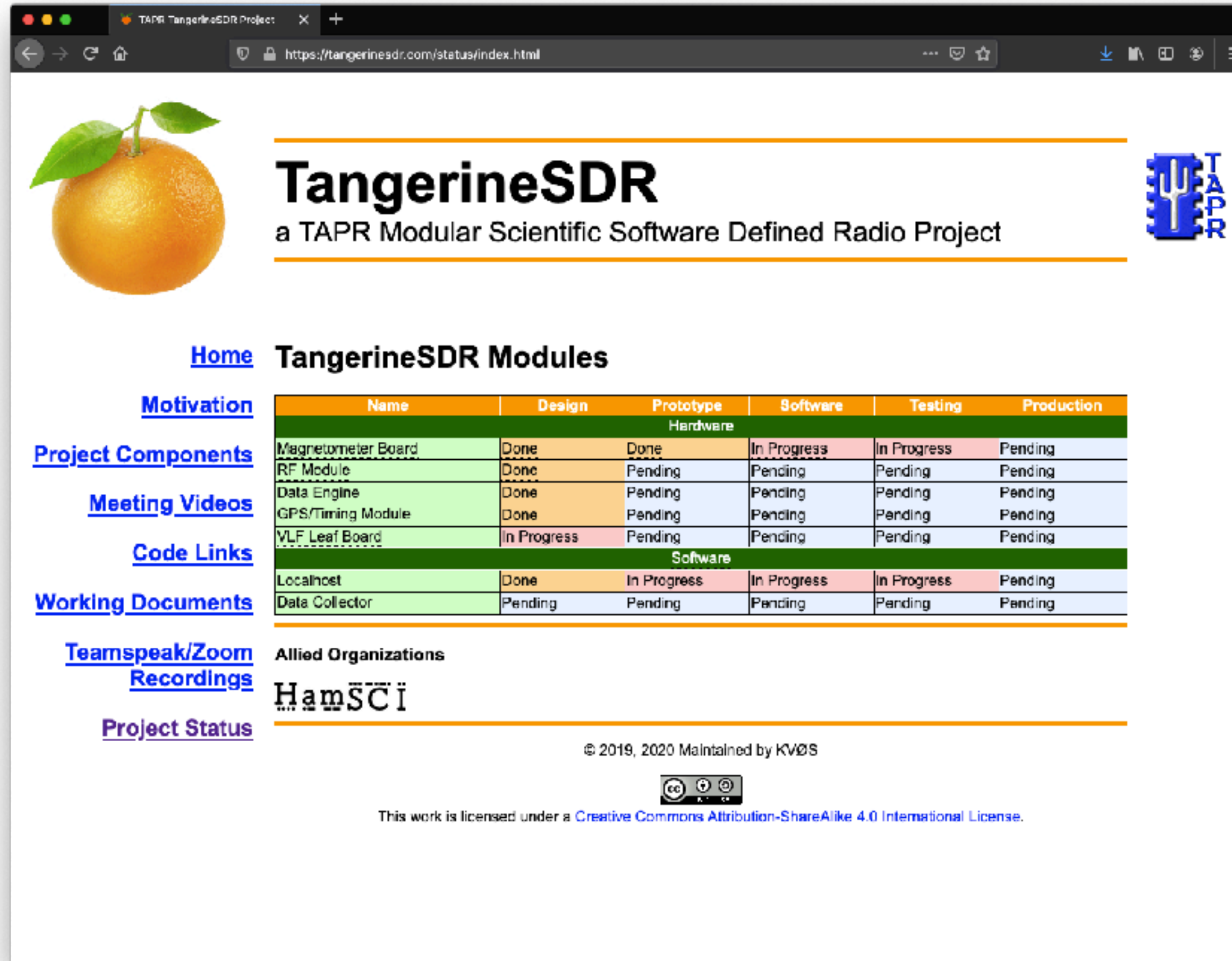


ARISS: STS Cross Band Repeater Support



ariss.org/current-status-of-iss-stations.html

TAPR: TangerineSDR



A screenshot of the TangerineSDR project website. The page features a header with an orange logo and the title "TangerineSDR a TAPR Modular Scientific Software Defined Radio Project". A sidebar on the left contains navigation links: Home, Motivation, Project Components, Meeting Videos, Code Links, Working Documents, Teamspeak/Zoom Recordings, and Project Status. The main content area is titled "TangerineSDR Modules" and contains a table with columns for Name, Design, Prototype, Software, Testing, and Production. The table lists modules like Magnetometer Board, RF Module, Data Engine, GPS/Timing Module, VLF Leaf Board, Localhost, and Data Collector, with their respective development stages. Below the table, there is a section for "Allied Organizations" featuring the HamSCI logo. The footer includes copyright information for 2019 and 2020, maintained by KVØS, and a Creative Commons Attribution-ShareAlike 4.0 International License logo.

TangerineSDR

a TAPR Modular Scientific Software Defined Radio Project

[Home](#) [Motivation](#) [Project Components](#) [Meeting Videos](#) [Code Links](#) [Working Documents](#) [Teamspeak/Zoom Recordings](#) [Project Status](#)

TangerineSDR Modules

Name	Design	Prototype	Software	Testing	Production
Hardware					
Magnetometer Board	Done	Done	In Progress	In Progress	Pending
RF Module	Done	Pending	Pending	Pending	Pending
Data Engine	Done	Pending	Pending	Pending	Pending
GPS/Timing Module	Done	Pending	Pending	Pending	Pending
VLF Leaf Board	In Progress	Pending	Pending	Pending	Pending
Software					
Localhost	Done	In Progress	In Progress	In Progress	Pending
Data Collector	Pending	Pending	Pending	Pending	Pending

Allied Organizations

HamSCI

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A screenshot of the TangerineSDR project website, showing a different section. The header is the same. The sidebar navigation is identical. The main content area is titled "TangerineSDR a TAPR Modular Scientific Software Defined Radio Project" and lists various modules with brief descriptions. The modules listed are: Data Engine Module, Radio Frequency Module, GPS/Timing Module, Magnetometer/Sensor Board, Very Low Frequency Leaf Board, Single Board Computer, Local Software, Local Host Software, Network Software, Data Aggregator, Summary Data Reporter, and Science Data Server. The footer includes copyright information for 2017 and 2020, maintained by KVØS, and a Creative Commons Attribution-ShareAlike 4.0 International License logo.

TangerineSDR

a TAPR Modular Scientific Software Defined Radio Project

[Home](#) [Motivation](#) [Project Components](#) [Meeting Videos](#) [Code Links](#) [Working Documents](#) [Teamspeak/Zoom Recordings](#) [Project Status](#)

Modules

Data Engine Module
The module that contains the FPGA the controls the data flow from the other support modules.

Radio Frequency Module
The module that has the Radio Frequency part for the Software Defined Radio.

GPS/Timing Module
This module has a time GPS to provide high performance timing module as well as position of the radio.

Magnetometer/Sensor Board
The host board that has the magnetometer and temperature sensors. It is design to store the sensor to be up to 10m (10 ft) from the RF Module.

Very Low Frequency Leaf Board
The module that has the very low frequency part for the Software Defined Radio.

Single Board Computer
A Single Board Computer with both high speed ethernet and USB interface to the other components.

Local Software

Local Host Software
Software that runs on the single board computer to communicate with the Software Defined Radio module and software that runs on the single board computer to communicate with data storage servers in the Internet Space Weather Station Network.

Network Software

Data Aggregator
Description of the software that creates recording messages for the public.

Summary Data Reporter
Description of the software that creates recording messages for the public.

Science Data Server
Description of the software for serving external access to the data collected by the project.

Allied Organizations

HamSCI

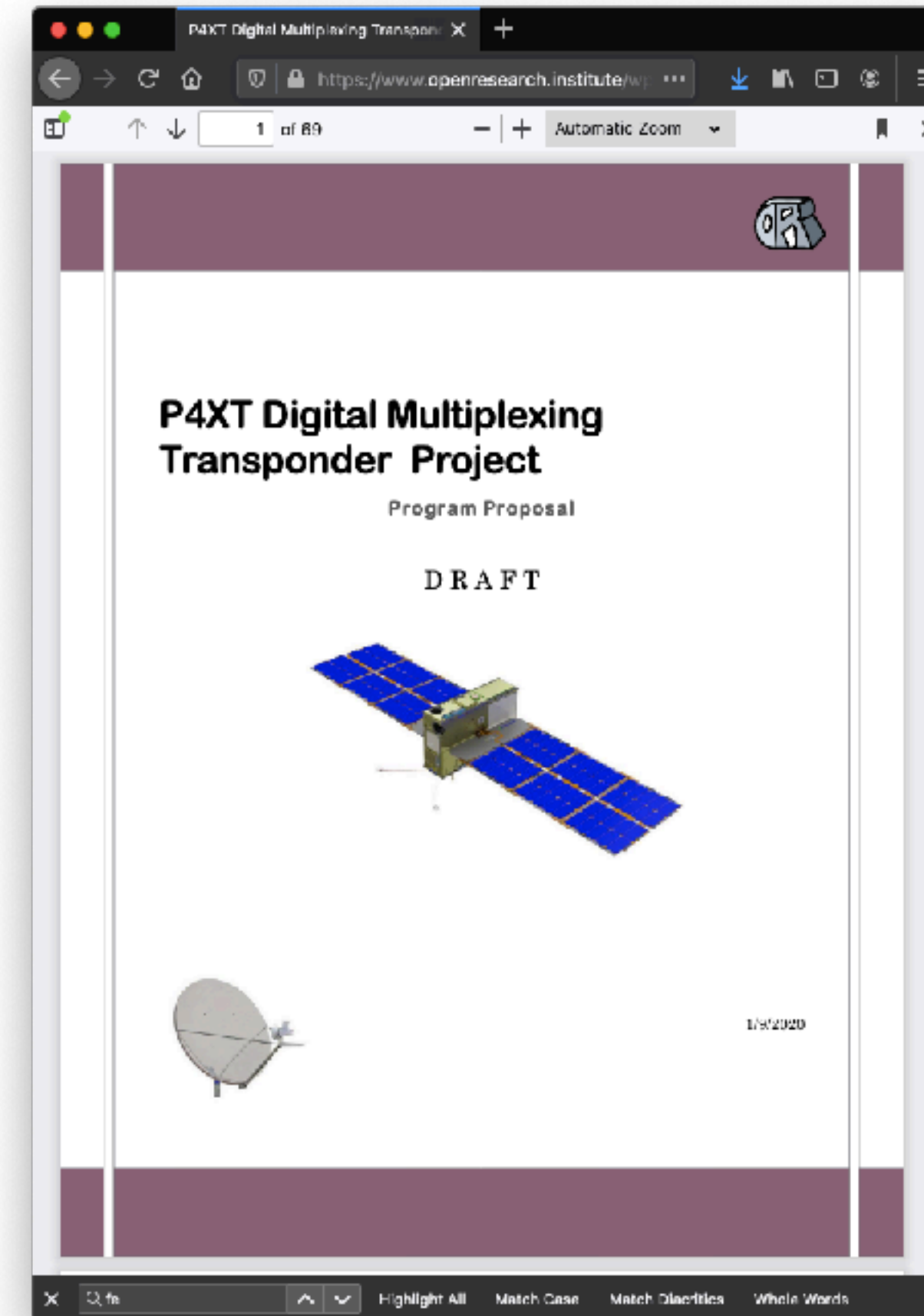
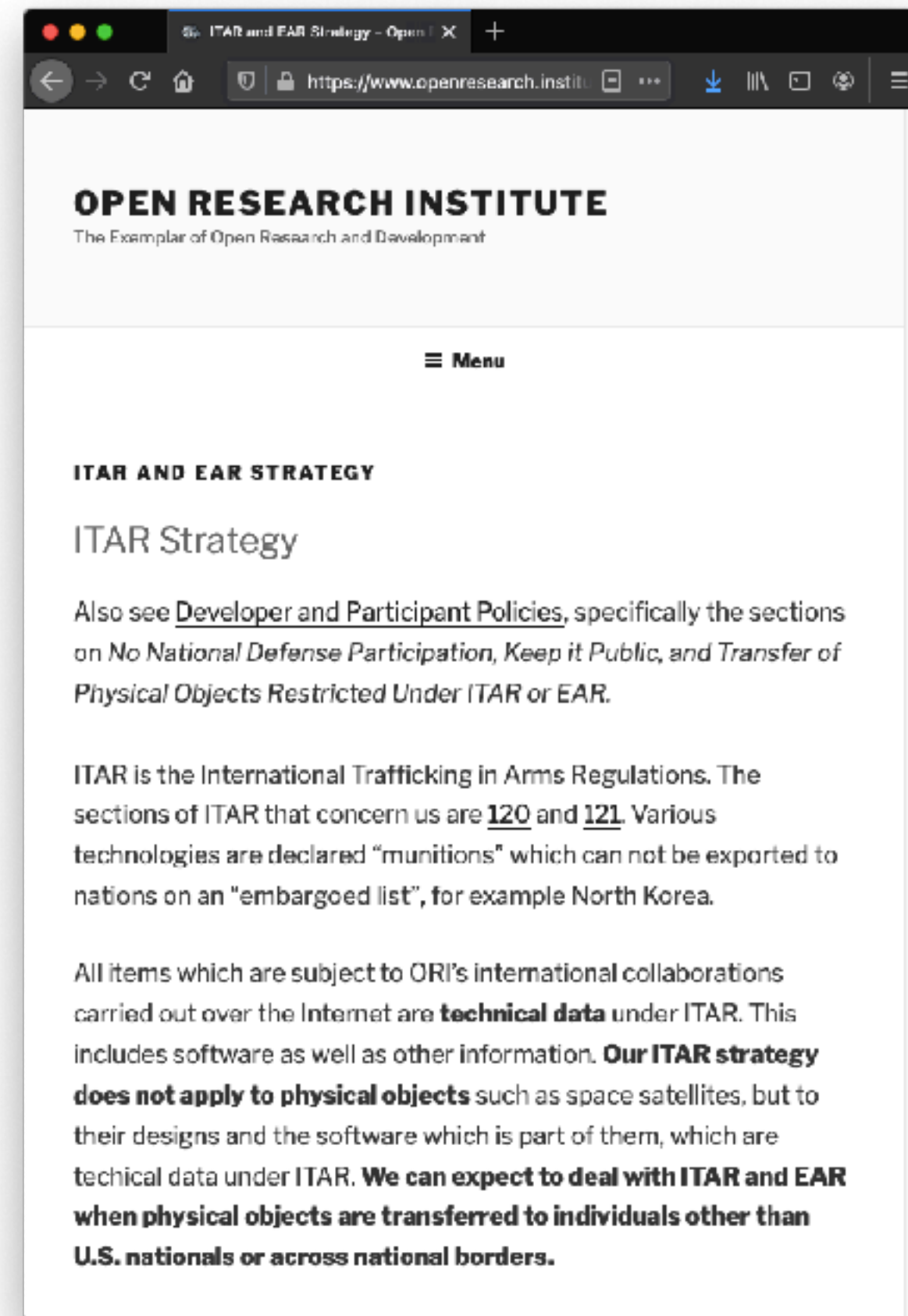
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tangerinesdr.com



Open Research Institute (ORI)



openresearch.institute

Scholarships & Internships

Organization	Description	Amount
ARRL	2020 Scholarships 1:1 Matching	\$200,000
FAR	2020 Scholarship Program	\$200,000
Outreachy	Paid Mentored Internships	\$200,000
TAPR	Student DCC Attendance Grants	\$10,000
UCSD Foundation	Alan Turing Memorial Scholarship	\$225,533
Yasme Foundation	General	\$50,000

** so far :)*

ampr.org/grants



Grants Process

Proposal ➔ **GAC Review** ➔ **Board Review**

Grants Process

Proposal ➔ **GAC Review** ➔ **Board Review**

Check for...

Eligibility?

Team capability?

Do we have a budget for this?

Does this meet ARDC Granting Goals?

How similar / different is this proposal from other ARDC grants?

Grants Process

Proposal ➔ **GAC Review** ➔ **Board Review**

Check for...

Eligibility?

Team capability?

Do we have a budget for this?

Does this meet ARDC Granting Goals?

How similar / different is this proposal from other ARDC grants?

Recusal required for conflict of interest (COI)!

Eligibility

Org Type	Location	Current	Future*
501(c)(3) Public Charity	US	✓	✓
Fiscal Sponsorship by 501(c)(3)	US	✓	✓
Government Entity	US	✓	✓
School / University	US	✓	✓
Businesses + non-501(c)(3)s	US + Int'l		✓
Individuals	US + Int'l		✓
School / University	Int'l		✓
501(c)(3) Equivalent	Int'l		✓

** assuming legality + operational capability*

Applying for a Grant

1. Check eligibility
2. Check your project against our granting goals
3. Send us a proposal!

[**ampr.org/giving/**](https://ampr.org/giving/)

Please expect:

- 30-90 day proposal processing time
- Questions from ARDC
- Quarterly reports (following approval)

Q+A / Discussion

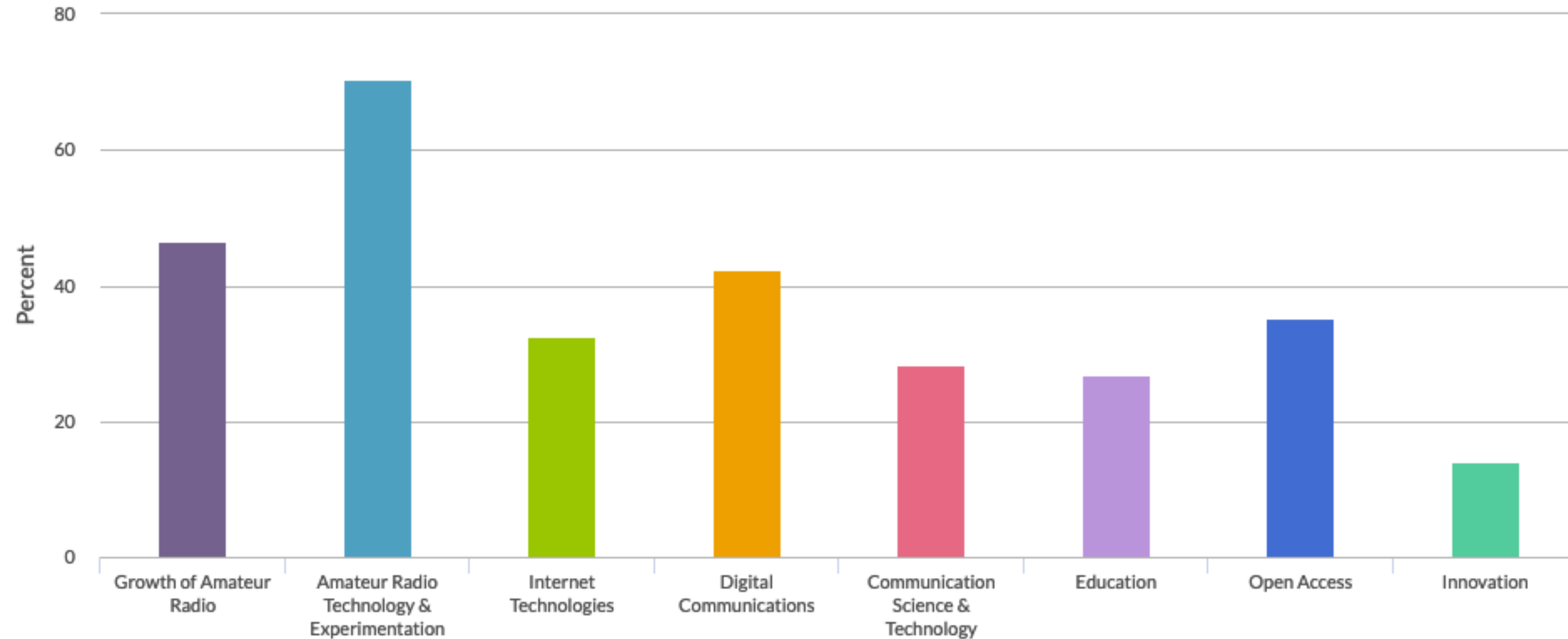
Grants Made to-Date + Grants Process

Survey! Feedback! Ideas!

* from 44net List *

Grantmaking Goals

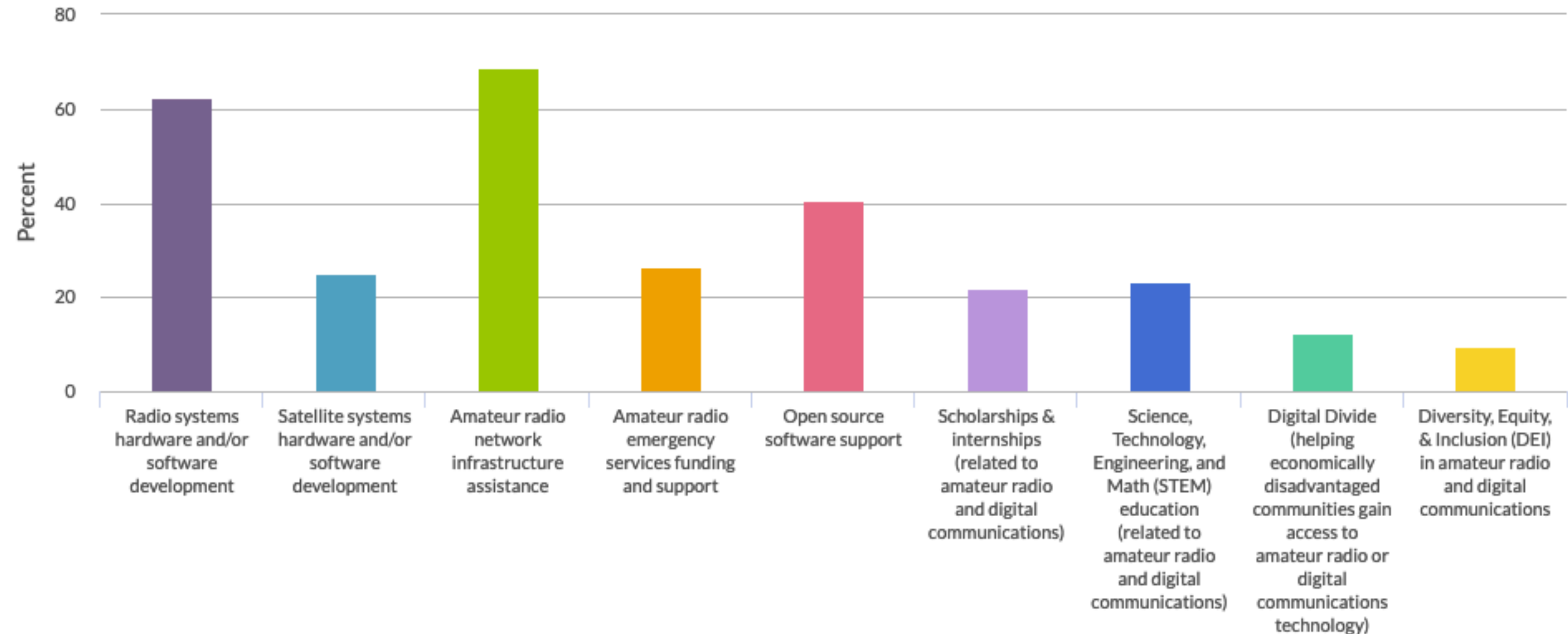
9. Of the grantmaking goals listed above, what 3 are the most important to you? (Please select up to 3)



As of Saturday 10 Oct. 2020 @ 9:20 am PT (114 respondents)

Project Types

20. Of the above project types, what 3 are the most important to you? (Please select no more than 3)



As of Saturday 10 Oct. 2020 @ 9:20 am PT (114 respondents)

Ideas

- **Improve + Maintain 44net Infrastructure**
 - **+ Documentation & Educational resources**
 - **+ Ease of use & Modernization**
 - **+ Publicize address space**
- Fill gaps in overall amateur radio communication infrastructure
- Digital ham educational materials & how-tos
- Open proprietary software and technology
- Decentralized web
- Wireless technology experimentation
- GPL enforcement for ham-specific technology
- Space + AR technology education support
- Help preserve amateur radio spectrum

44net Infrastructure Ideas

- Ensured 44.x.x.x IPv4 gateway access to the internet
- Investment in portal
 - Ease of use
 - Documentation & wiki
 - educational resources
- IPv6
- VPN service
- Pending RPKI issue for BGP users
- Integration with AREDN
- AMPRnet/HAMNET service directory
- AMPRnet/HAMNET radio solutions

Amateur Radio Infrastructure Ideas

- Open Repeater Database
- Global authentication platform for amateur radio
- Global IPv6 network for amateur radio
- Global geosat infrastructure for amateur radio
- OpenWebRX Enhancements
- Linux AX.25 stack development
- Improving amateur radio regulations
- Protecting amateur radio spectrum

Ideas for Orgs to Support

Allstar

Amateur Radio Software Award

AMSAT

AREDN

ARES/RACES

ARISS

ARRL Foundation

DV-Switch

Echolink

hackaday.io

HamWAN.org

IRLP

Open Research Institute (ORI)

Open Source Mobile Communications

SATNOGS

Swiss-ARTG

TAPR

Critiques / Concerns

- **Let's work on our own systems before assisting others**
- No lobbying, please!
- Confused by overlapping granting goals
- Keep grants to amateur radio + digital comms (not general tech grants)
- Worldwide effort, please!

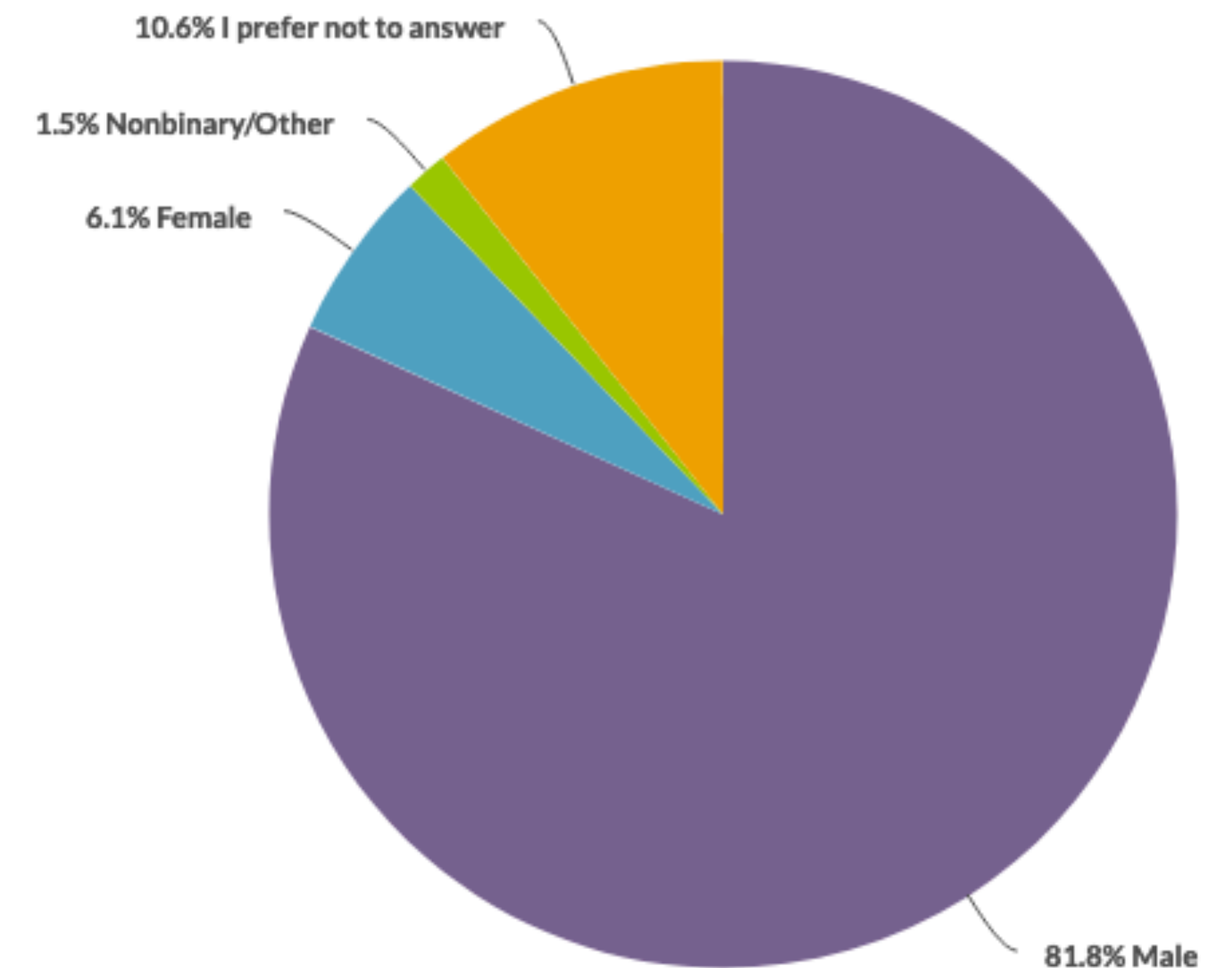
Critiques / Concerns

“I am a young person, and I see few to none of the people of my age, or younger work on the hobby and/or are interested to get in depth with digital communication technology. I think the largest part of the grants should focus on studying younger generations, and focusing on assisting them, as an investment there is an investment to the future, and not the past or the present. This may require changes or non-traditional thinking, but if it's required, I'd like to see that.”

Demographics

Reported Location	
Argentina	2
Australia	1
Canada	4
China	1
Corsica	1
England	2
Europe	1
Germany	2
Netherlands	1
Romania	1
Serbia	1
Slovenia	1
Sweden	1
Switzerland	5
UK	1
US	28
US + Canada	1
Venezuela	1

27. How do you describe your gender?



As of Saturday 10 Oct. 2020 @ 9:20 am PT (114 respondents)

Survey Results

bit.ly/ARDCsurvey2020

Q+A / Discussion

Survey, Feedback & Ideas

What comes next?

- 44net maintenance + improvement plan
- 2021 grantmaking strategy
 - Grantmaking to INDVs and non-501(c)(3)s + int'l orgs?
 - Specific projects / areas of interest?
 - Increased staff?
 - Streamline grantmaking process
- Share all of the above (+ this presentation) on 44net + ampr.org
- Make grants and empower incredible work for amateur radio & digital comms!



AMATEUR RADIO DIGITAL COMMUNICATIONS

Thank you!

Reach out any time: rosy@ampr.org