Virtual ARRL/TAPR DCC, Sept. 11-12

This "Special DCC Issue" of *PSR* contains the schedules for Friday and Saturday of the 2020 Virtual ARRL/TAPR Digital Communications Conference (DCC) and a list of the published DCC Papers.

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DCC Schedule

ARRL and TAPR Virtual Online Digital Communications Conference (DCC)

FRIDAY, SEPTEMBER 11, 2020

EDT UTC-4	PDT UTC-7	UTC	PRESENTATION
9:00	6:00	13:00	**Opening Remarks**
9:15	6:15	13:15	**HamSCI PSWS Overview/Status** by Nathaniel Frissell, W2NAF (University of Scranton)
9:30	6:30	13:30	**HF Propagation Measurement Techniques and Analyses** by Steve Cerwin, WA5FRF
10:00	7:00	14:00	**Early Results of Festival of Frequency Measurement Experiment & June 21, 2020 Asian Eclipse** by Kristina Collins, KD8OXT (Case Western Reserve University)
10:30	7:30	14:30	Break Time
11:00	8:00	15:00	**Frequency Estimation Techniques** by David Kazdan, AD8Y (Case Western Reserve University)
11:30	8:30	15:30	**LC-PSWS Engineering Status** by John Gibbons, N8OBJ (Case Western Reserve University)
12:00 NOON	9:00	16:00	**PSWS Control Software and Database** by Bill Engelke, AB4EJ (University of Alabama)
12:30	9:30	16:30	Break Time
13:00	10:00	17:00	**Evaluation of uBlox GPS Receivers Performance** by John Ackermann, N8UR (TAPR)
13:30	10:30	17:30	**TangerineSDR Hardware Update** by Scotty Cowling, WA2DFI, John Ackermann, N8UR, Tom McDermott, N5EG (TAPR)
14:00	11:00	18:00	**TangerineSDR VLF Module (A new module!)** by Jonathan Rizzo, KC3EEY (University of Scranton)
14:30	11:30	18:30	Break Time
15:00	12:00 NOON	19:00	**Characterizing and Optimizing the behavior of a Ground-based Magnetometer for Ionospheric Space Weather Observations** by Dave Witten, KD0EAG, Hyomin Kim, Julius Madey, Scotty Cowling WA2DFI, et. al.
15:30	12:30	19:30	**Mobile Mesh Tower Fleet** by Erik Westgard, NY9D
16:00	13:00	20:00	**Design Tips for QSD Down Conversion SDR Designs** by Rob Frohne, Ph.D, KL7NA, Jordan Watkins, KN6FFS, Josh Silver, Caleb Froelich, and Konrad McClure (Walla Walla University)
16:30	13:30	20:30	Break Time
17:00	14:00	21:00	**Packet Compressed Sensing Imaging (PCSI: Robust Image Transmission over Noisy Channels** by Scott Howard, KD9PDP; Grant Barthelmes; Cara Ravasio, Lisa Huang, Benjamin Poag, Varun Mannam (University of Notre Dame)
17:30	14:30	2130	**Continued Lessons from the RF-Seismograph** by Alex Schwarz, VE7DXW
18:00	15:00	22:00	**Current Status Report of FX.25 KISS TNC Development** by Masaaki Yonezawa, JE1WAZ, Norito Nemoto, JH1FBM (PRUG)
18:30	15:30	22:30	**Conclusion**

SATURDAY, SEPTEMBER 12, 2020

EDT UTC-4	PDT UTC-7	UTC	PRESENTATION
9:00	6:00	13:00	**APRS Performance and Limits** by Marco Bersani, IK2PIH
9:30	6:30	13:30	**Digital Signal Processing: I2S in ESP32 by** Anthony Le Cren, F4GOH/KB1GOH (Gabriel Touchard Washington High School – Le Mans)
10:00	7:00	14:00	**Aids to the Presentation and Analysis of WSPR Spots: TimescaleDB Database and Grafana** by Gwyn Griffiths, G3ZIL, Rob Robinett, AI6VN
10:30	7:30	14:30	Break Time
11:00	8:00	15:00	**QMesh: A Synchronized, Flooded Mesh Network Protocol for Voice** by Dan Fay, Ph.D., KG5VBY
11:30	8:30	15:30	**GaN based RF Power Amplifier Design** by Mohammad A. Maktoomi, Ph.D. (University of Scranton)
12:00 NOON	9:00	16:00	**The AERO/VISTA Twin Small Satellite Project** by Philip J. Erickson, W1PJE (MIT Haystack Observatory)
12:30	9:30	16:30	Break Time
13:00	10:00	17:00	**ENAMS (Electromagnetic Noise Area Monitoring System)** by Michael Hartje, DK5HH
13:30	10:30	17:30	**PSWS Antenna Designs** by Zach Leffke, KJ4QLP, Bob McGwier N4HY (Virginia Tech)
14:00	11:00	18:00	**RF Machine Learning Applied to doing Cognitive Radio on HF** by Bob McGwier N4HY (Virginia Tech)
14:30	11:30	18:30	Break Time
15:00	12:00 NOON	19:00	**Improved Layer 2 Protocol** by Nino Carrillo, KK4HEJ
15:30	12:30	19:30	**FreeDV 700D and 202** by David Rowe, VK5DGR
16:00	13:00	20:00	**Forward Error Correction and Pictures from Mars** by David Garner, N6WY
16:30	13:30	20:30	**TAPR Annual Meeting** with TAPR Officers and Board Members
17:30	14:30	21:30	**Conclusion**

Papers of the 2020 ARRL/TAPR Digital Communications Conference (DCC)

The following is the list of papers submitted for the 2020 ARRL/TAPR Digital Communications Conference (DCC). Each registered DCC attendee will receive an electronic (pdf) copy of the papers, while non-attendees may purchase a printed copy of the papers for $9 from the ARRL.

Timing and Location Performance of Recent u-blox GNSS Receiver Modules
John Ackermann, N8UR jra@febo.com

APRS Performance and Limits
Marco Bersani bermarco72@gmail.com

Improved Layer 2 Protocol
Nino Carrillo, KK4HEJ nino.carrillo@outlook.com

HF Propagation Measurement Techniques and Analyses
Steve Cerwin, WA5FRF steve@cerwinconsulting.com

QMesh: A Synchronized, Flooded Mesh Network Protocol for Voice
Dan Fay, PhD, KG5VBY daniel.fay@gmail.com

A Comparison of Affordable, Self-Assembled Software-Defined Radio Receivers Using Quadrature Sampling Down-Conversion; Caleb Froelich; Dr. Rob Frohne, KL7NA; Konrad McClure; Joshua Silver; Jordyn Watkins, KN6FFS; Rob Frohne rob.frohne@wallawalla.edu

Forward Error Correction and Pictures from Mars
David Garner, N6WY mag_djg@comcast.net

Aids to the presentation and Analysis of WSPR Spots: TimescaleDB database and Grafana
Gwyn Griffiths, G2ZIL gwyn@autonomousanalytics.com, Rob Robinett, AI6VN

Packet Compressed Sensing Imaging (PCSI_: Robust Image Transmission over Noisy Channels
Scott Howard showard@nd.edu, Grant Barthelmes, Cara Ravasio, Lisa Huang, Benjamin Poag, and Varun Mannam

Digital Signal Processing: I2S in ESP32
Anthony Le Cren, KF4GOH kb1goh@yahoo.com

Continued Lessons from the RF-Seismograph
Alex Schwarz, VE7DXW alexschwarz@telus.net

How to Kill Packet-Radio & APRS? Come to Serbia! (Part 3)
Miroslav “Misko” Skoric, YT7MPB skoric@uns.ac.rs

Build a Mobile Mesh Tower Fleet
Erik Westgard, NY9D ewestgard@att.net

Current Status Report of FX.25 KISS TNC Development;
Kazuhisa Yokota, JN1DFF; Masaaki Yonezawa, JE1WAZ; Aki Yonex yonexaki098@gmail.com

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Phone +1 972 413 8277

E-mail contact@tapr.org

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PSR Editor:

Stana Horzepa, WA1LOU

E-mail wa1lou@tapr.org

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