



November 2025



## **This Issue:**

- Fun times at our chapter fall social at GameOn Arcade & Bar
- nVent Schrof provided fantastic technical talk on enclosures for EW
- 2026 scholarship applications to be released Nov-Dec
- Satellite-to-satellite jamming

## **2026 Upcoming Events**



We have no further events planned for 2025, but please save the date for a January 22 Technical Talk 11:30-1PM, courtesy of Rohde & Schwarz. More info will be in our newsletter, published in January.

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## **Keep a Look Out for Scholarships Applications**

Our Chesapeake Bay Roost has been awarding scholarships to local high school students annually. The process for 2026 has begun. We are currently developing this year's application and expect to release it to the school guidance counselors sometime between Thanksgiving and Christmas with a response deadline in early Spring. Please spread the word to any potential college-bound Science, Technology, Engineering, and Math (STEM) candidates that would be interested.

# Chesapeake Bay Roost Newsletter

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## Thanks to Our Chapter Sponsors!

Our chapter provides scholarships to local youth and chapter events for EW professionals. These activities quickly exceed what the chapter can achieve simply on AOC national chapter funds. We are truly thankful for Axillon Aerospace (previously Parker Meggitt), Annapolis Micro Systems, and Keysight Technologies for contributing financially in support of these endeavors. Please consider working with them for your product needs.



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[www.keysight.com](http://www.keysight.com)

1900 Garden of the Gods Road, Colorado Springs, CO

We are seeking financial sponsorship to support our club activities and scholarship benefits we provide to the community. Please contact the board at [AOC.ChesapeakeBay@gmail.com](mailto:AOC.ChesapeakeBay@gmail.com) for reasonable rates.

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## Satellite-to-Satellite Jamming

The Ukraine conflict zone is a contested electromagnetic spectrum, including the GPS bands, as defeating navigation aids serves to defeat unmanned flight vehicle attacks. This has been discussed in past newsletters, describing the Russian R-330Zh Zhitel, a mobile truck that can be used to jam large swaths of the electromagnetic spectrum.<sup>1,2</sup> The prevalence of GPS jamming is common enough that a web site exists where crowd sourced ADSB (Automatic Dependent Surveillance Broadcast) transponder data from commercial aircrafts is analyzed to display real time jamming maps for GPS (<https://gpsjam.org>).

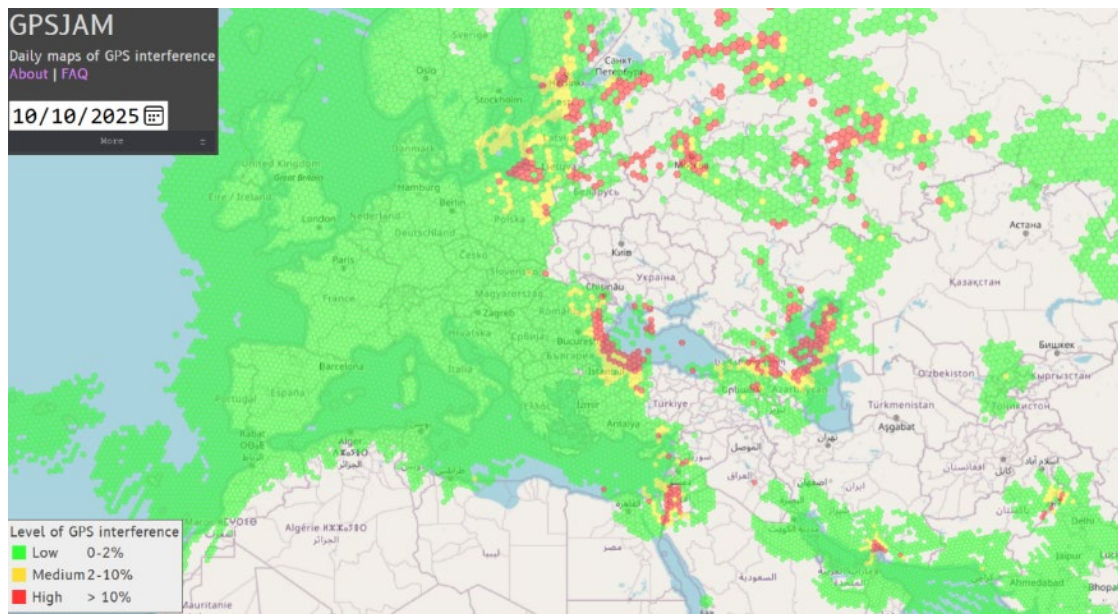


Figure. Live Crowd Sourced GPS Interference Map (from <https://gpsjam.org>)

“An overwhelming majority of these cases can be traced to accidental leakage into the GNSS frequency bands, personal privacy devices, or electronic warfare spillover from nearby conflict zones.” However, a recent paper presented at the September 2025 GNSS Conference in Baltimore “investigates GNSS interference sources ... occurring from other space vehicles.” The paper analyzed the “spatial and temporal patterns of wide-area GNSS outage events” and presented a “satellite identification strategy to narrow down” the candidate satellites that would be the source of the interference.<sup>3</sup>

In the past, other GNSS satellite vehicles themselves have been identified as sources of interference. The Beidou satellite (NORAD ID 40749) had previously been identified as the source of tones in the 1268.52 MHz (B3I band) region. GPS PRN 24 had been found to be transmitting leakage tones +/-10/20 MHz from GPS L5 frequency. The study examined occurrences where ground stations with wide geographic separation across the globe simultaneously detected degradation of the carrier to noise ratio, suggesting a common interference source in the space-region by the GPS satellites. The study found that interference occurrences typically happened during business days, and receivers in the Baltic region were impacted most.<sup>3</sup>

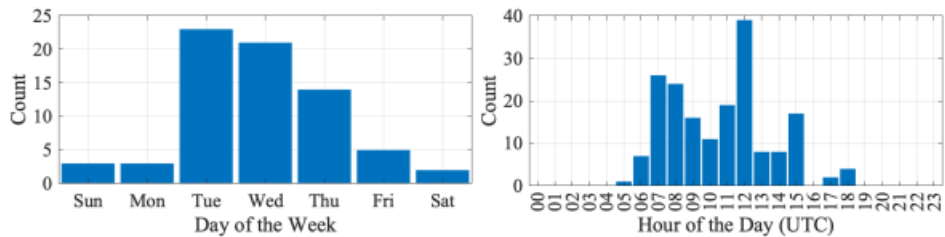


Fig. 6: Distribution of the day of the week and hour of day (with respect to UTC) that interference bursts with at least one station seeing a drop of 5 dB-Hz or greater occurred on. These high-power interference bursts typically occur during business days and business hours.

Figure. Interference Occurrences from (3)

With the times and GPS satellite vehicles effected identified, the other non-GPS satellites that were in the local space region, while also having an appropriate antenna field of regard could then be identified, reducing the large amount of potential offending satellites down to just 13 suspects.<sup>3</sup>

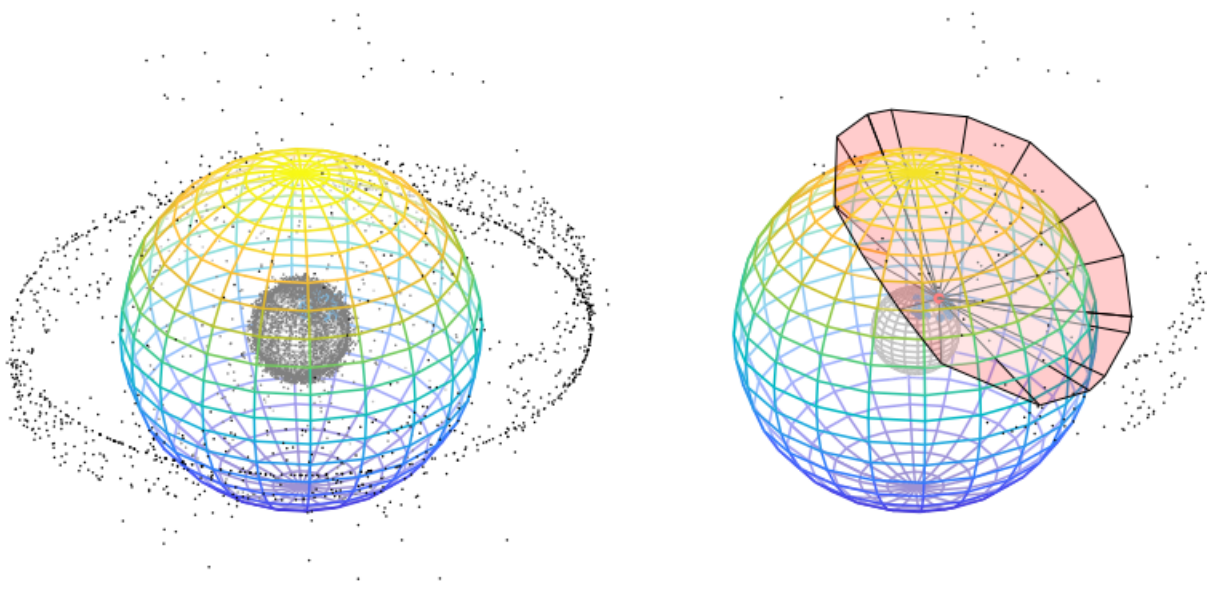


Fig. 9: Left: The position of all tracked objects during the high-power interference burst on day 160 year 2021. Right: The position of all satellites that satisfy a  $0^\circ$  elevation mask constraint and excluding all debris and rocket bodies. The red zone represents the feasible region the satellite could have been positioned. As a reference, the colored shell corresponds to Medium Earth Orbit (20,000 km altitude).

Figure. Suspected Satellites from (3)

The importance of navigation and the obvious risks to GPS have created opportunities to pursue alternatives to GPS. These include Enhanced Long Range Navigation (LORAN), a form of navigation that had been terminated, ignoring the objections and concerns of having to be reliant on GPS, as well as using nonconventional Low Earth Orbit (LEO) satellites as alternatives navigation sources.

1. Sept 2022 Chesapeake Bay Roost Newsletter
2. [https://odin.tradoc.army.mil/WEG/Asset/R-330Zh\\_Zhitel\\_Russian\\_Cellular\\_Jamming\\_and\\_Direction\\_Finding\\_System](https://odin.tradoc.army.mil/WEG/Asset/R-330Zh_Zhitel_Russian_Cellular_Jamming_and_Direction_Finding_System)
3. "Transient Space-Based GNSS Interference: Observations and Analysis", Zachary L Clements, Todd E. Humphreys, 2025 ION GNSS+ Conference, Sept 2025.

# Chesapeake Bay Roost Newsletter

## Fantastic August Technical Talk : nVent Schrof

A key detail that can make or break a system is its final mission packaging. Electronic Warfare (EW) uses complex state-of-the-art electronics, and packaging the system to survive its environment is a critical detail that must not be overlooked. On August 14 a team from nVent Schrof (<https://www.nvent.com/en-us/>) did a deep dive into the details of system protection and thermal management. Their product offerings were reviewed, including cabinets, racks, systems (VME, VPX, PCIe, PXIe), board retention, and thermal management. They provided key insights on new internal developments with PXIe and thermal cooling solutions. Thanks to RL Engineering (<https://www.rlengineering.com/>) for making the event happen!



Figure. Dash Ragin, Sharon Frye of RL Engineering, and nVent Schrof's Chris Smerillo at the Technical Talk

## Fall Social

On October 2, our Chesapeake Bay Roost had our fall social in Columbia at the GameOn Bar/Arcade. Our members had some gaming fun along with pizza and drinks. Thanks for all who made the effort to come out, as it was great to see everyone face-face at this event!



## **Advertise Your Company Here!**

Did you know as of 03/09/24 this Chesapeake Bay Roost has over 447 current members in its database?

Our membership represents major EW centers in this area, including:

- Axillon Aerospace (formerly Parker Meggitt )
- BAE Systems
- Boeing
- Booz Allen Hamilton
- CACI
- CEA Technologies
- Johns Hopkins Applied Physics Laboratory
- Multiple branches of the Department of Defense
- Northrop Grumman Corporation
- Rohde & Schwarz
- Raytheon
- Textron Systems
- WGS Systems
- And many others!

We are seeking sponsorship to support our club activities and scholarship benefits we provide the community.

Space is available here to target your advertisement/announcements to our select membership!

Please contact the board at [AOC.ChesapeakeBay@gmail.com](mailto:AOC.ChesapeakeBay@gmail.com) for reasonable rates

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## AOC Events

Dec 9-11  
Annual AOC International  
Symposium & Convention  
National Harbor, MD