

NSC Member Develops Improved Sensor for Disadvantaged DoD Use-Cases, and it's 20x Less Expensive than its Predecessor!

As a result of the Advanced Wireless Services 3 licensing rules, the U.S. Air Force and U.S. Navy had a critical need for spectrum monitoring, recording, and visualization solutions for the 1780-1850 MHz band. Rather than relocate out of the band completely, the government sought novel approaches to develop a robust yet low-cost Next Generation Spectrum Situational Awareness System that could verify compliance with the newly mandated spectrum cohabitation and compression, provide spectrum usage data to decision makers, and provide historical trends of spectrum usage for future planning. This is where a team lead by Perspecta Labs comes in.

After successfully designing the system architecture, Perspecta Labs and Pacific Star Communications are currently building and conducting lab testing. The back-end architecture of the system is designed from open-source, license-free, software packages in a micro-services architecture that allows the system to scale from a handful of sensors and laptops all the way to 1000's of sensors and an enterprise cloud deployment.

To date, four initial sensor configurations with agnostic architecture have been developed, covering the 300 kHz – 6GHz range. These RF sensors come at an order of magnitude reduction of cost (\$5k instead of >\$100k) that is specifically designed for disadvantaged DoD use cases. The team is almost ready to finalize the initial development so that a set can be fielded. Testing the baseline configuration, development, and refinement will continue out in the field, and use findings to inform the final development/polishing stages.

When fully implemented, NGS2AS will provide solutions to environmental hardening, tamper monitoring, and data processing to reduce transmission requirements. These low cost sensors can be placed in remote areas and use network technology to get data back to a central location, and will deliver the DoD with increased capability at a significantly reduced cost.

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