



## Defense Production Act (DPA) Title III: 5G Wireless Networks

### US Ignite's Proposal: Leverage the Defense Production Act Title III Office to Foster a 5G Wireless Ecosystem Enabled by Open RAN to Support U.S. Federal and Commercial 5G Needs.

The development and deployment of 5G wireless networks is essential to U.S. national defense, with a wide range of Department of Defense (DoD) applications for security, public safety, energy, and transportation. Despite these networks being critical to national defense, there are no large U.S. vendors in the marketplace, with only handful of European and Asian vendors able to provide at-scale deployment of 5G networks globally. This has left U.S. major carriers, and the Federal agencies they serve, reliant on just two vendors for equipment and professional services to deploy their 5G networks. As a result, this has led to widespread concerns over supply chain risk, with no easy solution of creating a new national vendor that can compete globally for 5G networks and beyond.

Despite these challenges, there are dozens of smaller, domestic vendors that are leveraging Open Radio Access Networks (Open RAN) technologies to serve U.S. carriers. The Open RAN ecosystem is focused on creating virtualized networks that rely on commodity hardware and open software to ensure 5G networks are not dominated by the four largest vendors. However, these smaller companies need support for prototyping, scale-up, and hardening of Open RAN solutions to ensure products qualify as "carrier-grade".

This opportunity creates a clear need for the Defense Production Act (DPA) Title III Office<sup>1</sup> to lead a response to support these targeted U.S. firms, with the following goals:

- **Ensure wireless networking equipment manufacturing meets standards for carrier-grade production.** This program would ensure small and mid-sized wireless vendors can meet both large carriers and DoD networks. These vendors will not be reliant on government support for the long-term, but need DPA-funding today to accelerate the development of new Open RAN and other wireless technologies.
- **Commercialize domestic wireless technologies for deployment in carrier and DoD networks.** This should also provide funds to access PAWR, DoD or other 5G testbeds to evaluate prototypes in real-world environments.
- **Support through DPA funding for capex, product development to scale up those prototyped Open RAN solutions.** Scale-up manufacturing capabilities to support increasing carrier demand. Create domestic alternative to global competitors while opening up new domestic markets for emerging vendors. Require companies to develop a vision for how they plan to scale and become sustainable, either through internal development or M&A.

The DoD/DPA Title III Office is currently evaluating similar funding and supporting strategies for small Unmanned Aerial Systems (sUAS), another vital technology market where the U.S. has fallen

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<sup>1</sup> [https://www.energy.gov/sites/prod/files/2014/03/f14/2\\_seaford\\_roundtable.pdf](https://www.energy.gov/sites/prod/files/2014/03/f14/2_seaford_roundtable.pdf)

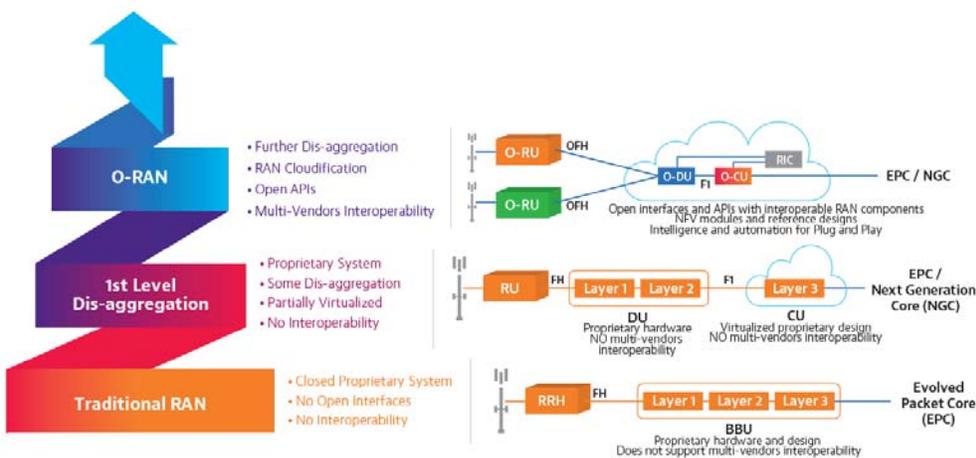
behind global competitors. This approach could also leverage the approach taken by DoD/DMEA's Trusted Foundry program<sup>2</sup> for vetting the integrity of the design and manufacture of integrated circuit design. DPA Title III funding to companies includes production support, R&D commercialization, and scaling emerging technologies:

- **Sustain critical production:** Support grants, loans and loan guarantees to targeted vendors within the Open RAN ecosystem.
- **Commercialize R&D:** Support commercialization through a prototyping, testing, and evaluation program.
- **Scale emerging technologies:** Position the federal government as an anchor tenant in order to ensure that smaller vendors can ultimately scale up to meet the needs of both Federal and carrier customers.

For the Open RAN ecosystem of vendors, carriers, and service providers, this effort would offer grants, competitive procurement, loans and loan guarantees of **\$5 to \$20 million** that are matched by the vendor. This does not include grants for research or development, which would be offered to these vendors through DoD, NSF, DOE and other 5G R&D programs. These grants would support efforts to:

- Modernize manufacturing facilities to expand capabilities for Open RAN production.
- Build sample products for government and carrier customer to test and evaluate prior to deploying in their networks.
- Spend on capital improvements to reduce costs or enhance yield performance, to help improve the competitive position of these vendors.
- Develop and implement go-to-market strategies for both DoD and carrier customers.

### Evolution to Open RAN Networks<sup>3</sup>



<sup>2</sup> <http://www.ndia.org/-/media/sites/ndia/divisions/electronics/past-proceedings/ndia-ed-baldwin-18jan2018-vf.ashx?la=en>

<sup>3</sup> <https://www.viavisolutions.com/en-us/solutions/wireless/o-ran>