Open RAN for America
Helping the U.S. lead in 5G and beyond

Some Select Examples of Use Cases for Future Open RAN NTIA Grants

Today, American companies supply few of the infrastructure components for U.S. (and worldwide) 4G and 5G mobile networks. With the jump to 5G coinciding with a wireless network technology migration to Open Radio Access Networks ("Open RAN"), there is an opportunity for both the United States and countries across the globe to expand their wireless supply chains to include products and systems from innovative American companies – propelling the U.S. economy and advancing U.S. leadership for 5G and beyond.

In order to accomplish these objectives, the currently-nascent U.S. domestic Open RAN industry needs a financial resources shot in the arm. That is why Congress authorized an NTIA-administered "Public Wireless Supply Chain Innovation Fund" in its FY2021 NDAA, but Congress now needs to appropriate funding for that authorization to best unleash American innovation on the global 5G telecom supply chain market.

Below are *just a few* examples of how some of the American companies innovating in this industry (such as the ones named in the header above) could utilize grants from the NTIA and potentially create thousands of new U.S.-based jobs… *once* the Public Wireless Supply Chain Innovation Fund has money appropriated to it, that is.

Supercharge U.S. Telecommunication Manufacturing

American vendors are challenged to compete with subsidized Chinese vendors and other foreign competitors already dominating the market and at scale. Open RAN unbundles and expands the supply chain to allow multiple vendors to coexist and compete, allowing mobile network operators to be less reliant on any single, foreign-owned vendor for their entire network architectures. Supporting Open RAN deployment also allows the U.S. government to improve its national security posture by reshoring critical network components from China to the U.S.

Potential projects include:

- Building a U.S.-based manufacturing facility to produce open and interoperable network components (e.g. RF components, filters, Remote Radio Units, and antenna design) to supply the worldwide Open RAN ecosystem and help lower mobile network operator costs. Estimated funding could be ~$100 million.
- Upgrading existing semiconductor fabrication facilities in the U.S., thereby reshoring key manufacturing capabilities (e.g., through the formal transfer of two critical integrated circuits

currently fabricated at TSMC in Taiwan and OnSemi in Belgium) Estimated funding could be ~$20-25 million.

- Creating U.S.-based 5G technology/innovation labs with the goal of advancing technology development and use-case validation to improve competitiveness of the global Open RAN ecosystem. Estimated funding could be ~$70 million.

- Creating a lab to certify interoperability of Open RAN compliance, and other end-to-end network elements from multiple vendors, with the goal of accelerating integration with multiple vendors to authenticate use-cases and interfaces for different markets. In doing so, domestic supply chain diversity is achieved and Open RAN equipment is primed as a key U.S. export to international markets. Estimated funding could be ~$15-20 million.

Advance U.S. Leadership in the Development of Open and Interoperable Interfaces

Open and interoperable specifications will reduce network costs and allow more U.S. companies to compete globally. However, more is needed to be done to close the feature gap and ensure continuity to future generations of wireless standards. Interface standards development is essential to the success of the Open RAN multi-vendor vision, and is a multimillion dollar initiative for the Open RAN ecosystem. Standards development will ensure both dynamic innovation and robust competition, with American players firmly in the mix.

Potential projects include:

- Hiring U.S.-based standards and software engineers to develop and promote new open and interoperable interfaces based on the constantly evolving standards from 4G to 5G and beyond. These engineers would accelerate closing existing vendor-locked feature gaps within established mobile wireless infrastructure suppliers. Estimated funding could be ~$85 million.

Improve American Mobile Network Security

Open and interoperable interfaces provide the foundation and architecture for improving security. An open, intelligent Radio Access Network (RAN) enables operators to deploy greater security capabilities closer to the network edge, allowing the operators to more quickly respond to cybersecurity threats.

Potential projects include:

- Funding for U.S-based "Centers of Excellence" dedicated to developing security assurance standards and practices to help ensure that the U.S. stays at the forefront of cybersecurity and related disciplines. Estimated funding could be ~$75 million.

- Funding that allows for the expansion of U.S.-based 5G and 6G (and beyond) R&D would not only enable U.S. development of next-generation specifications and products (hardware, firmware, software) but would empower U.S. vendors to keep pace with feature-development currently dominated by foreign suppliers. Such support could range from funding for enhanced or new R&D facilities in the U.S. to investments in testing equipment and staff. Estimated funding could range from ~$35 million for limited feature sets to ~$175 million for more comprehensive solutions.