

# URGENT CALL FOR INNOVATIONS: 5G+ TECHNOLOGY SPRINTS

## TechConnect Ventures Sprint Challenge:

### Enabling technologies for Dynamic Spectrum Utilization and Sharing (5G+)

**Due Date: Wednesday, November 20, 2020. Rapid response required!**

#### SPRINT CHALLENGE DESCRIPTION

Our Client, a **Fortune 100 Aerospace & Defense Prime**, is seeking immediate responses describing innovative technologies – including hardware and software solutions – to enable Dynamic Spectrum Utilization and Sharing with commercial networks.

All solutions, such as novel algorithms, frameworks, network topologies, and methodologies, are of interest. The Client welcomes both novel innovations and dual-use technologies from across industry, including those from applications outside of aerospace and defense. Potential solutions may include, but are not limited to, signal multiplexing, beamforming, novel waveforms, and solutions utilizing zero-trust architectures.

All responses to this Sprint should include ONLY non-confidential information.

#### BUSINESS OPPORTUNITY

Respondents will have the opportunity for direct collaboration with the Aerospace & Defense prime on product integration, supply chain, collaborative R&D, and/or DOD contract partnerships. Additionally, the Client can provide access to:

- Fabrication facilities for specialty thin-films, flexible electronics, and semiconductor devices
- Testbed facilities and collaborative product demonstration opportunities

The top-rated organizations responding to this Sprint will be invited to an introductory meeting with our Client's corporate venture capital arm and partnering venture capital firms. Select top companies will be invited to present their solution to representatives from the Client's team, including engineering and investment managers, and may be considered for collaborative opportunities on DoD Contract R&D, SBIR programs, and other forms of government non-dilutive capital.

Potential business outcomes for the submitters may include, but are not limited to:

- Contract R&D
- Joint development
- Licensing
- Acquisition
- Introduction to the Client's global supply chain team
- Letters of Support for SBIR pursuits
- Venture / equity investment
- Mentorship

#### TIMELINE

This is a rapid partner identification opportunity. Responses must be received no later than the Submission Deadline to be considered for collaborations with the Client.

- Project Launch: November 4, 2020
- Submission Deadline: November 18, 2020
- Client Evaluations Complete: December 2020
- Initiation of Partner Engagements: January 2021

#### BACKGROUND

According to the U.S. Department of Defense, warfare in the 21st Century is dependent on a network-centric model of persistent communication. New 5G+ technologies are at the core of this concept; promising 10-100X performance gains relative to existing 3G and 4G systems. However, the implementation of 5G+ networks for military application will require constant, game-changing innovation in several areas, such as:

- Peak Data Rate (Gbit/s)
- Spectrum Efficiency, Mobility (km/h)
- Latency (ms)
- Connection Density (devices/km<sup>2</sup>)
- Network Energy Efficiency
- Area Traffic Capacity (Mbit/s/m<sup>2</sup>).

New technologies are thus required to solve existing telecommunications challenges and achieve the desired performance gains for military communication systems, and adjacently for novel commercial and non-military operations.

Our Client believes that significant technological innovations (e.g. materials, hardware, software, etc.) may already exist which can influence or accelerate dynamic spectrum utilization on 5G+ networks. The objective of this Sprint is to identify innovative, state-of-future solutions that can be deployed to solve telecom challenges through accelerated development and rapid prototyping.

Solutions from small-to-medium sized businesses (e.g. 10-700 employees) across all industries and commercial backgrounds are highly encouraged.

#### SUBMISSION REQUIREMENTS

Your submission must include items 1 and 2 below and must be submitted through the project-specific Submission Form linked to this Sprint call for innovations. **DO NOT submit any content which is considered Confidential, Proprietary or otherwise Sensitive. Any responses found to contain such information will be automatically deleted and disqualified from consideration without notice.**

1. You must submit a short, white paper response (PDF format, max. 3 pages) describing the following information about your solution:
  - **Need Statement:** Address the specific bottleneck(s) that your solution addresses, such as:
    - Peak Data Rate (Gbit/s)
    - Spectrum Efficiency
    - Mobility (km/h)
    - Latency (ms)
    - Connection Density (devices/km<sup>2</sup>)
    - Network Energy Efficiency
    - Area Traffic Capacity (Mbit/s/m<sup>2</sup>)
  - **Approach:** Describe in detail your technical solution, including:
    - Technical description of solution
    - Process and resources for developing solution
    - Business model for implementing the solution
  - **Benefits:** Describe the primary benefits that your solution provides relative to existing standards and alternatives, including:
    - Cost savings
    - Time savings
    - Measurable quality improvements
    - Size, Weight, and Power improvements
    - User experience; ease-of-use
  - **Competition:** Describe how the need/problem which your solution solves is addressed today and how it compares to existing, alternative solutions to the same need/problem.
    - Are there other solutions or mechanisms by which your intended customers can experience the benefits they seek?
    - How is your innovation and organization positioned to compete with these alternatives?
2. You must complete the online Submission Form, which includes:
  - A short non-confidential summary of your technology or innovation, including any technical data and details on performance as it applies to the Problem Statement
  - Value proposition and (potential) commercial impact
  - Development status and readiness level
  - Development and scale-up pathway (if available)
  - Intellectual property position
  - Funding and award status (if applicable)
  - Type of partnership or commercial relationship sought with Innovation Seekers
  - Company or organizational profile
  - Contact, team and organizational information

#### REMEMBER... We don't know what we don't know!

If your technology is not highlighted above, but can meet the Request requirements please consider submitting a response in order to enhance your exposure to new commercial opportunities. Your solution may be an ideal solution to this critical area of need!

#### EVALUATION

TechConnect Ventures and the Client will evaluate all responses. Based on the nature of the innovation and strength of the response relative to all submissions received, top innovators will be selected for introductions and potential further engagements.

**QUESTIONS?** Contact [info@techconnectventures.com](mailto:info@techconnectventures.com) and reference this Sprint Topic.