



**TechNexus Venture Collaborative in partnership with the
US Department of Homeland Security and
the Virginia Center for Innovative Technology (CIT)**

Technical Specification: Smart Hub

**Capability Areas: Communication Interoperability and
Sensor Network Connectivity**

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Project Scope:

The U.S. Department of Homeland Security (DHS) Science and Technology Directorate (S&T) First Responders Group (FRG) is partnering with SCITI Labs, to prototype internet of things (IoT) and smart city technologies for emergency response and management.

The SCITI Labs team, which includes the Virginia Center for Innovative Technology (CIT) and TechNexus Venture Collaborative, will work across innovators, from startups to corporations, to provide **access to the First Responder Market, provide prototype funding** (non-dilutive capital) and align those technologies with **larger tangential opportunities in broader industries through pilots and collaboration with enterprise partners.**

Submitted innovations will be evaluated based on the following criteria: ability for the initial product to be available in a commercial market within the required schedule, mission fit, technology innovation, projected unit pricing, availability of non-governmental revenue to support ongoing evolution of key technology (such as provided by adjacent commercial markets), company credentials, and other criteria. Our philosophy, as reflected in these criteria, is “commercial-first”, a bias towards products developed for commercial markets that can be quickly adapted to meet the needs of the responder community.

TechNexus is a venture collaborative — equal parts strategist, venture incubator, and venture investor. TechNexus curates the power of collaboration to harness disruption and create new market opportunities. We find, fund and grow technology ventures in partnership with entrepreneurs and enterprises, providing the market access, capital, and development support they need to grow and scale.

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Technology Scope:

Core Product

- The Smart Hub is a body worn responder interoperability platform that integrates personal area network communications with third-party body-worn sensor packages (e.g. integrated voice/comms, physiological monitors).

Usecase Examples (These are meant to provide contextual clarity, but are not hard requirements)

- Interoperability and Open Communications
 - In support of large scale and cross jurisdiction incidents/events, responding agencies often leverage different communication equipment than their counterparts, limiting their operational effectiveness. As a result, an open standard for communication and interoperable technology is required.
- Enhanced Situational Awareness
 - For incident commanders, accurate and readily available information is essential. The responder of the future will be deployed with sensors that relay individual location, biometrics, supply levels, video object recognition and audio directly back to incident command in real time.
- Advanced Operational Capabilities



- In the unpredictable environment of disasters, there is need for First Responders to have the ability to communicate using alternative methods of communication (e.g. non-verbal). Such cases may include, but are not limited to, environments with loud noise, limited bandwidth, or low visibility.
- Next-generation technology in support of mission-critical operations for First Responders will be required to communicate with non-body worn sensors such as smart building sensor suites or smart city technologies.
 - For responders, this may take shape as being relayed information typically displayed on a building's fire control panel or security system prior to arriving on scene.

Technology Feature Examples:

*****The below features are provided as contextual examples for clarity purposes, innovators with suitable alternative solutions (including single feature products) are encouraged to apply.*****

Features:

- Messaging (SMS, e-mail)
- Computer Aided Dispatch (CAD) interface to receive dispatch information and send status updates / additional information to PSAP systems
- Camera / voice recording and display / playback
- Voice to text for messaging and application commands
- Map display, including layer filtering / selection and own position display
- Communications system management / configuration / status / display / operation
- Off-body sensor system management / configuration / status / data display
- Responder Physiological sensor system management / configuration / status / data display
- Alerting system management / configuration / display
- Web browser for access to enterprise network and Internet
- Responder logon / identification / credentialing