

DHS Science and Technology Directorate

Responder Technology Alliance: Paving the Way for the Next Generation First Responder

Responder Technology Alliance Looks to Innovation and New Partners to Tackle the Toughest Challenges

The Next Generation First Responder Apex (NGFR) program's Responder Technology Alliance (RTA) brings together first responders, industry, federal agencies, research institutions, academia and the investment community to help advance the development of emerging technologies critical to the responder community. The focus is on finding integrated solutions that benefit and improve responder capabilities now and well into the future.

Next Generation First Responder

The NGFR Apex program envisions responders who are:

- **Protected** by next generation multi-hazard personal protective equipment incorporating technology advances in thermal, ballistic, stab penetration, and chemical and biological agent protection;
- **Connected** through secure, integrated, and resilient voice and data communications technology; and
- **Fully Aware**, thanks to an integrated body-worn system of sensors and enhanced situational awareness and decision support devices.

RTA is laying the groundwork in the following vital areas:

Cutting-edge Technologies – Technology Forecasting, Prototyping and Field Assessments

RTA researches and identifies emerging and future technology using its technology forecasting capability. RTA also prototypes technology and conducts operational field assessments with the responder community.

Current efforts include improving the capability of first responders to remotely monitor patient vital signs and developing a standardized approach for the assessment of prototypes by first responders.

Framing the Vision of the Responder of the Future

RTA, in partnership with first responders from around the nation, has developed visionary design concepts and futuristic prototypes, along with videos, to serve as the guidepost to move forward in developing technology solutions for first responders 10 years out and beyond. The framework helps responders envision the future risk and technology needs in core areas including body-worn electronics, advanced sensors, personal protective equipment, and integrated voice and data communications.



RTA aims to develop integrated systems that improve first responder safety and effectiveness. Photo credit: Pacific Northwest National Laboratory.

This integrated approach harnesses critical technology solutions for responders at major incidents. It also provides shared situational information between responders, incident commands, 911 centers, and local, state and federal operation centers.

Future plans are to identify new opportunities and challenges for responders as well as focus on emerging trends like smart cities and brilliant buildings.

S&T EMERGE Tapping into Business Accelerator and Incubator Networks

S&T taps into creative ways to collaborate with innovators – especially inventors and early-stage businesses – through *EMERGE*. S&T's *EMERGE* program is working with accelerator and incubator networks to discover emerging technology in the startup community that could be adapted for homeland security use. Accelerators and incubators help early-stage companies start their business, provide mentors, and match them with investors.

RTA kicked off [S&T's EMERGE pilot](#) which focused on wearable technology for first responders. S&T worked with innovators on putting their technology in the hands of first responders, and held its first Demonstration Day last September. Demo Day participants are now further developing, validating, and receiving feedback from first responders.

S&T is currently working with first responders to evaluate the *EMERGE* prototypes. Some of the technology will be demonstrated at upcoming active shooter exercises and used during operational field assessments in the coming months.



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To learn more about the NGFR Responder Technology Alliance, contact SandTFRG@dhs.gov.