

# DHS Science and Technology Directorate

## NGFR – Harris County Operational Experimentation

### Integrating Responder Technology to Increase Impact

Today's first responders face dangerous, evolving threats, and are often equipped with outdated and proprietary technologies that restrict their ability to communicate between agencies at the incident scene. Responders need access to advanced, interoperable, plug-and-play technologies that can augment their existing capabilities.

To address this, the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) launched the [Next Generation First Responder \(NGFR\) Apex program](#) to develop, adopt and integrate cutting-edge capabilities using a standards-based approach to make responders better protected, connected and fully aware. By leveraging the open standards documented in the [NGFR Integration Handbook](#), first responders can have plug-and-play technologies to help them rapidly adapt to changing environments and evolving threats while sharing mission-critical information between all responding agencies.

### NGFR Integration Demonstrations

DHS S&T has hosted several [NGFR Integration Demonstrations](#) to assess how prototype technologies integrate and augment first responder capabilities. In June 2017 at the [Grant County, Washington – DHS S&T NGFR Technology Experiment \(TechEx\)](#), DHS S&T integrated and deployed NGFR technologies during a search and rescue scenario. The TechEx included physiological and location sensors, situational awareness systems, drones, datacasting and deployable communications in a cohesive public safety solution in a rural setting.

During NGFR integration demonstrations, DHS S&T seeks first responder feedback on technologies in an operational setting. Feedback and the test results are used to create knowledge products, such as after action reports and NGFR Case Studies, to help share lessons-learned and best practices with public safety agencies nationwide. The NGFR Case Study series, which result from the TechExs, helps agencies understand how tools like [location services](#), [deployable communications](#), [video services](#), [physiological monitoring](#) and [situational awareness](#) can improve their mission response and provides guidance on how agencies can best implement them. DHS S&T is building on the lessons of the Grant County TechEx to host the next NGFR Integration Demonstration in an urban environment later this year.

### NGFR – Harris County Operational Experimentation

DHS S&T will host the NGFR – Harris County Operational Experimentation (OpEx) December 4-5, 2018, at the Port of Houston in Houston, Texas. The OpEx will integrate first responder technologies using open standards in the [NGFR Integration Handbook](#) to enhance the mission capabilities of Houston-area responders and the U.S. Coast Guard during a HAZMAT scenario.



*DHS S&T and leadership from Harris County, City of Houston, Port of Houston Authority, U.S. Coast Guard, Southeast Texas Regional Advisory Council, Cy-Fair Volunteer Fire Department and Atascocita Fire Department launching the partnership.*

DHS S&T chose Houston-area partners for the OpEx because urban areas response agencies have significant collaboration and information-sharing needs. As of 2016, 81.7 percent of Americans live in urban areas, and urban responders have different technology needs and budgets than those in rural areas. By hosting the NGFR – Harris County OpEx in the Houston area, DHS S&T and industry partners can learn about the interoperability and integration requirements of coordinated urban response and develop recommendations for both urban and rural responders.

During the OpEx, DHS S&T and responders will evaluate how DHS-developed and commercial technologies integrate with legacy public safety systems using open standards, and how those integrated capabilities enhance operational communications, increase operational coordination, improve responder safety and augment situational awareness. DHS S&T and industry partners are providing technologies such as responder and patient physiological monitoring sensors, indoor location tracking, HAZMAT sensors, smart alerting for responders and incident command, advanced data analytics, and situational awareness and collaboration dashboards. DHS S&T and partners hope to demonstrate how integrated solutions deliver greater operational impact.



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To learn more about the NGFR – Harris County OpEx, contact the Next Generation First Responder Apex Program at [NGFR@hq.dhs.gov](mailto:NGFR@hq.dhs.gov).