**SCIRA Stakeholder Workshop Breakout**

**2.A. – First Responders**

1100

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The SCIRA workshop was organized to generate a series of conversations to both “teach and learn” from each other.  Participants were invited to share their experiences with current plans and smart city deployments including successes and lessons learned during presentations and more specific breakout sessions.  The following paragraphs were compiled to record the results of discussions during the First Responder breakout session. The breakout session was very helpful to identify requirements, constraints, and measures of success involving current solutions and smart city innovations being developed.  The results of the First Responder breakout will contribute valuable insights during development of a Smart City Interoperability Reference Architecture (SCIRA).

**Compiled Session results**

Mr. Brooks lead the discussion and began by presenting a series of key technology, policy and procedural capabilities under the following topics:

* Communications systems
* Training
* Decision Making
* Navigation/routing
* Protection

The paragraphs that follow provide a summary of the results of the discussions in these topic areas.

**Communications systems**

Boston fire department uses a range of communications systems to support response to incidents that includes:

* Radio
	+ Handheld (On-body, 5Watt)
	+ Mobile Communications Terminal (MCT)/Mobile Data Terminal
* Cellular (FirstNet, data)
* Dispatch
* Command Center (operations center) (integrating access and use of all available communications systems)
* In-building Fire Panels systems (direct connect to Dispatch)

**Training**

Training is conducted to ensure personnel know how to operate critical equipment quickly and easily. Fire fighters don’t have time to think about how to use equipment when it is needed – it just has to be simple and obvious.

Skills are gained through regular and recurring training. Periodic retraining is necessary and expected to ensure skills are well honed for peak performance. Personnel training must be completed before new equipment is deployed to ensure proper operation and personal safety.

**Decision Making**

Fire fighters responding to the scene, such as fire in a building, must have the right data at the right time. Too much data too quickly, or non-critical data, can easily overload the responder, which can impact performance and threatens safety. The responder doesn’t have time to sort through a flood of data to determine what is most important or relevant to their on-scene situation.

Examples of types of information that is important to decision making in-building response includes:

* Building fire panel alerts (smoke, temperature, floor)
* Building type (residence, commercial)
* Potential hazardous materials
* Number and type of occupants, especially in residential, including mobility requirements (ex. wheelchair, walkers, etc)
* Social media (ex. dispatch monitor twitter) (trusted known sources more reliable, but general public tweets are also useful to corroborate scope, location and some details)
* Responder and victim life safety information is the most critical.

Fire fighters on scene and command personnel are most interested in the “red lights or alerts” (where something is wrong) than the “green lights” (where everything is OK or normal).

Dispatch and command personnel are responsible to assess and communicate the right data to first responders generated from a wide

**Navigation/routing**

Navigation and routing information in a response is critical information to ensure a timely response. This information includes not only routing from station to the scene via available road or other transportation networks, but also on scene for best response. For example:

* First responder vehicle navigation to a scene using accurate and up to date road network information. Example where location (x-y location) only is insufficient and misleading for a situation where the location of the incident was in a building rather than on a road that travelled under the building in a densely populated urban area.
* Vehicle clearance information along the response route
* In-building response needs to know location in x-y-z; for example, what floor and how to get there and escape routes when necessary.

**Safety and Protection**

Safety and protection related to an event is relevant to first responders and the general public.

First responders face many risks and life threatening factors when responding to a scene whether it be a building fire, traffic accident, chemical or hazardous release, or active shooter, to name but a few.

Information and equipment is critical to ensure safety of first responder’s en-route or on the scene. It must be reliable and trusted so that first responders can depend on it. (See also topics: communications, decision-making, and navigation/routing).

* Sensors and other sources of data (including, for example, in-building sensors) must have established trust (valid sensor, properly working, secure data transmitted to responders) to ensure public and responder safety and appropriate response.
* Data from sensors on responders or in-situ, such as ambient temperature, heart rate, respiration rate, available air in SCBA, atmospherics (for example, O2, CO, toxic atmospherics, etc) are critical to know how to protect responders on scene, and the general public that may be in the area.

Communications

* Radio communications that includes device ID’s associated with device and role of responder being performed on scene are critical to safety or personnel and capability to respond. For example, team radio (ID) was assigned to personnel performing role on pumper; however, personnel reassignment sent first responder with the radio into the burning building, resulting in a failure of communications among the team.
* External environment factors can effect or interrupt communications. For example, a lightning storm can cause electromagnetic pulse (EMP) to damage or ruin sensitive electronic equipment, such as medical devices or other communications equipment that is not hardened approapriately.

The latest version of Project Responder v5 available now provides a view of what the DHS S&T First Responder Group (FRG) is and will focus on in future development.