

# Workshop Proceedings: Interoperability and Compatibility of Emergency Responder Electronic Safety Equipment

Held Thursday 20 September 2012 in Atlanta, Georgia

## EXECUTIVE SUMMARY

A one-day workshop was held in Atlanta Georgia on Thursday 20 September 2012, whose purpose was to identify performance requirements, clarify technical gaps, and establish an action plan to support and promote the proliferation of compatible and interoperable electronic equipment used by fire service and other emergency responders.

These are the proceedings of that workshop. This workshop was conducted as part of a larger research effort to address interoperability and compatibility of fire service electronic safety equipment (ESE).

As a result of the presentations and group discussions at this workshop, the following summary observations have resulted, in no particular order of priority:

### 1. **Moving Toward ESE Interoperability**

- 1.1. **Supporting an Evolutionary Approach.** Promote concepts that support ESE platforms with individual components that are compatible, integrated and interoperable. This would be an evolutionary path that recognizes the virtues of a centralized interoperable platform. An example is the combining and maximizing of the efficiency of various features (e.g., power supplies), which would potentially alleviate and mitigate other performance concerns (e.g., insufficient performance due to limited power supplies).
- 1.2. **Related Professional Applications.** Identify and consider the lessons learned from professions with parallel ESE applications to structural fire fighting, such as aviation, military, space and underwater diving.

### 2. **Establishing Central Concepts for ESE Interoperability**

- 2.1. **Clarify Definition of ESE.** Clarify the definition of ESE to distinguish if it is intended to include or exclude portable, mobile, stationary and/or field deployable equipment.
- 2.2. **Define ESE Interoperability.** Define “ESE Interoperability” to distinguish it from fire ground interoperability and wireless communication interoperability. A possible definition is: “ESE Interoperability - the ability of ESE to operate in synergy in the execution of assigned tasks.”
- 2.3. **ESE Categories.** Consider categorization of emergency responder ESE, such as:
  - (a) Communications,
  - (b) Environmental monitoring,
  - (c) Physiological monitoring,
  - (d) Sensory support, and
  - (e) Tracking/location.
- 2.4. **Responder Knowledge Base.** Continue to recognize, utilize and support the Responder Knowledge Base as a mechanism for tracking available ESE.
- 2.5. **Interoperability Performance Characteristics.** Consider the key interoperability performance characteristics for fire service ESE as electrical oriented and non-electrical oriented. Examples of electrical oriented performance characteristics include:
  - (a) Inter-component communication,
  - (b) Centralized power supply and distribution, and
  - (c) Non-interference.Examples of non-electrical oriented performance characteristics include:
  - (a) Form, fit & function,
  - (b) Ergonomics,
  - (c) User interface, and
  - (d) Donning & doffing.
- 2.6. **Component Attributes.** Consider the primary ESE component attributes, which are:
  - (a) Operability,
  - (b) Maintainability,
  - (c) Durability,
  - (d) Availability,
  - (e) Stability, and
  - (f) Reliability.

### 3. **ESE Interoperability Standardization**

- 3.1. **Standardize Interoperability Concepts.** Document interoperability concepts in consensus developed codes and standards documents. Use these documented requirements and/or guidelines to provide an appropriate baseline to address the overall topic of interoperability.
- 3.2. **Define the Fire Service Landscape.** Better define the requirements for fire service ESE by clarifying fire ground environments and fire fighter needs, with specific attention to how ESE will be used in different situations. Transpose this information into the requirements or guidelines in standardization documents.
- 3.3. **Consistency of Requirements.** Consistency of performance requirements across all emergency responder ESE is a sensible goal, and consideration of logical differences in

performance requirements should be based on substantive technical rationale. Action items that should be considered include:

- 3.3.1. Revisit NFPA requirements for performance requirements for all ESE, using an approach similar to the recent analysis provided for PASS by the Intrinsic Safety Task Group for the NFPA ESE Technical Committee.
- 3.3.2. Consider this effort through the PPE Correlating Committee since it affects multiple Technical Committees under their direction.
- 3.4. **Periodic Re-Evaluation.** The performance characteristics for different ESE should be re-evaluated on a periodic basis, since the technological landscape is continually changing and subject to on-going advancements that impact the respective requirements.