Global Fire Safety Challenges in the 21st Century

DOING ALL WE CAN TO PREVENT AND PROTECT

7 May 2018| Donald P Bliss| Vice President for Field Operations

IT'S A BIG WORLD. LET'S PROTECT IT TOGETHER.™

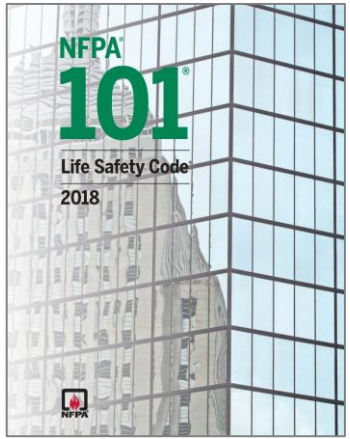
OUR MISSION

We **help** save lives and reduce loss with **information, knowledge and passion**

OUR VISION

We are the leading **global advocate** for the **elimination** of death, injury, property and economic loss due to fire, electrical and related hazards

Knowledge & Information



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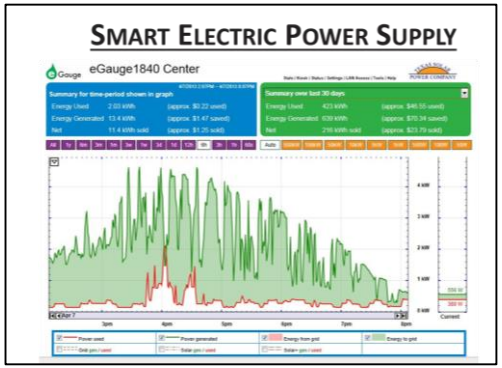

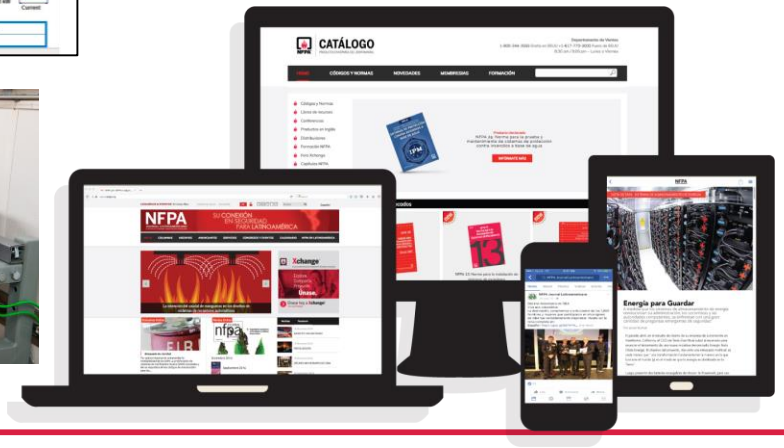

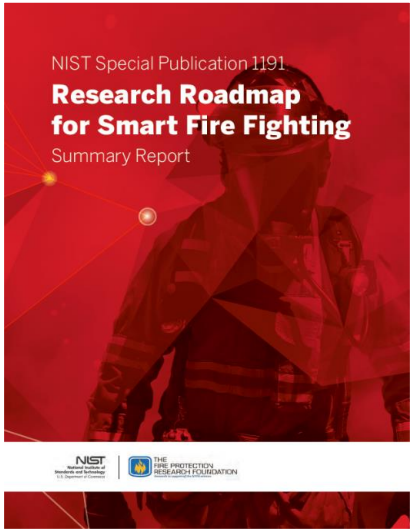

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21st Century Challenges

- Changing world
- New threats & hazards
- Broken safety ecosystem

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Climate Change

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Urbanization

Cities around the world are growing rapidly.

1.4 MILLION

people/week

Up to 1.4 million people per week are moving into urban areas around the globe.

1 BILLION

new dwellings

To support these growing populations, nearly 1 billion new dwelling units will be built by 2050.

Source: The World Bank

Political barriers

- Focus on “business-friendly” environment
- Reduced funding/staffing for fire protection
- De-regulation
- Corruption

The Fire & Life Safety Ecosystem

ROLE OF GOVERNMENT
effective policy and regulatory environment

STAYING CURRENT
using the most up-to-date codes and standards

SAFETY FIRST
choosing safety over cost-cutting

APPLY WITHIN
applying the referenced standards within codes

THE ENFORCER
supporting effective code enforcement

EDUCATION & SKILLS
promoting the development of skilled professionals who can apply the code

THE RISKS
educating the public and policymakers about the dangers posed by fire and other hazards

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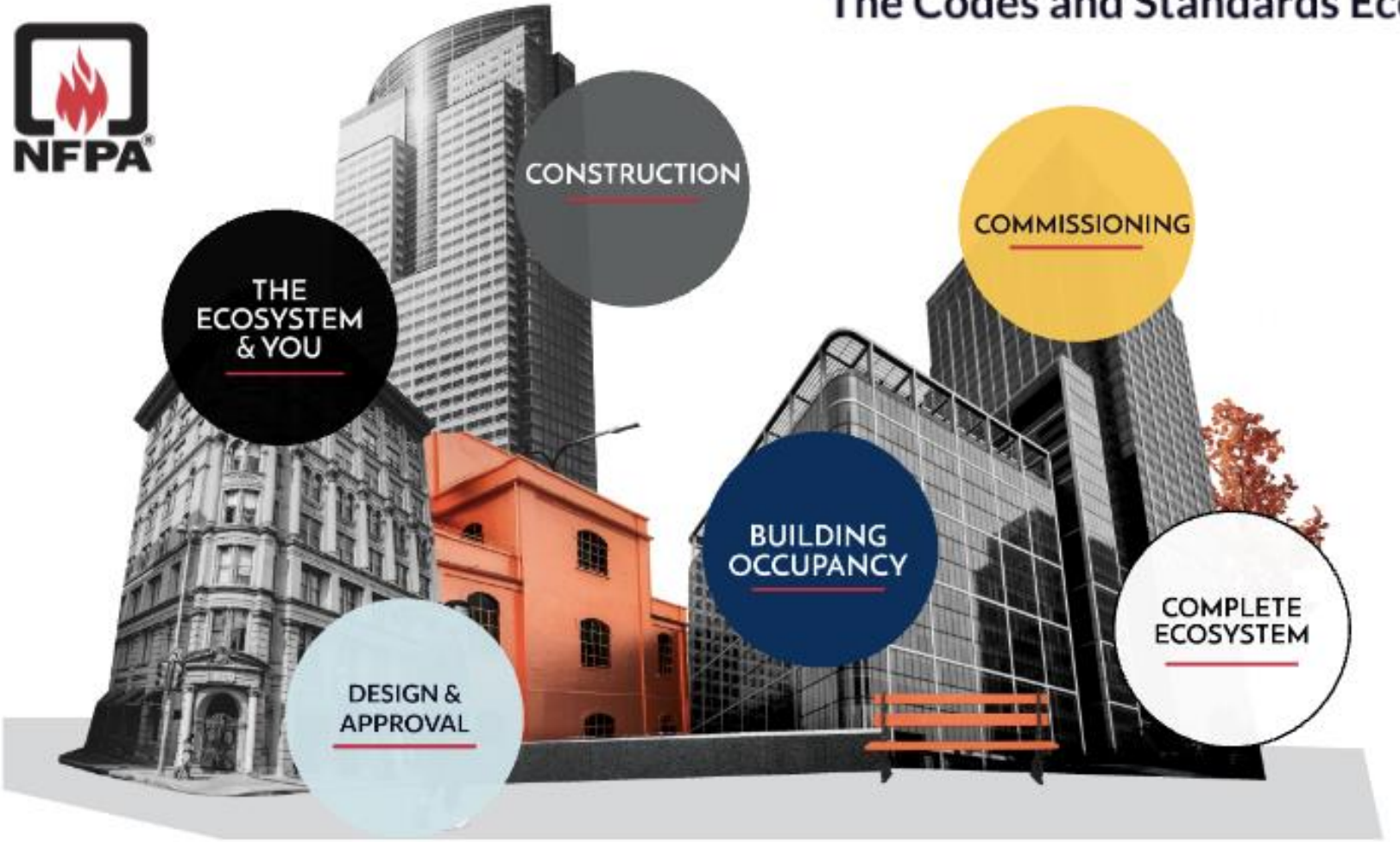
The Codes and Standards Ecosystem



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Grenfell Inquiry Preliminary Findings

"This tragic incident should not have happened in our country in the 21st century"

"…it has become clear that the whole system of regulation, covering what is written down and the way it is enacted in practice, is not fit for purpose, having room for those who want to take shortcuts to do so."

Dame Judith Hackitt

Emerging issues

- Energy storage systems
- Exterior cladding flammability
- Impact of green building features on fire safety
- Alternative fuel vehicles
- Power-Over-Ethernet
- Tall wooden buildings
- Super-tall buildings

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Emerging Issues

- Changes in fire dynamics
- Occupational cancer in firefighters
- Terrorism/active shooter events
- “SMART” firefighting technologies

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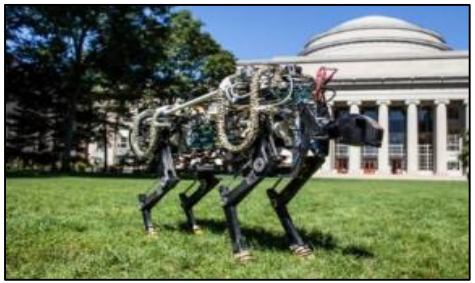
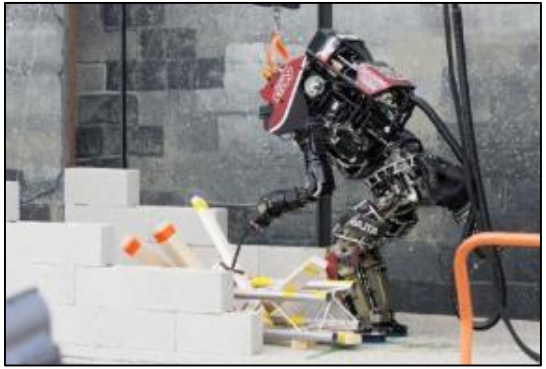
Sensor Technology Developmental Gaps





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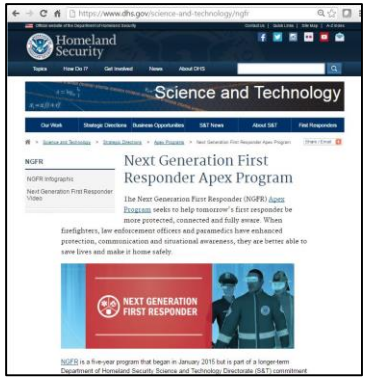
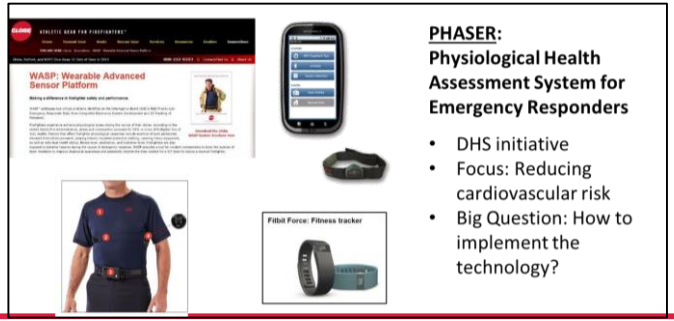
Fire Fighter & Fire Unit Focus

Examples:

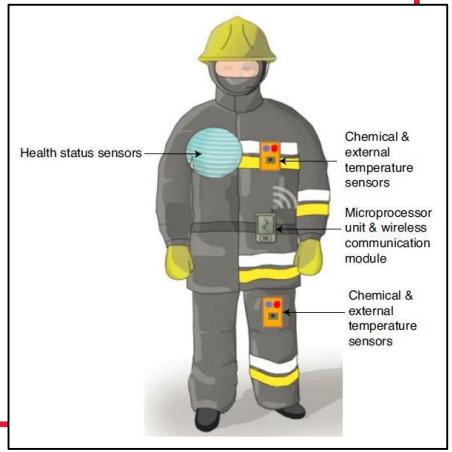
- Smart ESE & PPE
  - (e.g., DHS Next Gen First Responder, UNM Cyber ESE FF)
- Smart Physiological Monitoring
  - (e.g., WASP, PHASER, etc.)
- Smart Accountability/Tracking
  - (e.g., augmented reality, GLANSER)
- Other…



Source: Courtesy of Tannagram



Source: Courtesy of Globe Manufacturing, and Fitbit



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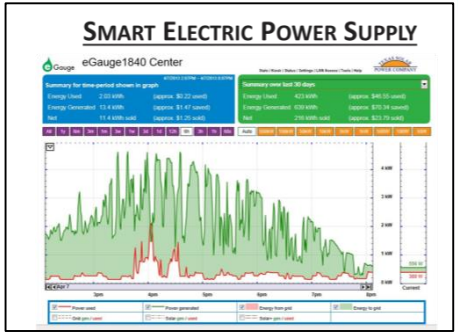
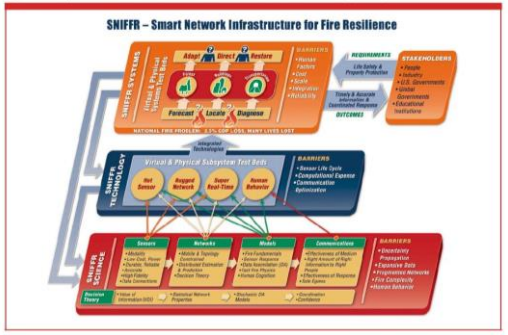
Fire Ground & Emergency Scene Focus

Examples:

- Smart Cities
  - (e.g., Smart Cities Initiative)
- Smart Buildings
  - (e.g., Structure, Systems, Utilities, etc.)
- Smart Transportation
  - (e.g., Telematics, V2V, V2B, etc.)
- Robotics
  - DARPA Challenge
  - (e.g., Aerial, Terrestrial, Submersible)
- Other…





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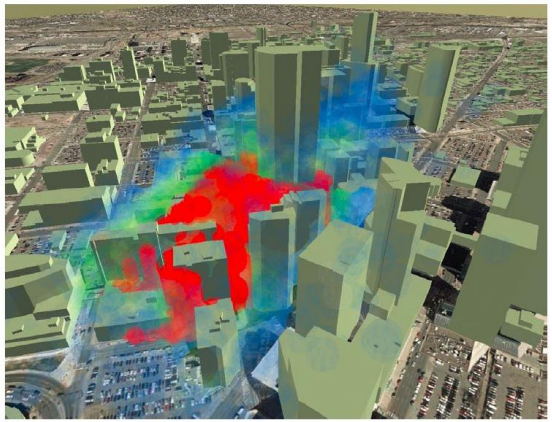
Jurisdiction & Inter-Jurisdiction Focus

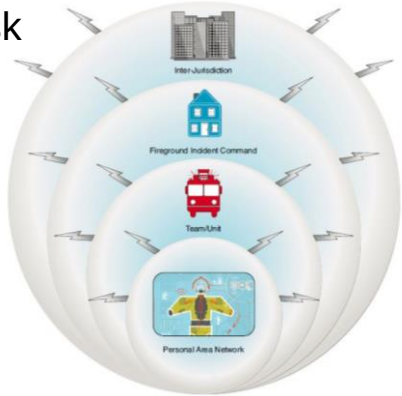
Examples:

- Communications
  - (e.g., CAD, GIS, FirstNet, etc.)
- VOST (Virtual Operations Support Teams
  - VOSG, Virtual EMA
  - (i.e., Social Media Task Group for IC)
- Other…
  - (e.g., CAD, GIS, FirstNet, etc.)

Source: Courtesy City of Phoenix Fire Department



Source: Courtesy City of the National Center for Atmospheric Research



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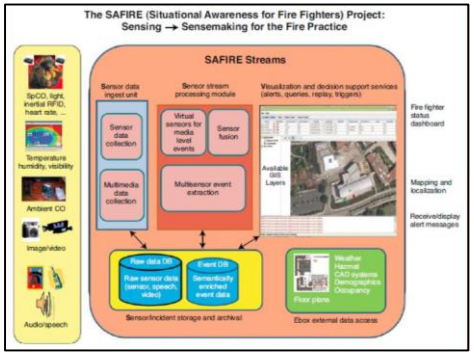
Technology Development

- Key Observations
  - We do not necessarily need to invent or re-invent anything, but instead work with others who can and are doing this now (e.g., Smart Cities initiative).
  - We are rapidly solving the technological challenges, but the greater challenges that are surfacing are legal, social, cultural, etc. (e.g., privacy of data, confidentially, proprietary information, competition, and so on).

- Hardware
- Software
- Communications
- Other…



Source: Courtesy City of Frisco Texas

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Standardization

- Key Observations
  - The pace of new technology is out-pacing the standardization infrastructure to support it.
  - It's important to not slow the pace of technological innovation, reaping its virtues against set-backs.

Examples of Standardization

- Example of Related NFPA Standards Activity: NFPA 950/951
  - NFPA 950: *Standard for Data Development & Exchange for the Fire Service*
  - NFPA 951: *Guide to Building and Utilizing Digital Information*
- Example of Other Related Standards Activity: ISO 37120
  - ISO 37120: Sustainable Development of Communities
  - Chapter 10: Fire and Emergency Response

Other Examples:

- Electronic-based (ESE) standards
- Professional Qualification standards
- Aerial Robotics
- Others…

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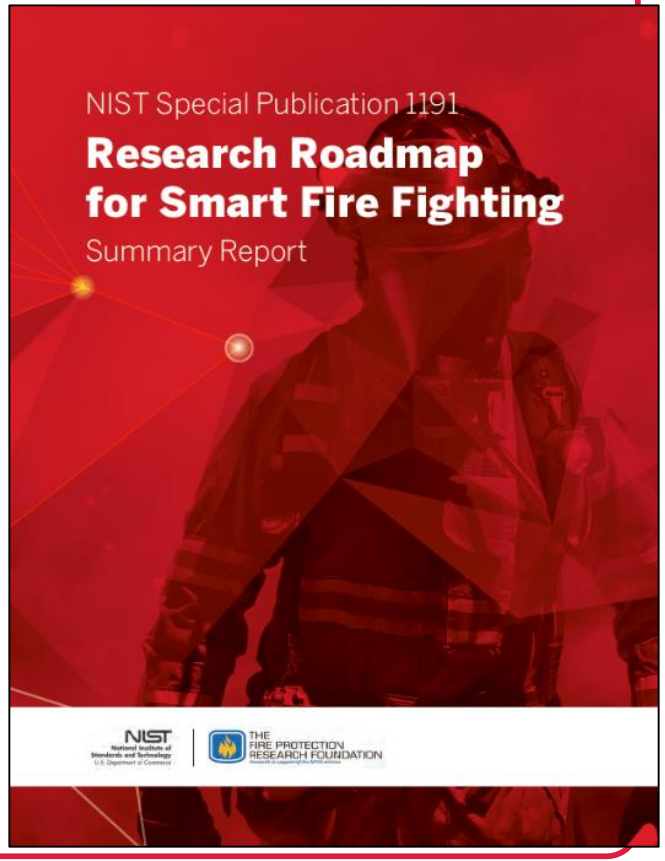
Smart Fire Fighting

Project Report available on the Foundation and NIST websites

www.nfpa.org/SmartFireFighting

www.nist.gov/news-events/news/2015/06/research-roadmap-traces-path-smart-fire-fighting



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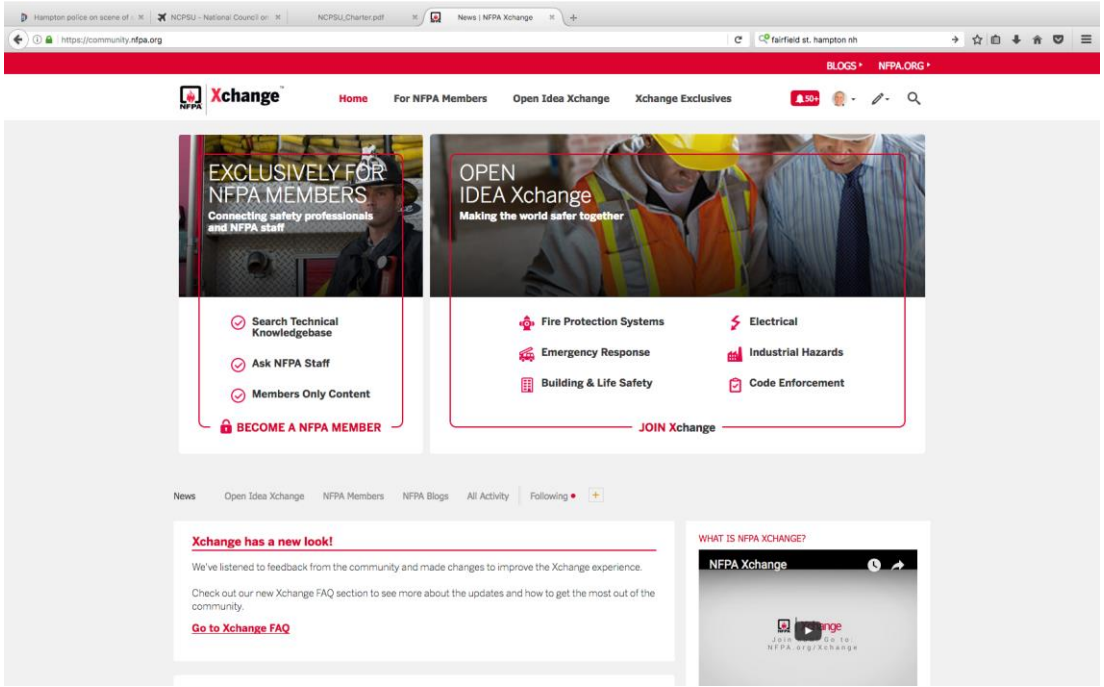
New Standards

- NFPA 1300: Community Risk Reduction
- NFPA 1700: Guide for Structural Firefighting
- NFPA 2400: sUAS Used for Public Safety Operations
- NFPA 3000: Preparedness & Response to Active Shooter and/or Hostile Events

NFPA Xchange: community.nfpa.org



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