



January 26, 2009

To whom this may concern:

The purpose of this letter is to describe the "Floorplan Display Problem" that was developed at the October, 2008 NIST workshop for the Building Information Exchange with First Responders project. The Floorplan Display Problem is one of many research topics that requires investigation and cooperation between NIST and industry in order to develop an appropriate solution.

NIST is working with industry to develop a standardized mechanism for representing building floorplans for any building's shape and size for two dimensional display purposes; and to map entities such as standpipes and sensor locations onto those floorplans in real time; e.g., a sensor object must contain location information that can be used to map the sensor onto the floorplan. The location information must be able to be represented in a building alert message such as a Common Alerting Protocol (CAP) message.

The representation of these floorplans must be small (lightweight) and be usable given the limited resources typical of a first responder's mobile data computer (MDC) in a quick and efficient manner. If a network connection to the building server is available, the small sizes of these floorplans will speed retrieval from the building server onto the MDC, as well as conserve bandwidth to be used by other critical applications.

By having a standardized mechanism to represent floorplans, software vendors that are compliant with the representations of these floorplans can use any software techniques or graphics engines to interpret and correctly display the floorplans on the user's screen. Implicitly, the floorplan must have a coordinate system so that when given the location of an object such as a sensor, that object can then be displayed in the correct position on the floorplan.

The following list defines some of the requirements that need to be resolved by the Floorplan Display Problem research:

1. Requirements analysis to understand the components required on a floorplan for an emergency fire scenario such as standpipes, sensors, etc.; reference the NFPA 72, annex F, 2007 edition.
2. Develop a standardized mechanism for representing any building's floorplan (a.k.a., a standardized floorplan).
3. Develop a mechanism for converting printed drawings, or electronic files into the standardized floorplan.
4. Develop a standard means of mapping building objects such as standpipes and sensors to the standardized floorplan.
5. The standardized floorplan must be lightweight and can stand alone (i.e., on low power notebooks and computers without network connections).
6. Evaluate and demonstrate using various software techniques and graphical engines such as Scalable Vector Graphics (SVG) and Flash to present the standardized floorplan.
7. Demonstrate by displaying multiple "real-time" sensor locations on a standardized floorplan.

Sincerely,

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