

## SensorPedia

### Applying Social Networking Principles to Sensor Data Sharing

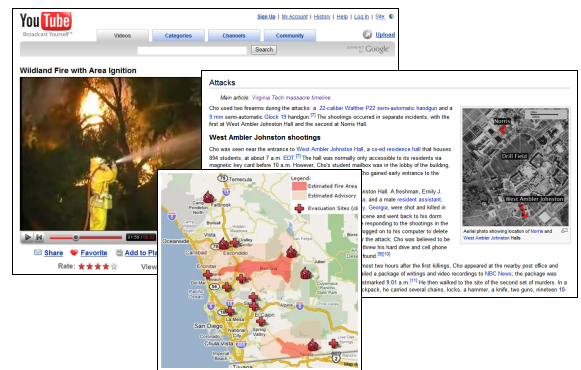
#### Web 2.0 and Social Software Applications

Because humans are innately social, a natural trend has emerged in web application design to incorporate functionality to enable many-to-many conversations between users of those applications. The past eight years have seen an explosion in growth and popularity of these new Web 2.0 sites.

#### Ad Hoc Information Networks

As the popularity of web sites like YouTube, Flickr, Wikipedia, and Twitter grows, first responders and public safety officials are implementing their own homegrown solutions using these social networking web sites to share data and collaborate with other users. A number of local success stories have emerged, including:

- Firefighters utilized YouTube, Twitter, and Google Maps “mashups” to track the progress of containing the California wildfires.
- Wikipedia was used by students to collect eye-witness reports and document incidents surrounding the Virginia Tech Massacre.
- Police departments have captured fugitives after placing their ten most wanted information on YouTube.



Example uses of public Web 2.0 websites for data sharing.

But **local success** ≠ **national success**. Even as these innovative solutions are being used to solve real problems on the ground, the media regularly reports on failures for interoperability and response coordination at a national level. The solutions exist – they just need to be applied nationally.

#### The SensorPedia Approach

SensorPedia is a program initiated by Oak Ridge National Laboratory (ORNL) that utilizes Web 2.0 social networking principles for organizing and providing access to online sensor network data and related data sets. SensorPedia is based on the same underlying technologies as popular web sites such as Wikipedia, Squidoo, Google Maps, and Facebook to provide a “write-able” web site for near-real time collaboration amongst a community with a requirement to share sensor information. Instead of networking users based on mutual personal interests, SensorPedia networks users based on mutual information interests. SensorPedia leverages the success of these popular social software applications and formalizes how these technologies can be applied to the safety and security domains.



Follow the innovators and “pave the cowpaths” for everyone.

**SensorPedia Services and User Interface**

SensorPedia combines familiar and commonly available social networking technologies with proven cyber-security technologies to facilitate simplified sensor interoperability while preserving the integrity, security, authenticity, and provenance of sensor information. SensorPedia consists of web services components and an extensible user interface. The web services are designed to accept and publish data using popular data and interface standards such as streaming media, Google Earth KML, and GeoRSS. The SensorPedia user interface is designed using Web 2.0 best practices and allows extension by third-party developers using a flexible modular framework.

**Textual and geospatial data search**

**Profile of author**

**Editable "modules" for streaming data links, textual descriptions, etc**

**Automated creation of map "mashups"**

**Embedded live video streams**

**Intuitive interface for easy exploration and contribution**

**Links to help information and popular example pages**

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