

## MADIS: Multimedia-Aided Disaster information Integration System

### Mission Need

#### Benefit:

The proposed MADIS makes it easier for emergency managers to gather relevant information by automatically linking the situation reports directly to imagery obtained in the field.

#### Developer:

Florida International University

Thanks to the availability of mobile devices, emergency responders, supporting agencies and even private citizens can capture imagery of disaster events as they unfold. Once the crisis is contained, however, it's a daunting task for emergency managers to collect, organize and integrate disaster event data from multiple sources into incidence command systems where situation reports, incidence action plans, etc are being held. Therefore, we have developed a semi-autonomous system Multimedia-Aided Disaster information Integration System (MADIS), which uses advanced data integration and visual analysis techniques to associate temporal, spatial and other textual features of a disaster event situation report with event images and related text annotations.

#### Data Layers:

- Web-crawled dataset
- Disaster related images
- Situation documents

#### Collaborators:

Miami-Dade County  
Department of Emergency  
Management

#### Funded by:

U.S. Department of Homeland  
Security, Command, Control and  
Interoperability Center of  
Excellence



Our prototype consists of a preprocessing component that catalogs disaster event related images and identifies relevant subject text in posted situation reports, training modules that establish the systems cataloging and text analysis capabilities, and a web-based database system with RESTful APIs that allow for support of both web or mobile device client applications. An iPad application (shown above) was developed based on the system framework. The first screen shot on the left shows the main report list with thumbnail sized system associated related images; the second shows an open situation report with highlighted key words and the related images identified by the system; and the last displays a selected image with description and allows the user to browse related images by using a image timeline or by content based retrieval.

Early Development

Lab Prototype

Commercial Product



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