



## sData & Analytics

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## IMPROVING EMERGENCY MANAGEMENT THROUGH SOCIAL NETWORK ANALYSIS

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### **SERVING CITIZENS WITHOUT LISTENING TO SOCIAL MEDIA?**

Traditional channels for citizens to access emergency services (typically by calling 112 or 911) should be expanded with real-time analysis of social networks (web 2.0 channels). This remark is the starting point of one of the lines in which Telefónica Group (a world-renowned supplier of integrated emergency management systems) has been working to integrate it into its SENECA platform.

### **SOCIAL DASHBOARD FOR EMERGENCY MANAGEMENT**

From [MeaningCloud](#) onward we worked for Telefónica to develop a social dashboard for emergency services, which could analyze and organize information shared on social networks (initially Twitter) before, during and after an emergency. From a functional point of view, this entails:

- Collecting interactions (tweets) related to incidents in a given geographical area.
- Classifying them according to the type of incident (concentrations, accidents, natural disasters...)
- Identifying the phase in the incident life cycle (alert or pre-incident, incident or post-incident)

## Benefits for organizations that manage emergencies

### ANTICIPATE INCIDENTS

Events of an unpredictable, foreseeable or unknown magnitude, must be subject to future emergency care services in advance. Within this scenario, there are events that are arranged, broadcast, or just commented on through social networks (attending sporting events, holidays, protest, etc.). Predicting the size and scope of these events is essential for the authorities to develop an action plan. Recall the riots following [a birthday party in the Dutch town of Haren through Facebook](#) in 2012 or the tragedy of the [Love Parade in Duisburg](#).

### ENRICH THE AVAILABLE INFORMATION

Social networks provide instant sharing of images and videos that often become important sources of information to learn the situation of an emergency situation far enough in advance for the assistance services to arrive. These contents can be incorporated into a record or an incident, to help define the scope, pinpoint the exact location, or discover a unique perspective on the matter.

### ANALYSIS TECHNOLOGY

MeaningCloud, a product of Singular Data & Analytics, is used to analyze of social content and semantic text analytics (text mining). MeaningCloud's cloud services are used to:

- Identify the **language** in the message.
- Classify messages according to **taxonomy** (ontology) developed for this scenario (various accidents, attacks, natural disasters, mobs, etc.).
- Extract of **entities** mentioned (people's names, organizations, places) and the message's most relevant concepts.
- Identify the **Author's** of each tweet or retweet.
- Detect the **geographical location** of the sender and incident.

- Temporarily **identify** the message and incidence.
- Classify the message's **impact**.
- Extract **audiovisual material** (images and videos) and **references** (links to web pages, attachments, etc.) mentioned in the tweet of incident documentation purposes.
- Automatically **group** messages related to the same incident within an open file.
- Remove the incident **cloud tags**.

## A multidimensional social perspective.

The technology for text analysis is integrated into a web application that provides a complete social dashboard that offers three perspectives:

- **Geographical:** with maps showing the location of message senders, able to zoom in on specific areas.
- **Temporal:** a timeline with the evolution of an incident's impact on social networks, with the inclusion of sentiment analysis.
- **Documentation:** gathering of all incident information.