INTEROPERABILITY IN RESCUE SERVICES

A system to allow cooperation between rescuers

The Common Alerting Protocol (CAP) is a simple and general format (XML-based data format) for emergency alerting and public warning. CAP is being developed by US Department of Homeland Security, the National Weather Service and the Federal Communications Commission. It is a public alert system designed for "all-hazards" (addressing weather events, earthquakes, tsunami, volcanoes, public health, power outages, etc.) and for "all-media" (addressing communications media such as sirens, cell phones, faxes, radio, television, and various other digital communication networks including the Internet) through common standards on category of hazard, alert level, etc.. It has been adopted by Canada and Italy and is being implemented by other countries such as Australia, and South Africa, all of them for their Public Alert and Warning System. Private companies such as Google and MS are aggregators of the CAP system. Regarding the UN system, the International Telecommunication Union (ITU) has adopted in 2007 the Common Alerting Protocol as an OASIS1 standard through its Recommendation X.1303. The standard CAP format has been promoted by both WMO and ITU to other UN bodies concerned by disaster and emergency management and to the public worldwide.

Some hints

The Corpo Nazionale dei Vigili del Fuoco has adopted the protocols CAP and Atom Feed in the framework of the European R&D project REACT. CAP was selected because it is simple and well spread worldwide. RSS and Atom Feed are widely used to publish news on the web which will after been aggregated asymmetrically by many users: a scenario of distribution "many-to-many" similar to the emergency, where operative centres publish and access to data made available by the other ones.

Three scenarios

Multiple road accident: when a road accident has occurred on a motorway, it may happen that curious drivers cause another accident nearby. Citizens calling emergency numbers are often unaware of the situation and report info concerning one or the other accident with not clearly distinguishable details. If insufficient info is available, the Control Centre operators risk to assess the situation as a one-accident event and to send rescuers to only one of the two actual accidents. Data exchange between Control Centres makes it possible to merge all the info received and visualize then on a map as "points cloud", thus increasing the probability to understand that two different accidents happened.

Toxic cloud: whenever malicious people release toxic fumes in air, rescuers obtain a fragmented picture: calls reporting "strange smells" are received by firemen, possibly also by the Environmental Protection Agency, while Ambulance operators are more frequently called for breathing problems. Data exchange between Control Centres allows finding the common factor between diverse and apparently uncorrelated facts.

Micro floods: during severe weather events, calls from affected citizens may saturate the capacity of the infrastructure of dedicated emergency numbers, thus risking to "hide" high risk situations to the rescuers. Through the data exchange, the Public Safety Answering Points of several rescue services can cooperate in collecting and forwarding calls to the right recipient with the correct priority.