Information Intelligence (II)

EU FP7 Project No. 261817
BRIDGE

Overall Goal

In all emergency management phases information about the current situation is vital. People document any situation they are confronted with in social media. Hence, our aim with BRIDGE II is to introduce a tool that allows the automatic analysis of such media data in addition with live data from in-the-field and aggregates it in a sort of situational report.

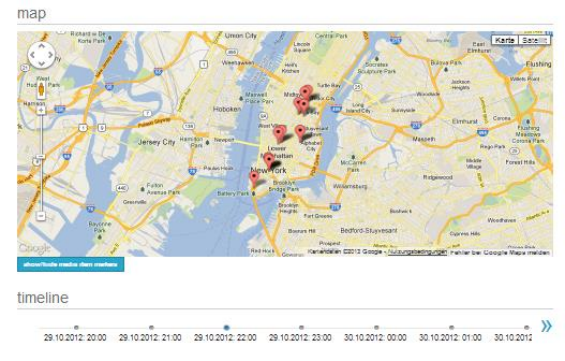
Main Functionality

The BRIDGE II comprises several components:

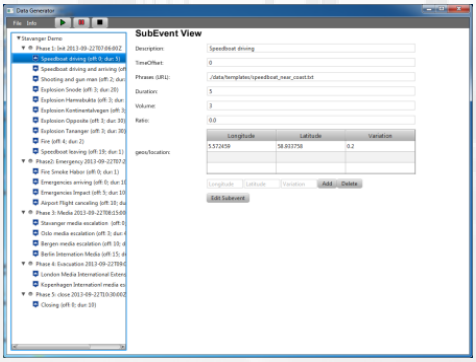
1. *Aggregation Component:* It performs the aggregation based on sub-events (= specific hotspots of a crisis) and shows the results to the user (see figures below).
2. *Data Simulation Component:* I allows the simulation of data during a running exercise. This tool can also be used for training purpose.
3. *Data Collection Component:* It is implemented as an Android-App and allows the collection of live data (from within the field).

The *Aggregation Component* performs the aggregation based on online clustering algorithms. It aggregates the data based on their textual and location content. The aggregation can be performed on social media data (e.g., Twitter) and on live data coming from within the field.

The results are shown to the user via a web-based implementation reachable from any browser (e.g., Mozilla, Google Chrome etc.). The GUI contains a map-representation and a detail view for sub-events (see figures below). In addition, it allows to filter the results based on geo-location and/or keywords.

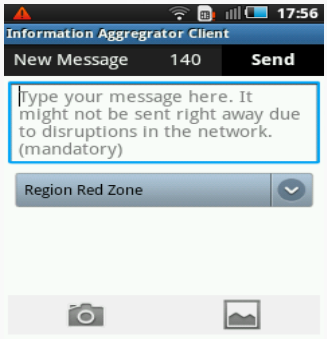


Aggregation Component GUI



Data Simulation Component

The Data Simulation Component allows the creation of data based on a given scenario description (XML). The description can be also administered by the tool (see Figure). The creation of the dataset follows this scenario description. It comprises short text messages (i.e., simulated tweets), which are based on the effect the incident might have. For the generation process different sub-event attributes are needed (see figure right-hand-side), e.g., start of the sub-event (offset) during the exercise, description, some textual phrases for the generation mechanism etc. The data simulation tool can be used, e.g., for training to integrate (simulated) "social media" into a running exercise.



Data Collection Component

The *Data Collection Component* allows the introduction of live data into the aggregation process. The Smartphone App was created in cooperation with my colleagues Amro Al-Akkad and Christian Raffelsberger (regarding the "Local Cloud" concept of Amro Al-Akkad). It allows directly the integration of text messages and pictures from persons in the field into the aggregation mechanism. The idea is to enrich the aggregation process with this live data.

Integration with Other Concept Cases

The information aggregated by BRIDGE II can be passed to the Master Table. This is performed by selecting a specific sub-event which is of importance for the emergency agencies. In addition, it makes use of the general ideas of the "Local Cloud" concept of Amro Al-Akkad.

Features Visible in Demo III

The following components of the BRIDGE II will be shown during the Demo:

- *Aggregation Component:* The aggregation component to aggregate and visualize the information
- *Data Simulation Component*: This component is used to create sufficient amount of data to aggregate. The simulation is based on a description following the Stavanger II Exercise process.
- *Data Collection Component*: Students will collect pictures and send text messages during the exercise.

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