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SmartRescue using LOD

Disaster Risk Alerts on LOD for all

Balakrishnan Bhaskaran[1], Aisha Naseer[2]

[1]*Technical Computing Research Division (TCR)*

[2]*Intelligent Society Platform Research Division (ISPR)*

Fujitsu Laboratories of Europe Limited (FLE)

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LOD Challenge 2014

SmartRescue using LOD

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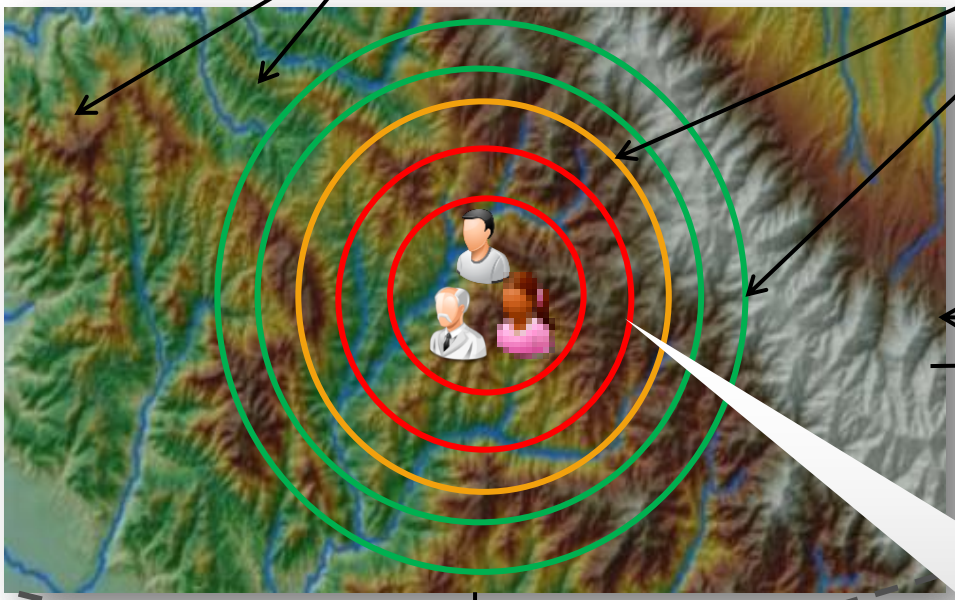
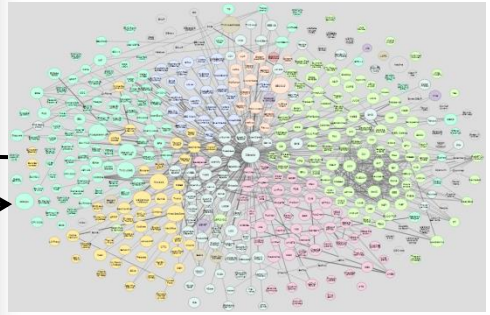
An interactive web-based application that provides a quantitative assessment of vulnerability as a function of space and time

Hazards X Vulnerability Information = Mapping Levels of Risk





http://LOD4all.net

Circles indicate the risk levels:
RED → High risk
AMBER → Medium risk
GREEN → Low risk

SmartRescue using LOD

- SmartRescue is a disaster risk alert tool, here we aim to deliver an objective metric based risk information for any location, in response to hazards developing in quasi real-time.
- It differs from the earlier tools in that it proposes to take advantage of the LOD4all platform and other open data sources to derive and continuously update risk index by integrating their data, such as:
  - weather data, terrain data, social media data, and socio-economic data
- This tool will aid the disaster response planners, to make effective disaster prevention and recovery decisions, as this will provide quasi real-time objective risk indices (as opposed to decisions made through expert judgements).

SmartRescue using LOD - Impact

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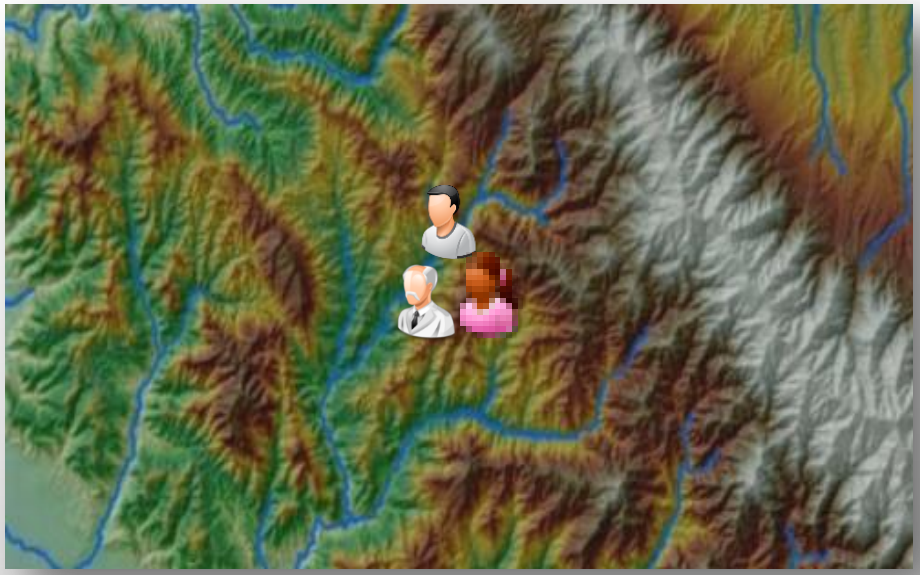
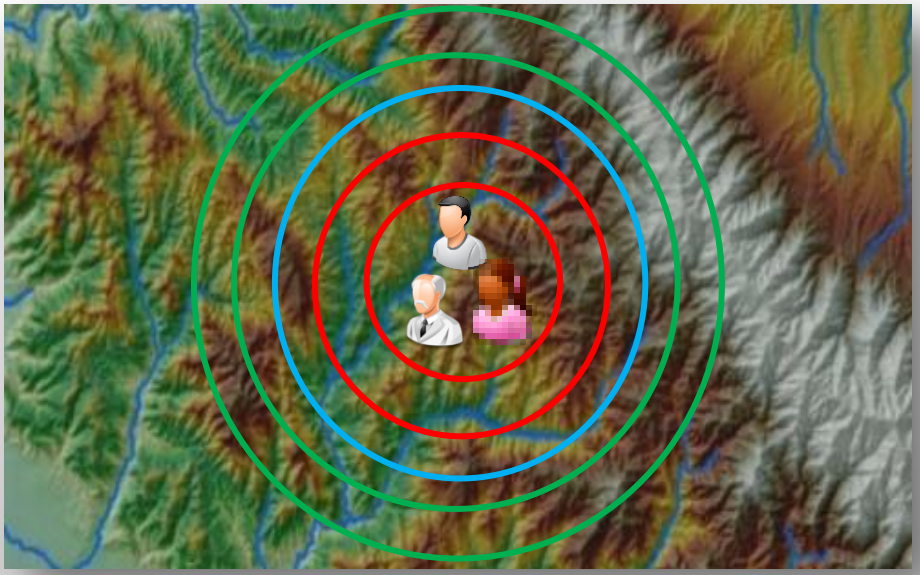
Before SmartRescue



- Inconsistent data from disparate sources
- **Qualitative RI** from experts based on their personal opinions and judgement
- Pre- and post-analysis due to the lack of quantitative assessment of risks levels
- Increased uncertainty of information
- Inconsistent decision making for rescue

After SmartRescue



- Unified entry point using LOD for all
- **Quantitative RI** (circles) indicating consistent risk levels
- Quasi real-time analytics using data from LOD for all and social media streams
- Reduced uncertainty of information
- Effective decision making for rescue

Risk Information (RI)

SmartRescue using LOD - Data Sources

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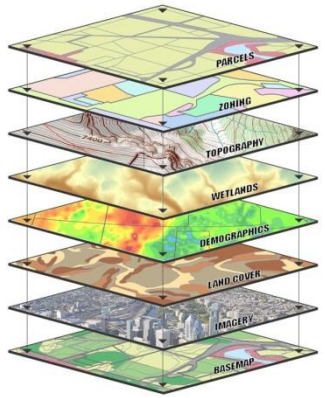
- LOD for all datasets to be used:
  - MET office
    - live weather information
  - British Ordinance Survey (Terrance information)
    - postcode data, terrain data, stream data, channel, canals, locks & keys data
  - World Bank
    - socio-economic information such as GDP and inflation
- Other datasets to be used:
  - TfL Live Traffic Cameras
    - live traffic feed
  - Social media such as Twitter, Facebook, etc.



SmartRescue using LOD - Analytics Process

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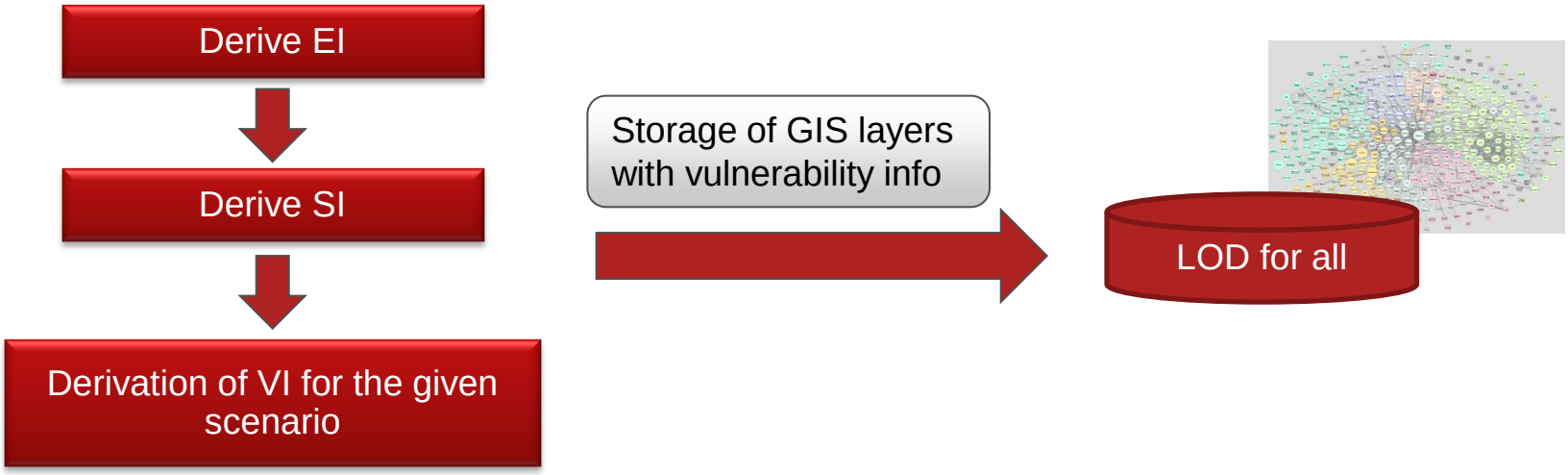
- Define science indicators and derive inundation maps using GIS technology for a variety of flooding scenarios to create Event Information (EI)
- Integrate data from a variety of sources to tune and update event scenarios to match with the real world to generate Secondary Information (SI)
- Derive Vulnerability Index (VI) based on exposure and hazard intensity
  - i.e. Is hazard a disaster?
  - We answer this question by accessing open data such as terrain, asset, infrastructure, probability of hazard strike and its intensity, and socio-economic status



SmartRescue using LOD - Benefits

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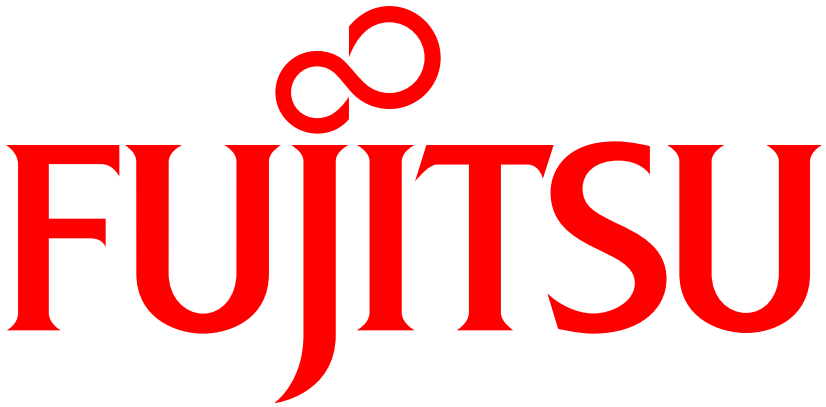
- Government Agencies
  - Smart disaster recovery and response
- Society
  - Human-centric, safe rescue for the individuals, social innovation, and community protection
- Businesses
  - Asset protection and business continuity



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