

Date

Monday 16 July 2007

Title of session

Workshop 4 - Imagery Matters

Name of presenter/chair

Chair: Peter ter Haar, Director of Products, Ordnance Survey, GB

Presenter: Matthew Foote, Executive Director, Catastrophe Management, Willis Analytics & Solutions

Name of rapporteur

Jenny Harding, Ordnance Survey

Title of presentation: Use of EO data in the insurance and reinsurance industries.

The presentation covered uses of imagery with respect to risk management. Taking weather related losses as an example, the trend for loss is increasing globally and the biggest issue for insurers and re-insurers concerns identifying exposure to risk and determining risk transfer. It is important that risk can be assessed in reproducible and defensible ways.

Location is a key factor in identifying risk exposure. Data is required that allows quantification of risk with respect to location. Remotely sensed imagery can be used for collecting data on exposure, vulnerability and hazard, but it is not yet widely used because of a number of issues as identified in the BNSC report of 2001. Since this report, much has changed within the insurance and reinsurance industry, including trends of increased losses to manage, and increased research collaboration.

In terms of using imagery for assessing exposure of building stock, for example, information needs to be extracted on type of building, what it's made of, roof type etc. Better mapping of risk, especially from flooding, can potentially be acquired by using 3D data to visualise risk. Post-event damage investigation can be improved by using visual and textural analysis of imagery, together with other data of past events to calibrate risk models. Additionally, visualising risk analysis information in a map based form is very powerful for insurers.

3D data is becoming increasingly important for urban risk modelling and increased use is expected

for risk quantification in the vertical dimension. Research into the fusion of high resolution topography data and detailed flood propagation methods using GIS is investigating ways to generate more realistic flood propagation taking into account permeability of the urban area.

'Parametric Insurance', where insurance payments are based on a trigger threshold, is a further use of imagery; thresholds are based on analysis of past event data. Also, the increasing availability of more recent high resolution imagery from new satellites, for example TerraSAR, facilitate the understanding of the impact of events as soon as possible after they have occurred - which is very important to insurers and re-insurers.

In conclusion, Earth Observation (EO) data especially imagery, has potential to improve insurance risk management. Imagery is currently in use in a number of areas of the risk management process, with new tools and data sources available, though issues need to be addressed concerning timeliness, coverage, data fusion etc. Ongoing research aims to develop use further and there is further work to do to properly integrate EO data into insurance risk assessment tools and services.

Questions	Answers
Ian Dowman (University College London): Have you/the industry considered building a database to do vulnerability analysis using optical imagery data?	There is a project examining global database requirements. First standardisation is needed on what type of data is required, and then we can look at how best to capture the required data.
Chris Parker (Ordnance Survey): Have you considered conflation of CCTV coverage with other data sources?	CCTV data has not yet been looked at, but the usefulness of any available data should be considered.
Chris Parker (Ordnance Survey): What is driving the parametric insurance approach?	This approach provides a way of cutting through the time required to address claims. It frees up more financial resource to protect, for example, large insurance portfolios.
David Henderson (Ordnance Survey): What role should NMAs have in providing tools to extract information from imagery?	There's a need for derived data from imagery, together with advice on how to extract and use information from imagery.
Peter ter Haar - Chair (Ordnance Survey) Concluding comment: Future progress is not just about providing as much data as possible but about what is provided and its timeliness. NMAs have a role to play in this.	