The Geospatial Analytics Module in Touchstone

HIGHLIGHTS

With Touchstone's visually rich and intuitive Geospatial Analytics Module, you can:

- Clearly understand and explain the drivers of risk (in terms of exposure, hazard, and loss) to internal and external stakeholders
- Account for financial terms when accumulating the risk
- Explore the impact of risk from non-modeled perils and regions
- Develop your own internal view of risk and facilitate regulatory compliance

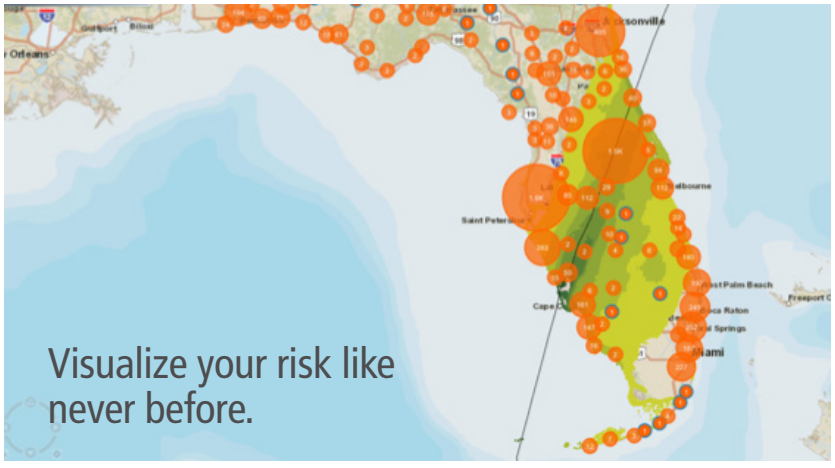
More than ever before, companies are seeking powerful new ways to visualize and understand their data to better manage their risk.

The award-winning Geospatial Analytics Module in Touchstone® is far more powerful than off-the-shelf GIS solutions. That's because it lets you seamlessly integrate exposure information, hazard data, and probabilistically modeled losses to enable you to analyze portfolios of risk in new, dynamic ways.

See where your global exposures are located and how they break down by construction, occupancy, year-built, and other risk attributes. Visualize information like landslide and flood zones or liquefaction potential to formulate better underwriting guidelines and risk management strategies.

Accumulate exposures—even for non-modeled perils and regions—and take advantage of Touchstone's financial module to apply policy terms, limits, and deductibles to calculate exposed limits. Specify user-defined damage ratios to estimate losses.

In short, Touchstone's Geospatial Analytics Module enables you to go far beyond the exceedance probability (EP) curve to better own your risk. A small selection of the dozens of possible applications is presented here.



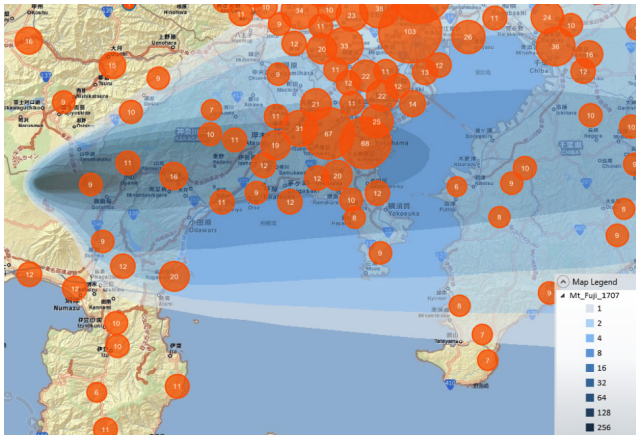
MANAGE ACCUMULATIONS BY USER-DEFINED ZONES

Perform analyses based on user-defined zones, (such as counties, states, or CRESTA zones) to monitor accumulations of risk and ensure that your portfolio is not overly concentrated in any geographic region. You can also import your own custom geographic boundaries or zones anywhere in the world, enabling you to implement customized risk management strategies.

Because the Geospatial Analytics Module is backed by Touchstone's full financial model, you can accumulate risk from a full range of perspectives, including on a ground-up, gross, pre-cat excess of loss, net of pre-cat, and post-cat net basis.

IMPORT CUSTOM MAP LAYERS TO MANAGE NON-MODELED PERILS

For non-modeled regions and perils, Touchstone enables you to conduct geospatial analytics based on custom event footprints. For example, you can import third-party flood or tsunami footprints for countries where no models currently exist. You can assign custom damage ratios to different zones within these layers to estimate losses and apply user-specified policy terms and reinsurance programs.



Ashfall depth footprint from the eruption of Mt. Fuji in 1707

THIRD-PARTY HAZARD DATA

Touchstone's open architecture allows for the seamless integration of third-party data and models, and several organizations have already signed agreements with AIR to provide their data.

In addition, there are many sources of freely available third-party hazard layers that can be imported into Touchstone, including:

- Avalanche, flood, and earthquake hazard maps from Cartorisque
- Volcano data from the Smithsonian, USGS, and the National Research Institute for Earth Science and Disaster Prevention of Japan
- Return period ground motion hazard maps from the Global Earthquake Model

MANAGE TERRORISM RISK

Accumulations can also be calculated within a series of concentric rings. This is particularly useful for analyzing potential terrorist targets, whether they are high value locations in your portfolio or from AIR's landmark database of targets in the U.S.—or any user-defined location. By specifying gradually decreasing damage ratios for consecutively larger rings, you can assess potential losses to nearby properties resulting from a terrorist attack at any location worldwide.

Concentric ring terrorism analysis in Lower Manhattan

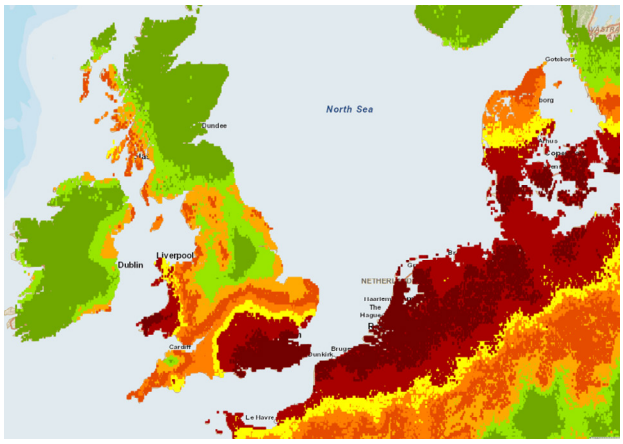
INFORM UNDERWRITING GUIDELINES WITH POWERFUL GIS AND SPATIAL QUERY CAPABILITIES

You can easily view accumulations of risk by construction type or by proximity to potential hazards such as flood zones, fault lines, and coastlines. Used in conjunction with Touchstone's Hazard Analytics Module, you can answer questions such as:

- How much light metal construction in the portfolio is located within 1 mile of the coast in Florida?
- How much property value sits on soils subject to liquefaction in the Tokyo metropolitan area?

ANALYZE HISTORICAL EVENTS, RDS, AND EDS

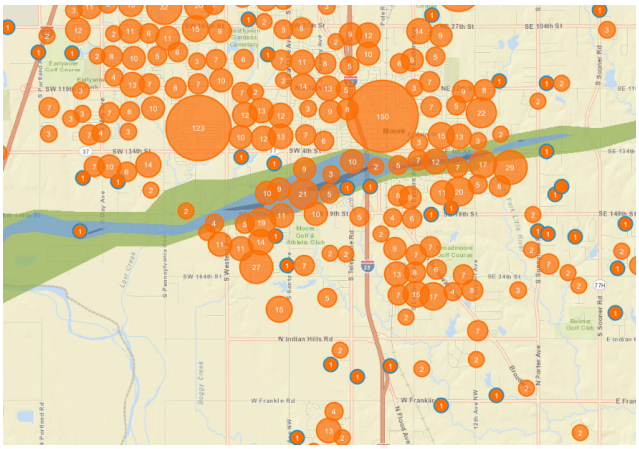
The footprints of historical events, Lloyd's Realistic Disaster Scenarios (RDS), AIR's Extreme Disaster Scenarios (EDS), and government scenarios are available for a growing number of AIR models. You can analyze your accumulations of exposure against the intensity footprints of historical U.S. hurricanes and earthquakes, for example, or European windstorms, or typhoons and earthquakes affecting Japan. And you can modify the damage ratio Touchstone applies to the properties located within each intensity band (e.g., wind speed band or peak ground acceleration) for these events.



Lloyd's RDS windstorm

ESTIMATE AN ACTUAL EVENT'S IMPACT IN REAL TIME

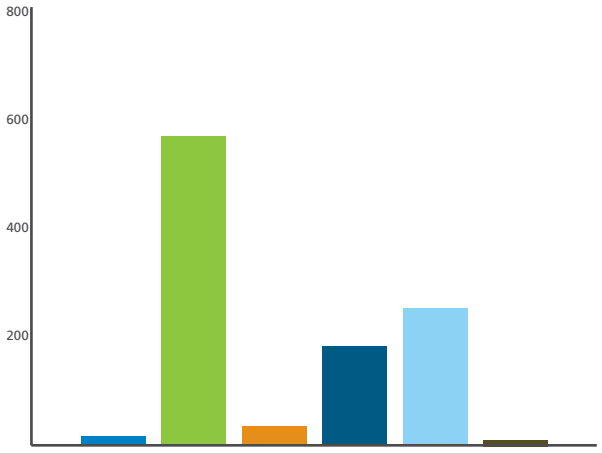
You can visualize which locations are likely to be affected by a real-time event and obtain a quick estimate of potential losses and plan risk transfer and claims adjustment strategies accordingly. AIR provides custom shapefiles for significant events as part of our ALERT™ postings. For example, following the deadly EF-5 tornado that struck Moore, Oklahoma, in the spring of 2013, AIR published a footprint of the tornado's path through the city to help clients with exposures in the area assess the impact of this event.



Moore tornado footprint

COMBINE MODELED LOSSES WITH ACCUMULATIONS

After running a detailed loss analysis, you can perform a geospatial analysis to accumulate modeled loss results, such as average annual loss (AAL), by hazard and exposure attributes. This helps you understand which portfolio characteristics (by region, construction type, year-built, distance to coast, etc.) are disproportionately driving your risk. And these analyses leverage the full power of AIR's financial model so that you can accurately account for the impact of contract and layer terms.



Average annual loss by distance to coast

VALIDATE VENDOR MODELS

You can use Touchstone's geospatial analytics to assist with model validation. For example, you can visualize historical event damage footprints and assess for reasonability against claims data, or validate the reasonability of modeled losses from an event at a policy level. For perils that are highly sensitive to geocode quality, such as storm surge or flood, you can visualize which locations in a multi-location policy had the most loss and determine if these losses make sense.

MEET REGULATORY REQUIREMENTS

New regulatory regimes like Solvency II require increased transparency into the information companies need to demonstrate an understanding of the catastrophe models that inform their decision-making. Touchstone allows an expanded view of event parameters and hazard data.

Touchstone makes meeting Lloyd's and the Bermuda Monetary Authority's (BMA's) reporting requirements on accumulations within countries or groups of countries more straightforward than ever before by accounting for all the layers and limits written into every policy. Footprints for the global set of Lloyd's Realistic Disaster Scenarios are also provided within Touchstone to simplify analysis and reporting on these events.

FEATURES AT A GLANCE

Licensing the Geospatial Analytics Module in Touchstone gives you the ability to accumulate:

- Risk counts
- Replacement values
- Exposed limits

Specify accumulations by:

- Existing predefined zones
- Custom zones that can represent either user-defined territories/areas or event footprints for real or simulated events
- Concentric rings (i.e., rings around the highest value locations by replacement value, AIR targets from our landmark database, or a custom list of addresses)
- Intensity band for historical events (for the U.S., Europe, and Japan—provided the associated model has been licensed)

To learn more, please contact your AIR representative or visit us at:
http://www.air-worldwide.com/Software-Solutions/Touchstone/