The Hazard Analytics Module in Touchstone

HIGHLIGHTS

With the Hazard Analytics Module, you can:

- Understand the basis for catastrophe model loss output
- Make critical business decisions with detailed hazard information at hand
- Develop optimal insurance and reinsurance programs
- Enter larger markets with competitive territory pricing
- Streamline underwriting workflow and increase productivity
- Identify areas for profitable growth or retraction

The Hazard Analytics Module is AIR's response to industry calls for increased transparency. Gone are the days when catastrophe models were considered "black boxes." Today, Touchstone® delivers the means for risk managers to gain deeper insight into the drivers of loss and own their risk.

To provide transparency within Touchstone, the Hazard Analytics Module offers access to location-level intensity information for simulated and historical events and enables users to assess their exposures against multiple static hazard profiles for a wide variety of perils. These are the two core functions of Hazard Analytics, and the information provided by each allows you to perform multiple types of analyses that support decision-making.

EVENT INTENSITIES

The Hazard Analytics Module allows you to obtain intensity information—maximum wind speed and duration, storm surge depth, peak ground and spectral acceleration—at the location level for stochastic, historical, RDS, and Extreme Disaster Scenario (EDS) events. The information is currently available for AIR tropical cyclone, extratropical cyclone, and earthquake models for more than 70 countries, and that number will continue to grow with every release.

Table 1. AIR models for which event intensity information is available within Touchstone.

Tropical Cyclone	Extratropical Cyclone	Earthquake
United States, Caribbean, Mexico, Gulf of Mexico, Central America, Japan, China, South Korea, Southeast Asia	Europe	United States, Canada, Japan, Southeast Asia

AIR WORLDWIDE®

Detailed Hazard Information Service

If you would like event intensity information for models not included in Table 1, AIR's Detailed Hazard Information (DHI) service is available for other tropical cyclone and earthquake models. DHI licensees can request the following parameters for stochastic events (for specified locations):

- Earthquake source parameters and shake data
- Track information for tropical cyclones, including:
  - Event tracks
  - Landfall parameters
  - Central pressure, wind speeds, Rmax at specified locations along tracks
- Location-level wind speed intensities for tropical and extratropical cyclones

VALIDATE CATASTROPHE MODELS

Although companies can already perform robust model validation against their exposure and loss data, as well as basic event parameters, many companies want to go even deeper to validate the underlying hazard components of the model at a more granular level. With location-level event intensity data you can:

- Compare model output against other scientific sources and alternative views of risk
- Test that a model makes sense for your portfolio and makes reasonable, scientific assumptions
- Better understand model changes
- Obtain deeper insight to make better model blending decisions

MEET REGULATORY REQUIREMENTS

As regulatory regimes around the world grow ever more stringent, companies are being asked to demonstrate that they truly understand the models they use to manage their risk. The catastrophe loss estimates used for regulatory reporting represent a company's own view of risk. Information from the hazard module can be used to validate AIR's catastrophe models and even modify loss estimates to arrive at a view of risk consistent with that company's experience. With location-level event intensity data you can go beyond exceedance probability (EP) curves and average annual loss (AAL) numbers to:

- Refine and expand answers to questions from regulatory agencies
- Prepare enhanced documentation, including for Solvency II's ORSA requirements

MANAGE PARAMETRIC TRANSACTIONS

Interest in risk transfer mechanisms that trigger based on event parameters continues to grow. With location-level event intensity data, you'll be able to:

- Interpret the underlying hazard data to understand when existing contracts might trigger
- Increase confidence when buying or selling insurance-linked securities

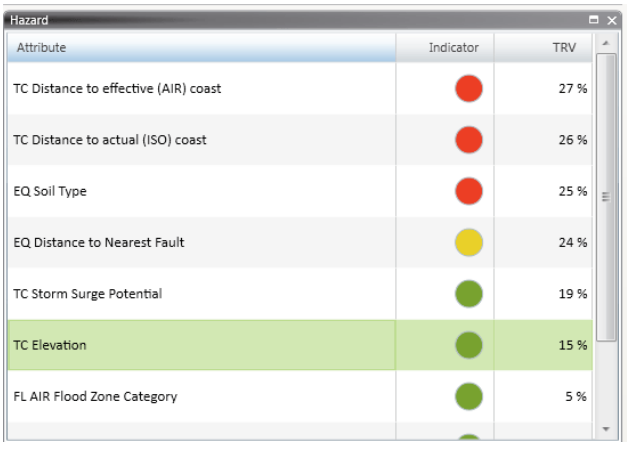
STATIC HAZARD PROFILES

The Hazard Analytics Module in Touchstone also enables you to identify the catastrophe hazards to which individual properties in the U.S. are exposed. Underwriters, retail brokers, corporate risk managers, and mortgage lenders can assess a location's risk from tropical cyclones, earthquakes, severe thunderstorms, floods, and terrorism using hazard and loss data. Leveraging AIR's high resolution databases, Touchstone's Hazard Analytics Module supports informed decision-making in risk selection, development of underwriting guidelines, and actuarially sound ratemaking.

VERIFY EXPOSURES AGAINST UNDERWRITING GUIDELINES

Avoid adverse selection by making your policy decisions based on unbiased underwriting guidelines. Within the Hazard Analytics Module, you can use any of the 51 available hazard profiles as underwriting guidelines and flag exposures that do not comply.

The hazard information can also be used to create underwriting territories with uniform hazard. Such niche programs may be attractive to reinsurers to help optimize their portfolios.



Indicator lights within Touchstone's Underwriting Mode flag rule violations.

SUMMARY OF ANALYSIS OPTIONS

TROPICAL CYCLONE

LOSS	RELATIVE RISK	HURRICANE HAZARDS	FLORIDA WIND MITIGATION (FWM)
– 100-Year Loss Level – 250-Year Loss Level – Average Annual Loss	– Relative Risk by County – Relative Risk by State	– Distance to Effective Coast (AIR) – Distance to Actual Coast (ISO) – Nearest Historical Hurricane – Coastal County – Storm Surge Potential – Elevation – Terrain	– Wind-Borne Debris Region – High Velocity Wind Region – Exposure Area – Wind Speed Region

EARTHQUAKE

LOSS	RELATIVE RISK	EARTHQUAKE HAZARDS
– 100-Year Loss Level – 250-Year Loss Level – Average Annual Loss	– Relative Risk by County – Relative Risk by State	– Distance to Nearest Fault – Nearest Historical Earthquake – California DOI Zone – Liquefaction Potential – Soil Type – Landslide Zone – Alquist-Priolo Earthquake Fault Zone

SEVERE THUNDERSTORM

LOSS	RELATIVE RISK	SEVERE THUNDERSTORM HAZARDS
– 100-Year Loss Level – 250-Year Loss Level – Average Annual Loss	– Relative Risk by County – Relative Risk by State	– Tornado – Hail Storm – Wind Storm – Nearest Historical Tornado – Nearest Historical Hail Storm – Nearest Historical Straight-Line Wind Storm

FLOOD

- FEMA Distance to Water Body
- FEMA Distance to 100-Year Flood Plain
- FEMA Distance to 500-Year Flood Plain
- FEMA Flood Source
- FEMA Flood Zone Category
- FEMA Flood Zone
- FEMA Base Flood Elevation
- AIR Distance to 100-Year Flood Plain
- AIR Distance to 500-Year Flood Plain
- AIR Flood Zone Category
- Elevation

TERRORISM

- Distance to Landmark
- Landmark Types

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

ABOUT AIR WORLDWIDE AIR Worldwide (AIR) provides catastrophe risk modeling solutions that make individuals, businesses, and society more resilient. AIR founded the catastrophe modeling industry in 1987, and today models the risk from natural catastrophes and terrorism globally. Insurance, reinsurance, financial, corporate, and government clients rely on AIR's advanced science, software, and consulting services for catastrophe risk management, insurance-linked securities, site-specific engineering analyses, and agricultural risk management. AIR Worldwide, a Verisk Analytics (Nasdaq:VRSK) business, is headquartered in Boston with additional offices in North America, Europe, and Asia. For more information visit www.air-worldwide.com.

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