

# envision '16





KEY	
<span style="color: green;">■</span> ⌚	TOUCHSTONE 20 MINUTE SESSION
<span style="color: green;">■</span>	TOUCHSTONE
<span style="color: orange;">■</span>	RESEARCH AND MODELING
<span style="color: blue;">■</span>	MODELING FUNDAMENTALS
<span style="color: lightblue;">■</span>	THOUGHT LEADERSHIP

7:30 - 8:30	Breakfast and Registration
8:30 - 8:45	Welcome and Opening Remarks
8:45 - 9:15	Keynote
9:15 - 10:00	The Protection Gap: A Panel Discussion
10:00 - 10:30	Break
10:30 - 11:30	<p><span style="color: orange;">Cyber Risk Modeling Capabilities and the Verisk Cyber Exposure Data Standard</span></p> <p><span style="color: orange;">Update to the AIR Terrorism Model</span></p> <p><span style="color: green;">What's New in Touchstone 4.0?</span></p> <p><span style="color: blue;">Introduction to Catastrophe Modeling</span></p>
11:30 - 12:15	<p><span style="color: blue;">Climate Change and Cat Models</span></p> <p><span style="color: orange;">Update to the AIR Pandemic Model</span></p> <p><span style="color: green;">Transforming Modeling Workflows Through Integration</span></p> <p><span style="color: blue;">Introduction to Interpreting Model Results</span></p>
12:15 - 1:30	Lunch
1:30 - 2:30	<p><span style="color: blue;">New Advancements in Surge and Flood Modeling</span></p> <p><span style="color: orange;">The AIR Earthquake Model for India</span></p> <p><span style="color: green;">Migrating to MPP - Technology and Infrastructure</span> ⌚</p> <p><span style="color: green;">Migrating to MPP - Data and Queries</span> ⌚</p> <p><span style="color: blue;">Model Validation: A Review of Best Practices</span></p>

2:30 - 3:15	<p><span style="color: blue;">Quantification of Primary and Secondary Model Uncertainty</span></p> <p><span style="color: orange;">Update to the AIR Typhoon Models for Southeast Asia</span></p> <p><span style="color: green;">Migrating to MPP - Analyst Workflows</span> ⌚</p> <p><span style="color: green;">A New Choice In Deployment: The Air Cloud</span> ⌚</p> <p><span style="color: blue;">So You Want to Issue a Cat Bond?</span></p>
3:15 - 3:45	Break
3:45 - 4:45	<p><span style="color: orange;">Preview of the 2017 Update to the AIR Earthquake Model for the United States—Overview and Hazard</span></p> <p><span style="color: orange;">Update to the AIR Earthquake Models for Southeast Asia</span></p> <p><span style="color: orange;">Guest Speaker Session: BitSight</span> ⌚</p> <p><span style="color: green;">Recent Advances in Developing the Enterprise Exposure and Portfolio Management Mode</span> ⌚</p> <p><span style="color: green;">Verisk Underwriting Solutions in Touchstone</span></p>
4:45 - 5:30	<p><span style="color: orange;">Preview of the 2017 Update to the AIR Earthquake Model for the United States—Vulnerability and Modeled Losses</span></p> <p><span style="color: blue;">Is It Time to Rethink How We View the Industry Exposure Database (IED)?</span></p> <p><span style="color: green;">Leveraging Increased Model Transparency in Touchstone</span> ⌚</p> <p><span style="color: green;">Touchstone Vision: Open Platform Roadmap</span> ⌚</p> <p><span style="color: orange;">Cyber Risk Modeling Capabilities and the Verisk Cyber Exposure Data Standard</span></p>
6:00 - 9:00	Dinner and Reception



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7:30 - 8:30	Breakfast
8:30 - 8:45	Announcements
8:45 - 9:30	Research Roadmap with Ask the Experts
9:30 - 10:15	Guest Speaker Session: Why We Never See It Coming - Dr. Karen Cerulo
10:15 - 10:45	Break
10:45 - 11:45	Implementing Touchstone Throughout Your Portfolio Management and Underwriting Workflows: A Client Perspective
11:45 - 12:30	What AIR's Next Generation Modeling Framework Will Do for You
12:30 - 2:00	Lunch
2:00 - 3:00	<p><span style="color: orange;">Cyber Risk Modeling Capabilities and the Verisk Cyber Exposure Data Standard</span></p> <p><span style="color: lightblue;">Understanding A.M. Best's New Approach to Catastrophe Risk</span></p> <p><span style="color: green;">What's New in Touchstone 4.0?</span></p> <p><span style="color: orange;">Update to the AIR Terrorism Model</span></p>

3:00 - 3:45	<p><span style="color: lightblue;">New Advancements in Surge and Flood Modeling</span></p> <p><span style="color: orange;">Preview of the 2017 Update to the AIR Earthquake Model for the United States—Overview and Hazard</span></p> <p><span style="color: green;">Transforming Modeling Workflows Through Integration</span></p> <p><span style="color: orange;">Update to the AIR Typhoon Models for Southeast Asia</span></p>
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7:30 - 8:30	Breakfast
8:30 - 9:30	Ask AIR's Product and Technology Experts
9:30 - 10:00	Break
10:00 - 11:00	<p>Climate Change and Cat Models</p> <p>Migrating to MPP - Analyst Workflows ⌚</p> <p>Recent Advances in Developing the Enterprise Exposure and Portfolio Management Mode ⌚</p> <p>Is It Time to Rethink How We View the Industry Exposure Database (IED)?</p>
11:00 - 11:45	<p>Update to the AIR Pandemic Model</p> <p>Leveraging Increased Model Transparency in Touchstone ⌚</p> <p>Touchstone Vision: Open Platform Roadmap ⌚</p> <p>New Advancements in Surge and Flood Modeling</p>

11:45 - 12:30	<p>Update to the AIR Terrorism Model</p> <p>So You Want to Issue a Cat Bond?</p> <p>Quantification of Primary and Secondary Model Uncertainty</p>
12:30 - 2:00	Lunch

## GENERAL SESSIONS

### IMPLEMENTING TOUCHSTONE THROUGHOUT YOUR PORTFOLIO MANAGEMENT AND UNDERWRITING WORKFLOWS: A CLIENT PERSPECTIVE

Interested in hearing from a peer about how to expand the application of modeling throughout your company's workflows? Charles Decrucq, Director of Catastrophe Management at Global Indemnity, will discuss how his team brought Touchstone in-house and implemented a seamless modeling workflow from the point of underwriting to portfolio rollup.

### THE PROTECTION GAP: A PANEL DISCUSSION

Even in highly developed countries, less than half of natural catastrophe losses are covered by insurance. In developing markets, the proportion can be less than 10%. This protection gap represents both a societal and governmental problem, as well as an opportunity for the global insurance industry. Join us for a panel discussion with leaders from academia, the insurance industry, and the modeling industry to discuss how this protection gap can be closed.

### WHY WE NEVER SEE IT COMING

Dr. Karen Cerulo is a professor of Sociology at Rutgers University whose research focuses on how the mind perceives and acts upon risk. In this session, she will explore the human tendency to take an optimistic view in high risk situations and the dire consequences that can result from this natural predisposition.

### ASK AIR'S PRODUCT AND TECHNOLOGY EXPERTS

A panel of AIR's product and technology experts will answer your questions about current and future plans for our software. Our panel, which includes the architects of Touchstone® and CATRADER®, will be ready to field questions about AIR's existing products, the AIR Cloud, the forthcoming transition to MPP databases, and whatever else you're curious about.

### RESEARCH ROADMAP WITH ASK THE EXPERTS

AIR's Executive Vice President of Research and Modeling Dr. Jayanta Guin will discuss areas of active research at AIR and in the wider scientific community, and how findings might inform future AIR models and model updates. We will also assemble AIR's leading research scientists and engineers to answer your questions.

## WHAT AIR'S NEXT GENERATION MODELING FRAMEWORK WILL DO FOR YOU

AIR is committed to providing you with much greater transparency and flexibility through the Next Generation Modeling Framework. Through case studies, this session will illustrate the business benefits you will receive from our upcoming enhanced modeling framework. These benefits range from a more robust treatment of uncertainty to the ability to support an even wider array of complex commercial policy terms and reinsurance treaty structures.

## THOUGHT LEADERSHIP

### IS IT TIME TO RETHINK HOW WE VIEW THE INDUSTRY EXPOSURE DATABASE (IED)?

AIR's Industry Exposure Databases (IEDs) provide counts of all insurable properties—with their replacement values and information about occupancy, physical characteristics, and policy conditions—for more than 100 modeled countries. IEDs have many applications, including calculating industry loss estimates for historical and real-time events, enabling the disaggregation feature in Touchstone, and supporting companies in benchmarking their exposures and modeled losses against the industry's. Keeping IEDs up-to-date is a time-consuming and costly process. With the demand increasing to create industry exposure data at ever higher resolutions, incorporate more detail, and cover many more countries, the question arises: "Is it time to rethink how we view the Industry Exposure Database?"

### QUANTIFICATION OF PRIMARY AND SECONDARY MODEL UNCERTAINTY

While AIR strives with each model update to reduce uncertainty by incorporating cutting-edge research and the latest available observations and claims data, uncertainty remains inherent to both the perils themselves and to the models. Indeed, without uncertainty there would be no risk, and therefore no insurance. This session will describe how best to recognize and quantify uncertainty with AIR's current solutions and also discuss our latest thinking on how uncertainty can be even better addressed in the future.

### NEW ADVANCEMENTS IN STORM SURGE AND FLOOD MODELING

Storm surge and flood models are some of the most complex tools AIR has developed. This session will take a look back at some of the trade-offs made in implementing the current generation of models and explore some of the

new approaches under consideration as we continue to make improvements, including enhancing Digital Terrain Model resolution, better quantifying hazard uncertainty, and modeling tropical cyclone-induced inland flooding.

### **CLIMATE CHANGE AND CAT MODELS**

Climate change has received considerable attention in the past year. NOAA declared 2015 the warmest year on record globally and the 2015 United Nations Climate Change Conference in Paris negotiated a global agreement on the reduction of carbon emissions. So what does that mean for the catastrophe modeling industry? Join us for this engaging presentation on climate change and its impact on catastrophe models.

### **UNDERSTANDING A.M. BEST'S NEW APPROACH TO CATASTROPHE RISK**

Jim Gillard, Vice President of Credit Rating Criteria, Research and Analytics at A.M. Best, will discuss recent changes to the Best's Capital Adequacy Ratio (BCAR) and how these changes impact Best's Credit Rating Methodology (BCRM). He will discuss the shift in BCAR to consider a wider range of Value at Risk (VaR) points and how this shift can affect capital allocation. This session will highlight the importance of planning for and managing resources to prepare for and respond to natural catastrophes, as well as the implications the changes to the BCAR have on the Cat Stress Test.

## **RESEARCH AND MODELING**

### **UPDATE TO THE AIR TERRORISM MODEL**

Terrorism is a complex and dynamic global threat that requires a comprehensive risk assessment solution. In an update scheduled for release in 2016, AIR continues to expand our offerings for managing exposure to terrorism risk. Learn about the latest advancements in geospatial accumulation management, the full update to the U.S. probabilistic terrorism loss model, and the expansion to worldwide capabilities for deterministic terrorism loss modeling.

### **UPDATE TO THE AIR TYPHOON MODELS FOR SOUTHEAST ASIA**

The AIR Typhoon Models for Southeast Asia represent the first tools for capturing risk from typhoon winds and flood across this fast growing region. This session will cover comprehensive updates made to Hong Kong, Philippines, and Taiwan, as well as the introduction of four new countries—Guam, Macau, Saipan, and Vietnam. These updates include the addition of a probabilistic storm surge module for Hong Kong, the Philippines, and Taiwan, and all-new precipitation-induced flooding modules.

### **UPDATE TO THE AIR EARTHQUAKE MODELS FOR SOUTHEAST ASIA**

Southeast Asia is one of the most complex seismic zones in the world. Four major tectonic plates—the Pacific, Eurasian, Australian, and Philippine Sea plates—are converging toward or sliding past each other at rates ranging from 4 to 10 cm per year. Later this year, AIR will release its Southeast Asia earthquake models, which incorporate comprehensive updates to the models for Indonesia, Philippines, and Taiwan, and new models for Hong Kong, Macau, Malaysia, Singapore, Thailand, and Vietnam. This session will examine the latest data from local and regional GPS networks, liquefaction, and tsunami generation, and AIR's reassessment of the vulnerability of the local building stock.

### **THE AIR EARTHQUAKE MODEL FOR INDIA**

India experiences major damaging earthquakes as a result of the Indian plate thrusting against the Eurasian plate along the Himalayan region, and the subduction of the southeastern part of the Indian plate along the Sumatra-Andaman trench. In this session, you will hear about how AIR's new earthquake model for India provides the most up-to-date view of seismicity based on the latest historical catalogs and active fault databases from several global, regional, and local sources. In addition, you will learn about how building damage has been modeled and the challenges and innovations in assessing the financial impact of earthquakes in India.

### **PREVIEW OF THE 2017 UPDATE TO THE AIR EARTHQUAKE MODEL FOR THE UNITED STATES—OVERVIEW AND HAZARD**

Enhanced with new data and lessons learned from recent earthquakes, a major update to the AIR U.S. earthquake model will be released in 2017. In this session, AIR experts will present how we are incorporating the latest release of USGS seismic hazard maps, the new formulation of seismicity on faults in California, updates to ground motion prediction equations, and research into the effects of fracking.

### **PREVIEW OF THE 2017 UPDATE TO THE AIR EARTHQUAKE MODEL FOR THE UNITED STATES—VULNERABILITY AND MODELED LOSSES**

Novel approaches are emerging for delivering more accurate views of vulnerability in the complex and ever changing built environment. In this session, you will learn about AIR's current view of vulnerability in the United States, which incorporates a comprehensive review of evolving building codes, the history of code adoption, the explicit consideration of structural

ductility, the vulnerability of high-value homes, and lessons learned from recent worldwide events. We will also discuss the substantial enhancements to the fire following and liquefaction sub-perils in the updated model, as well as the sprinkler leakage, landslide, and tsunami sub-perils.

#### **UPDATE TO THE AIR PANDEMIC MODEL**

As the world becomes more interconnected, the potential for the rapid spread of new and deadly viruses is of increasing concern. To prepare for the potential impact of a pandemic on the life, health, and P&C insurance industries, AIR is releasing an update to our pandemic model. In this session, you will learn about the expansion of the model to include six additional diseases.

#### **CYBER RISK MODELING CAPABILITIES AND THE VERISK CYBER EXPOSURE DATA STANDARD**

Cyber risk has been consistently in the news lately with a slew of high-profile data breaches at a range of global companies. AIR is committed to providing clients with tools to better understand and manage their cyber risk. This session highlights the AIR cyber risk modeling approach, the implementation of the recently released Verisk Cyber Exposure Data Standard, and SQL database tools that will help you create deterministic scenarios of cyber attacks. We'll wrap up by walking through a few cyber risk scenarios that will help you better understand your exposure to this emerging risk.

#### **GUEST SPEAKER SESSION: BITSIGHT**

Cyber risk, one of the hottest topics in the world today, has become increasingly important in the insurance industry. Gathering objective data to evaluate risk and security performance is the crux of a robust cyber underwriting practice, as with any other peril. This session is delivered by Ira Scharf, Business Insurance general manager at BitSight, an AIR data collaborator. Ira will discuss how BitSight Security Ratings are used in cyber insurance underwriting to unobtrusively and continuously evaluate the security status of target organizations.

### **TOUCHSTONE | 40 MIN**

#### **WHAT'S NEW IN TOUCHSTONE 4.0?**

Touchstone 4.0 provides a multitude of enhancements designed to streamline workflows and improve the overall robustness of the platform. Learn how performance and usability will be improving across various facets of the software, including its user interface, Loss Analytics Module, data maneuverability, and much more.

#### **VERISK UNDERWRITING SOLUTIONS IN TOUCHSTONE**

As a Verisk Analytics business, AIR is in a unique position to integrate Verisk data and products into your risk modeling workflow and to provide you with best-in-breed analytics for underwriting and front-end risk management. In this session, you'll learn about the solutions from Verisk that are available in Touchstone today and how progressive companies are enhancing their view of risk. You will also learn about ways in which solutions from AIR and our Verisk sister companies can be further integrated to offer more comprehensive and streamlined solutions in the future.

#### **TRANSFORMING MODELING WORKFLOWS THROUGH INTEGRATION**

Integration tools offer opportunities to innovate and achieve significant productivity improvements by harmoniously incorporating modeling into custom workflows. Touchstone APIs are being used today to create unique applications that allow users to focus on making decisions instead of worrying about the mechanics of running analyses. Join us in this session to discover the power of APIs and learn about current integration trends that are shaping the industry.

### **TOUCHSTONE | 20 MIN**

#### **TOUCHSTONE VISION: OPEN PLATFORM ROADMAP**

Open platforms enable workflow efficiencies by providing users with the ability to bring data and systems from different sources together. They also enhance your view of risk by giving you the means to visualize loss estimates from different providers, internal or external, all at once. In this session, you'll learn how AIR will continue to offer choice and flexibility in Touchstone.

#### **RECENT ADVANCES IN DEVELOPING THE ENTERPRISE EXPOSURE AND PORTFOLIO MANAGEMENT MODE**

Touchstone continues to grow as a risk management platform. AIR is in the process of developing a state-of-the-art reinsurance underwriting and enterprise portfolio management capability. This session will provide a look ahead into the analytics that will be available next year to support data handling, reinsurance pricing, and risk management that goes beyond the portfolio level.

## **MIGRATING TO MPP—TECHNOLOGY AND INFRASTRUCTURE**

This session will highlight some of the differences between massively parallel processing (MPP) databases such as Actian Matrix and symmetric multiprocessing (SMP) databases such as Microsoft SQL Server. AIR experts will review the benefits of MPP and how its database architecture makes these benefits possible. Migration scenarios, infrastructure planning, and the hardware requirements to ensure a successful migration will also be discussed.

## **MIGRATING TO MPP—DATA AND QUERIES**

Transitioning to MPP and Actian Matrix will result in some changes for AIR's Touchstone databases. This session will highlight the differences in the schema as well as in the query language used to extract and manipulate data. A selection of complex and frequently used queries will be converted from the Transact SQL used in Microsoft SQL Server to the PostgreSQL used in Actian Matrix to illustrate the process. Techniques and tools available to aid your organization in making this transition will also be discussed.

## **MIGRATING TO MPP—ANALYST WORKFLOWS**

The move to MPP databases will introduce a few necessary changes into the current modeling workflow. This session will walk through the process of managing exposure data sources, importing data, and converting data formats to work with the Matrix databases. AIR will also describe how exposure and results data can be shared throughout the insurance value chain and across different databases. Preliminary performance benchmarks using the new database will also be presented.

## **LEVERAGING INCREASED MODEL TRANSPARENCY IN TOUCHSTONE**

With catastrophe modeling now an integral component of risk management, sophisticated insurers are requiring more than just loss output for their decision-making processes. AIR has answered the call for transparency with Touchstone's Hazard Analytics Module, which offers access to location-level intensity information for simulated, historical RDS, and EDS events. In this session, you'll see how hazard information from AIR models can be used to gain deeper insights into the assumptions underlying the models and into the drivers of loss.

## **A NEW CHOICE IN DEPLOYMENT: THE AIR CLOUD**

Since introducing Touchstone in 2013, AIR has been committed to offering you choices in deployment. Many of the cloud capabilities we have discussed are available to you

today, including cloud bursting—which enables you to take advantage of public cloud providers during peak times—and the recently introduced AIR Cloud—a complete turnkey solution that eliminates time and energy spent on platform maintenance. These deployment options allow you to focus on what really matters: managing your risk.

## **MODELING FUNDAMENTALS**

### **INTRODUCTION TO CATASTROPHE MODELING**

How are AIR's catastrophe models constructed? How is the modeling output used? During this session, you will learn the fundamentals of modeling, including stochastic catalog generation, damage estimation, and insured loss calculation.

### **INTRODUCTION TO INTERPRETING MODEL RESULTS**

Targeted to relative newcomers to modeling, this session will outline the industry's best practices for interpreting model results. Topics include aggregation of risk across regions and perils, validation of model results against historical data, sensitivity of analysis results to changes in data and assumptions, and the actuarial principles associated with the risk metrics produced by AIR models.

### **MODEL VALIDATION: A REVIEW OF BEST PRACTICES**

In this session, we will review best practices for validating models against actual losses. Topics include "model misses" and the challenges of validating models in various regions around the world. You will also learn the proper use of detailed and aggregate models and how to benchmark modeled losses against historical loss data.

### **SO YOU WANT TO ISSUE A CAT BOND?**

A growing number of organizations are successfully exercising alternate risk transfer strategies to diversify their holdings, identify profitable (capital deployment) opportunities, and proactively control exposure to catastrophe risk. This introductory session reviews one of the most common types of these vehicles—catastrophe bonds. Topics include an overview of the cat bond issuance process, variations in trigger mechanisms and their associated benefits and drawbacks, as well as how bonds can be structured to best meet the needs of the sponsor.