



Meeting the Future Head On: Responding to Events in Real Time and Upcoming Model Updates

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OVERVIEW

- RMS Event Response Advancements
- What's Driving Recent Losses?
- Update on 2019 Model / Data Releases
 - Version 18.1 Highlights
 - U.S. Wildfire
 - U.S. Inland Flood
 - Pan-Europe Severe Convective Storm
 - Data for Underwriting
 - Cyber Solutions
- What's Coming?





RMS EVENT RESPONSE IS GLOBAL AND CONTINUOUS



HWind Development Team **Event Response Teams**

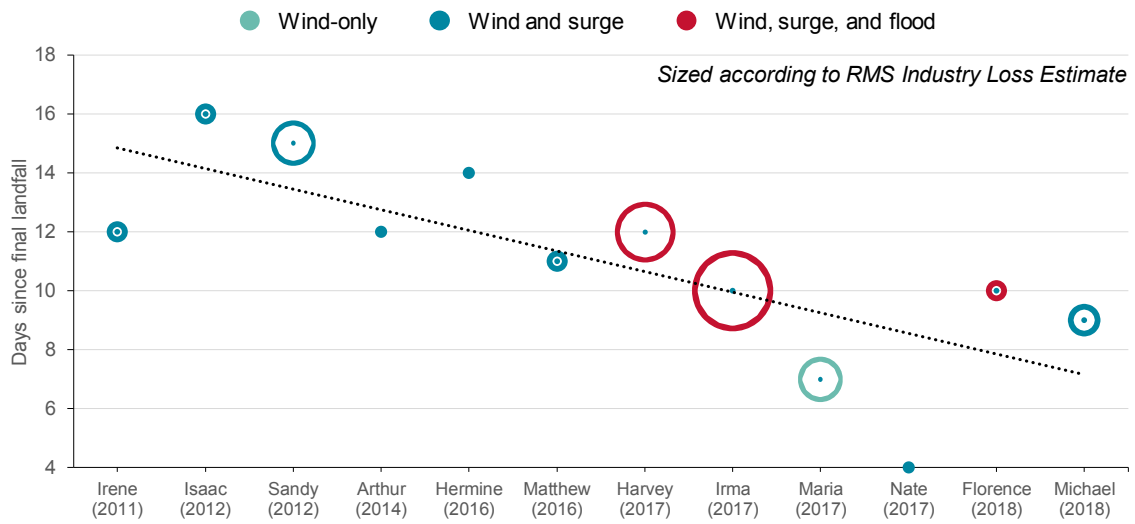


GUIDING PRINCIPLES OF INDUSTRY LOSS ESTIMATES

- Key event response objective is to help clients at a critical time
 - “Our job is to understand the characteristics of an event, and capture as much hazard and damage information as possible, before, during and after an event”
- Every event is unique, thus modeling uncertainties only slowly subside over time
- We take our responsibility to the market and to our clients very seriously
 - Model loss estimates have real-life financial implications for clients, especially in the alternative capital markets
 - Accuracy is top priority, speed is a continual work in progress



DAYS TO ISSUE FINAL HU MODELING PRODUCTS, 2011–18

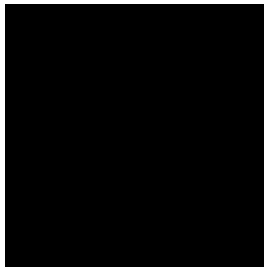




ATLANTIC HURRICANE EFFICIENCY IMPROVEMENTS FOR 2019



Improved integration
with RMS HWind



Earlier advisories
and automated products



Internal web and in-person
reconnaissance portal

RMS GLOBAL FORECAST CENTER

- 24 / 7 / 365 operational coverage
- Led by globally-recognized hurricane specialist Mark Powell
- Operations incorporate wide range of real-time data sources
 - Aircraft reconnaissance
 - Satellite
 - TTU sticknets
 - FCMP towers
 - WeatherFlow network
 - EarthNetworks



GLOBAL LOSSES

30%

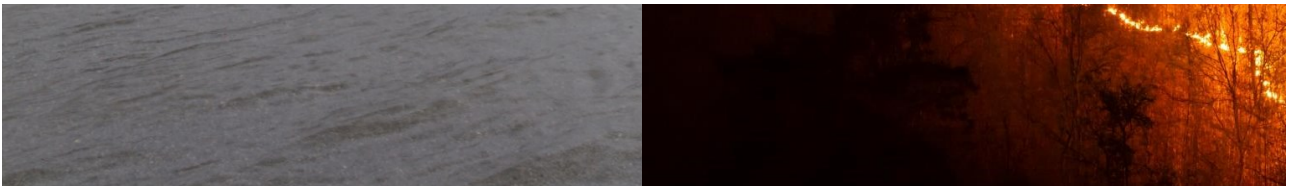


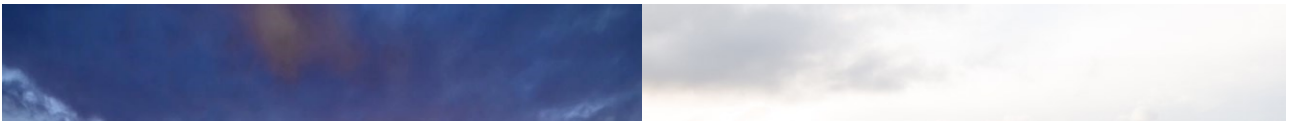
INSURED LOSSES



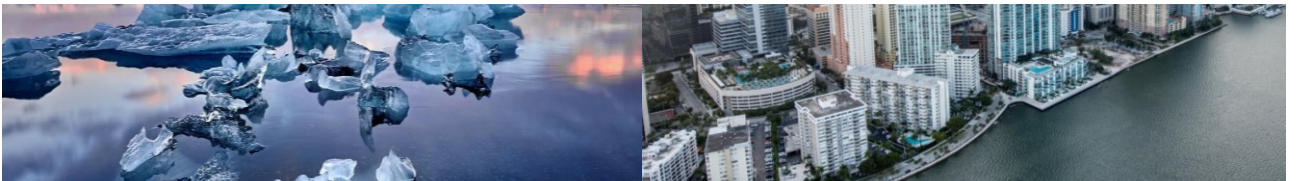


TWO PERILS
ATLANTIC HURRICANES
CALIFORNIA WILDFIRES





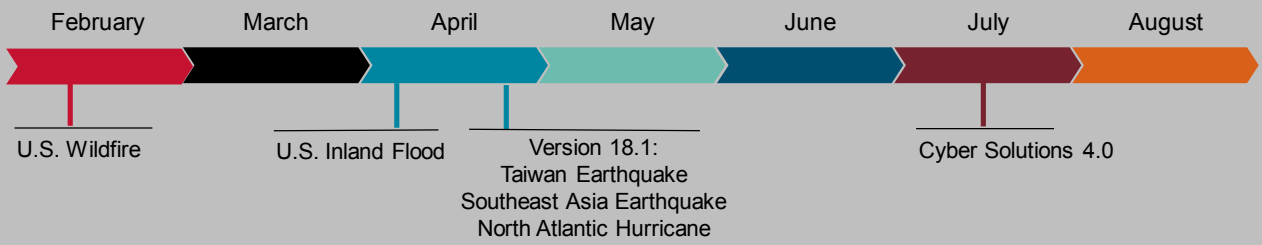
WHAT IS DRIVING THE LOSSES NOW?



**CLIMATE
CHANGE**

**CHANGES IN
EXPOSURE**

OVERVIEW OF MODEL RELEASES IN 2019



Updated **North Atlantic**
Hurricane Models

U.S. Geocoding & industry
exposure data updates

Version 18.1

Spring 2019

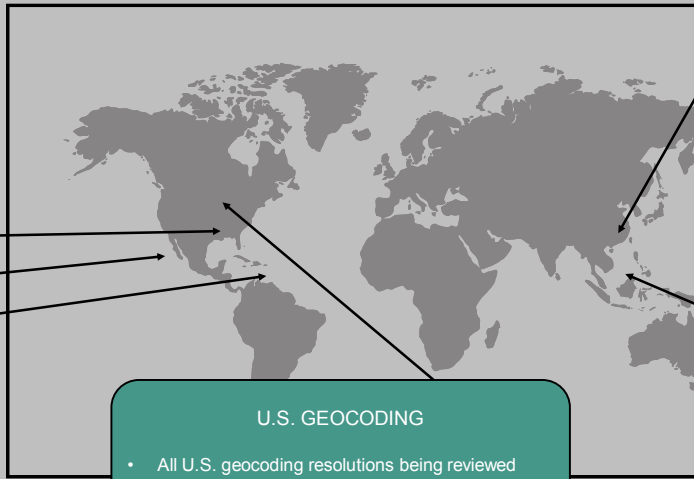
Software enhancements but
no schema changes

Asia Pacific: updates for
Taiwan and Southeast Asia
Earthquake Models

VERSION 18.1 RELEASE HIGHLIGHTS

NORTH ATLANTIC HURRICANE

- Updates to long-term & medium-term rates across the Basin
- New historical event reconstructions,
- Hazard & line-of-business specific vulnerability enhancements
- IEDs and ILCs updates



U.S. GEOCODING

- All U.S. geocoding resolutions being reviewed and updated (as needed)
- Adding high-resolution building data

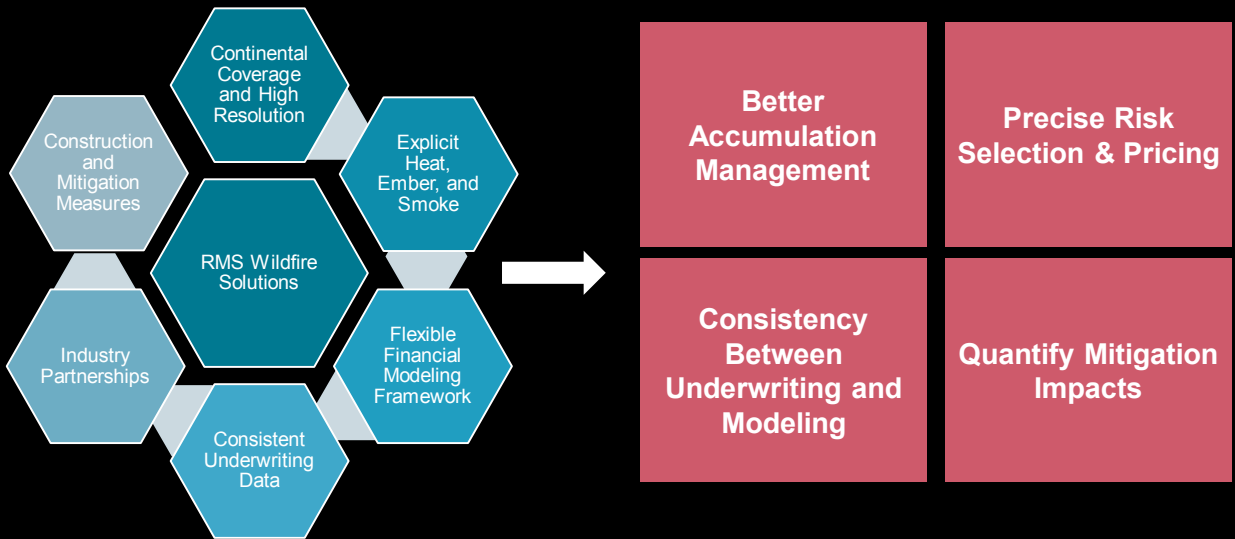
TAIWAN EARTHQUAKE

- Updated earthquake model to supplement existing typhoon model
- Latest scientific view of risk
- New ground motion modeling (GMPE) & spectral acceleration used
- Adding Adding Loss Amplification (PLA)

SOUTHEAST ASIA EARTHQUAKE

- RMS gathered more observational data & claims from major events in the region
- Includes 2006 Yogyakarta, 2009 Padang, and 2013 Bohol earthquakes
- Additional data, coupled with client feedback, prompted recalibration of the model

AGAINST A BACKDROP OF \$30 IN INSURED LOSS, A HOLISTIC WILDFIRE SOLUTION



U.S. INLAND FLOOD MODEL... A UNIQUE SOLUTION



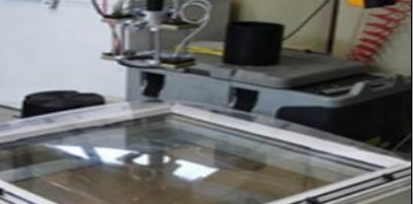
**Build innovative products
and a diversified portfolio**

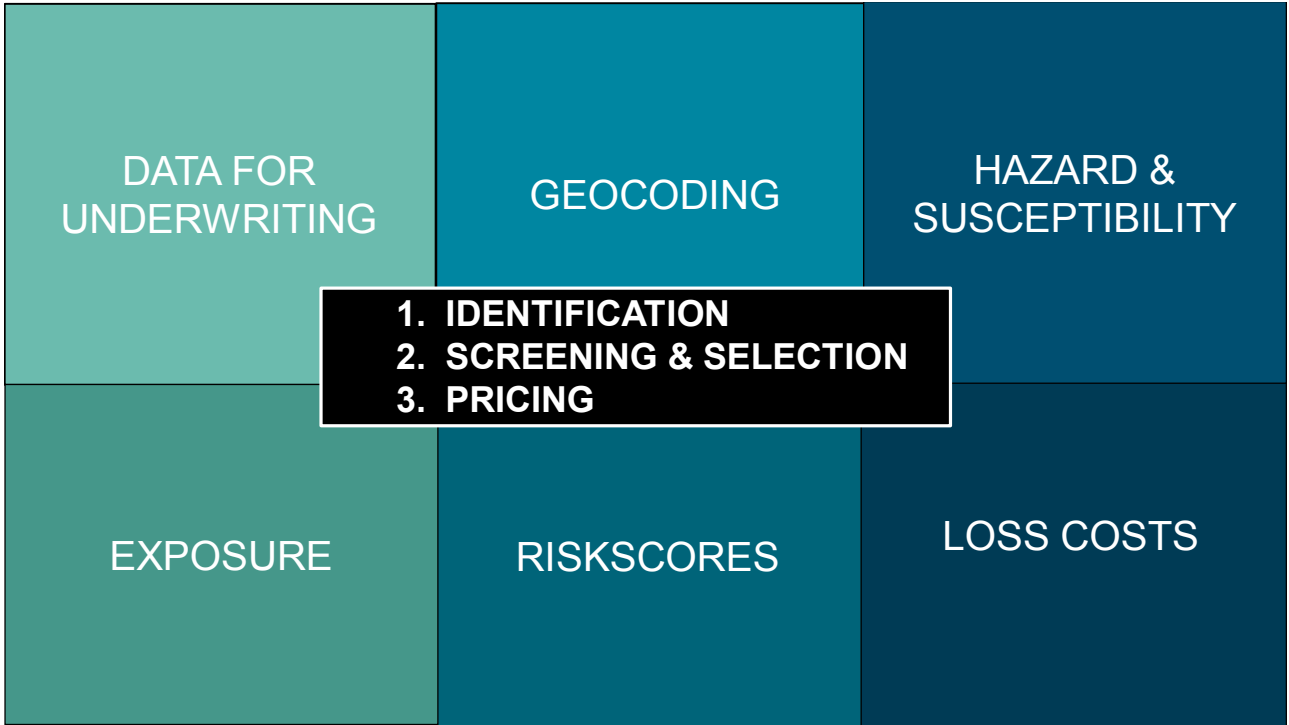
**Competitively price risk in
a developing market**

**Efficient capital
deployment for profitable
underwriting**

**Improve management of
capital and outwards
reinsurance programs**

PAN-EUROPEAN SEVERE CONVECTIVE STORM

SCS is more than hail	Vehicles are not static	Develop models in Europe Proximity with industry/research
 <p data-bbox="152 1149 394 1192">Germany, 7-9 June 2014 (RMS reconnaissance)</p>	 <p data-bbox="553 1149 847 1192">The Netherlands, June 23, 2016</p>	
<p data-bbox="142 1198 538 1364">> 20% of AAL in severe convective storm events comes from straight-line winds and tornadoes Run sub-perils correlated and individually</p>	<p data-bbox="543 1198 951 1364">Total postal codes affected: ~ 5% for a residential book ~ 25% for a motor book</p>	<p data-bbox="955 1198 1365 1364">> €10 B of claims to calibrate the model, but RMS closely partnering with E.U. material testing labs for realistic damage differentiation</p>





WHAT'S NEXT?



SUMMARY

- RMS Event Response improving on response times while maintaining quality
- Dedicated team, global coverage
- Unique 24/7/365 Forecast Centre

- 2019 continues roadmap delivery