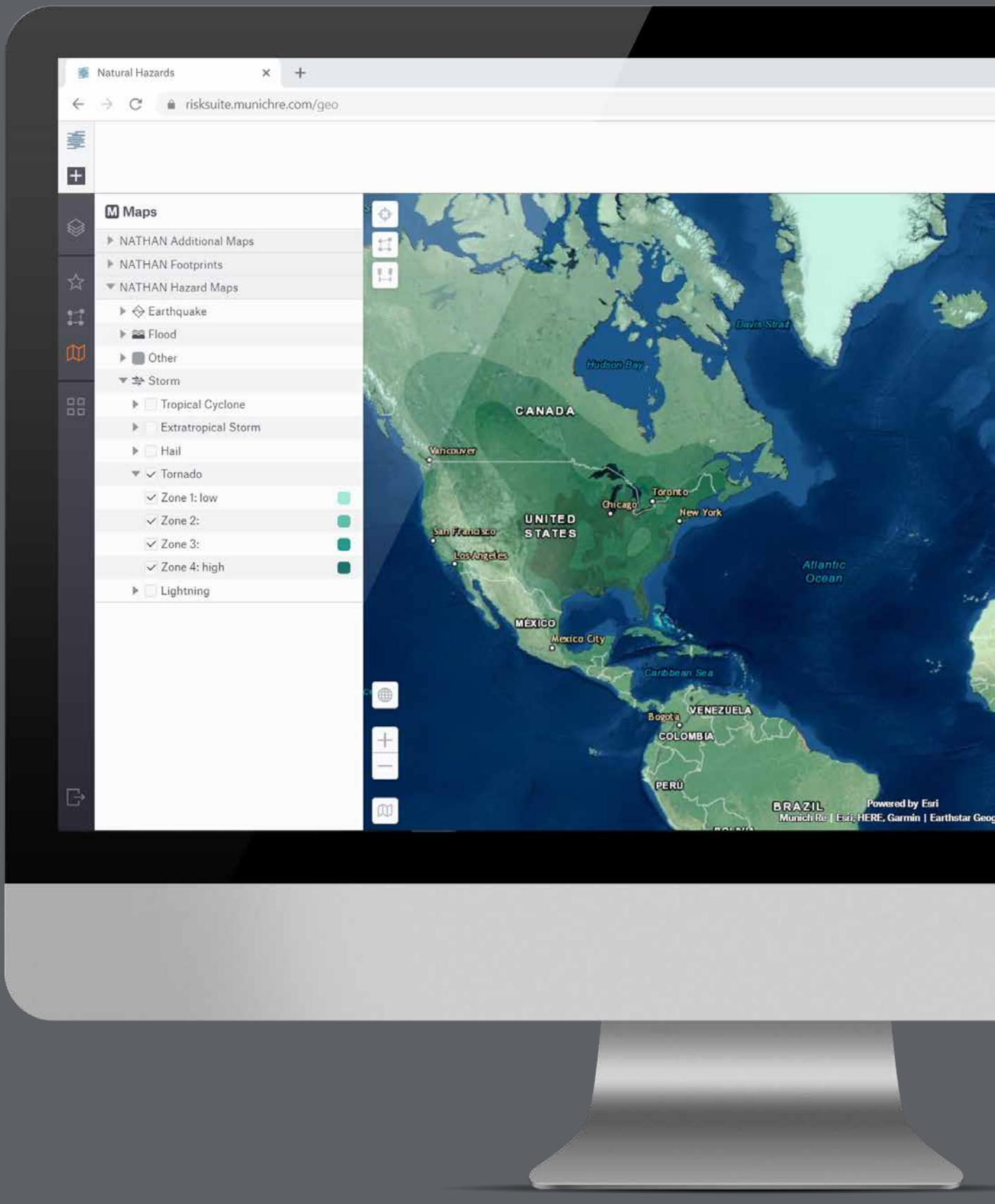
NOT IF, BUT HOW

Munich RE

Munich Re's
Location Risk Intelligence

Replace risks by control. Simply by opting for a comprehensive assessment solution


Natural Hazards
risksuite.munichre.com/geo
Maps
NATHAN Additional Maps
NATHAN Footprints
NATHAN Hazard Maps
Earthquake
Flood
Other
Storm
Tropical Cyclone
Extratropical Storm
Hail
Tornado
Zone 1: low
Zone 2:
Zone 3:
Zone 4: high
Lightning
CANADA
Vancouver
Toronto
Chicago
New York
UNITED STATES
San Francisco
Los Angeles
MÉXICO
Mexico City
Caribbean Sea
VENEZUELA
Bogotá
COLOMBIA
PERU
BRAZIL
Atlantic Ocean
Hudson Bay
Davis Strait
Powered by Esri
Munich Re | Esri, HERE, Garmin | Earthstar Geog

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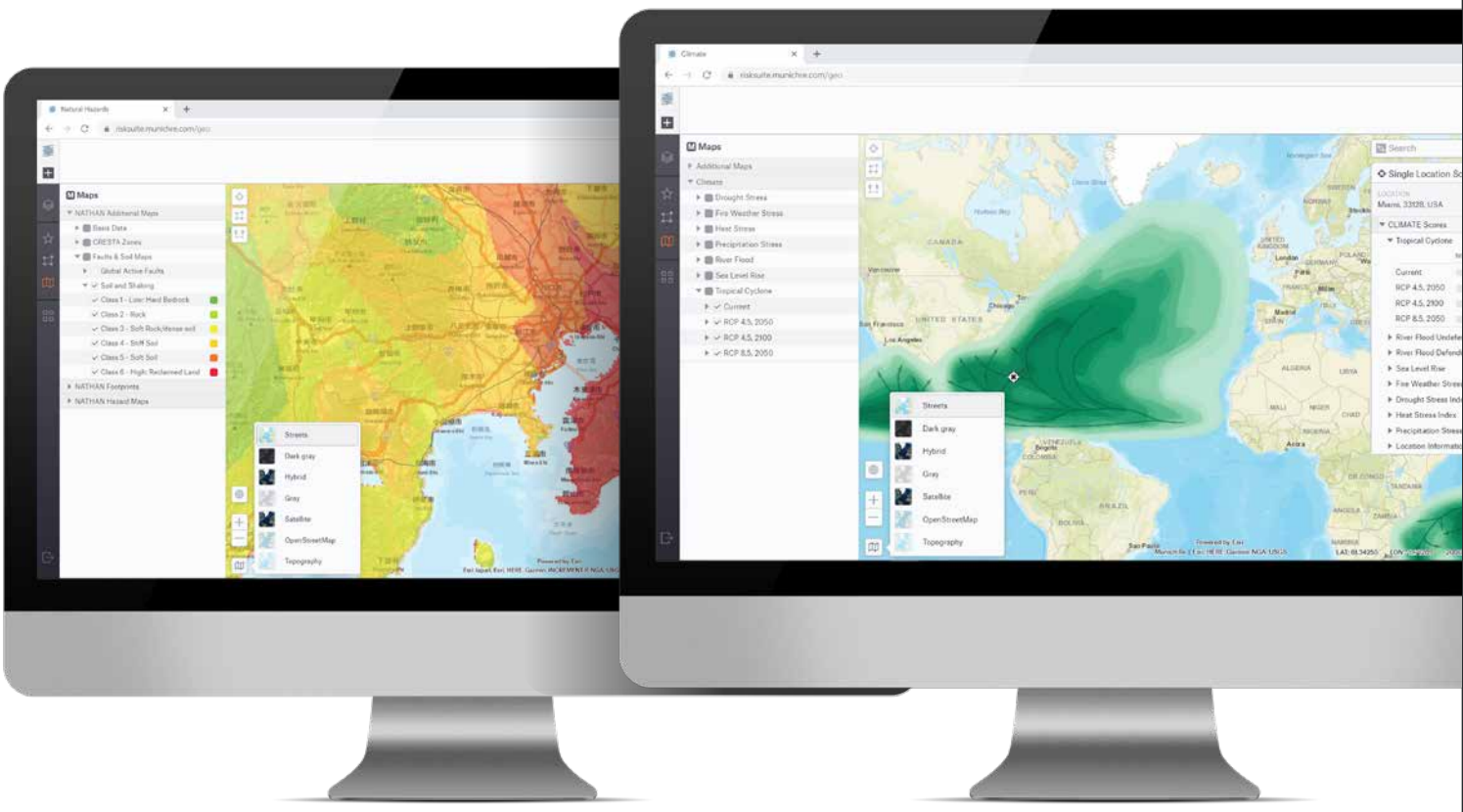
Munich Re's Location Risk Intelligence keeps you in full control of natural disaster and climate change risks worldwide and at all times, so you can concentrate fully on your core tasks

Location Risk Intelligence is a comprehensive analysis platform for location risk assessment and management. Alternatively, you can access the scores of the solution via an API (Application Programming Interface) and use this data entirely in your own applications.

This modular, powerful solution combines different complementary assessment models to generate detailed, meaningful assessments based on data from past events on the one hand, and future-oriented assessments that take into account a wide range of internationally agreed climate change scenarios on the other.

Due to its modular structure, this solution is available in three theme-specific versions, as Natural Hazards Edition, Climate Change Edition or Wildfire HD Edition, each with just one of the three assessment models. However, all versions can be extended at any time with the other assessment models as well as with additional supplementary modules.

You also enjoy full flexibility with the deployment options. So it is up to you whether you access the solution via a web application or via the API. And the Natural Hazards Edition is even available as an on-demand version.



140

140 years of experience in risk assessment and management represent the world's largest and most comprehensive knowledge base of natural disasters and form the basis for Munich Re's Location Risk Intelligence.

50+

More than 50 million risk assessments per year worldwide.

45,000

The solution accesses the world's largest natural catastrophe loss database, NatCatSERVICE, which contains **more than 45,000 entries on natural hazards.**

15

15 years of continuous development make Munich Re's Location Risk Intelligence by far the most sophisticated solution with the largest functional depth, which will constantly be expanded with new functions and scores.

>90%

Over 90% customer satisfaction year after year.

"Munich Re's Location Risk Intelligence is the only solution for the assessment of risks from natural disasters and climate change scenarios which is based on the largest and most comprehensive expertise worldwide gained from 140 years of risk assessment and management, as well as 15 years of continuous product development."

Christof Reinert | Head of Risk Management Partners

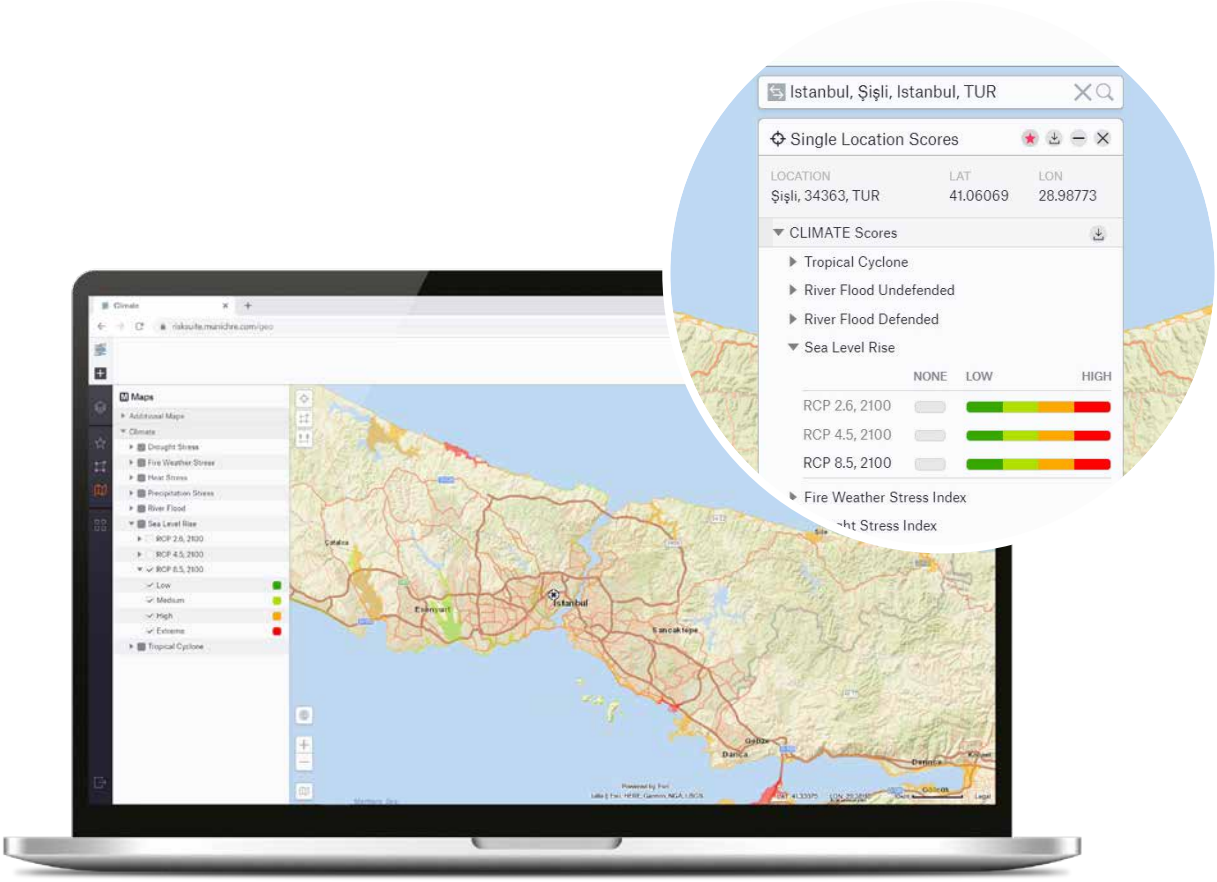
According to a study from 2013, flood damage of 60 to 63 billion US dollars is predicted by 2050 in the 136 largest coastal cities.

Source: Nature Climate Change, 2013

Reduce your risks to the minimum with the easy-to-use analysis tool for single locations or entire portfolios

Munich Re's Location Risk Intelligence accordingly supports companies in assessing risks from natural hazards or climate change around the world – from individual locations to entire portfolios – and accordingly helps to accelerate business processes and improve both portfolio and claims management.

By entering dedicated locations, users can access risk and hazard assessments in the form of risk scores for a variety of natural hazards and/or climate change risks, visualize them and save or download them as comprehensive reports.



Choose the plan that suits you best

Location Risk Intelligence is a modular software solution in two respects.

On the one hand, the solution is available in a total of six different platform options. And on the other hand, depending on the subscription plan, they can be modularly supplemented with up to three risk score editions (Climate Change Edition, Natural Hazards Edition and Wildfire HD Edition) as well as four additional score modules (see overview on the right).

On Demand

In the On-Demand plan, users without a contractual commitment can use credits that can be purchased directly on the website to determine risk assessments for individual locations and download them as meaningful reports.

In contrast to the subscription versions, the evaluation of portfolios is not possible in this option.

Business

The Business subscription plan represents the entry into the modularly extendable platform versions.

It already contains six of the ten platform functionalities and can additionally be extended by the REST API function. This version also offers the opportunity to add all of the three risk score editions individually and optionally, as well as two of the three additional modules, such as the Flood Module and the Earthquake Module.

Corporate

The Corporate subscription plan contains two further platform functionalities – the traffic light functionality as well as the location set filtering. Of course it can also be optionally extended by the REST API function and also offers the possibility of adding all three risk score editions individually and optionally, as described above.

Enterprise

The Enterprise subscription plan has all of the ten platform functionalities as standard and offers the widest range of extension options, including the Climate Change Expert Module, the advanced scoring functionality for area and line objects (such as a large production site or a motorway), and the REST API.

The ideal solution for fully assessing all risks and their impact on your entire portfolio.

API

In addition to the platform options, Location Risk Intelligence is available in two alternative API versions.

As a Standard API option or as an Advanced API option. With these two versions, you can seamlessly integrate your assessment tools and data sets from Location Risk Intelligence into your own application environment.

	Platform options				API options	
Subscription plans	**On Demand**	**Business**	**Corporate**	**Enterprise**	**Standard API**	**Advanced API**
Functionalities						
– Single location assessment	●	●	●	●	●	●
– Location geocoding	●	●	●	●	●	●
– Map services	●	●	●	●	●	●
– Portfolio assessment		●	●	●	●	●
– Save locations		●	●	●		
– Elevation profiles		●	●	●		
– Traffic light functionality			●	●		
– Location set filtering			●	●		
– REST API		○	○	●	●	●
– Areas and lines scoring				●		●
Climate Change Edition[1]		○	○	○	○	○
– Climate Change Expert Module				✓		✓
– Flood Module[3]		⊕	⊕	⊕	⊕	⊕
– Earthquake Module[4]		⊕	⊕	⊕	⊕	⊕
Natural Hazards Edition[2]	●	○	○	○	○	○
– Flood Module[3]		⊕	⊕	⊕	⊕	⊕
Wildfire HD Edition		○	○		○	

[1] Climate Change Edition includes the following risk scores: tropical cyclones zones, fluvial flood zones, sea level rise index, fire stress, drought stress, heat stress, precipitation stress (see also fact sheet). [2] Natural Hazards Edition includes the following risk scores: earthquake, volcano, tsunami, tropical cyclone, extratropical storm, storm surge, tornado, hail, lightning, wildfire, river flood, flash flood (see also fact sheet). [3] Flood Module includes Natural Hazards Defended (Netherlands and Belgium only) and enables the integration of additional data sources such as JBA, ZÜRS (Germany only), Environment Agency (UK only). [4] Earthquake Module includes NATHAN® risk score and enables the integration of additional data sources such as GEM.

● Included in this edition ○ Can be purchased additionally

✓ Included in the corresponding edition ⊕ Can be purchased additionally for the corresponding edition

High value platform functionalities

Single location assessment

Using single location assessment, you can score hazard risks for individual locations using location search. The location search works both by coordinates and by name. Based on what your needs are, you can search for NATHAN scores or climate scores.

The scores are offered in two types: Risk scores to identify red flags and hazard zones to dive into the details.

Location geocoding

The Location Risk Intelligence application includes an integrated geocoder for location visualisation based on an address search within the application.

Geocoder transforms the description of a location, such as an address, or a name of a place to latitude and longitude coordinates on the earth's surface, which can be used for risk analysis.

Map services

Map services are the visualisation of the available hazard datasets and are provided for all the maps you can find in Location Risk Intelligence.

Via the map services endpoint in the API you can visualise the maps in your dedicated working environment.

Elevation profiles

Location Risk Intelligence allows to create elevation profiles between any two locations on the map.

By simply drawing a line between two points you can analyse the elevation (height above sea level) in a graph for the entire distance.

Traffic light visualization

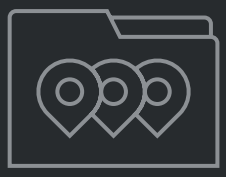
Location Risk Intelligence provides hazard scores on a normalized scale, visualized by "traffic light" colours that are easy to interpret.

We therefore classified the hazard exposure into five categories: no or very low exposure, low exposure, medium exposure, high exposure and very high exposure. The traffic light visualisation simplifies the identification of red flags across hazards.

Location set filtering

Allows you to filter your location set according to different attributes like risk scores, per country, or depending on the level of geocoding quality. If your data contains additional attributes, you can use them as filter options as well.

Corresponding diagrams are shown per peril and selected filters are applied. You can download the results of your analysis as a CSV or Excel file or create a PDF report.



Portfolio assessment

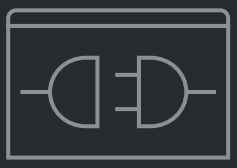
Portfolio assessment allows you to score a set of assets, also called a portfolio. You can easily review the distribution of your portfolio across different hazard zones and filter by risk scores to identify red flags.

You can also run an analysis on your portfolio by filtering for different attributes in your location set. In addition you can also download reports from the portfolio assessment in the format of your choice.

Save locations

Location Risk Intelligence provides you with the option to save the results of your location assessment.

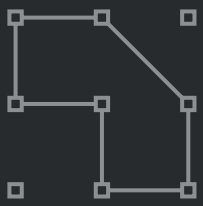
This means you don't need to score each time. Instead, you can view your assessment from the past whenever you want.



REST API

Location Risk Intelligence provides you with the option of getting all scores with the help of a REST API.

By using this stateless protocol, you can seamlessly integrate almost all assessment tools and data sets from Location Risk Intelligence into your own application environment. APIs are offered in 2 tiers: API Standard and API Advanced.



Areas and lines scoring

Location Risk Intelligence now expands its risk scoring capabilities from points to lines and areas. Business data is not always ideally represented by an address or a coordinate. This is the case, for example for railway lines, oil and gas pipelines, roads, airports, industrial plants and ecological areas.

Areas and lines scoring capabilities show the percentage of an area exposed to natural hazards.

Build your own solution from three complementary risk score editions and a further four, highly specialised add-on modules

1. Climate Change Edition supports companies in analysing and assessing the risks of future climate change.

From a single asset to multiple assets within a portfolio located in areas prone to the effects of future climate change, such as:

– Tropical cyclones
– Fluvial flood
– Sea level rise
– Fire stress
– Drought stress
– Heat stress
– Precipitation stress

In contrast to the Natural Hazards Edition, risk assessments are not calculated on the basis of past events, but on forecasts of future events that are expected to occur as a result of climate change.

In order to generate an all-encompassing assessment, the Climate Change Edition can be combined at any time with the functions and scores of the Natural Hazards Edition, Wildfire HD Edition and other modules.

2. Natural Hazards Edition* is the ideal solution for companies which want to reliably evaluate the current status of their portfolios or individual locations.

In addition to the comprehensive overall score, which is based on the three individually accessible detailed scores for earthquake, storm and flood, users receive dedicated ratings for a total of 11 natural hazards, including:

– Earthquake
– Volcano
– Tsunami
– Extratropical storm
– Storm surge
– Tornado
– Hail
– Lightning
– Wildfire
– River flood
– Flash flood

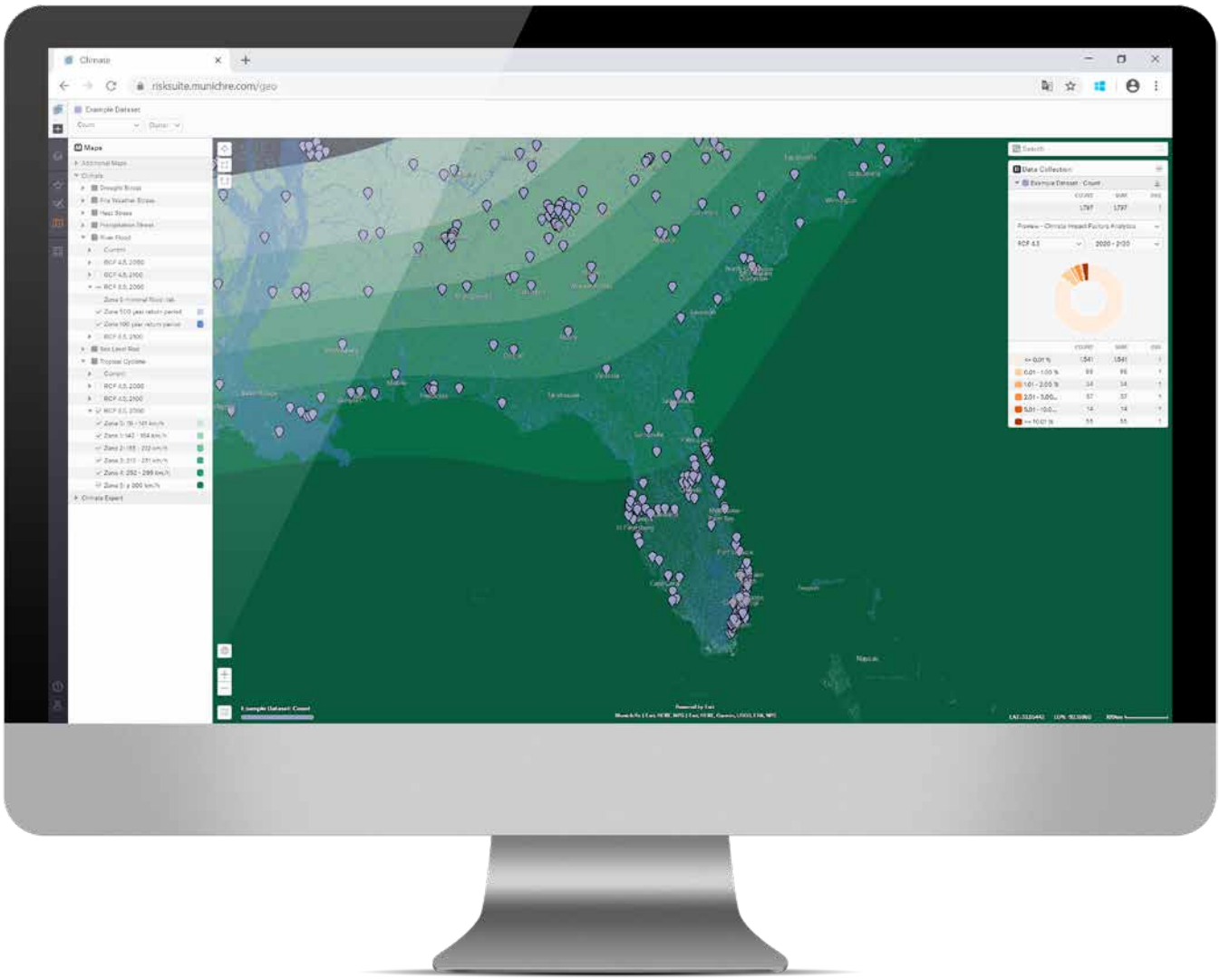
All analysed locations are visually displayed in the form of detailed maps with risk layers and can be saved as reports together with all individual scores.

The evaluation criteria can be extended modularly at any time by adding those of the Climate Change Edition, Wildfire HD Edition and other modules.

3. Wildfire HD Edition provides the analysis and assessment of the increasing risks of wildfires due to climate change in the USA, Canada, and Australia (New South Wales and Victoria, as well as the internal territory of Australian Capital Territory).

The maps in the Wildfire HD Edition offer, in contrast to those of Natural Hazards Edition or Climate Change Edition, a significantly

*Also available On-Demand, see overview on pages 8/9



higher resolution in order to generate even more detailed assessments.

4. Climate Change Expert Module provides more detailed information on the climatological stress indices and is also available via API.

It contains valuable complementary information to the set of climatological stress indices (heat stress, precipitation stress, fire weather stress and drought stress). Additionally, the Climate Expert Module makes information on the flood defences' standard of protection (SoP) for river flood analyses available (provided by JBA Risk Management). For more details, see Climate Change Edition fact sheet.

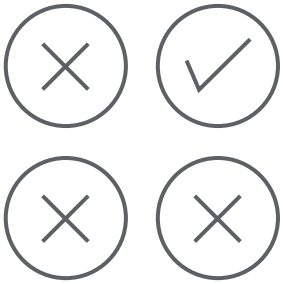
5. Flood Module includes Natural Hazards Defended for the Netherlands and Belgium and enables the integration of additional data sources such as JBA, ZÜRS (Germany only), Environment Agency (UK only).

6. Earthquake Module includes NATHAN® risk score and enables the integration of additional data sources such as GEM.

Flexibility to the maximum

Cloud & API

Munich Re's Location Risk Intelligence is an SaaS solution, but you can alternatively access the scores of the solution via API and use its data entirely in your own applications.

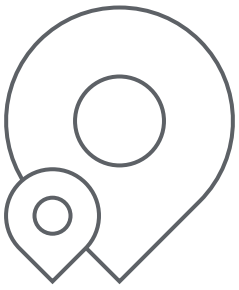


Freedom due to modularity

Thanks to the modular structure, each of the three theme-specific editions can be supplemented at any time with the other assessment model as well as with additionally available modules.. All in a single user interface.

Scalable to your needs

Assess single locations or entire portfolios with regard to both natural disasters and the consequences of climate change.



Overview
Munich Re's Risk Suite

Munich Re's Risk Suite is a range of modular risk solutions provided as a software portfolio by Munich Re Service GmbH, a wholly owned subsidiary of the world's leading reinsurer. It offers companies access to the risk management tools developed in-house and the knowledge and experience of 140 years of one of the world's leading providers of reinsurance, primary insurance and insurance-related risk solutions.

Since the introduction of NATHAN (now Natural Hazards Edition), Munich Re has been a pioneer in the global assessment of natural hazard risks. Munich Re's Risk Suite builds on this expertise and offers a selection of well-engineered risk assessment solutions for technical underwriting, data protection, investment decisions and climate change analysis.

On the other hand, Munich Re's Risk Suite draws on years of experience in global data transfer under regulatory requirements. Against this extensive background of experience, highly efficient solutions for data protection and IT security management were developed, originally for internal use, which ideally complement Munich Re's Risk Suite and thus provide companies with a comprehensive set of tools that covers the management of all risk aspects relevant to a company and is continually being developed further in view of the expected further increase in complexity in the field of data and IT security protection.

Munich Re's Location Risk Intelligence

Subscription plans[1]	Business	Corporate	Enterprise
Platform functionalities	●	●	●
Climate Change Edition	○	○	○
– Climate Change Expert Module			✓
– Flood Module	⊕	⊕	⊕
Natural Hazard Edition[2]	○	○	○
– Flood Module	⊕	⊕	⊕
– Earthquake Module	⊕	⊕	⊕
Wildfire HD Edition (USA, Canada, Australia)	○	○	

[1]Also available in two API options. [2]Also available as an On-Demand option.

Munich Re's Data Risk Intelligence

	Enterprise Edition	Professional Edition	Data Breach Edition
Data Risk Intelligence Platform	●	●	●
Standard Data Risks Module	●	●	
Enterprise Data Risks Module	●	○	
Data Breach Module	○	○	●
Additional Modules (optionally available):			
Data Subject Rights Module	○	○	
Advanced Risk Assessment Module	○	○	

● Included in this subscription plan / edition ○ Can be purchased additionally

✓ Included in the corresponding edition ⊕ Can be purchased additionally for the corresponding edition

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Munich Re Service GmbH
Königinstr. 107, 80802 Munich, Germany

Tel.: +49 (0)89 3891-0
Fax: +49 (0)89 399056
Email: Risk-Management-Partners@munichre.com

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