OASIS NEWS

February 2018

WHAT CAN YOU EXPECT FOR 2018

More models available on the Oasis platform:

- All independent model providers listed below are committed to making their models available to you.
- As of now we have models implemented and running by ARA, COMBUS, IF, JBA, and Cat Risk.
- Once a model has been deployed from one model provider, you can then deploy other models more easily (same provider, different model).
- In addition, model providers would like to know what you are looking for so just let us know (info@oasislmf.org).

Over 80 models from 15 different providers will be delivered to Oasis users during 2018, some subject to market demand as below. Models are at different levels of preparation, but all can be available within a relatively short period of time. We call these stages:

- Off the shelf: deployment work has been completed;
- Ready when needed: available within a few weeks to three months, about the same length of time it would take a new user to go live;
- Converted to order: models can be available in around six months subject to demand.

Off the shelf models are available from ARA (US Hurricane), Cat Risk (Middle East earthquake), COMBUS (Australia), JBA (UK flood) Impact Forecasting (Euro wind and French flood) and UCL (Northwest

Pacific tsunami).

Ready when needed models will be available from ERN (Central America and Europe earthquake), with more flood models from Impact Forecasting, JBA (Europe and Asia flood) and CatRisk (Africa earthquake), within a few weeks to 3 months from now.

In the converted to order category, technical feasibility and preparatory work has been completed for ImageCat's U.S. earthquake model and KatRisk's North America comprehensive flood model as well as models from Guy Carpenter and Willis Towers Watson. These models can be made available within a period of around 6 months subject to client demand.
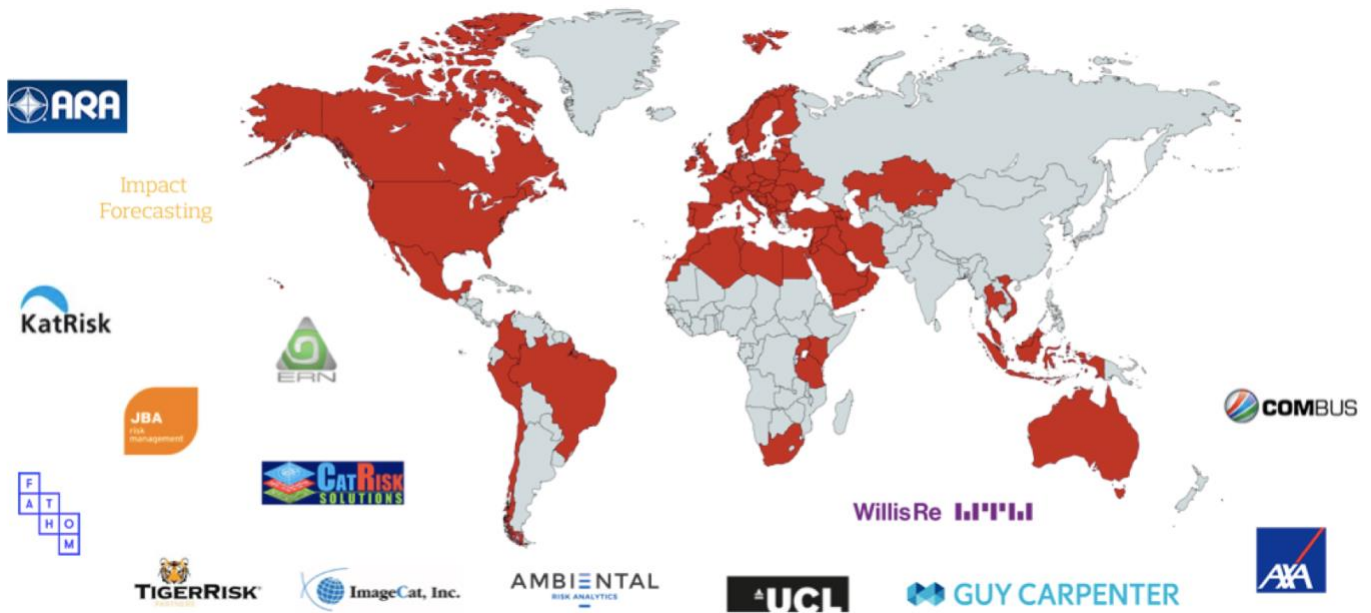
Independent model providers

Ambiental | ARA | AXA | Cat Risk Solutions | COMBUS | ERN | Fathom | Guy Carpenter | Image Cat | Impact Forecasting | JBA | Kat Risk LLC | Tiger Risk |UCL | Willis Towers Watson.

WHAT ARE WE WORKING ON?

Much of our development activity is focused on features and refinements based on direct feedback from in-production usage by Oasis members, alongside building out the Oasis model library with our model development partners. Incorporating this real-world learning is critical to maintaining a robust and performant system.

The first version of the Oasis Model Development Kit (MDK) is now available on GitHub (https://github.com/OasisLMF/omdk). This is a suite of Python utilities aimed at simplifying the process of building and testing models on Oasis, without requiring access to the full Oasis platform.

A major feature that the community is requesting is the ability to model reinsurance structures within the Oasis platform. We began work on the design last year, and this will be a main development focus for 2018. This is an opportunity for the Oasis members to build a financial model that truly represents how business is written. We are seeking active input and expertise from the community, please contact us if you want to participate.

Oasis code and documentation can be accessed via GitHub: (https://github.com/OasisLMF).

FREE TESTING ENVIRONMENT FOR MEMBERS

Oasis can now offer an easy-access, hosted testing environment in AWS for members who would like to evaluate the Oasis platform and models, learn how to implement the Oasis stack, and pre-configure the platform for their own environment. Access can be set up almost instantly for anyone who wants to get their hands on Oasis and see how it works.

PARTNER NEWS

The Oasis LMF strategy is to enable commercial partners to deliver services and products around the core Oasis platform. This ecosystem of partners is already active and expanding in response to demand from different market and client segments.

Simplitium

Delivered by Simplitium, ModEx is revolutionizing the cat risk modelling marketplace. ModEx delivers a flexible, scalable and secure shared cat risk modelling service via a hosted and fully managed environment.
The service is operated on the Oasis Loss Modelling Framework (LMF) platform and delivers a comprehensive platform where independent model developers can make their models available to the (re)insurance community, lowering barriers to entry while providing ease of access and increased choice to the market. By unifying multiple cat modelling vendors on one platform, ModEx delivers productivity and efficiency gains and substantially reduces a firm's training requirements associated with using multiple platforms.

By delivering a shared service offering, ModEx creates cost-efficiencies unmatched by any other cat modelling platforms. This enables firms to optimise resource, free up capital and re-think their cat risk modelling budget allocation, as well as facilitating targeted growth in regions where cat models have traditionally been unavailable and cost prohibitive.
The fully hosted service means that firms don't require any client- side software install with access to ModEx provided via browser, through a private and secure connection. Firms can take advantage of ModEx's single-license solution which removes the need for multiple licences with each different model and hardware providers. On-boarding time is therefore significantly lower compared to traditional approaches. In addition to the cost efficiencies already outlined above, for the first time, (re)insurers can trial cat risk models before purchase using ModEx's model evaluation platform.
Simplitium, whose services traditionally focus on financial technology, were approached by Oasis in 2014 to assist with the initial client evaluation for a proof of concept of a shared service offering accessible by multiple clients. The initiative, which was sponsored by Lloyd's and the LMA, was designed to make it easier for firms to access advanced cat risk models. Having operated with 100% uptime and zero incidents since 2007, Simplitium was the natural choice to deliver the service to market.

CONTACT: Emmy Granstrom, Marketing Director (emmy.granstrom@cinnober.com).

MVO (Michel Voronkoff)

MVO Risk Consulting is a new company set up in France to address market demand for choice and flexibility in their catastrophe modelling solutions. Consistent feedback from the market in the past few years:

- High cost of the hardware needed to run the models: difficulty to manage the necessary computing power and storage needs, cost of maintenance, security concerns, change management, trained staff needed, etc.
- Due to the above being limited to one or two platforms.
- Limited to the models available with each Commercial Vendor's platform. Smaller region peril models usually not available via existing main platforms.
- Models not tailored to different needs (e.g. Corporates, smaller Insurers & Brokers, etc.).

Oasis is progressively providing access to a wider constellation of hazard & vulnerability models thus addressing the limitation in the access to a variety of views of the risk and to the other markets. MVO RISK Consulting was set up to provide the following services based on the Oasis platform provides the following services:

- Using available best of class Cloud computing providers to supply "unlimited" computing power and data storage: as and when you need it on a pay-per-use basis, no local infrastructure needed, the highest security standards and orders of magnitudes cheaper than a local infrastructure.
- Encouraging the migration of more models into Oasis.

CONTACT: Michel Voronkoff (mvoronkoff@mvorisk.com).

Tata Consultancy Services (TCS)

Tata Consultancy Services is the global leader in IT Services, Consulting, Technology and Digital Solutions with a large network of Innovation & delivery centres. TCS is offering the following services in partnership with Oasis Palm Tree:

1. Implementation and support of Oasis catastrophe modelling platform to create an in-premise or cloud-based service;
2. Development and implementation of a generic exposure data transformation toolkit to convert between various exposure data formats, which can be leveraged by customers to create conversion components (e.g. RMS/AIR/Oasis->Canonical->RMS/AIR/Oasis) and exposure data transformation service;
3. Development and implementation of data lakes for exposure data and model results data integrated with above exposure data transformation service, Oasis catastrophe modelling services as well as non-Oasis catastrophe modelling services (if any) using permitted interfaces;
4. Development and implementation of a dashboard to manage the data through the above (1), (2), (3) and generate/view a standard set of analytics and/or export data to downstream analytical engines.

CONTACT: Pratap Tambe, Business Development Manager (pratap.tambe@tcs.com).

NEW AND MORE FUNDING SOURCES

Historically, Oasis has been fully funded by the insurance industry. Industry members still represent our core source of income, but we now have some other, growing, areas of funding:

- Model developers: most model developers have agreed that for models licensed on the Oasis platform they will give 10% of licence costs to Oasis to help maintain the software.
- Government grants: We are part of an H2020 consortium that has been granted €5m, part of which is being allocated to re-design and development of Flamingo including visualisation of the underlying data.
- Climate-KIC, as well as being a member of Oasis, have also committed funds around Oasis as well as partly funded the new Model Development Kit (MDK).

LATEST COMMUNITY ACTIVITY

Oasis is driving for solutions where there is demand for new approaches and increasing interest in public-private market collaboration. Oasis is participating in several initiatives to bring its expertise in catastrophe risk modelling and re/insurance along with its platform to open up new data sources and risk communication channels.

- *H2020 Insurance* - Danube flood will produce a Danube river flood catastrophe model on the Oasis platform. The development lead is the Potsdam Institute and several insurers are involved in the evaluation and development including Allianz, Aspen Re, AXA, Generali, Genillard & Co., and Uniqa Re.

- *United Nations Office for Disaster Risk Reduction (UNISDR) collaboration-* Oasis was an active contributor to the Expert Meeting on the Global Risk Assessment Framework in support of the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, and the Paris Agreement held in Geneva in November 2015. Oasis' platform is available to use for free by all governments for disaster risk assessment and reduction.

- Oasis is working closely with the Insurance Development Forum Risk Modelling and Mapping Group, including an initiative to increase interoperability between different risk modelling platforms in both the public and private sectors.

- We are in the final round of approval from the BMUB International Climate Initiative (IKI) for our project to build a cyclone model for Bangladesh and a flood model for the Philippines on the Oasis platform, working with local academics, global catastrophe model developers, scientific experts such as the Met Office and Potsdam Institute for Climate Impact Research, and insurance industry players from the countries, London and Europe. We hope to be able to announce the start date for this project very soon.

USING OASIS FOR CAT MODEL R&D

Using Oasis as an R&D tool will become increasingly compelling as more academic datasets and models become available on the platform, and with the upcoming release of the Model Development Toolkit (MDK) which will significantly simplify the process of implementing cat models into Oasis.

Another initiative, in collaboration with Oasis member XL-Catlin and funded by the Natural Environment Research Council (NERC), will be to integrate the SAFE toolbox into Oasis. The SAFE toolbox provides a set of functions to perform Global Sensitivity Analysis on models quickly, thus identifying which model components have the most impact on results. It has been developed by Bristol University, and is widely used within the academic community to understand sensitivity of

model components. We believe it has great relevance for our industry and are looking forward to bringing it to the cat modelling world over the course of the next 18 months. More will be shared on this as the project develops.

SPOTLIGHT ON: FATHOM
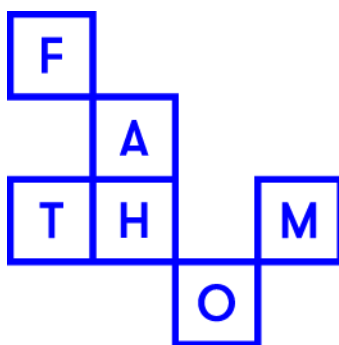
New U.S. Probabilistic Flood hazard model from Fathom

Early in 2018 Fathom will be launching their first probabilistic hazard model within OasisLMF. Developed by a team of recognised world leading scientists from Bristol University, Fathom-US simulates both fluvial and pluvial flooding across the United States and also represents flood defences nationwide. Crucially, all river channels from the large rivers to small streams are explicitly represented with a 2D hydraulic modelling framework, which results in a far more comprehensive view of risk, as often flood losses occur away from major floodplains. The model itself represents the first large scale flood model to be validated within the scientific peer-review process (http://onlinelibrary.wiley.com/doi/10.1002/2017WR020917/pdf), with further papers detailing other model components to follow in 2018. By working in collaboration with insurance partners, research institutions and leading tech firms, Fathom are aiming to provide a new view of US flood whilst also making their methods as open and transparent as possible. For more information about the model visit http://www.fathom.global or email info@fathom.global.

Sacramento 1-in-100 year Defended

Legend
Depths (m)
0
4
>4
Levees
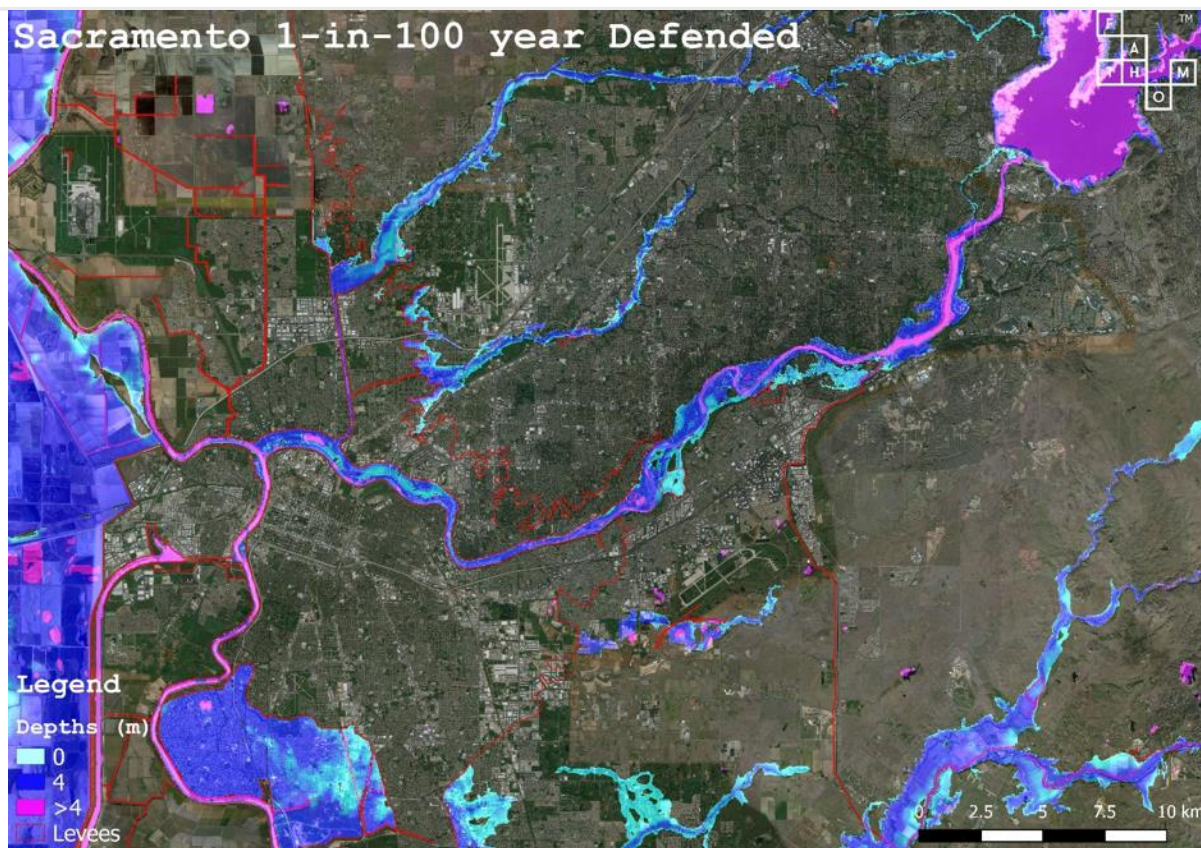
LEARN HOW TO BUILD MODELS AND THE USE OF OASIS TOOLS

Massive Open Online Course (MOOC)

The MOOC is intended to help people working in climate change and disaster loss mitigation and academia, as well the insurance industry. Sponsored by Climate-KIC and the UK Natural Environmental Research Council (NERC), the course is available free to anyone looking for a better understanding of natural catastrophes. The course and training material can be accessed through our website https://oasislmf.org (please scroll to the bottom of the page).

Send us your thoughts, feedback, comments and questions via email. We will get back to you.