

G-CAT Thai Flood Model ModEx® platform from Simplitium

November 5th, 2018



CEO Focus Group Seminar
Thai General Insurance Association

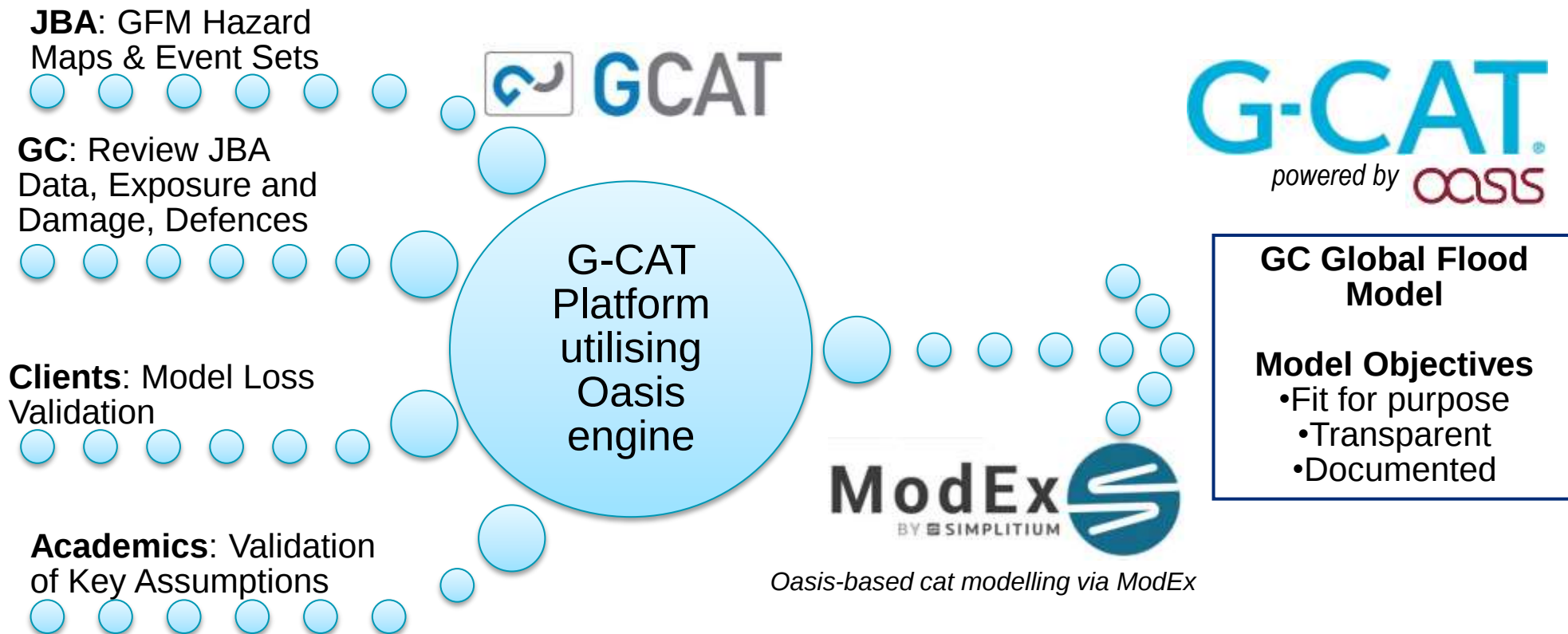
GC Analytics
Singapore

Sections:

- GC Modelling Platforms Overview
- ModEx®
 - Interface
 - Inputs
 - Outputs
- Demo

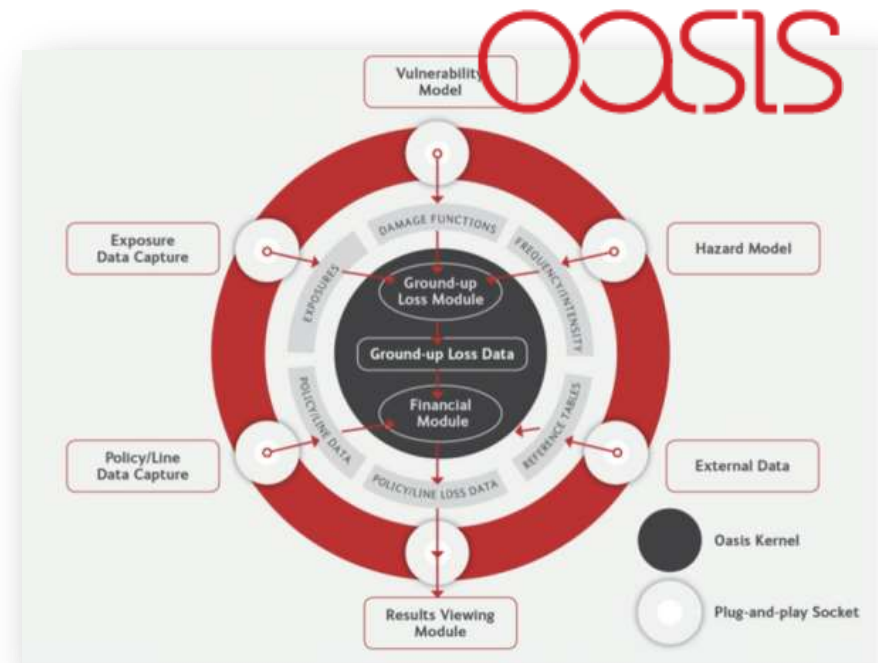
GC Global Flood Programme

Multi-year project aiming for global coverage



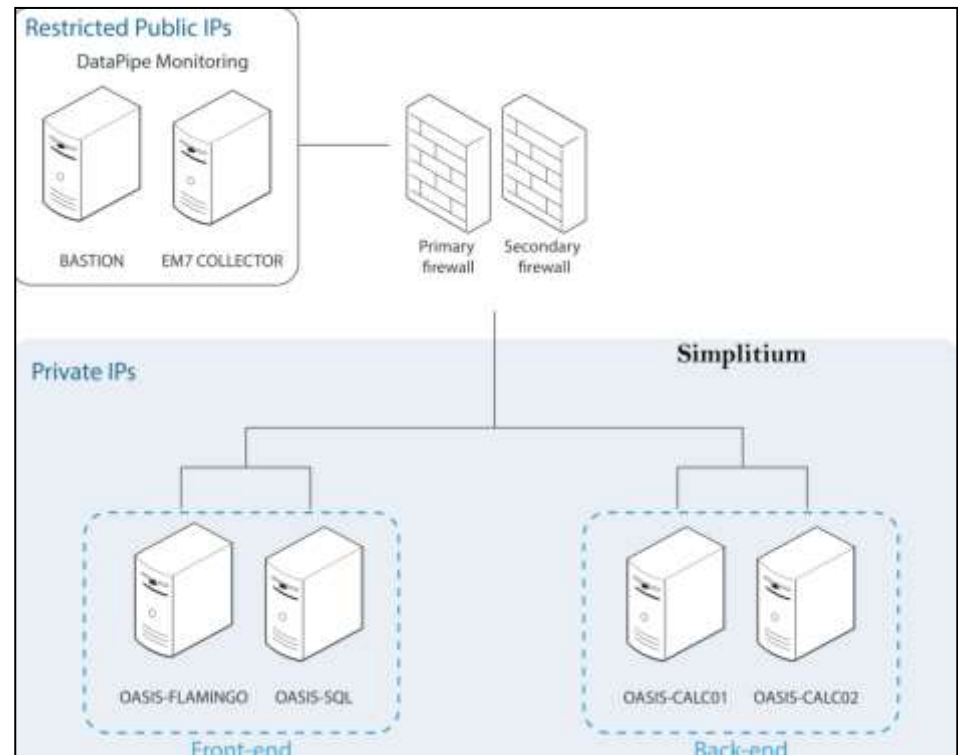
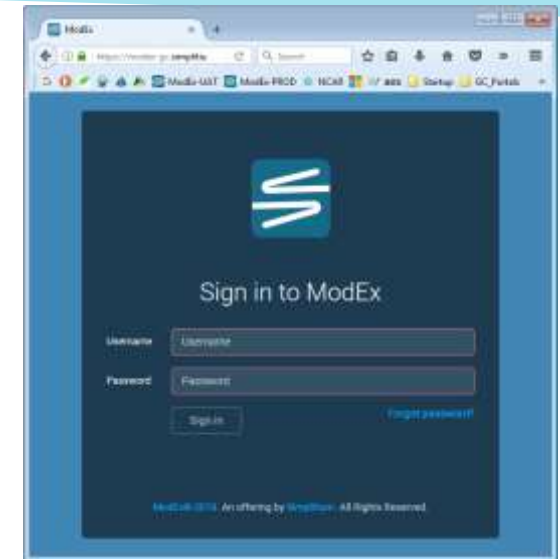
GC in the process of swapping from G-CAT to Oasis

- The **Oasis Loss Modelling Framework** is a new open-source catastrophe modelling platform designed and built by the insurance industry (<https://github.com/OasisLmf>)
- Over 40 sponsors including GC
- Several insurers and reinsurers already using the platform for “gap” models
 - Single platform to maintain
 - Lowers training and support costs
 - Open source
- ModEx® platform from Simplitium

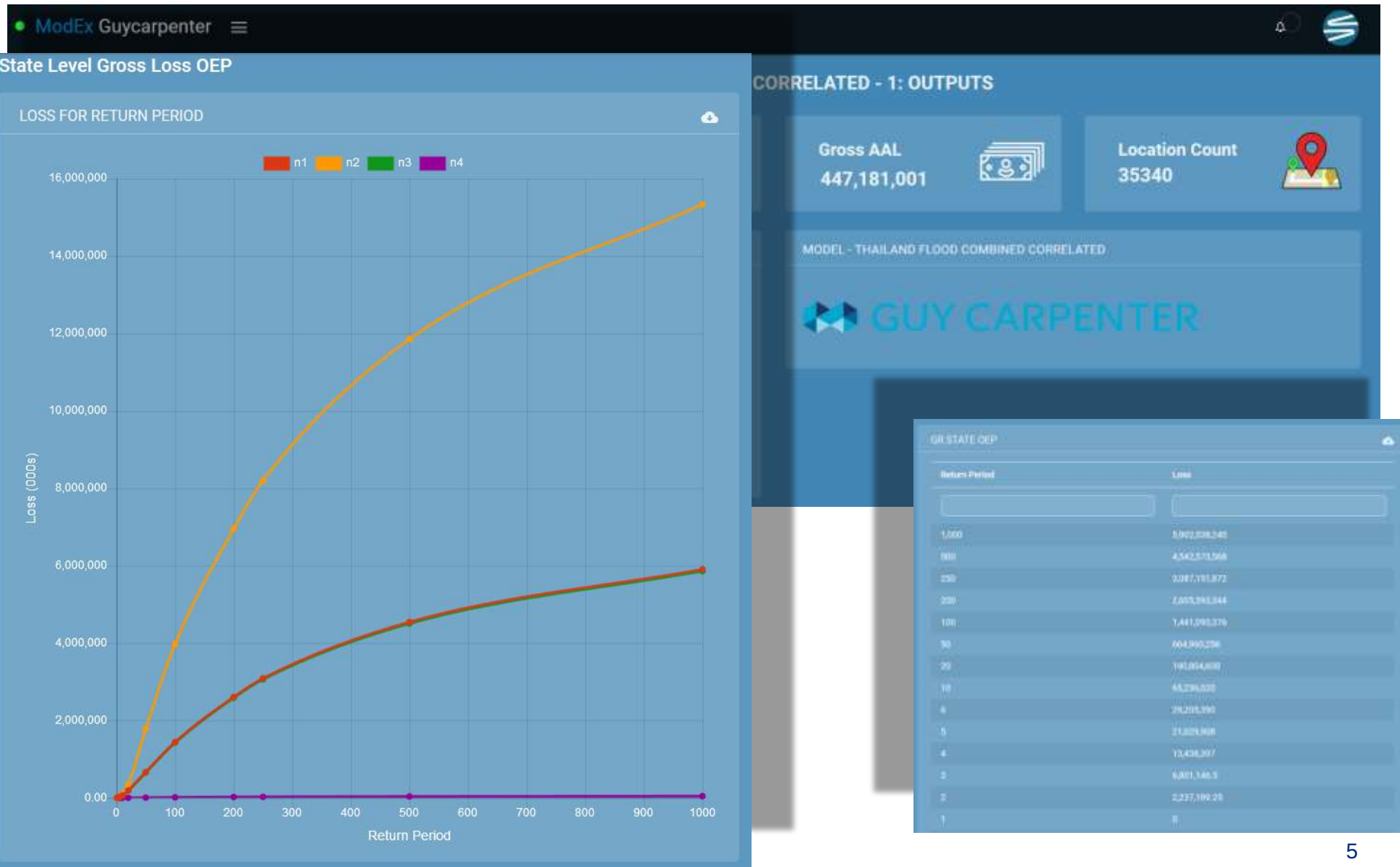


ModEx Interface via web browser

- ModEx® platform from Simplitium is accessible through web browser
- Simplitium hosts and fully manages the environment for GC
- Uses the Equinix data centre in Slough with our own dedicated to GC hardware (i.e. completely physical hosted environment).
- Selected IP addresses (only from GC) have access to the system



ModEx Interface



Required fields: *location file*

ACCNTNUM	LOCNUM	LATITUDE	LONGITUDE	OCCSCHEME	OCCTYPE	BLDGSCHEME	BLDGTYPE
1	1	35.6895	139.6917	TH_FL	1	TH_FL	0
1	2	31.2122	138.1921	TH_FL	2	TH_FL	1

- ACCNTNUM and LOCNUM need to be defined (use small integers if possible).
- LOCNUM should be unique by row
- ACCNTNUM should match with the *account* file

Required fields: *location file*

ACCNTNUM	LOCNUM	LATITUDE	LONGITUDE	OCCSCHEME	OCCTYPE	BLDGSCHEME	BLDGTYPE
1	1	35.6895	139.6917	TH_FL	1	TH_FL	0
1	2	31.2122	138.1921	TH_FL	2	TH_FL	1

- For detailed data, LATITUDE and LONGITUDE are defined as floats.
- For aggregated data, leave LATITUDE and LONGITUDE empty but LOCATORCODE and LOCATORRESOLUTION need to be defined

Required fields: *location file*

ACCNTNUM	LOCNUM	LATITUDE	LONGITUDE	OCCSCHEME	OCCTYPE	BLDGSCHEME	BLDGTYPE
1	1	35.6895	139.6917	TH_FL	1	OmniCat_FL	0
1	2	31.2122	138.1921	TH_FL	2	OmniCat_FL	1

○ Occupancies and Building types available:

Construction/Occupancy Combination	0_Unknown	1_Wood	2_Masonry	3_Concrete	4_Steel	5_Concrete-wood
1_Single Residential	/	/	/	/	/	/
2_Multi Residential	/	/	/	/	/	/
3_General Residential	/	/	/	/	/	/
10_General Commercial	/	/	/	/	/	/
11_Commercial Office	/	/	/	/	/	/
12_Commercial Retail	/	/	/	/	/	/
13_Commercial Hotel	/	/	/	/	/	/
14_Commercial Warehouse	/	/	/	/	/	/
16_Industrial	/	/	/	/	/	/
17_Agricultural	/					
21_Motor	/					
23_Municipal	/					

- Additional Thailand specific hybrid construction type
- TGIA standard occupancy can be mapped to the available combinations

Required fields: *location file*

FLCV1VAR	FLCV2VAR	FLCV3VAR	FLCV1DED	FLCV2DED	FLCV3DED
1000000	200000	50000	20000		
420000	130000	50000	20000		

FLCV1LIM	FLCV2LIM	FLCV3LIM	FLSITEDED	FLSITELIM
500000				1000000
5000000				1000000

- FLCV1VAL = BUILDINGS
- FLCV2VAL = CONTENTS
- FLCV3VAL = TIME ELEMENT (BI)

Required fields: *location file*

PERILNAME	GCATPOLICYTYPE	NUMBDLGS	LOCATORRESOLUTION	LOCATORCODE
Flood	0	1	PRO	10
Flood	0	5	SDI	100704

- In case of **aggregated data** then the following information is required as well:
 - NUMBLDGS representing the number of buildings.
 - Sample *locator* resolutions and codes:

CountryCode	Resolution	Name	Code
TH	PRO	Bangkok	10
TH	PRO	Samut Prakarn	11
TH	PRO	Nonthaburi	12
TH	PRO	Chiang Rai	57
TH	DIS	Dusit	1002
TH	DIS	Bang Bua Thong	1204
TH	DIS	Bang Pa-in	1406

CountryCode	Resolution	Name	Code
TH	PC5	55110	55110
TH	PC5	18110	18110
TH	PC5	10300	10300
TH	SDI	Lumpini	100704
TH	SDI	Wat Debsirin	100802
TH	SDI	Rangsit	130303
TH	SDI	Kaeng Khoi	190201

Required fields: *account file*

ACCNTNUM	POLICYNUM	UNDCOVAMT	PARTOF	MINDEDAMT	MAXDEDAMT	BLANDEDAMT	BLANLIMAMT
1	1						700000
2	1						700000

- Supports:

Oasis FM Level	Level description	Canonical fields	Oasis FM Profiles
1	Coverage terms	CV{X}LIM, CV{X}DED	1,3
2	Combined terms	COMBINEDLIM, COMBINEDDED	1,3
3	Site terms	SITELIM, SITEDED	1,3
4	Special Conditions (Sublimits)	COND1TYPE, COND1NAME, COND1DEDUCTIBLE, COND1LIMIT	1,3
5	Blanket policy	BLANDEDAMT, MINDEDAMT, MAXDEDAMT	3,4,5
6	Layers	UNDCOVAMT, BLANLIMAMT, PARTOF	6

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There are many limitations on actuarial analyses, including uncertainty in the estimates and reliance on data. We will provide additional information regarding these limitations upon request.

As with any actuarial analysis, the results presented herein are subject to significant variability. While these estimates represent our best professional judgment, it is probable that the actual results will differ from those projected. The degree of such variability could be substantial and could be in either direction from our estimates.

In performing this analysis, we relied on the company for estimates regarding [Enter Relied on Items]. We did not perform an independent review of these estimates.