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1. Introduction: a small footprint conceals immense analytical power

ICRFS[™] is a breeze to incorporate in a company's workflow.

Some people have the idea that a big corporation needs to use big and difficult software to warehouse and analyze all its data.

They think that the longer it takes to install and the more headaches it produces the more they are getting their money's worth.

Do not be fooled by the small footprint and ease of installation of ICRFS™!

ICRFS[™] proves simplicity and modeling power can go hand in hand

A company may have to keep track of thousands of separate divisions with data being imported and updated in next to real time.

How long do you expect it to take to have a fully featured system which can answer to the needs of the entire actuarial and management teams up and running?

Months?

Weeks?

How about a fully operational analytical platform within a few days?

After importing the data you shouldn't need to think about the software, you can concentrate on using it on your data to get the best and most actionable information out of it!

Now ICRFS[™] Importer accelerates the implementation process even further!

Insureware has developed a versatile technology for the creation of customised utilities that can build the bridge between a database holding a mass of transaction records and an analytic engine which can analyze triangle data.

This utility can communicate with any database supporting an ODBC connection such as Oracle and Netezza. These databases typically house very large repositories of unit-record data.

The Insureware team can provide instructions for adapting the database to support ICRFS[™] Importer. Minor tweaks to the Importer application may be required, however the Importer supports typical database structure formats.

ICRFS[™] Importer extracts all the database variables and allows a selection of these by the user to create triangles for analysis at whatever granularity is required.



1.1 Implementation

A typical industry implementation time frame for making data available for actuarial analysis purposes can run to many months involving many human hours and thus at large cost.

In contrast, Insureware provides database scripts allowing enterprise wide, server databases to be set up within hours, including repositories where some users have read-only or otherwise restricted access. Insureware lets you focus your resources on getting results – not getting data!



Actuarial teams can access their data and incorporate the powerful analytical modeling tools of ICRFS[™] into the company's workflow within days.

1.2. Virtual environments

ICRFS[™] blends seamlessly into virtualization environments.

Mobile employees requiring secure access to ICRFS[™] analytics, databases, and reports are supported in this way without opening any security holes in your corporate network. All the security of the virtualization software applies creating a stable, safe mechanism for analysis to be conducted remotely or on-the-fly when engaging with stakeholders.

System requirements can be easily managed according to each user's requirements.

Server databases can be accessed within, or external to, the virtualization ecosystem.

Microsoft Active Directory can be utilized to control access to the ICRFS™ application.

Insureware's technology department is able to provide advice and support in deployment within these environments.

2. ICRFS[™] Importer: Import and update large volumes of data



2.1. Fast access to loss development arrays and modeling at any level of granularity

Claims data typically reside in an Oracle, Netezza, or other data warehouse. Each claim is associated with many attributes; these attributes could be used to specify outcome subcategories containing significant corporate intelligence when skillfully analyzed. It is impossible to specify beforehand which combinations of attributes will yield the richest findings. The choice should be entirely in the hands of the analyst.

The ICRFS[™] Importer provides the mechanism to convert the claims table into loss development triangles based on a meaningful grouping of attributes.

ICRFS[™] Importer queries the claims data repository and enables the creation of loss development arrays based on user-selected attributes. You can think of it as a friendly robot data-librarian that can combine any or all of three ways of summarizing the loss development data according to your instructions:

- 1. Aggregating across all values of a variable, eg. Pricing State [if analyzing data USA Wide];
- 2. Selecting particular values, eg. Division ABC;
- 3. Grouping certain values together, eg. Division = ABC with Major Industry = Construction.

Related loss development arrays are stored in Triangle Groups (TGs) – a collection of triangles (Paid Losses, Incurred Losses, Case Reserve Estimates, Number of Claims Reported, Number of Claims Closed, etc), exposures, and premiums that all relate to the same attribute set.

The ICRFS[™] Importer utility interfaces with a big database of unit record transaction data, technically one that is ODBC enabled, such as Oracle, SQL or Netezza. The utility issues queries into the claims database and assembles the responses into data arrays which form objects in a Triangle Group. The utility has a simple, intuitive interface and is designed around four simple steps:

- 1. Configuring the data source and destination connections;
- 2. Selecting the data attributes [variables] which define a Triangle Group;
- 3. Selecting the fields which define the available loss data [triangles/loss development arrays];
- 4. Defining the dimensions of the triangles in the Triangle Groups.

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2.2. ICRFS[™] Importer with ICRFS[™] gives you a strategic advantage in underwriting

A second utility uses the database variables available in the Master Database to assemble TGs to be exported to a second ICRFS[™] database at a level suitable for analysis, these working units are made by amalgamating one or several of the fine-grained TGs from the Master. The second database will typically contain a much smaller number of TGs than the Master database.

The ability to put together different data segmentations according to any available indices gives you a strategic advantage in underwriting. Let's say the identified model for the paid losses for a particular line of business shows a high calendar year trend. The underwriters can drill down into the individual segments comprising this line and identify which business sectors are driving the high calendar year trend. Informed decisions can then be made as to whether the company should still write that business or how premiums should be charged to better represent the underlying risks.

Alternatively triangle data in Excel or unit record transactional data in Microsoft Access (or other databases) can be imported directly into an ICRFS[™] database via the ICRFS[™] COM API. With unit record data, queries can be created to produce any combination of triangles the actuary requires.

Scripts facilitate updating data (including models and forecasts) automatically – including simple checks on changes in forecast distributions to provide alerts on potential problems.

3. Corporate ICRFS[™] databases

Significant gains to an Insurance organization can be achieved by creating one or more corporate ICRFS[™] databases. The database, stored on a central server, serves as a repository for all aspects of the company's long-tail liability risks including:

- Models.
- Reserve, future underwriting, and combined forecast scenarios.
- Calendar year paid loss distributions and correlations.
- Distribution of aggregate reserves.
- One-year look-ahead statistics including variation in mean ultimates.
- Risk capital allocation by LoB and calendar year.
- Value-at-Risk and Tail-Value-at-Risk by Calendar Year, Accident Year, and Total for multiple LoBs.
- Solvency II one-year risk horizon metrics, IFRS 4 metrics, and ultimate year risk horizon metrics.

Three user-roles can be set by the Database Administrator to control access privileges. In order of increasing restriction these are Data Manager, Modeller and Viewer. The DBA can also activate an Audit Tracker which keeps detailed logs of all user-driven events.

3.1. User access levels and enhanced security

Use Microsoft Active Directory to control which users can see particular databases. Access level is also controllable within the Active Directory environment.

- 1. Simply log in to the Active Directory Server.
- 2. On a successful connection, the list of databases available to open (with access level) is displayed.

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All database connection details are handled securely within Active Directory – these are never made visible to the end user.

4. Database security and enterprise wide schemas

- Data within ICRFS[™] relational databases are stored in a proprietary format; data only readable within ICRFS[™].
- ICRFS[™] requires user authentication for all server databases: ORACLE, SQL Server, and Interbase databases.
- For each SQL Server and ORACLE ICRFS[™] database, the Database Administrator (DBA) can assign one (or more) of three user-roles with corresponding access privileges. These roles are: Data Manager, Modeller and Viewer. DBAs can also modify the role assigned to a particular user, as needed.
- DBA are able to activate an Audit Log on any Oracle, SQL Server or Interbase database. The audit log tracks all database access and modification events in detail and results can be filtered by User, Operation, Object Type, as well as date.
- Companies can use multiple ICRFS[™] databases according to the company's workflow.
- Scripts to create ORACLE, SQL Server, Interbase ICRFS[™] databases are supplied. Databases can be created in a few minutes.

4.1. Workstation or localized ICRFS[™] databases

Individual segments of the business (triangle groups) can be extracted from the corporate database to smaller, specific databases shared within an actuarial team. The corporate database is updated when work is completed.

ICRFS[™] users can work collaboratively from different locations in all aspects of modeling, forecasting and reporting. This flexibility supports incorporating ICRFS[™] into a company's preferred work flow tree without compromise.



4.2. Example ICRFS[™] data management scheme



- Server databases are implemented by region (or department) and corporately
- Actuarial users have modeler access (solid lines) to the respective server databases within their department and to their own local workstation and local databases. They have viewer privileges (dashed line) for the corporate server database.
- DBAs have full access to all ICRFS[™] server databases.

This set up is very flexible and is one of many configurations that are possible based on the needs of the corporation or actuarial departments.

For instance, regional server databases may act as a repository for the region and also would be read-only for regular users. The actuaries under this configuration would perform all modeling revisions on their local databases and only privileged users would propagate the final revisions to the regional server database repository.

5. Organize data according to your requirements

Accessing data and information through the ICRFS[™] system is a pleasure. All the information in the database including data, models, and results, are right at your fingertips.

5.1 Data, Models, and Reports

Composite triangle groups collate data from multiple triangle groups and form the base for a single composite model for the whole company.

Triangle groups contain:

- Triangles;
- Premiums;
- Exposures;
- Inflation;
- · Datasets;
- Models;
- · Forecast scenarios; and
- · Links to reports.

All this in a structured, relational database.

Models, forecasts, and data relevant to a Line of Business (LoB) or segment (including notes) are associated via triangle groups providing ready access to data and results.

5.2. Flexible structure

Use the system defined types or create any other additional triangle types which best describe your company's triangle data.

A large number (4000+) of user-defined classification variables can be used – however fewer variables will increase performance. An effectively unlimited number of values can be associated with each variable providing maximum flexibility.

In addition, there are four system defined categories: Type of TG, Valuation Date, Sampling Period, and Currency.





Triangle Groups contain building blocks:

- Triangles.
- Exposure, Inflation, Premium vectors.
- Datasets which link triangles with [optional] exposure, inflation or premium vectors.
- Composite datasets which contain at least one link to a dataset.

Composite triangle groups link with ordinary triangle groups. These contain:

- Composite datasets assembled from datasets from any connected triangle group.
- Composite datasets and datasets supply data to all modeling frameworks.

All data and modeling objects have user-customisable descriptions associated with them.



6. Seamless communication between ICRFS[™] databases

Drag and drop triangle groups (datasets, models, forecast scenarios, and other objects) between two ICRFS[™] databases in four simple steps.



Transfer your work from a corporate database on a server to a local database when you are going to be away from your network - or back to the server when you return. By previewing triangle groups individual objects within a triangle group can be copied – eg: models (below).

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Currency preferences enable quick selection of most commonly used currencies and associated symbols.

Multiple currencies can be managed within a single database pertaining to multiple regions.

- Triangle groups can be associated with a nominated currency (right click menu: inset).
- Composite triangle groups can link to triangle groups of varying currencies.

Model data in original currencies.

Obtain summaries:

- In each individual currency.
- By converting to a single currency using applicable exchange rates in the Multiple Probabilistic Trend Family (MPTF) forecast scenario.



8. Database navigation

All triangle groups and content within triangle groups can be accessed within a few mouse clicks. There is no need to run complicated queries to find and access data. Finding data is a quick and easy exercise.

Know the name of the triangle group you need? Simply begin typing the name in the triangle group window and the triangle group will be displayed.

Two main views are presented to enable quick access of information: tree view and query view. These two views are structurally similar, but activate different combinations of exploratory filters in the database.

Tree view

Triangle groups are filtered in tree view sequentially – from one category in the variable list to other categories as required. Access is sequential from one level to the next in the hierarchy.

Common queries in this format may be:

- Display all triangle groups corresponding to company: 21st Century Pacific Ins Co;
- Display all Worker's Compensation Lines of Business;
- Show data for Mutual companies writing Worker's Compensation in domicile of California.

All of these queries retain a single value for each variable in the hierarchy. The depth of the tree is only limited by the number of variables (triangle group classifiers) in the database.

Example

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Navigation through the view is simple with categories displayed via clicking on the [+] entries (1). Sub-filters are displayed by right clicking and selecting from the list of other available variables (2).

Query view

Triangle groups are filtered in query view simultaneously across categories. In addition, wild-card filters are permitted providing substantial flexibility in creating queries to quickly find your data.

Common queries in this format may be:

- · Select companies with loss ratios between particular intervals;
- from Line of Business B-PPA; and
- with Aggregation: AMB Group.

Any or all of these queries can correspond to a single value, multiple values, or search strings.

Example

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Line of Business	Pekin Ins Group [2014 USD	8-Private Passe	98,261	645,107	76.34	AN
B-Private Passenger Auto Li	ab Select the Interface	2014 USD	8-Private Passe	24,007	124,801	82.94	AN
V Reserves Held	security values for Query	HOLL LISD	8-Private Passe.	101,339	940,594	75.07	A
Ultimates Held	(8) 20(LR(=30)	×	8-Private Passe	175,337	1,388,919	79.21	Ab
E V Loss Ratio	HF 3D(LR(w40)		8-Privale Passe	189,173	2.043.143	76.40	AN
- 75 <lr<~80< td=""><td>10 400Ho450</td><td>Contraction</td><td></td><td>25,210</td><td>621,095</td><td>76.18</td><td>AN</td></lr<~80<>	10 400Ho450	Contraction		25,210	621,095	76.18	AN
80 <lr<=85< td=""><td>HE SOLD LACE</td><td>Select mult</td><td>ple attributes</td><td>38,608</td><td>209,313</td><td>75.30</td><td>AN</td></lr<=85<>	HE SOLD LACE	Select mult	ple attributes	38,608	209,313	75.30	AN
Aggregation	18-65(18(+20	including r	nested levels	98.837	789,569	75.41	AN
AMB Group	18 70(LR(=75	_	8-Phyate Passe	17,922	180,653	78.01	AN
Total Larned Premum	B 75(18(40)		8-Private Passe	16,917	184,820	82.83	AN
Relative Loss Habo	B BOLL 1-15		B-Private Patte	4,714	113,259	75.65	AN
Fieldive Surwal Flato	B- 85(LR<=90		8-Private Passe	3.247	10.285	81.22	AN
V SUDVID	⊕ 90(LR<95		8-Private Patte	5,881	23,490	84.71	AN
Total Gross Earned Planta m	⊕. 95(LR(*100		8-Private Passe	12 974	180,858	76.06	Ah
Gross Survival Ratio Relative Gross Survival Ratio	B LRD150	4					
State of the second sec	>						

Above a filter has been created for all companies with:

- Triangle Group Name contains 'ins';
- Line of Business: B-PPA;
- Loss Ratios (LR): 75> LR <= 85;
- Aggregation: AMB Group; and
- Dimensions: 10x10.

9. Updating, collapsing and truncating triangle groups

Update (Expand)



- New triangle groups can be created (original data left untouched) or updating can be done in place.
- All probabilistic models are retained as part of the updating algorithm.
- Monitoring is effortless as all models and scenarios from the previous update period are automatically extended for the new data diagonals.

Collapse basic triangle groups



• Basic triangle groups can be collapsed from higher resolution sampling periods (eg: quarter) to lower resolution sampling periods (eg: year) or mixed sampling periods (as here, year versus quarter).

Truncate

on:	Rename	F2	Truncate Triangle Group	-	×
15 17	Delete Open	Del . Ctrl+Enter	New Triangle Group Name:	CompA(trunc.)	
с с я	Assign Values Change currency Create Composite TG Combine Selected TGs Expand		Cumulate at Development Period: Cumulate Along (Calendar Periods C Accident Periods	14 × 15 16 17 18	Show Qimensions
BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	Collapse Truncate	1	<u>k</u>	20 21 + Çancel	Heb

• Truncation of triangle groups by development period is available. Cumulation can be applied by accident or calendar periods.

10. Run calculations across triangle groups

Combine basic triangle groups

• Multiple basic triangle groups of the same dimensions can be combined to facilitate calculations across triangle groups.

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	and a second sec	100	United and an	1

Run modeling wizard



• Run the modeling wizard for the selected basic triangle groups for any combination of triangle types.



• All manipulation of triangle group data, whether across triangle groups or within triangle groups, can be automated with COM scripts.

11. New triangle groups

Basic triangle groups

• Although typically completed via COM routines or importing from XML, the ICRFS[™] system also allows creation of triangle groups manually.

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Expand Collapse	1	Calendar Sampling Quarter 💌	Last Calendar Quarter:	2012	3600 -	Mm 1st Qir 2003 Max 4th Qir 2076
Run Witard			Truncation First Calendar Quarter	(1# 0# 💌	Min: 1st Qtr 2002 Max: 4th Qtr 2011
Export in XML format Default Sorting Order		Show	Last Accident Year starts at	[Tet Oir 🕑	Mirx 1st Qtr 2003 Max: 1st Qtr 2012
View	•		Total number of develo	pment periods:		Min: 4 Max: 43
Select All	Ctrl+A	() ()				1.
Refresh	F5		or 1	cure 1	Hab	Ť
Mary	lar C		UK	Cance	nep	

• Combinations of sampling periods, currencies, and truncation is available to match the triangle shapes used by individual companies. The maximum triangle group size is 300 periods.

Create composite triangle groups

Delete	Del	Composite Triangle G	roup	long.	Bank"	-	.B.
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• Assign triangle group classification values as part of creation of the composite triangle group.

12. Work with triangle groups of arbitrary shapes

• Mixed sampling periods: year vs quarter, half-year vs month, and more!



• Truncated by accident period (if in run-off).



• Create triangles where the number of calendar periods is less than the number of accident periods.



13. Inside triangle groups

Triangle groups connect all the data relating to a Line of Business, portfolio, or segment into a cohesive unit. The data can then be utilised in the modeling frameworks. All data are related clearly within the triangle group in an orderly fashion.

Basic triangle groups



- Models, forecast scenarios, and notes and are associated with data.
- All results for modeling and forecasts can be quickly found, answers replicated, and reports generated.
- Descriptions can be associated with any object providing summary comments to remind the user of important points about the data, model, or forecast scenario.

Composite triangle groups

Aside from composite datasets and notes, all objects within a composite triangle group are sourced from the linked basic TGs.



- At least two basic triangle groups must be linked within a composite triangle group.
- Access to basic triangle group data is controlled by the linked datasets.
- Any updates to data in the basic triangle groups are automatically applied to the composite triangle groups.
- Updating and monitoring is transparent and immediate.



- · Models, forecast scenarios, and notes and are associated with data.
- All results for modeling and forecasts can be quickly found, answers replicated, and reports generated.
- Descriptions can be associated with any object providing brief value snippets to remind the user of important points about the data, model, or forecast scenario.

Datasets

Models Datasets	Composite Data	sets Triangle	ts Exp/Inl/P	rem: Dimension	s Notes Report	z/Docz			
New	(PPL)) -	(None)	- Nonel	· DeNone]	• CRE(II) •				
Name	Triangle	Exposure	Inflation	Premium	Assoc Triangle	TriangleType	1/C	Allow Offset	Description
PUIL.	PUII	pionel	Monej	(None)	CREW	Pad losses		N	
CRE(I)	CRE(I)	[None]	[None]	(None)	[None]	Case reserve estimates	1.	N.	
PRE	PRE	(None)	(None)	[None]	[None]	Premiums	1.	N	
LDI	16.03	[None]	(None)	(None)	CRE(I)	Incurred losses	1	N	
VCR	NCR	(None)	(None)	[None]	(None)	Number of clams reported	1	N	
Buik & IBNR	Bulk & IBNR	(None)	(None)	[None]	(None)	Incurred but not reported to	. 1	N	
VCC_LP	NCC_LP	(None)	[None]	(None)	(None)	Number of claims closed will.	- T.	N	
NCOS	NCOS	[None]	[None]	[None]	(None)	Number of claims outstand	1	N	
Receives Held	Reserves Held	(None)	[None]	(None)	[None]	Reserves Held	1	N	Reserve held calculated ho
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xuk.	bulk.	[None]	(None)	(None)	[None]	Paid losses	C .	N	
PLICI	PL(C)	(None)	(None)	[None]	CREFT	Paid losses	C	N	
eported IL(C)	reported IL(C)	[None]	(None)	[None]	[None]	Paid losses	C	N	
LUC)	ILICI	(None)	[None]	[None]	CREIN	Incurred losses	C	N	

The datasets tab allows management of all data links relevant to modeling triangles including:

- Exposure, Inflation, Premium vectors.
- Related [Associated] triangles (eg: Paid losses can be associated with Case Reserve Estimates or Incurred Losses).
- A description field for any pertinent notes regarding the composition of the dataset.
- Operations on datasets (such as transformation, arithmetic, or splitting) can also be conducted on this tab.

Composite datasets



- Composite datasets consist of a set of incremental or cumulative datasets.
- If the composite dataset resides in a composite triangle group, then datasets can come from any linked basic triangle group.
- If the composite dataset resides in a basic triangle group, then datasets included the composite are sourced from the triangle group.
- Once models are created, composition of composite datasets is fixed.
- All pertinent dataset attributes are visible and any column can be used for sorting.

Models, forecast scenarios, etc

- All data for reproducing results stored within the relational database allowing any output table to be reproduced typically within a few mouse clicks.
- Models, forecasts, and other saved objects can be transferred within the Triangle Group (within datasets) or across multiple triangle groups or even databases.



Triangles

Models Datasets	Composite Datasets Triangles	Esp/Ini/Prema	Dimensions	Notes Re-
Name	Ture	1/IC	Scale	Category
P FUI	Pad known	1	Theoremath	Depend
CREIII	Case reserve estimates	1	Thousands	Original
PRE PRE	Premiuma	1	Thousands	Original
F (L)()	Incurred losses	1	Thousands	Original
I NCR	Number of claims reported	1	Units	Original
Buk & IBNR	Incurred but not reported forses	1	Thousands	Original
V NCC_LP	Number of claims closed with loss	1	Units	Original
I NCOS	Number of claims outstanding	1	Units	Original
P Reserves Held	Reserves Held	1	Thousands	Original
Prem_DAA	Premium earned direct and assum	1	Thousands	Original
Prem_Ceded	Premium earned ceded	1	Thousands	Original
PL(C)	Paid losses	С	Thousands	Original
🖉 IL(C)	Incurred losses	C	Thousands	Original
V Illimate Hald	10 monto Madel	0	Threatanda	Original

- Triangle data stored on the triangles tab.
- Many triangle types can be utilised within the same Triangle Group.
- Multiple datasets (previous) can be associated with the same triangle providing flexibility for evaluating and using exposures (or inflation) vectors.

Exposure/ Inflation/ Premiums

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_	Default Sorting Order		
_	View		
	Select All	Ctri+A	
	Refresh	15	
	New Exposure	Shift+Ctrl+E	
	New Inflation	Shift+Coli+1	
	New Premium	Shift+Chd+P	

- Exposures, inflation, and premium vectors are all managed on the Exp / Inf / Prem tab.
- · Multiple vectors can be stored simultaneously as exemplified above.
- Datasets are easily assembled.
- Each dataset is linked to one exposure, inflation, or premium vector.

14. Calculations within triangle groups

Transform

-iouoia	Dotarous	Composite	Datasets	Triang	les l	Exp/in//	Prems	Dimensi	ons	Votes	Rep	ports	/Docs			
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Nane		Toangle	Exp	osure		nflation		Premium		Assoc	Triang	ie	TriangleType	1/C	Allow Offset	Description
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• If transforming a dataset with an associated inflation, then inflation adjusted data can be created in either cumulative or incremental form.

Add, subtract, multiply or divide triangles



- Mathematical operations can be applied to either triangles or datasets to create new data triangles.
- Above a triangle group has been combined so that calculations across LoBs can be performed.

Split datasets

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- Datasets can be split by accident year enabling quick evaluation to see if trends are the same between sets of accident periods.
- Composite datasets, split exposures, and split premiums can all be created automatically.

Restore triangles

New		· [None] ·	[None] +	Nonel +	CREII -	5 C 0 1
arve	Triangle	Exposure	Inflation	Piemium	Assoc Triangle	TriangleType
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cn cn		(None) Restore CRE = IL - PL	[None]	[None]	CRES)	Incured losses
		New Triangle Names	(CRE())1		-	
			f incener	2		

• Restore triangles using the relationship IL = CRE + PL. As long as any two triangles are available, the third can be restored.

Simulate triangles

Want to see how different modeling techniques work on data where all the parameters are known? Simply simulate the data using those parameters and see whether the models can replicate the known features.

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- Full control over all parameters is provided: for the three directions and the process variance.
- Associate exposure, inflation, or premium data if required.

15. Wealth of analytical power in ICRFS[™]

All the ICRFS[™] tables and graphic displays based on the identified (optimal) composite model, in the MPTF modeling framework for multiple LoBs (or segments), can be replicated in matter of seconds as a result of Insureware's extremely fast computational algorithms. 'What if' analyzes can be considered and results obtained very quickly.

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Liability stream and risk capital by calendar year

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Capital allocation and risk diversification



Identify and



Critical financial information including reserve distributions by accident year, calendar year and total for each LoB and the aggregate of all LoBs, reserve distribution correlations between LoBs, risk capital allocation by LoB and calendar year, T-V@Rs and V@Rs for different time horizons, and more can be computed within a few seconds. A company-wide report for long-tail liability lines can be created with a single report template.



Assess risk capital and Reinsurance programs











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