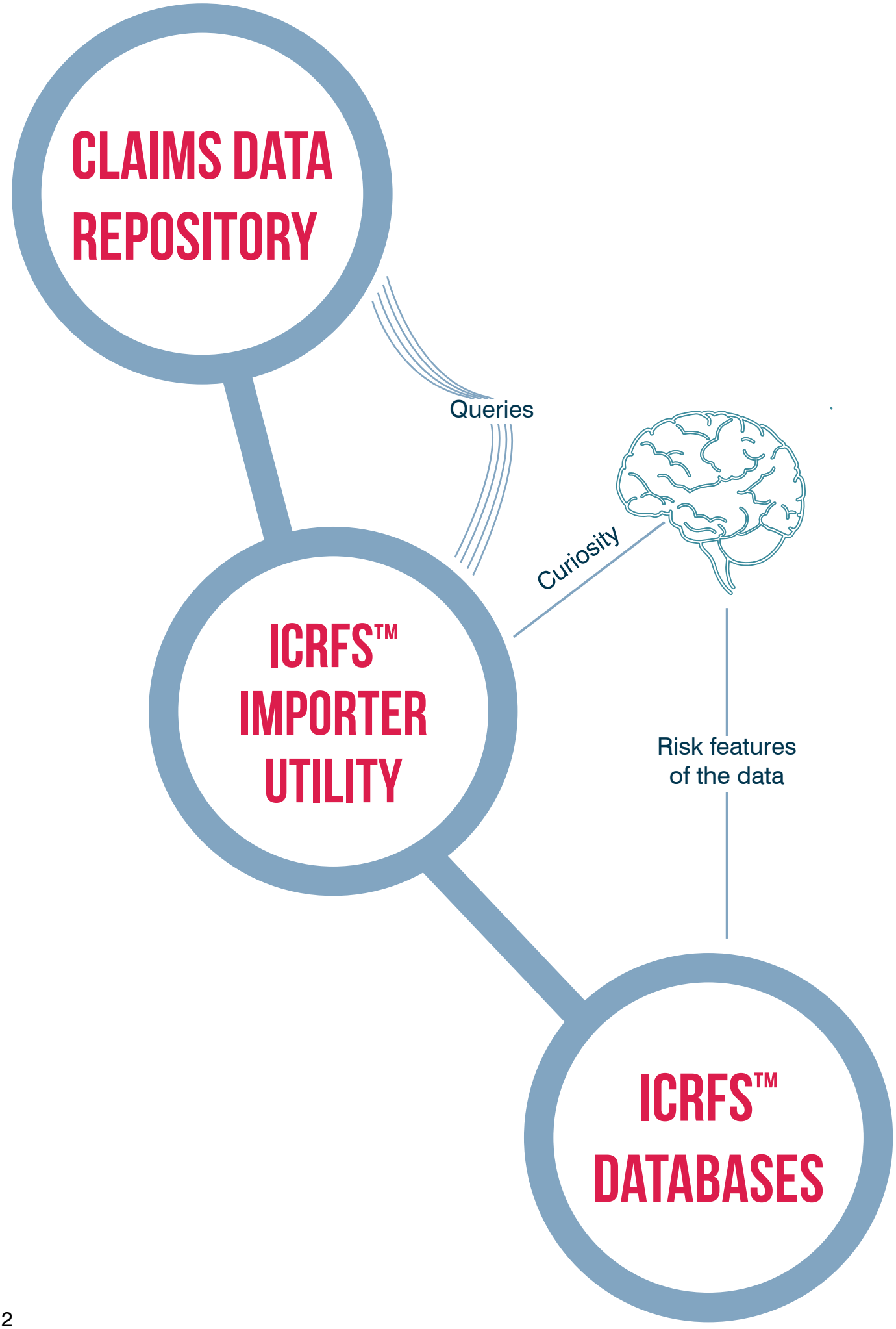
ICRFS™ IMPORTER

Insureware
Innovative Software Solutions for P&C Insurance

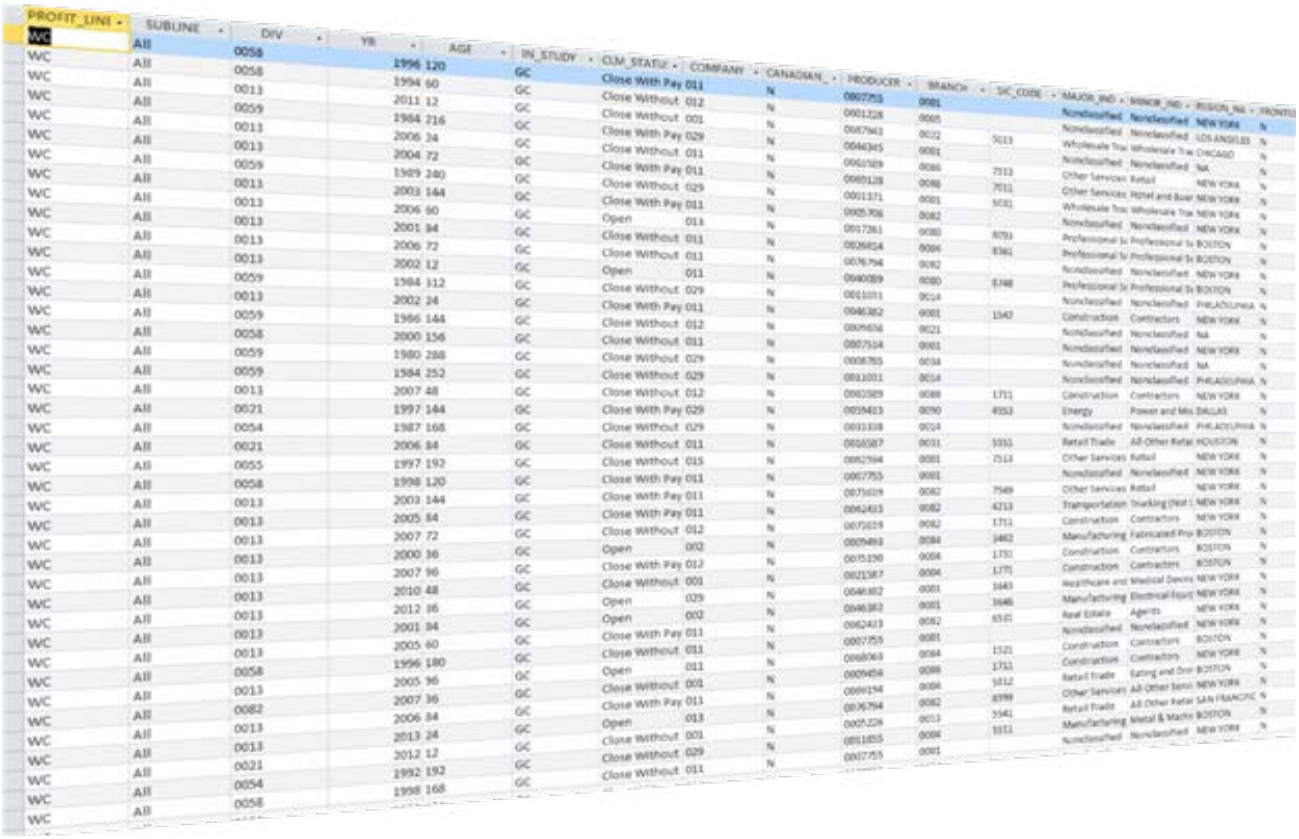

CLAIMS DATA REPOSITORY
Queries
Curiosity
ICRFS™ IMPORTER UTILITY
Risk features of the data
ICRFS™ DATABASES

FAST ACCESS TO LOSS DEVELOPMENT ARRAYS AND MODELING AT ANY LEVEL OF GRANULARITY

CLAIMS DATA REPOSITORY

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.

An example of some claims data that a client provided to Insureware:



PROFIT_LINE	SUBLINE	DIV	YR	AGE	IN_STUDY	CLM_STATU	COMPANY	CANADIAN_	PRODUCER	BRANCH	SIC_CODE	MAJOR_IND	MINOR_IND	REGION_NA	FRONTI
WC	All	0058	1996	120	GC	Close With Pay	011	N	0807751	0081		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0058	1994	60	GC	Close Without	012	N	0901328	0005		Nonclassified	Nonclassified	LOS ANGELES	N
WC	All	0013	2011	12	GC	Close Without	001	N	0947961	0022	5013	Wholesale Tra	Wholesale Tra	CHICAGO	N
WC	All	0059	1984	216	GC	Close With Pay	029	N	0946365	0081		Nonclassified	Nonclassified	NA	N
WC	All	0013	2006	24	GC	Close Without	011	N	0901589	0086	7513	Other Services	Retail	NEW YORK	N
WC	All	0013	2004	72	GC	Close With Pay	011	N	0905128	0086	7011	Other Services	Hotel and Boar	NEW YORK	N
WC	All	0059	1989	240	GC	Close Without	029	N	0901371	0081	5031	Wholesale Tra	Wholesale Tra	NEW YORK	N
WC	All	0013	2003	144	GC	Close With Pay	011	N	0905706	0082		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0013	2006	60	GC	Open	014	N	0917261	0080	8093	Professional Se	Professional Se	BOSTON	N
WC	All	0013	2001	84	GC	Close Without	011	N	0926814	0084	8361	Professional Se	Professional Se	BOSTON	N
WC	All	0013	2006	72	GC	Close Without	011	N	0976794	0082		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0059	2002	12	GC	Open	011	N	0940089	0080	8748	Professional Se	Professional Se	BOSTON	N
WC	All	0013	1984	312	GC	Close Without	029	N	0911031	0014		Nonclassified	Nonclassified	PHILADELPHIA	N
WC	All	0059	2002	24	GC	Close With Pay	011	N	0946382	0081	1542	Construction	Contractors	NEW YORK	N
WC	All	0059	1986	144	GC	Close Without	012	N	0909636	0021		Nonclassified	Nonclassified	NA	N
WC	All	0058	2000	156	GC	Close Without	011	N	0907514	0081		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0059	1980	288	GC	Close Without	029	N	0908765	0034		Nonclassified	Nonclassified	NA	N
WC	All	0059	1984	252	GC	Close Without	029	N	0911031	0014		Nonclassified	Nonclassified	PHILADELPHIA	N
WC	All	0013	2007	48	GC	Close Without	012	N	0902389	0088	1711	Construction	Contractors	NEW YORK	N
WC	All	0021	1997	144	GC	Close With Pay	029	N	0929413	0090	4953	Energy	Power and Mix	DALLAS	N
WC	All	0054	1987	168	GC	Close Without	029	N	0933338	0014		Nonclassified	Nonclassified	PHILADELPHIA	N
WC	All	0021	2006	84	GC	Close Without	011	N	0950587	0031	5551	Retail Trade	All Other Retai	HOUSTON	N
WC	All	0055	1997	192	GC	Close Without	015	N	0952594	0081	7513	Other Services	Retail	NEW YORK	N
WC	All	0058	1998	120	GC	Close With Pay	011	N	0907755	0081		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0013	2003	144	GC	Close With Pay	011	N	0973019	0082	7549	Other Services	Retail	NEW YORK	N
WC	All	0013	2005	84	GC	Close With Pay	011	N	0962403	0082	4213	Transportation	Trucking (Not L	NEW YORK	N
WC	All	0013	2007	72	GC	Close Without	012	N	0973019	0082	1711	Construction	Contractors	NEW YORK	N
WC	All	0013	2000	36	GC	Open	002	N	0909493	0084	3462	Manufacturing	Fabricated Pro	BOSTON	N
WC	All	0013	2007	96	GC	Close With Pay	012	N	0975190	0084	1731	Construction	Contractors	BOSTON	N
WC	All	0013	2010	48	GC	Close Without	001	N	0921587	0084	1771	Construction	Contractors	BOSTON	N
WC	All	0013	2012	36	GC	Open	029	N	0946382	0081	1641	Healthcare and	Medical Devic	NEW YORK	N
WC	All	0013	2001	84	GC	Open	002	N	0962403	0082	3646	Manufacturing	Electrical Equi	NEW YORK	N
WC	All	0013	2005	60	GC	Close With Pay	011	N	0907755	0081	6531	Real Estate	Agents	NEW YORK	N
WC	All	0013	1996	180	GC	Close Without	011	N	0960069	0084	1521	Nonclassified	Nonclassified	NEW YORK	N
WC	All	0058	2005	96	GC	Open	011	N	0909456	0086	1711	Construction	Contractors	BOSTON	N
WC	All	0013	2007	36	GC	Close Without	001	N	0999194	0084	5012	Retail Trade	Eating and Drir	NEW YORK	N
WC	All	0082	2006	84	GC	Close With Pay	011	N	0936794	0082	8999	Other Services	All Other Servi	BOSTON	N
WC	All	0013	2013	24	GC	Open	013	N	0905226	0013	5941	Retail Trade	All Other Retai	SAN FRANCISC	N
WC	All	0013	2012	12	GC	Close Without	001	N	0911055	0084	5511	Manufacturing	Metal & Machi	BOSTON	N
WC	All	0021	1992	192	GC	Close Without	029	N	0907755	0081		Nonclassified	Nonclassified	NEW YORK	N
WC	All	0054	1998	168	GC	Close Without	011	N							
WC	All	0058													

Each row represents a claim and includes, along with the payment specifiers, accompanying details like:

- Division
- Line
- Major Industry
- Minor Industry
- Pricing State
- Retention Range
- Company, and
- Many other attributes

The claims database contains over 40 variables, each of which can have numerous values.

In the ICRFS™ database, individual claims are aggregated into triangles and are grouped in Triangle Groups (TGs). TGs are assigned classification variable attributes (values) in the database.

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

ICRFS™ IMPORTER

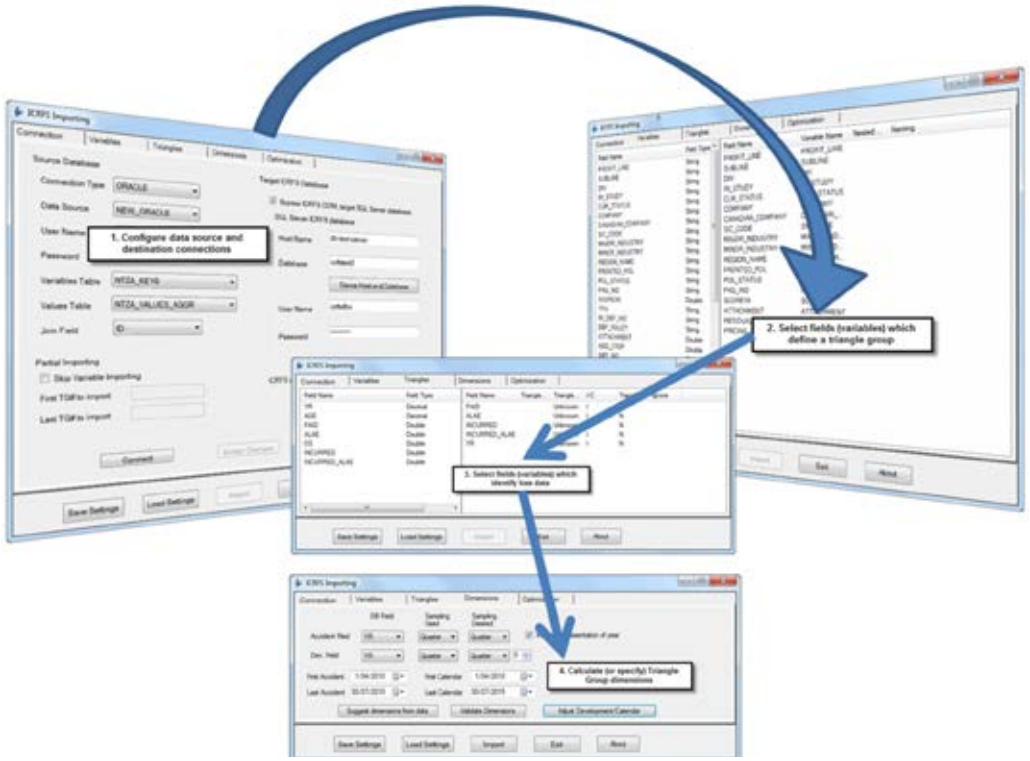
ICRFS™ Importer queries the claims data repository and enables the creation of loss development arrays based on user-selected attributes. You can think of it as a friendly robot data-librarian that can combine any or all of three ways of summarizing the loss development data according to your instructions:

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.



The ICRFS™ Importer swiftly imports the data from the Claims Data Repository into an ICRFS™ database format in a form suitable for analyses. Typical import speeds in testing are clocking in at up to 2,000 TGs per minute.

A real ICRFS™ database to be used for analysis would contain a few hundred TGs and can be imported in a matter of minutes, if not seconds.

ICRFS™ DATABASE

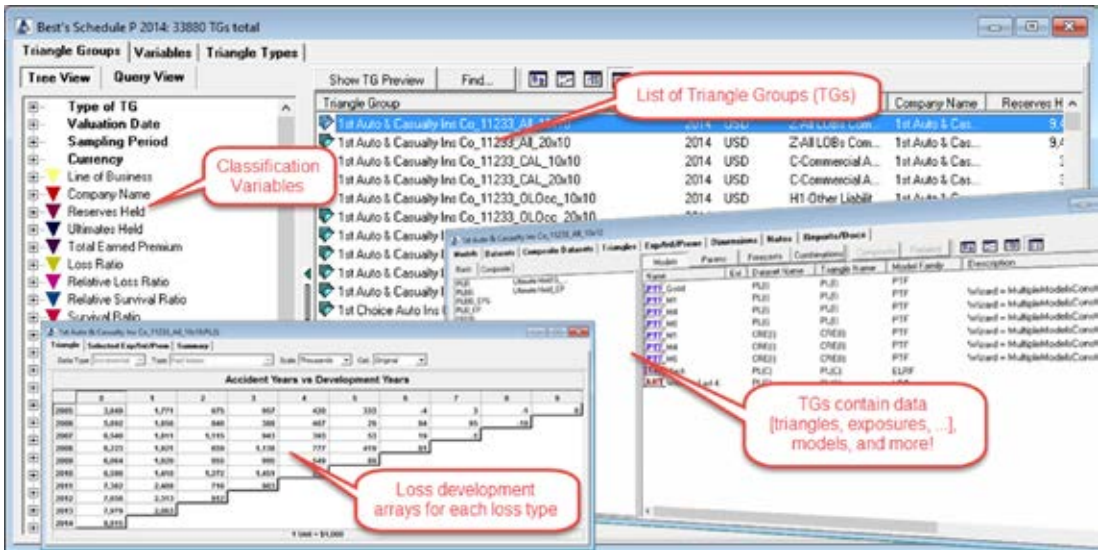
Accessing data and information through the ICRFS™ system is a pleasure. All the information in the database including data, models, and results, are right at your fingertips.

WHAT IS AN ICRFS™ DATABASE?

An ICRFS™ database is a framework for storing all loss development arrays [triangles], exposure vectors, premium vectors, and other data connected with analysis in a simple, structured system.

FLEXIBLE STRUCTURE

A large number (4000+) of user-defined classification variables can be used. An effectively unlimited number of values can be associated with each variable providing maximum flexibility. In addition, there are four system defined variables.



See the ICRFS™ Database brochure for more information.

DATA, MODELS, AND REPORTS

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.
Triangle groups contain:

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

Composite triangle groups collate data from multiple triangle groups and form the basis for a single composite model for all the LOBs or segments within the company.

ICRFS™ + ICRFS™ IMPORTER: THE ULTIMATE TOOL FOR STATISTICAL ANALYSIS

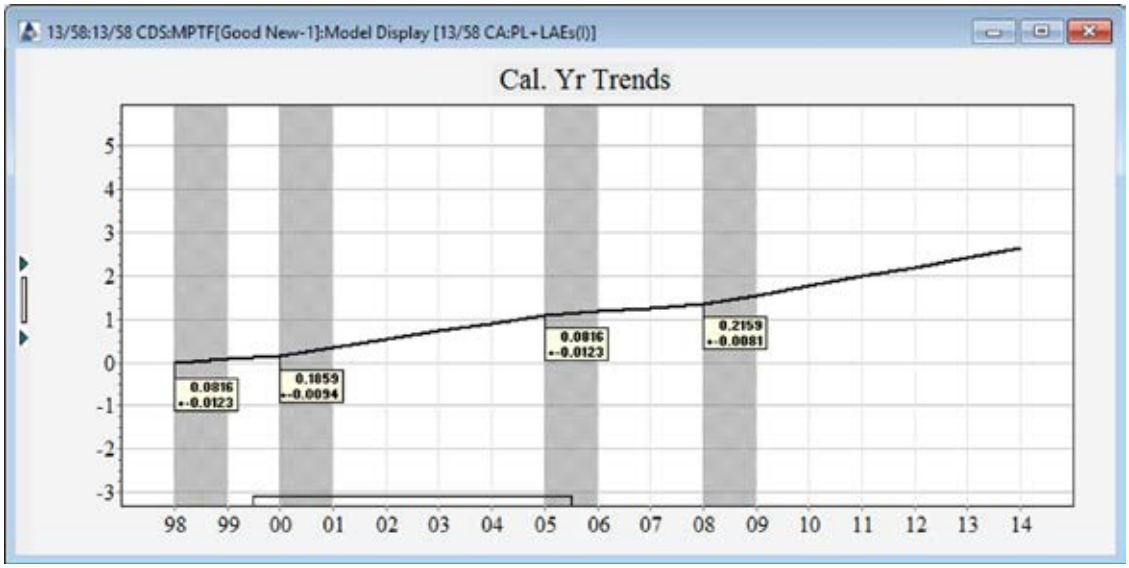
Users of the ICRFS™ software package know how to rapidly expose the internals of any data array used in P&C actuarial work by placing it within the Probabilistic Trend Family (PTF) or Multiple Probabilistic Trend Family (MPTF) modelling frameworks. The result is a set of pictures showing how the operative trends split among the three directions of account, and the precise pattern of data volatility relative to those trends. The process volatility and parameter uncertainty are clearly distinguished and correlations between lines are estimated from the data.

The single identified composite model produces all the metrics you need to understand the business.

One thing you couldn't do, up to now, unless it had already been done for you, is to slice up your data according to any available category.

GIVES YOU A STRATEGIC ADVANTAGE IN UNDERWRITING

An example: say you've analysed some Workers Compensation data and found higher than expected inflation in recent years. The identified model below shows an example, with a high calendar year trends post 2008.



You wonder whether this is driven by a particular manufacturing type eg: Construction.

Now you can split the data by Major industry to determine which industry is the principal driver of the huge (social) inflation. The principle driver(s) are very likely to have a much higher rate of inflation than the 21.6%+_ measured - say 30%+. You probably don't want to continue writing such business but, if you do continue writing the segment, the premiums must be increasing at at least the same rate as the inflation.

Another example: you want to find optimal retentions for reinsurance. Data can be imported splitting the claims into different layers. The optimal models can be identified and the strategy which provides the best insurance (or reinsurance) outcome is easily selected. Solutions can be presented side-by-side for ready comparison.

info@insureware.com
Suite 6 & 7 40-44 St Kilda Road
St Kilda VIC 3182 Australia
Tel: +61 3 9533 6333 Fax: +61 3 9533 6033