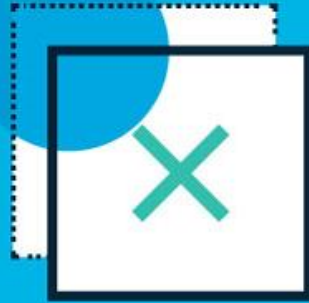
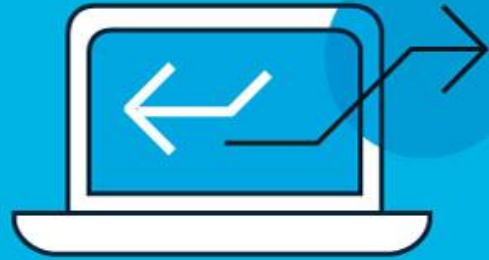


Introducing Touchstone Re

Colette Karakashian
Mark Williamson

TOUCHSTONE^{re}



Agenda

Introduction

Live Demo

Implementation Logistics

Questions?

2018 Release Plan:

CATRADER® 20.0

Touchstone®

Touchstone Re™

AUGUST

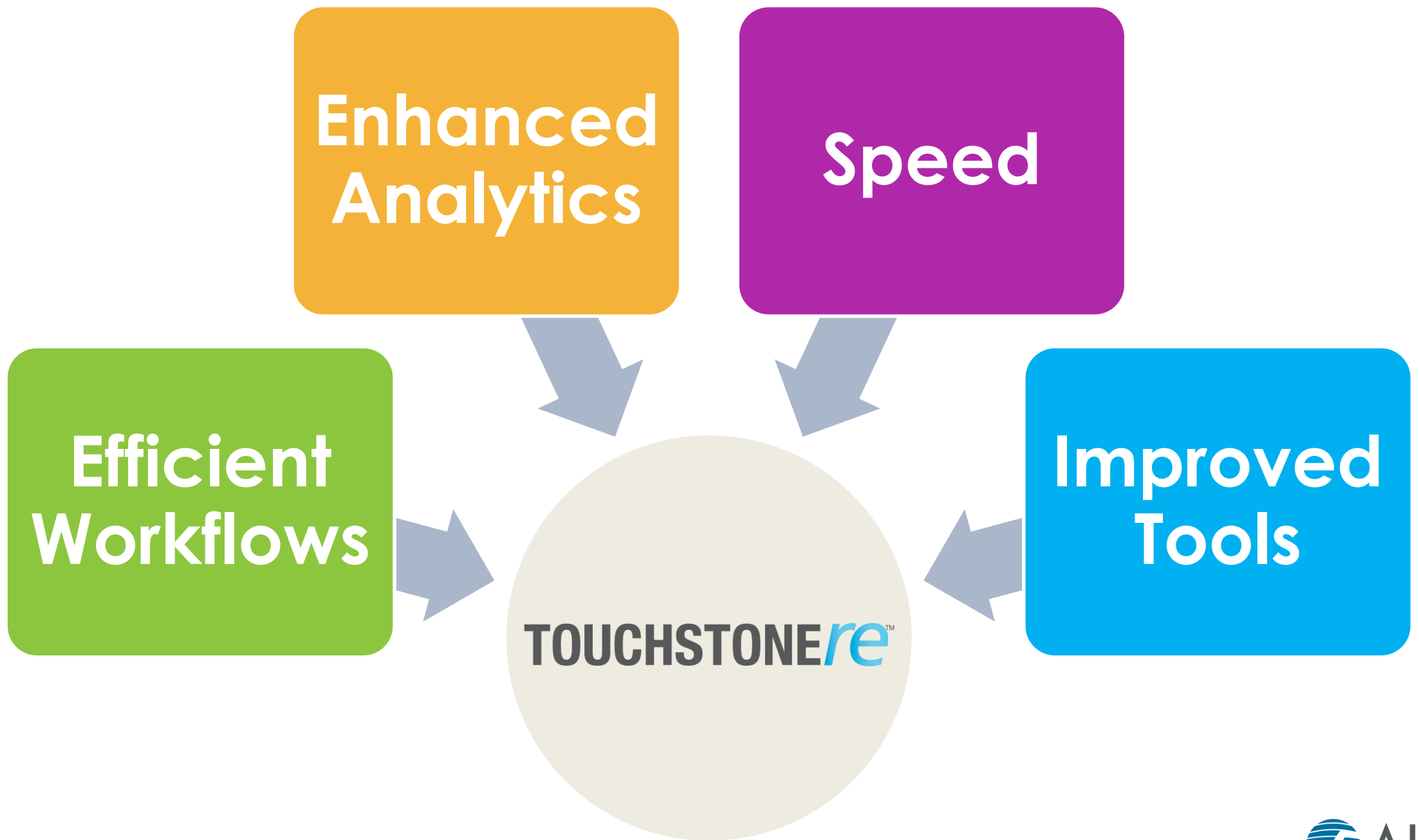
M	T	W	T	F	S
		1	2	3	4
6	7	8	9	10	11
13	14	15	16	17	18
20	21	22	23	24	25
27	28	29	30	31	



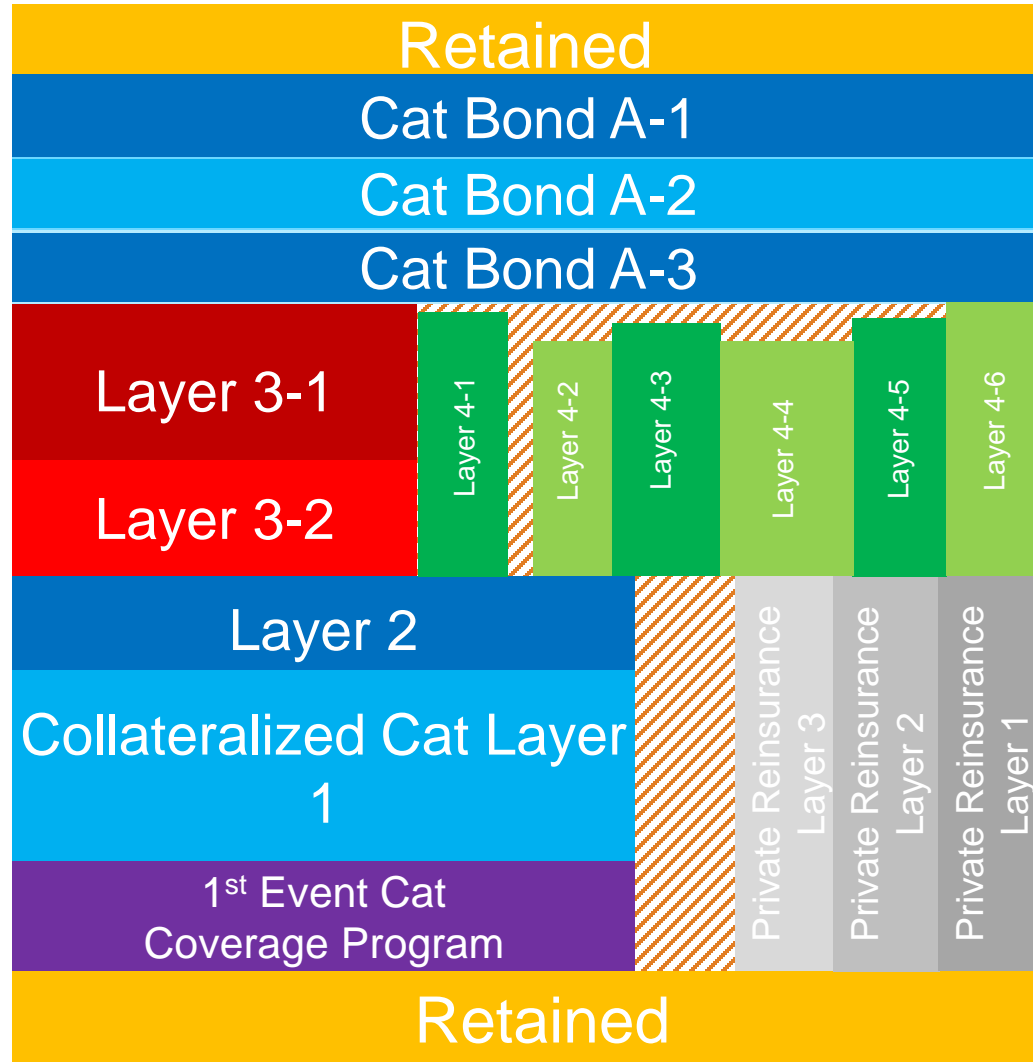
What to Expect in 2018?

- End-to-end pricing and portfolio workflows
- Touchstone integration
- New and improved functionality including:
 - Financial engine enhancements
 - Visual drag and drop for creating complex reinsurance structures
- Improved analysis performance
- Full suite of workflow APIs
- Brand new database schema





Today's Complex Programs Demand Increased Financial Engine Flexibility



- Specify perils by layer
- Multi-exposure data sets per company
 - Tie different exposure to different programs within a single company
- Enhanced source and inuring program functionality
 - Mix source and inuring
 - Multiple chains of programs
 - More loss perspectives
 - Use different CLFs/exposures

Visualization of Reinsurance Structures

TOUCHSTONE^{re}

ImportExportToolsAdminHelp

HomeTest 2Example Company

Company Data

Programs

All Programs

Recent

example

Retained Quota Share

Structure to be priced

Inuring CAT Bond 4

Inuring CAT Bonds 1,2,3

FHCF Program

Peril Split to Remove FL Wind

Inuring Treaty 4

Inuring Treaties 1,2,3

- View Fewer...

Results

Program: Structure to be priced

Program Details

Program Type: Catastrophe Excess of Loss

Inception Date: 01/01/2018

Expiration Date: 12/31/2018

Modified: 6/19/2018 by air-worldwide\I80895

Currency Rate Table: AIR Default

Save Terms in: US Dollar

Display Terms in: US Dollar

Units: Ones

Layers

Program Options

Relationships

```
graph TD; RS[Retained Quota Share] -.-> STBP[Structure to be priced]; IT123[Inuring Treaties 1,2,3] -.-> STBP; IT4[Inuring Treaty 4] -.-> STBP; FHCF[FHCF Program] -.-> STBP; ICAT123[Inuring CAT Bonds 1,2,3] -.-> STBP; ICAT4[Inuring CAT Bond 4] -.-> STBP; example[example] --> IT4; PS[Peril Split to Remove FL Wind] --> ICAT123
```

Available Program Templates

Company	Assessment
example	1/1/2018
FHCF Program	1/1/2018
Inuring CAT Bon...	1/1/2018
Inuring CAT Bon...	1/1/2018
Inuring Treaties 1...	1/1/2018
Inuring Treaty 4	1/1/2018
Peril Split to Rem...	1/1/2018
Retained Quota S...	1/1/2018

New Programs

Cat XOL

Quota Share

Agg

Cat Bond

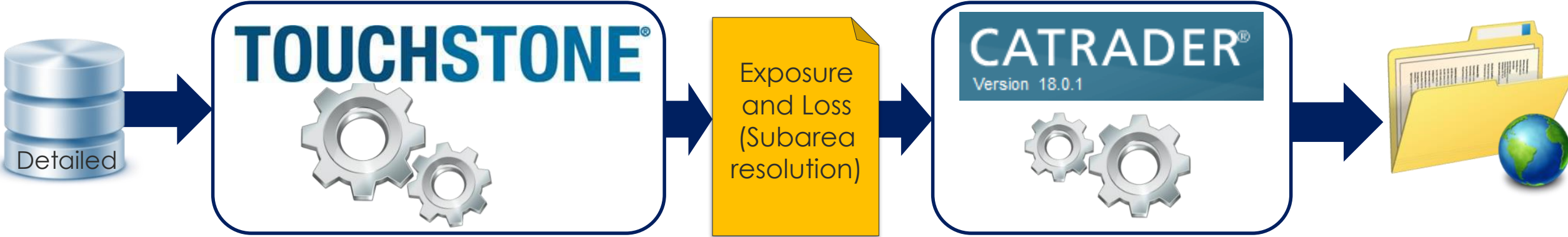
ILW

Ground

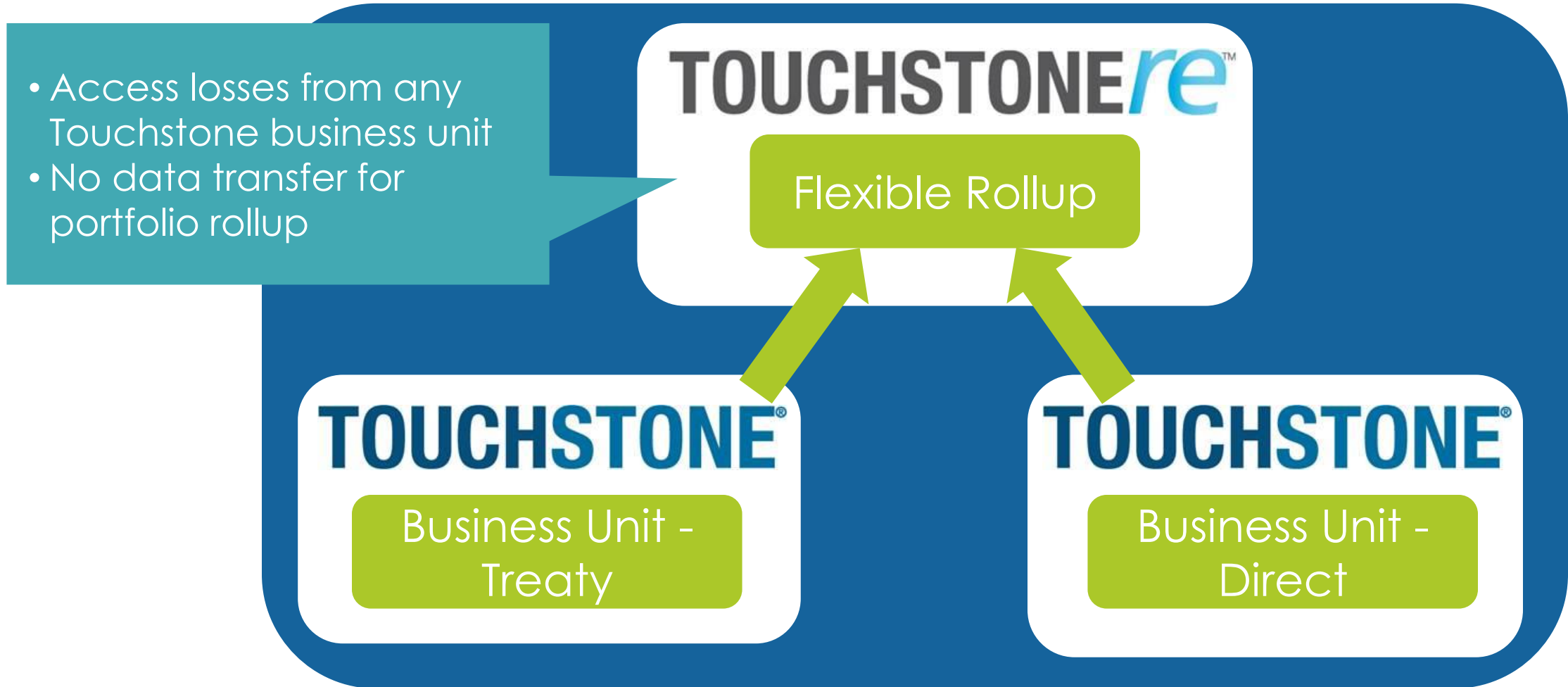
Relationship Properties Manager

Select any program on the s
view or modify its relation
properties

Streamlined Detailed Loss and Exposure Data Workflow



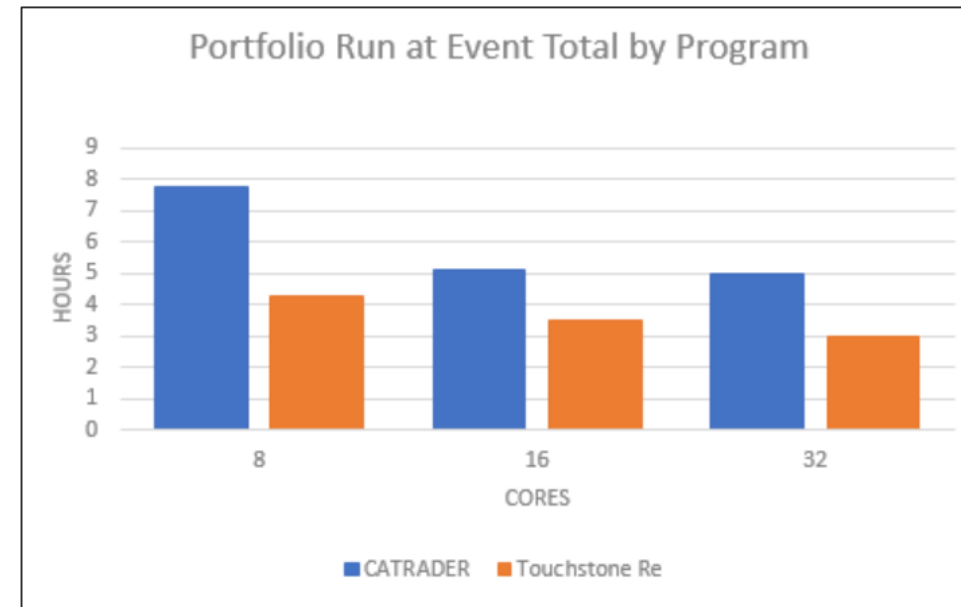
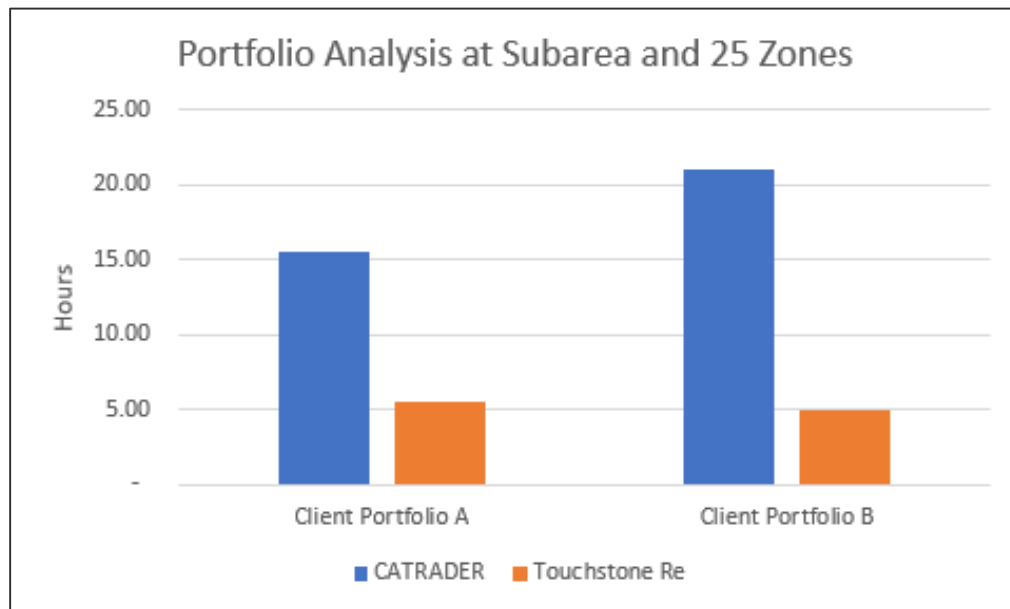
Flexible Data Access Across Business Units



Touchstone Re Analysis Run Time Performance – Client Portfolios

60-75% improvement when run at Subarea by program with zones

30-45% improvement when run at Event total by program



*Single program run times have generally improved but show variability based on exposures, analysis options

Touchstone Re Has a Brand New User Interface!

TOUCHSTONEre

ImportExportToolsAdminHelp

HomeExample Company

Reinsurance

CompaniesPortfolios

My CompaniesAll Companies

+New

Delete

Refresh

Audit History

Company Name	Company ID	Exposure Sets	Latest Exposure Year	Regions	Company Loss Sets	Latest Result	Latest Activity	Prog
Example Company		2	2017		2	4/3/2018 Pina Colada Umbrella - Loss Analysis	4/3/2018 Create Program	Reins

Latest News

ALERT Worldwide

AIRCurren

AIR in the News

AIR Events

Tropical Cyclone Marcus

The strongest tropical cyclone in 30 years, Marcus made landfall in Darwin, Northern Territory, Australi ACST (00:00 UTC). It struck the capital city as a Category 2 storm on the Bureau of Meteorology scale (hurricane on the Saffir-Simpson scale) with a minimum central pressure of 993 mb and maximum sust downing power lines and trees. It then passed over the northern coast of sparsely populated Kimberly, continuing westward away from land.

Tropical Cyclone Kelvin

Tropical Cyclone Kelvin made landfall near Anna Plains Station, 250 kilometers (155 miles) south of Bro Kimberley Coast of Western Australia, at about 7 a.m. on Sunday February 18, 2018, local time (23:00 l sustained winds of 148 km/h (92 mph). A red alert was issued across Western Australia as the storm in As well as damaging winds, Kelvin delivered intense rainfall to the region, resulting in widespread floo

M6.4 Hualian Taiwan Earthquake

Live Demo

Implementation Logistics

CATRADER to Touchstone Re Migration Tool

- Provides flexibility to migrate all or selected companies

The screenshot shows the 'CATRADER To TouchstoneRe' application window. It features a configuration section on the left with fields for 'TouchstoneRe SQL Server' (SDG TSAIODB4\SQL2016), 'CATRADER Database' (AIRCT2Exp), 'TouchstoneRe Database' (AIRExposureRe), 'SQL Server Login' (airadmin), 'SQL Server Password' (masked with asterisks), 'CATRADER CLF Source Directory' (\\SDGEmeraldEGDB\AirConfigData), and 'TouchstoneRe CLF Directory' (\\SDGEmeraldEGDB\DataShare). Below these are radio buttons for 'All Companies' (selected) and 'Company Filter'. The 'Company Filter' section includes a date picker set to '1/ 1/2010' and a 'Treaty Status' section with checkboxes for 'Bound' (checked), 'Authorized', and 'Submitted'. Action buttons include 'Get Company List', 'Calculate Space', and 'Migrate To Touchstone Re'. A list of companies is displayed on the right, with 'AMER PROFESSIONALS' highlighted. At the bottom, a status bar indicates '4292 of 4295 companies selected.' and a 'View Log' button is present.

CATRADER To TouchstoneRe

TouchstoneRe SQL Server: SDG TSAIODB4\SQL2016

CATRADER Database: AIRCT2Exp

TouchstoneRe Database: AIRExposureRe

SQL Server Login: airadmin

SQL Server Password: *****

CATRADER CLF Source Directory: \\SDGEmeraldEGDB\AirConfigData

TouchstoneRe CLF Directory: \\SDGEmeraldEGDB\DataShare

☒ All Companies

☐ Company Filter

With Programs Expiring On or After: 1/ 1/2010

Treaty Status

☒ Bound

☐ Authorized

☐ Submitted

Get Company List

Calculate Space

Migrate To Touchstone Re

AMER PHYS ASSUR CORP

AMER PREMIER INS CO

AMER PROFESSIONALS

AMER PROTECTION INS

AMER RE CORP GROUP

AMER RE-INS CO

AMER RELIABLE INS CO

AMER RESOURCES INS

AMER ROAD INS CO

AMER SAFETY CAS INS

AMER SAFETY INDEM CO

AMER SAFETY INS CO

AMER SAFETY INS GRP

AMER SECURITY INS CO

AMER SELECT INS CO

AMER SERVICE INS CO

AMFR SKYI INF INS CO

Select All

View Log

4292 of 4295 companies selected.

CATRADER Data Migration Details

– **What is being migrated?**

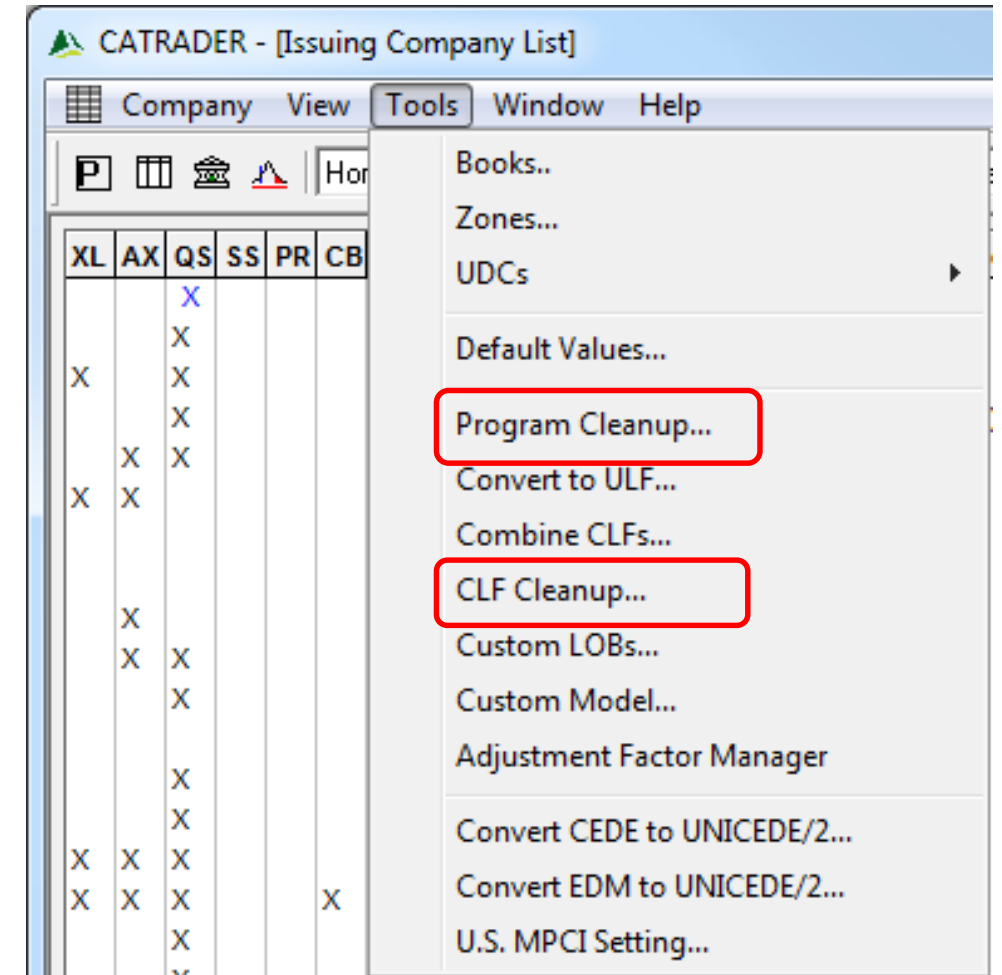
- Companies
- Programs (including inuring/assessment/source relationships)
- CLFs/DLFs
- User-Defined Categories or UDCs (Company and Cat Program)

– **What is not being migrated?**

- Zones
- Portfolios

Preparing for Migration of CATRADER Data

- CATRADER Cleanup Tools
 - Program Cleanup: Deletes programs and associated CLFs expiring before a specified date
 - CLF Cleanup: Removes files in CLF directory not associated with an existing company
- CLF Removal Scripts
 - Removes CLF/DLF files no longer compatible with supported event sets



User-Friendly Database Schema

tRRRR_LOSS_AnnualEP Table

tRRRR_LOSS_AnnualEP_ByPeril Table

tRRRR_LOSS_AnnualEP_Zone Table

tRRRR_LOSS_AnnualEP_ZonePeril Table

tRRRR_LOSS_AnnualEPSummary Table

tRRRR_LOSS_AnnualEPSummary_ZonePeril Table

```
SELECT EPAnnualTypeCode, Rank, EventID, ModelCode, YearID, PerilSetCode, ExceedanceProbability, ReturnPeriodYears, EPLoss, TVARLoss  
FROM [AIRResultRe].[dbo].[t40_LOSS_AnnualEP]
```

	EPAnnualTypeCode	Rank	EventID	ModelCode	YearID	PerilSetCode	ExceedanceProbability	ReturnPeriodYears	EPLoss	TVARLoss
1	AGG	1	80	27	3	67	0.0001	10000	4000000000	4000000000
2	AGG	2	301	27	11	67	0.0002	5000	4000000000	4000000000
3	AGG	3	435	27	16	67	0.0003	3333.33333333333	4000000000	4000000000

```
SELECT EPAnnualTypeCode, Rank, EventID, ModelCode, YearID, PerilSetCode, ExceedanceProbability, ReturnPeriodYears, EPLoss, TVARLoss  
FROM [AIRResultRe].[dbo].[t40_LOSS_AnnualEP]
```

	EPAnnualTypeCode	Rank	EventID	ModelCode	YearID	PerilSetCode	ExceedanceProbability	ReturnPeriodYears	EPLoss	TVARLoss
1	AGG	1	80	27	3	67	0.0001	10000	4000000000	4000000000
2	AGG	2	301	27	11	67	0.0002	5000	4000000000	4000000000
3	AGG	3	435	27	16	67	0.0003	3333.33333333333	4000000000	4000000000
17	AGG	17	2964	27	113	67	0.0017	588.235294117647	4000000000	4000000000
18	AGG	18	3107	27	118	67	0.0018	555.555555555556	4000000000	4000000000
19	AGG	19	3152	27	120	67	0.0019	526.315789473684	4000000000	4000000000
20	AGG	20	3397	27	130	67	0.002	500	4000000000	4000000000
21	AGG	21	3506	27	133	67	0.0021	476.190476190476	4000000000	4000000000
22	AGG	22	3574	27	135	67	0.0022	454.545454545455	4000000000	4000000000
23	AGG	23	4054	27	154	67	0.0023	434.782608695652	4000000000	4000000000
24	AGG	24	4440	27	168	67	0.0024	416.666666666667	4000000000	4000000000
25	AGG	25	4467	27	169	67	0.0025	400	4000000000	4000000000
26	AGG	26	4535	27	171	67	0.0026	384.615384615385	4000000000	4000000000
27	AGG	27	4741	27	179	67	0.0027	370.37037037037	4000000000	4000000000
28	AGG	28	4782	27	181	67	0.0028	357.142857142857	4000000000	4000000000

tRRRR_LOSS_ByReProgramZone Table

tRRRR_LOSS_ByReTreaty Table

tRRRR_LOSS_ByReTreatyAAL Table

tRRRR_LOSS_ByReTreatyGeo Table

tRRRR_LOSS_ByReTreatyLOBGeo Table

tRRRR_LOSS_ByReTreatyLOBZone Table

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tRRRR_LOSS_ByReAnnualEP_Peril Table

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tRRRR_LOSS_ByReCompanyLOBGeo Table

tRRRR_LOSS_ByReCompanyLOBZone Table

tRRRR_LOSS_ByRePortfolio Table

tRRRR_LOSS_ByRePortfolioLOBGeo Table

tRRRR_LOSS_ByRePortfolioLOBZone Table

tRRRR_LOSS_ByReProgram Table

tRRRR_LOSS_ByReProgramGeo Table

tRRRR_LOSS_ByReProgramZone Table

tRRRR_LOSS_ByReSourceInuring Table

tRRRR_LOSS_ByReSourceInuringLOBGeo Table

tRRRR_LOSS_ByReTreaty Table

tRRRR_LOSS_ByReTreatyAAL Table

tRRRR_LOSS_ByReTreatyGeo Table

tRRRR_LOSS_ByReTreatyLOBGeo Table

tRRRR_LOSS_ByReTreatyLOBZone Table

tRRRR_LOSS_DimReTreaty Table

tRRRR_LOSS_DimReZone Table

tSIDControl Table

Touchstone Re Database Reference

tRRRR_LOSS_ByReAnnualEP Table

Expand All

AIRResultsRe Database : tRRRR_LOSS_ByReAnnualEP Table

Description

Properties

Columns

Column Name	Description	Datatype	Length	Allow Nulls	Default	Formula
EPAnnualTypeCode	Code that indicates whether the corresponding losses are based on all events that occurred during a year (aggregate) or on the single largest loss caused by all events in a year (occurrence). For a complete list of codes, see tEPAnnualType Table.	varchar	10			
EPCurveTypeCode	Code that indicates whether the loss is based on AIR's default EP curve. Currently, Touchstone Re supports only AIR's default EP curve. For a complete list of codes, see tEPCurveType Table.	varchar	10			
FinancialPerspectiveCode	Code that represents the financial perspective used to display the losses. For a complete list of codes, see tFinancialPerspective Table.	varchar	10			
EPTargetTypeCode	Code that represents the target of the analysis for which losses were produced. For a complete list of codes, see tEPTargetType Table.	varchar	10			
ExposureDataSourceSID	Unique system-generated sequential identifier for the exposure data source that includes the analysis target. For a complete list of records, see tDataSource Table.	int	4			
EPTargetSID	Unique system-generated sequential identifier for the analysis target that generated the losses.	int	4			
Rank	Rank of the loss.	int	4			
EventID	Identifier of the event that generated the highest loss in the simulated year.	int	4	✓		
ModelCode	Code that represents the catastrophe model that generated the losses. For a complete list of codes, see tModel Table.	tinyint	1			
YearID	Identifier of the year that generated the losses.	int	4	✓		

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Core Functionality Available via API

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System Topology

Services Oriented Architecture

HPC Job Management

Touchstone Re API Workflow

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Touchstone Re API Reference

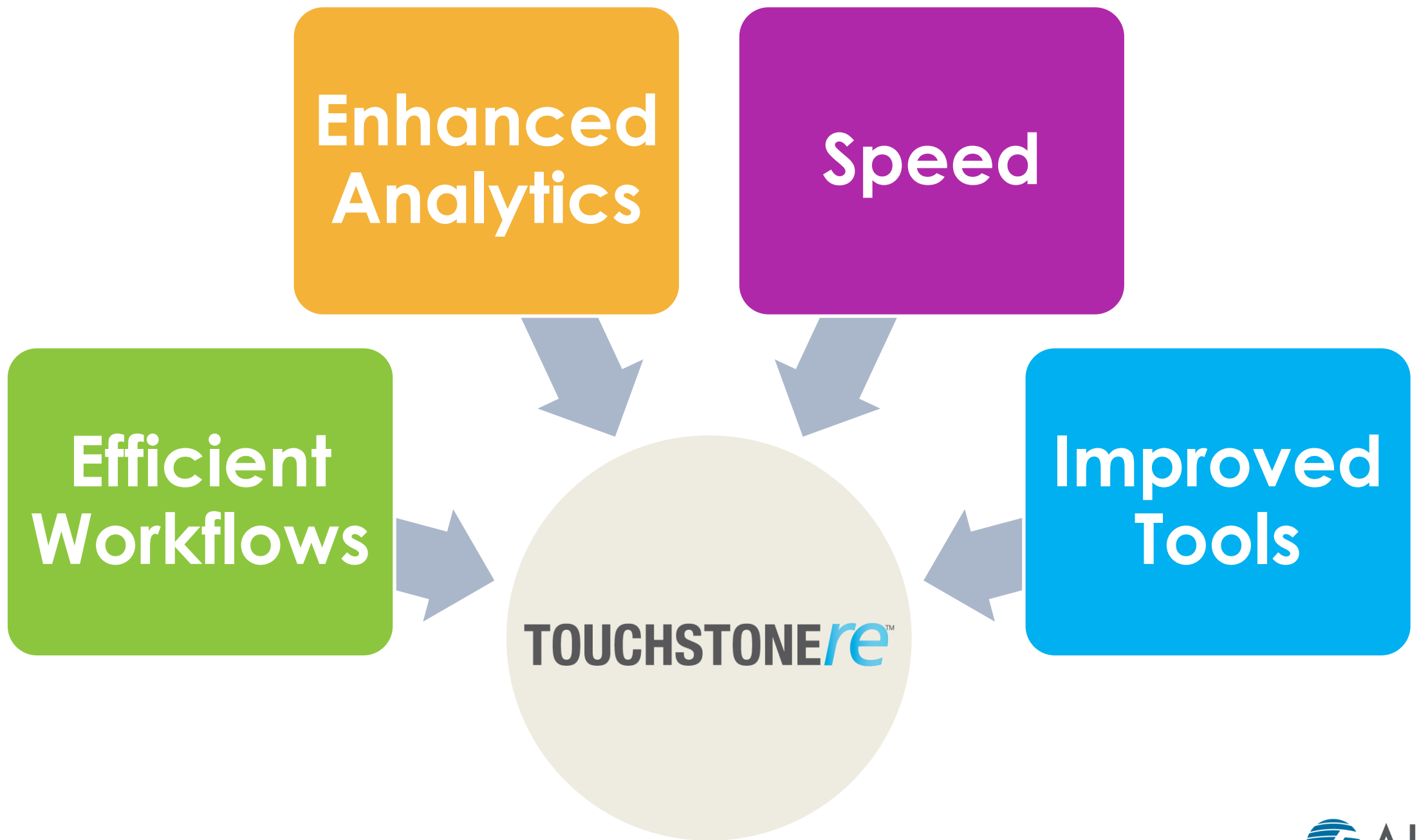
Overview

The Touchstone Re API enables you to integrate many of the core functions of Touchstone Re into your own applications.

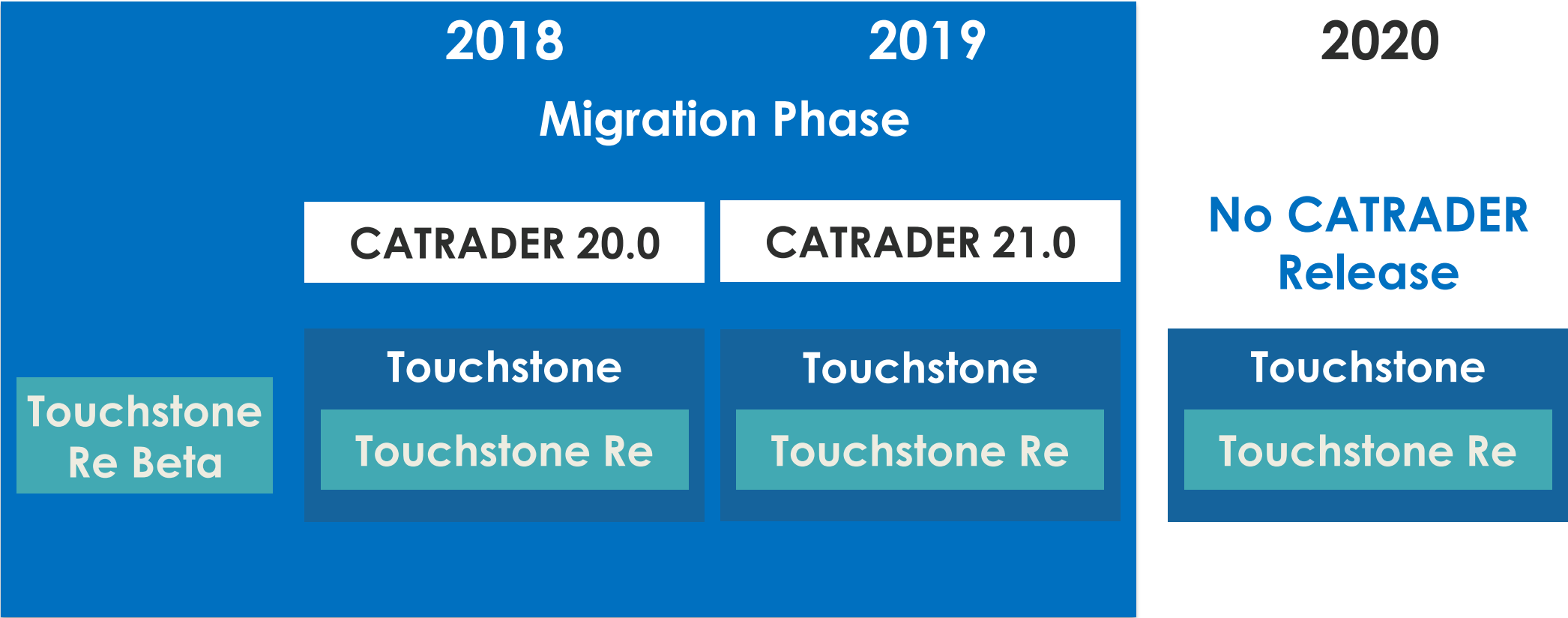
The API consists of several services:

Service	Description	Methods
ActivityManagementService	Retrieve and delete activities and retrieve activity logs. Activities are actions that you perform in Touchstone Re, for example, running an analysis.	<ul style="list-style-type: none">GetActivitiesGetActivityGetFileSubmitDeleteActivity
CompanyManagementService	Create, retrieve, update and delete Touchstone Re companies, and export exposure data. A company is a container for related exposure data, loss data, reinsurance programs, company loss file (CLF) sets, and loss analyses.	<ul style="list-style-type: none">CreateCompanyGetCompaniesUpdateCompanyDeleteCompanySubmitExportUnicoded2FromAggExposureSet
DataExportService	Export aggregate loss analyses results to comma-separated values (CSV) files, and export detailed loss files (DLFs) to binary or CSV files. You can run aggregate loss analyses on a reinsurance program or on a portfolio of reinsurance treaties.	<ul style="list-style-type: none">SubmitAggregateLossAnalysisExportSubmitAggregateLossAnalysisDLFExportSubmitPortfolioTreatyListReportExport
ObjectManagementService	subarea. For example, you can create a zone set named "Pacific Northwest" that comprises three zones: the U.S. state of Oregon,	<ul style="list-style-type: none">GetZoneSetsDeleteZoneSet

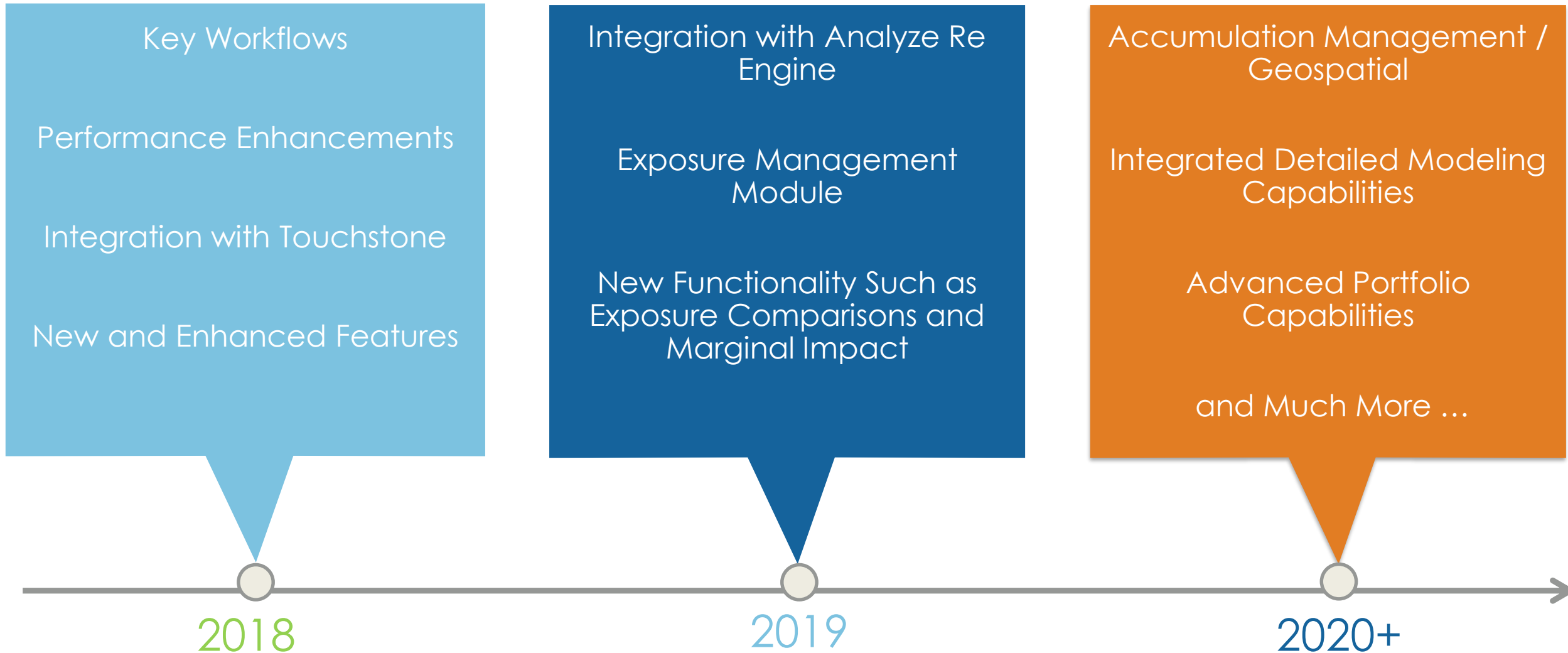
API documentation available soon on
Developer Zone



Touchstone Re Release Timeline



Touchstone Re Roadmap – 2018 and Beyond



This information is provided for information purposes only and may not be incorporated into any contract.

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Schedule a customized 1:1 demo

- Contact your AIR account representative or visit:
<https://airww.co/TouchstoneReDemo>

Learn more about Touchstone Re

- <http://www.air-worldwide.com/Software-Solutions/Touchstone-Re/>

Questions?