



RtReports

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Developer

Agenda

- Overview
- Benefits and Differentiators
- Version 3.0 New Features
- Product Demonstration
 - Using Predefined actions and Style sheets to build a Case Report
- Future planned Enhancements

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Overview – Goals of RtReports

- Improve employee efficiency
 - Reports built and regenerated without programming
 - Library of processing rules and formatting rules allow for rapid report generation
- Enhance knowledge management and collaboration
 - Reports available on-demand, via the Web
- Reduce variability in reporting
 - Information workers retrieve information from the same audited source
 - Generate tamper-proof reports
 - Using the Library of processing rules and formatting rules assures standardization of reports
- Improve manufacturing agility
 - Accelerate product release through automatic comparison with specification data and generation of C of A
 - Automate environmental reports

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Overview - What is RtReports?

- RtReports is OSIsoft's Web reporting product
 - Allows our customers to easily build complex, repeatable reports for the RtPM Platform
 - Enables our customers to easily manage the change of reports through configuration
 - Provides secure internet based access to reports
 - Supports the need to produce reports compliant with government regulations such as 21 CFR Part 11 and Title V permits
 - Streamlines the review and approval of production and environmental reports

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Benefits and Differentiators

- Report Template Versioning
- Flexible context meta-data
- Extensible data retrieval calls
- Library of processing rules and formatting rules allow for rapid report generation
- Compliance Edition Workflow

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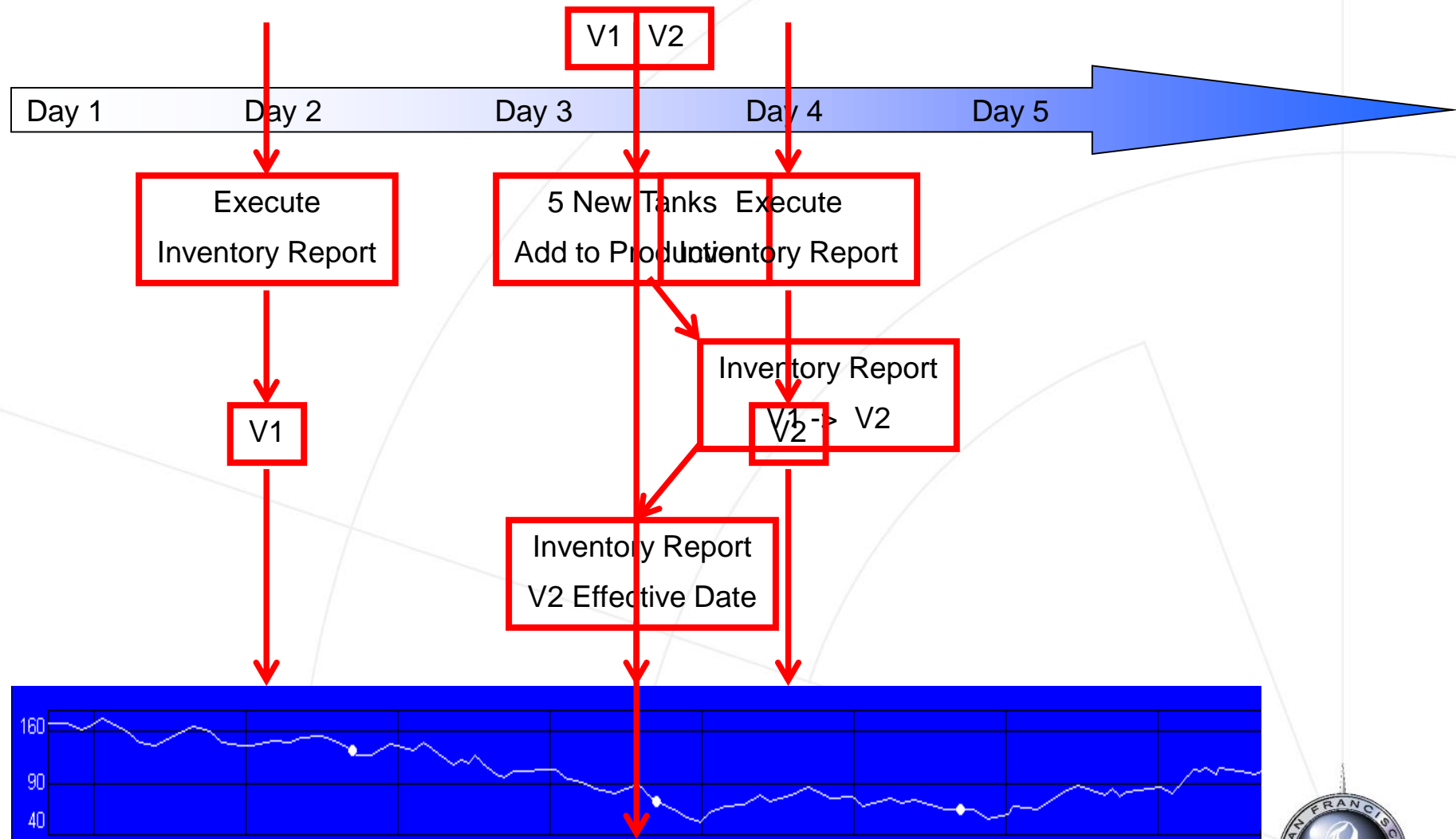
Differentiator - Report Template Versions

- No other reporting solution provides the change management of the report template like RtReports!
- No other reporting solution provides a means to associate versions of a report template with a specific context for the life of that context!

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Differentiator - Report Template Versions



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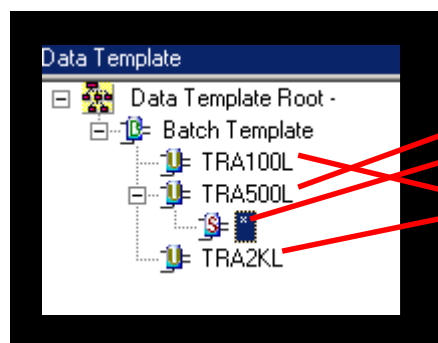
Differentiator – Flexible content meta-data

- Flexible context meta-data
 - No other reporting solution gives you the ability to **configure** a hierarchical context structure
 - You can use RtReports to map and monitor your business process
 - Which Batch processing steps should be included in the report
 - Which Time ranges, Assets and attributes should be included in the report
 - Which Cases, Assets, and attributes should be included in the report
 - Once you have mapped your business process you can retrieve specific, actionable data based on the context of your business process

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Differentiator - Batch Context Mapping



Batch ID	Recipe	Product	Unit	Start	End
OSIA15864	OSIBIO_rev2	OSIorg		3/29/2006 8:43:03 AM	3/29/2006 9:53:03 AM
OSIA15864	OSIBIO_rev2	OSIorg	TRA500L	3/29/2006 8:43:03 AM	3/29/2006 8:51:03 AM
	Initialize	OSIBIO_rev2	OSIorg	3/29/2006 8:43:03 AM	3/29/2006 8:44:03 AM
	Prepare	OSIBIO_rev2	OSIorg	3/29/2006 8:44:03 AM	3/29/2006 8:46:33 AM
	Inoculate	OSIBIO_rev2	OSIorg	3/29/2006 8:46:33 AM	3/29/2006 8:47:33 AM
	Transfer In	OSIBIO_rev2	OSIorg	3/29/2006 8:47:33 AM	3/29/2006 8:48:33 AM
	Cell Culturer	OSIBIO_rev2	OSIorg	3/29/2006 8:48:33 AM	3/29/2006 8:50:33 AM
	Transfer Out	OSIBIO_rev2	OSIorg	3/29/2006 8:50:33 AM	3/29/2006 8:51:03 AM
OSIA15864	OSIBIO_rev2	OSIorg	TRA2KL	3/29/2006 8:51:03 AM	3/29/2006 8:59:03 AM
	Initialize	OSIBIO_rev2	OSIorg	3/29/2006 8:51:03 AM	3/29/2006 8:52:33 AM
	Prepare	OSIBIO_rev2	OSIorg	3/29/2006 8:52:33 AM	3/29/2006 8:53:33 AM
	Inoculate	OSIBIO_rev2	OSIorg	3/29/2006 8:53:33 AM	3/29/2006 8:54:33 AM
	Transfer In	OSIBIO_rev2	OSIorg	3/29/2006 8:54:33 AM	3/29/2006 8:55:33 AM
	Cell Culturer	OSIBIO_rev2	OSIorg	3/29/2006 8:55:33 AM	3/29/2006 8:56:33 AM
	Transfer Out	OSIBIO_rev2	OSIorg	3/29/2006 8:56:33 AM	3/29/2006 8:59:03 AM
OSIA15864	OSIBIO_rev2	OSIorg	TRA100L	3/29/2006 9:47:03 AM	3/29/2006 9:53:03 AM
	Initialize	OSIBIO_rev2	OSIorg	3/29/2006 9:47:03 AM	3/29/2006 9:48:33 AM
	Prepare	OSIBIO_rev2	OSIorg	3/29/2006 9:48:33 AM	3/29/2006 9:49:33 AM
	Inoculate	OSIBIO_rev2	OSIorg	3/29/2006 9:49:33 AM	3/29/2006 9:50:33 AM
	Transfer In	OSIBIO_rev2	OSIorg	3/29/2006 9:50:33 AM	3/29/2006 9:51:33 AM
	Cell Culturer	OSIBIO_rev2	OSIorg	3/29/2006 9:51:33 AM	3/29/2006 9:52:33 AM
	Transfer Out	OSIBIO_rev2	OSIorg	3/29/2006 9:52:33 AM	3/29/2006 9:53:03 AM

Now you can configure heterogeneous data queries based on your business context

Did the Oxygen level violate an upper limit during the Cell Culture Operation?

Did the Inoculate Operation last at least 10 minutes in the 500 Liter Bioreactor?

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Differentiator - Time & Asset Context Mapping

- A plant manager would like to compare the number of excursions for a day against the number of excursions for a shift for each of his 4 factories

WEEKLY EXCURSION SUMMARY REPORT			
Report Start Date	1-Jan-06		
Report End Date	8-Jan-06		
Factory	FACTORY 1		
MONDAY		TUESDAY	
# of Excursions Per Day	22	# of Excursions Per Day	31
# of Excursions Shift 1	4	# of Excursions Shift 1	7
# of Excursions Shift 2	8	# of Excursions Shift 2	6
# of Excursions Shift 3	10	# of Excursions Shift 3	18
WEDNESDAY		THURSDAY	
# of Excursions Per Day	18	# of Excursions Per Day	25
# of Excursions Shift 1	2	# of Excursions Shift 1	7
# of Excursions Shift 2	6	# of Excursions Shift 2	8
# of Excursions Shift 3	10	# of Excursions Shift 3	10
FRIDAY		SATURDAY	
# of Excursions Per Day	42	# of Excursions Per Day	10
# of Excursions Shift 1	10	# of Excursions Shift 1	2
# of Excursions Shift 2	11	# of Excursions Shift 2	4
# of Excursions Shift 3	21	# of Excursions Shift 3	4

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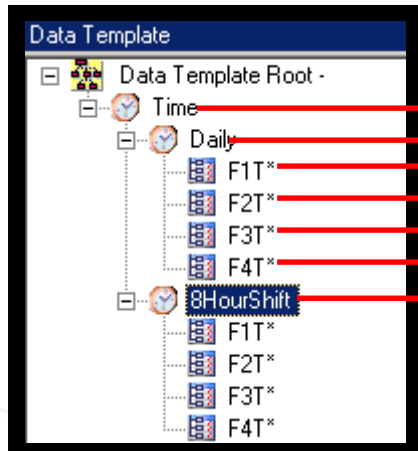
Differentiator - Time & Asset Context Mapping

- Business Process
 - Time Contexts
 - Calculations based on Daily Time Ranges
 - Calculations based on Shift Time Ranges
 - Asset Contexts
 - Tanks in Factory 1
 - Tanks in Factory 2
 - Tanks in Factory 3
 - Tanks in Factory 4

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Differentiator - Time & Asset Context Mapping



Time Template creates a weekly time range into daily time ranges corresponding to the 3 shift intervals
Time Template subdivides the weekly time range into eight hour time ranges corresponding to the 3 shift intervals
Element Template maps to all Factory 1 tanks
Element Template maps to all Factory 2 tanks
Element Template maps to all Factory 3 tanks
Time Template subdivides the weekly time range into eight hour time ranges corresponding to the 3 shift intervals

Now you can configure heterogeneous data queries based on your business context

Did any Heat Exchanger in Factory 1 violate an environmental limit?

Did any Heat Exchanger violate a process efficiency limit for Shift A?

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Differentiator - Time & Asset Context Mapping

- You execute a report with a specific context (Batch, Time Range, Case)
 - This context is usually at a summary level
 - You need to decompose it in order to extract the proper information
 - You do this in RtReports by configuring time and context templates to decompose the summary context to match your business process
 - You then configure actions to implement your data queries based on where you are in your business process

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Differentiator - Extensible data retrieval calls

- Built in Result Definitions
 - Trend
 - Summary Calculations

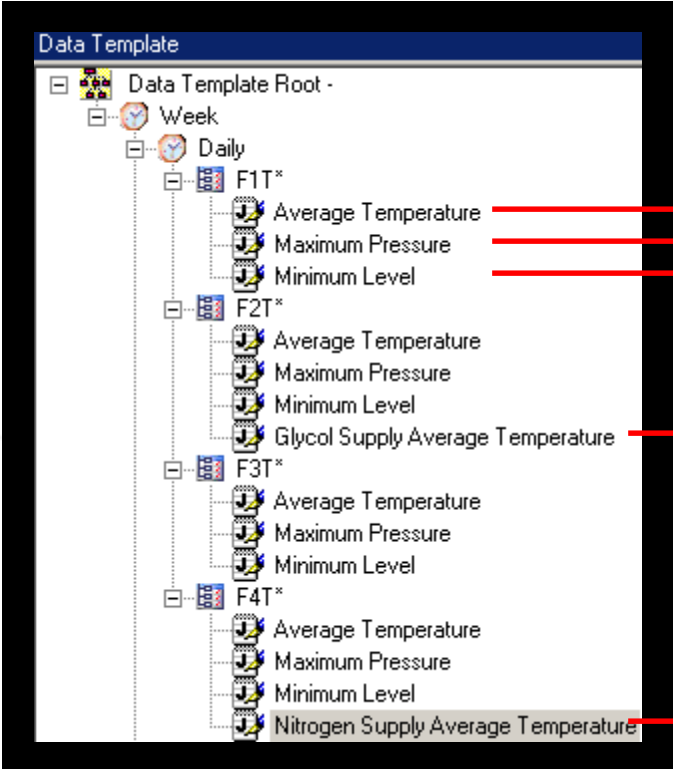
**Executed based on the Time and
Asset context of your business process**

- PI Batch Properties and EVT String Pool Tags
- RtBaseLine Data Sets (External relational and web service data sources)
 - Call a ACE Calculation through an RtBLS web service data set
- Analysis Framework data references

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Differentiator - Extensible data retrieval calls



~~Average Summary Result Definition~~
~~Maximum Summary Result Definition~~
~~Minimum Summary Result Definition~~
executed for the Day Time Range for
the Temperature Alias for all Tanks in
the Pressure Alias for all Tanks in
the Level Alias for all Tanks in
Factory 1

Average Summary Result Definition
executed for the Day Time Range for
the Glycol Supply Alias for all Tanks in
Factory 2

Average Summary Result Definition
executed for the Day Time Range for
the Nitrogen Supply Alias for all Tanks
in Factory 4

Differentiator - Extensible data retrieval calls

- Journal Action State Machine
 - Build custom logic through IF...Then...Else statements for conditional data retrieval

Executed based on the Time and Asset context of your business process

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STATE 3	3	

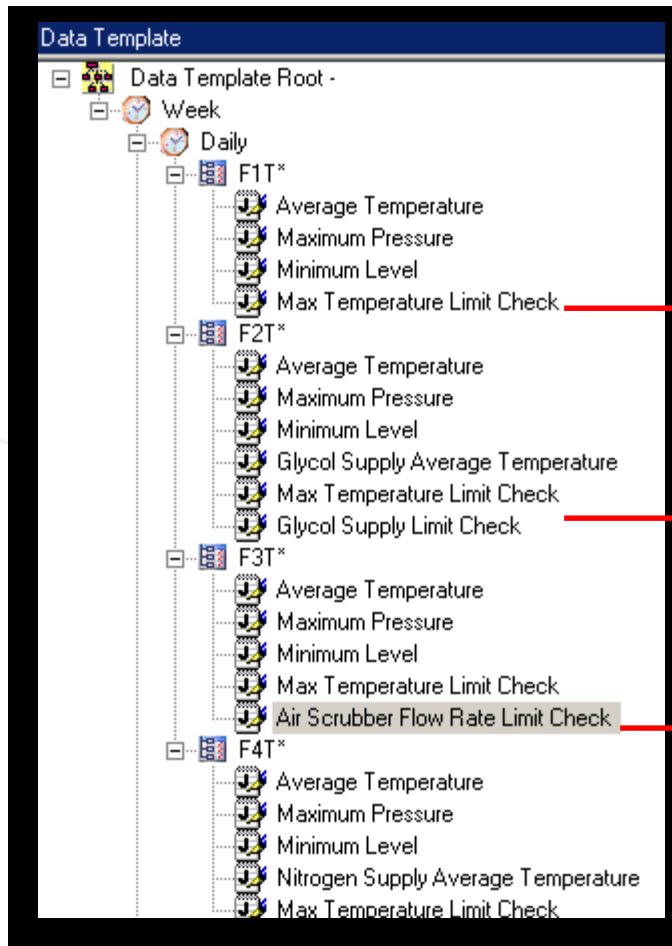
You can now define a result definition associated with the time range framed by this excursion

- For example, Return the Maximum Temperature and Pressure during the excursion

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Differentiator - Extensible data retrieval calls



The Maximum Temperature for all Factories is a Key Performance Indicator. This Action will determine if a Temperature sensor violated any limits

Factory 2 Key Performance Indicator is the Glycol Supply Temperature. This Action will determine if the Glycol Temperature violated a threshold and display a Trend

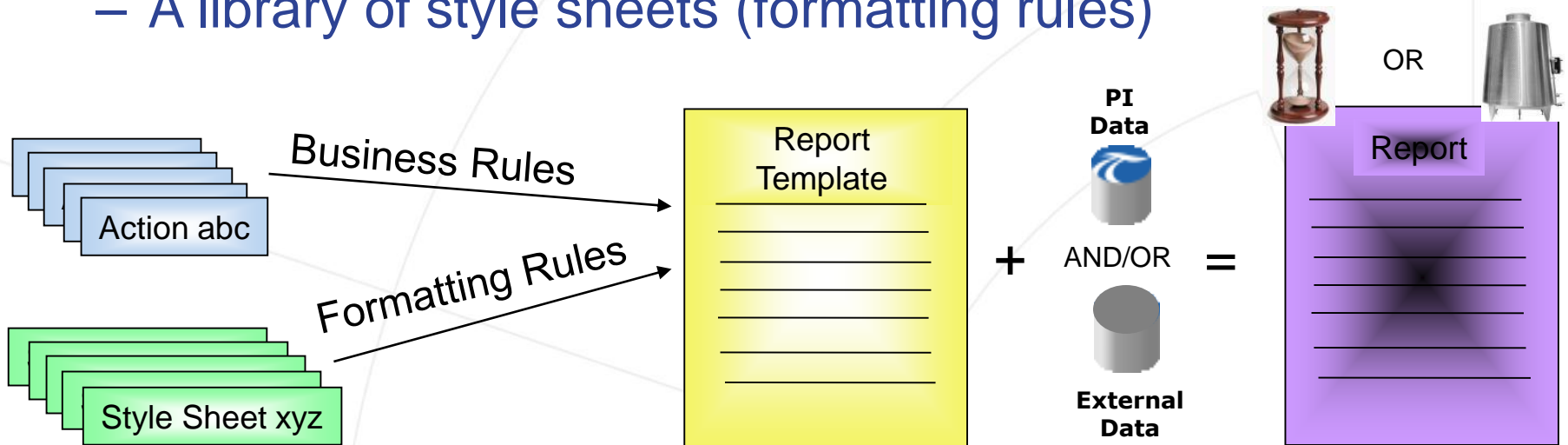
Factory 3 Key Performance Indicator is the Flow Rate on the Air Scrubber. This Action will determine if the Flow Rate violated a threshold and display a Trend

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Differentiator - Action and Style Sheet Libraries

- Report standardization is promoted through
 - A library of pre-defined actions (business rules)
 - A library of style sheets (formatting rules)



Modular Report Building Is Achieved Through A Standard Library of Business and Formatting Rules

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The Central Theme: SEA

Simple

- Eliminate redundancies, simplify choices and focus on usability. Everywhere.

Enterprise Aware

- Ready to keep customers in business.
- Meet enterprise needs and expand our presence.

Highly Available

- Whenever, wherever, and however customers need it.
- We are available if – and only if – a user can use our system.

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Version 3.0 New Features

Supporting Enterprise Aware and High Availability



File based Report Cache

- » RtReports now takes advantage of disk space by building a file based report cache



Report Execution Manager

- » A new module was implemented to support running reports and components across several machines.



Performance gains

- » Numerous performance enhancements were implemented in the Report Generator and Report Execution Manager

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Version 3.0 New Features

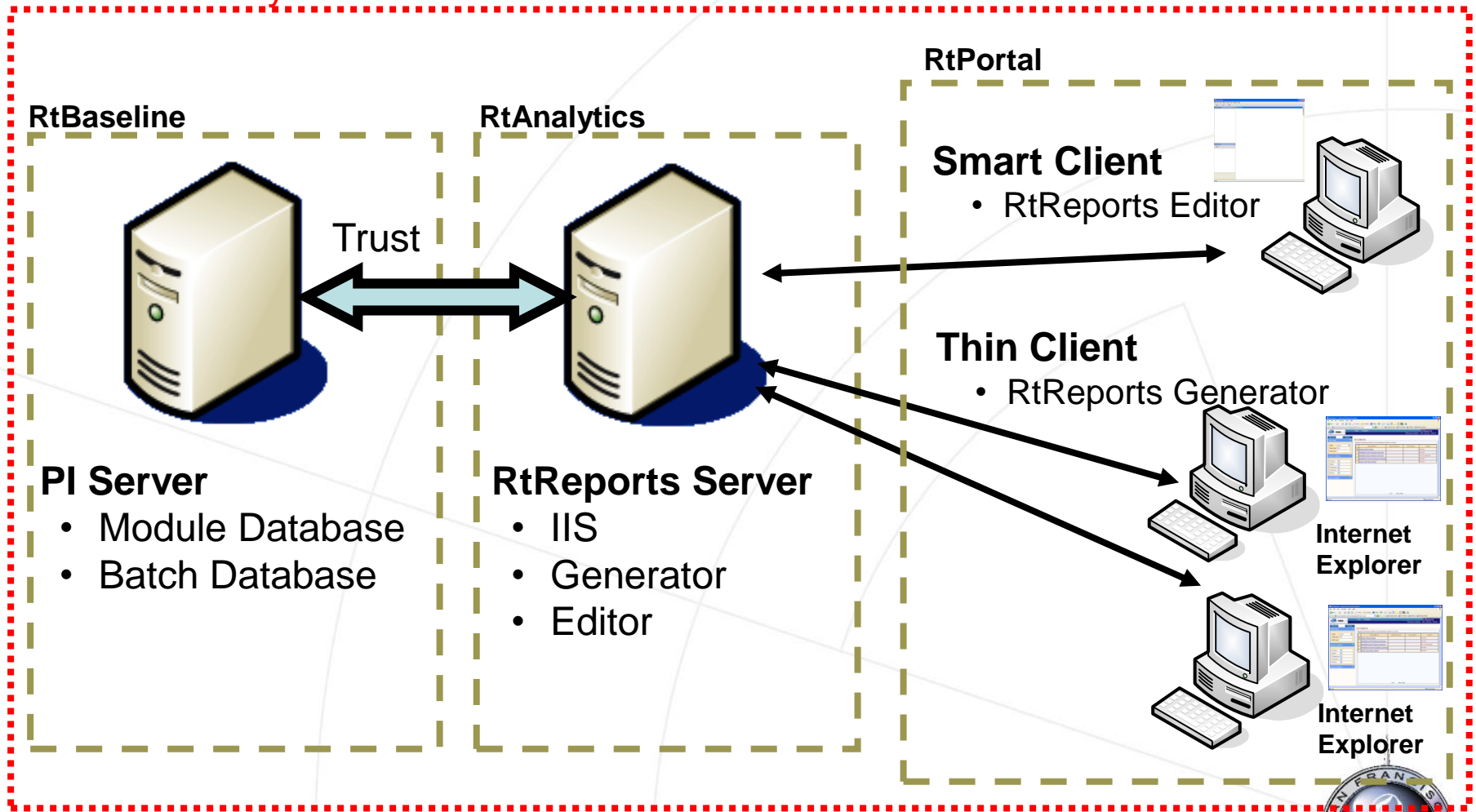
- Concentrated on Broader Applicability
 - Time Report Templates
 - Build reports for time ranges and recurrence patterns
 - Case Report Templates
 - Build reports for Analysis Framework cases
- SIG directed functionality enhancements
 - External Data Sources
 - Include relational and web service data sets using RtBaseline Services
 - RtReports Standard and Compliance Editions

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RtReports 2.x Architecture

Active Directory Domain



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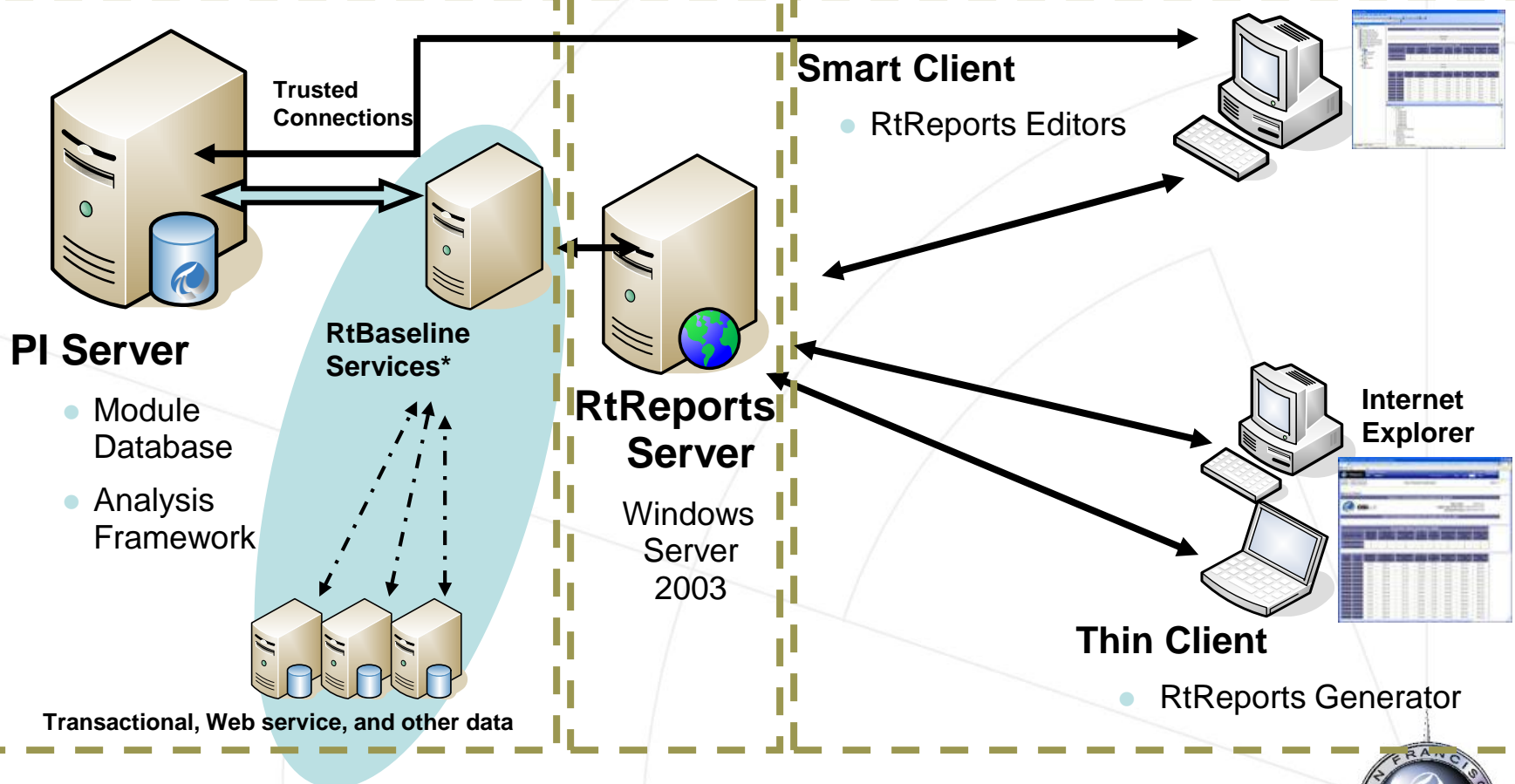
RtReports 3.0 Architecture

Active Directory Domain

RtBaseline

RtAnalytics

RtPortal



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Demonstration

Building Modular Case Reports



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RtReports Futures

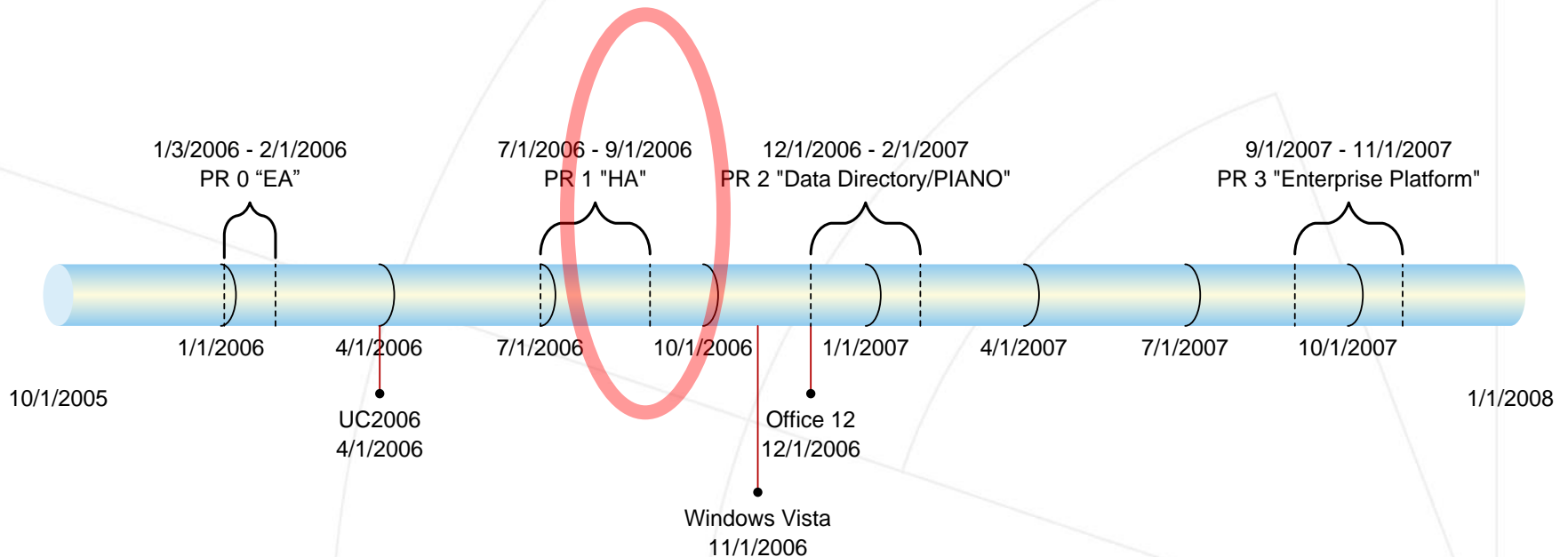
- RtReports Version 3.1
 - Multiple Batch/Case Reports
 - Report Properties storage in Annotations
 - RtReports Web Parts
 - Publish Web Services
 - Enhancements needed to support High Availability Platform Release

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Platform Release Timeline

RtReports 3.1

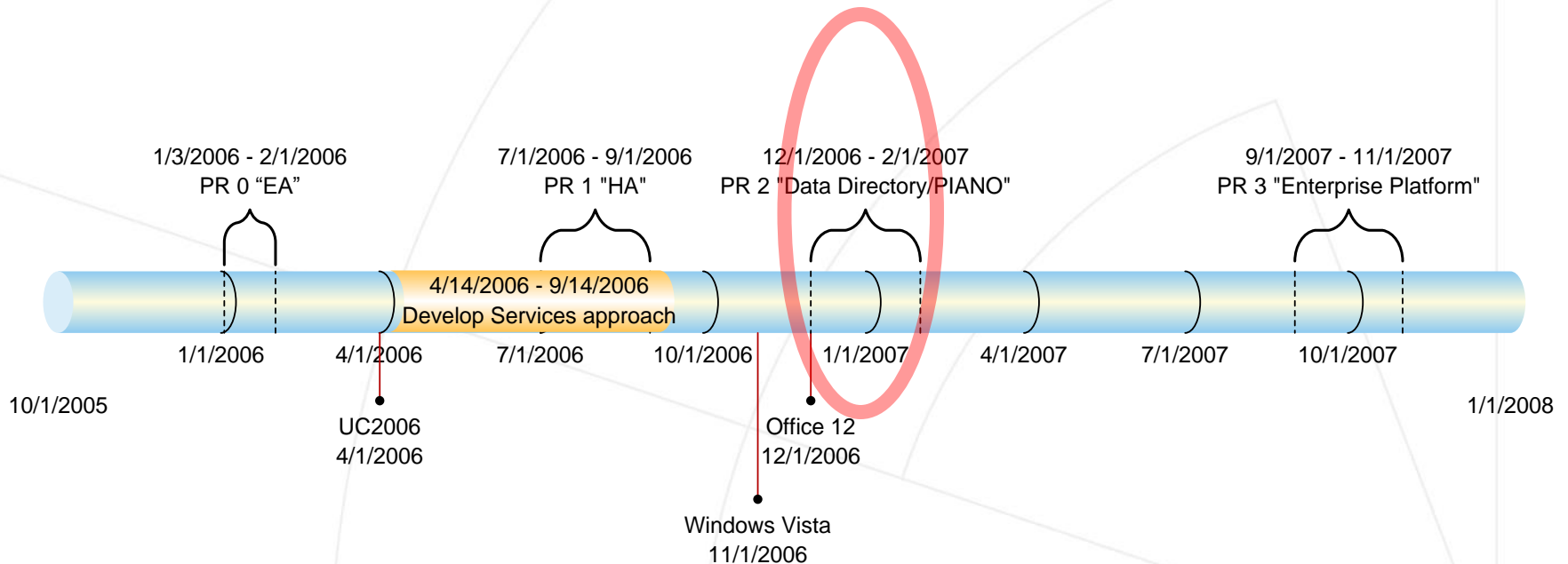


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Platform Release Timeline

RtReports 3.2



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THANK YOU!

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