



IBM Rational Software Conference 2009
As Real as It Gets!



Hang On a Minute - What Happened to My Requirements?

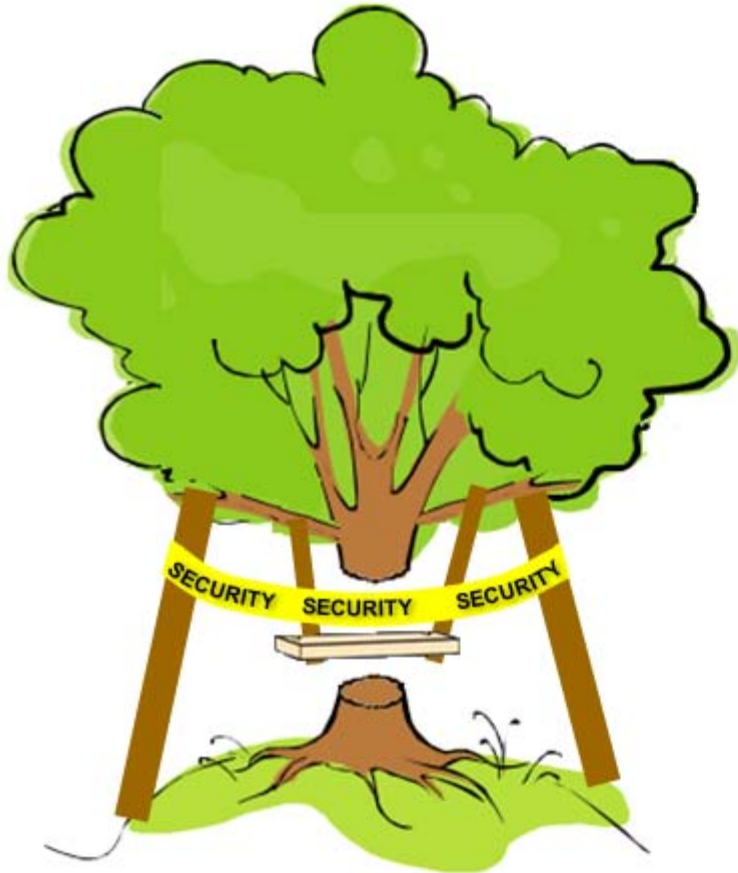
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Rational. software

NRDM02

Hang On a Minute - What Happened to My Requirements?



What engineering produced



What the customer wanted

What we will cover

- Why do your specified requirements not appear in the delivered product?
- Requirements happen across the whole of the lifecycle – not just at the beginning.
- What you can do to better manage the requirements set, and ensure that the developing product is meeting expectations.
- Conclusion and time for final questions.

Agenda

- **Root causes of disappearing requirements**
- Requirements across the whole lifecycle
- Tips and Techniques
- Conclusion



Some Familiar Situations...



Why your requirements don't appear in the final product

①

- Poorly defined requirements
- Not keeping track of changing requirements
- Developers doing what they want
- Impact analysis not undertaken properly
- Large volume makes managing the requirements set difficult

Why your requirements don't appear in the final product

②

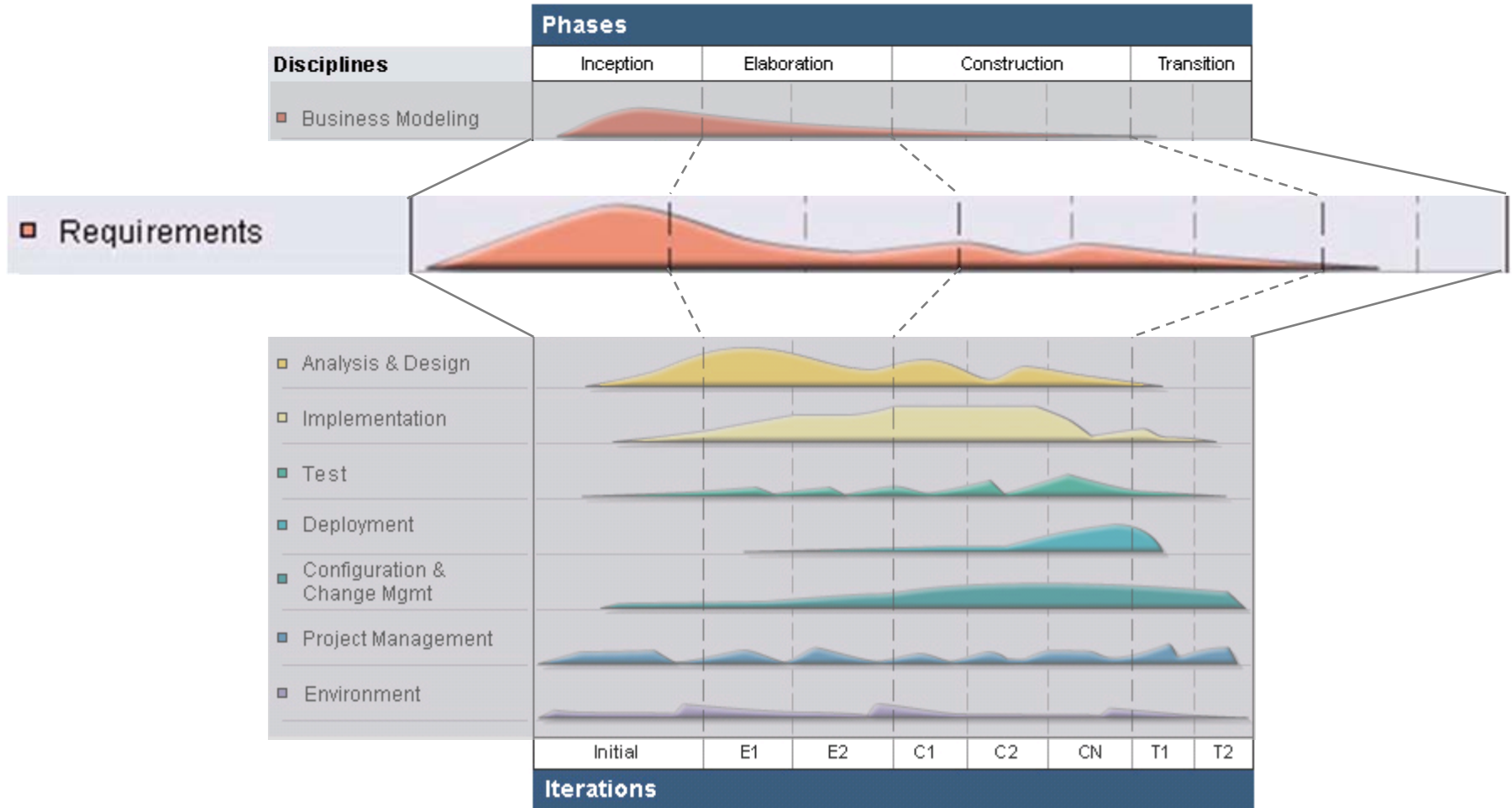
- Not changing scope as needs change
 - ▶ Stakeholders change their minds
 - and don't tell you
 - ▶ Business imperatives
- Test squeeze
- Locked into early screen designs

Agenda

- Root causes of disappearing requirements
- **Requirements across the whole lifecycle**
- Tips and Techniques
- Conclusion



Requirements across the whole lifecycle



Changing emphasis across the phases (optimal):

- In Inception, confirm the scope
 - ▶ 60%-80% of final requirements gathered
- In Elaboration, refine scope through discovery when mitigating risks
 - Negotiated scope change – add, modify and delete requirements
- In Construction, minor changes to scope
- In Transition, no new requirements

The Requirements Management Practice

Content References

-  How to Adopt the Requirements Management Practice
- Key Concepts
 -  Requirements
 -  Requirement Attributes
 -  Traceability
- Work Products
 -  Requirements Attributes
 -  Requirements Traceability
 -  Requirements Management Process Description
- Tasks
 -  Organize Requirements
 -  Assess Requirements Consistency
 -  Manage Changing Requirements
 -  Plan Requirements Management Strategy
-  Analyst

①

from the IBM Rational Unified Process

The Requirements Management Practice

②

- Guidance
 - Tool Mentors
 -  Packaging Requirements in RequisitePro
 -  How to assign attributes with RequisitePro
 -  How to establish and verify traceability with RequisitePro
 -  Packaging Requirements
 -  Categorizing Requirements
-  Measurements

Inputs

- [Technical Specification]

from the IBM Rational Unified Process

Agenda

- Root causes of disappearing requirements
- Requirements across the whole lifecycle
- **Tips and Techniques**
- Conclusion



What you can do to stop requirements disappearing

①

- Use the requirements to gain and maintain agreement
- Document and maintain the requirements set
- Organize your requirements
- Create and use attributes
- Trace between the types of requirements


What you can do to stop requirements disappearing

②

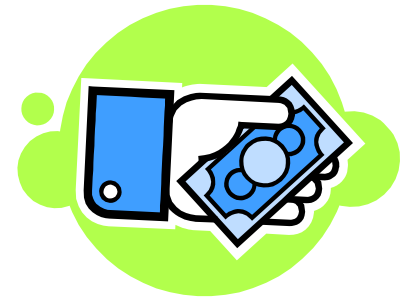
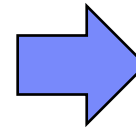
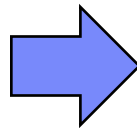
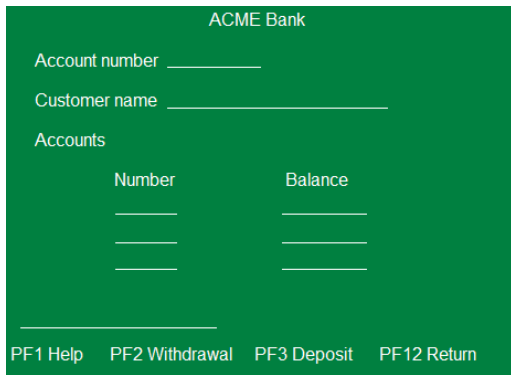
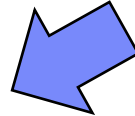
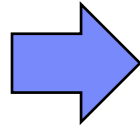
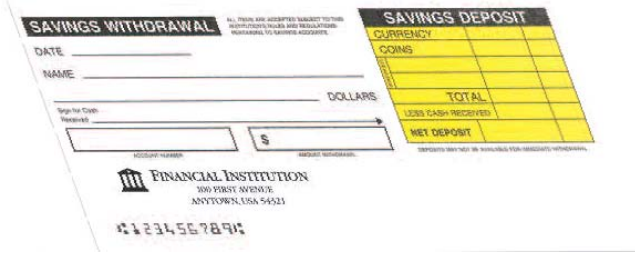
- Plan and measure
- Control change
- Avoid GUI design too early
- Automate where practical
- Gradually improve your requirements practices

Use the requirements to gain and maintain agreement

- Tell the stakeholder what you think they are telling you
 - ▶ Requirements Composer lets you tell stories
- Document and maintain the requirements set
 - ▶ Communicate to the developers, testers and tech writers
- Use a requirements hierarchy to do impact analysis
 - ▶ Allows discussion on scope change
- Don't let the stakeholders change the originally submitted document
 - ▶ Make them do a change request instead

Tool: IBM Rational Requirements Composer 

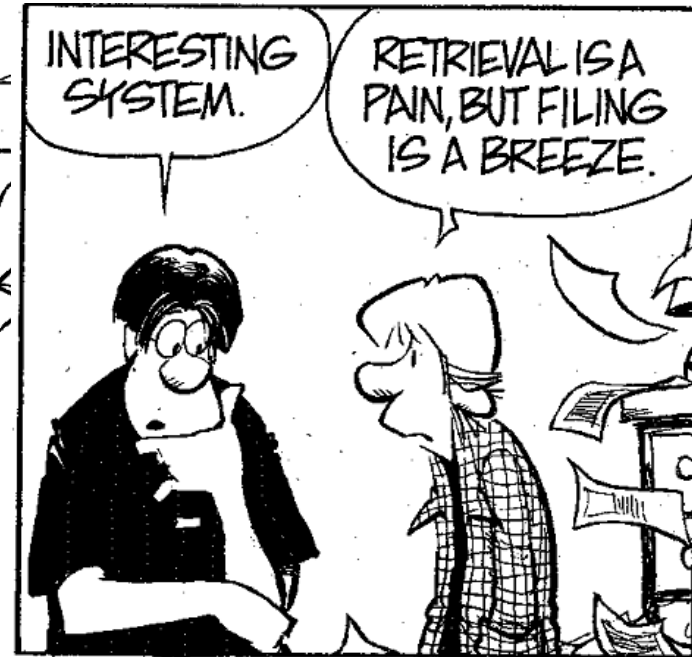
Storyboards are more than just screenshots



Document and maintain the requirements set



SCOTT AND FOREMAN

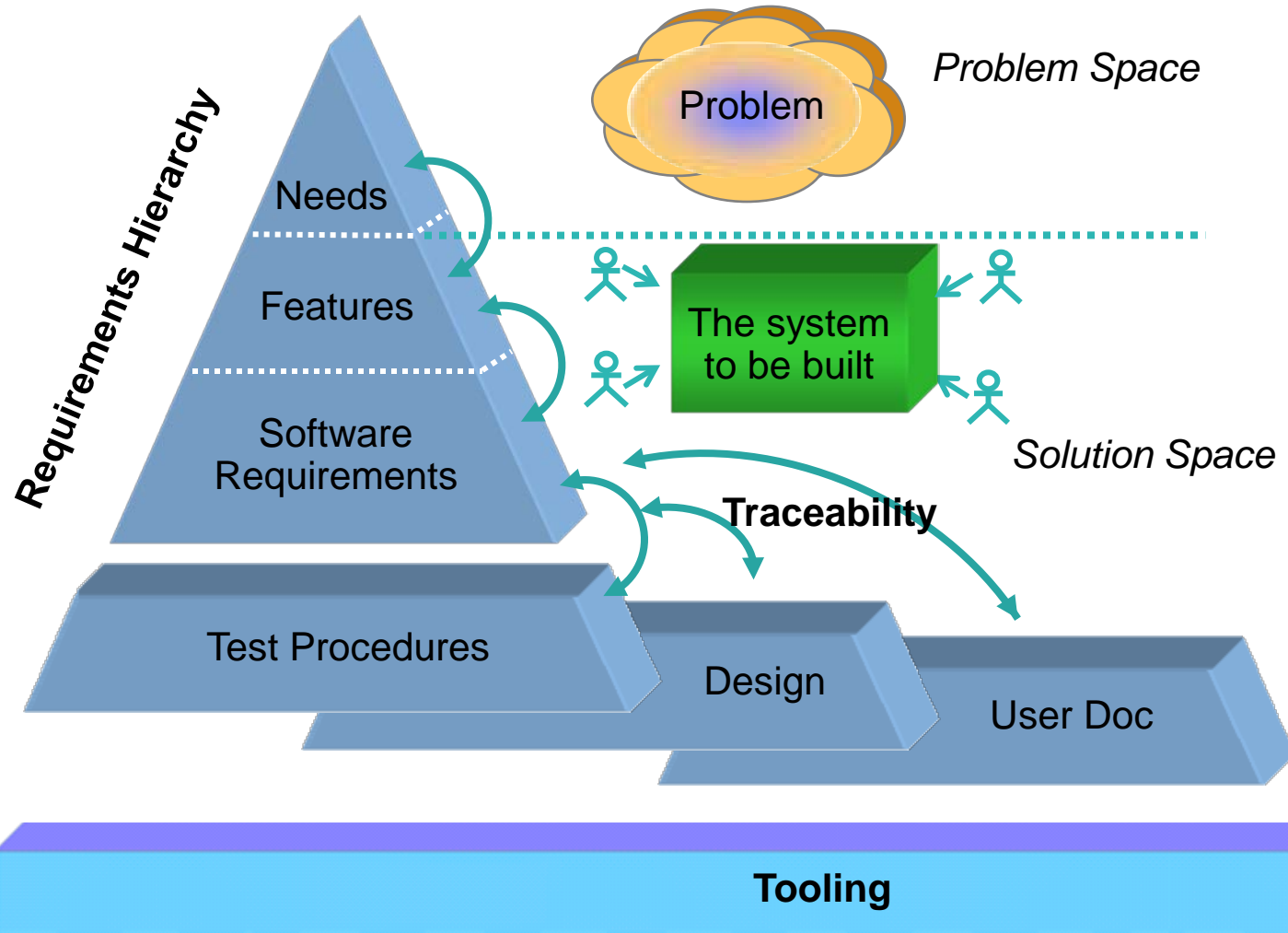


Document and maintain the requirements set

- Write them down
- Index them
- Your copy of the requirements is the reference point
- Update them as they change
- Use them as the basis for testing

Tool: IBM Rational RequisitePro 

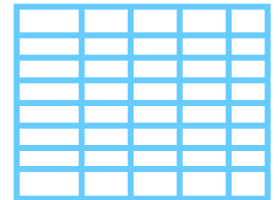
Organize your requirements



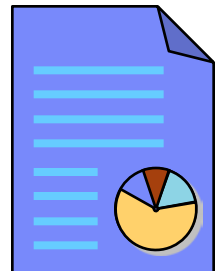
Controlling



Security



Attributes



Metrics

Organize your requirements

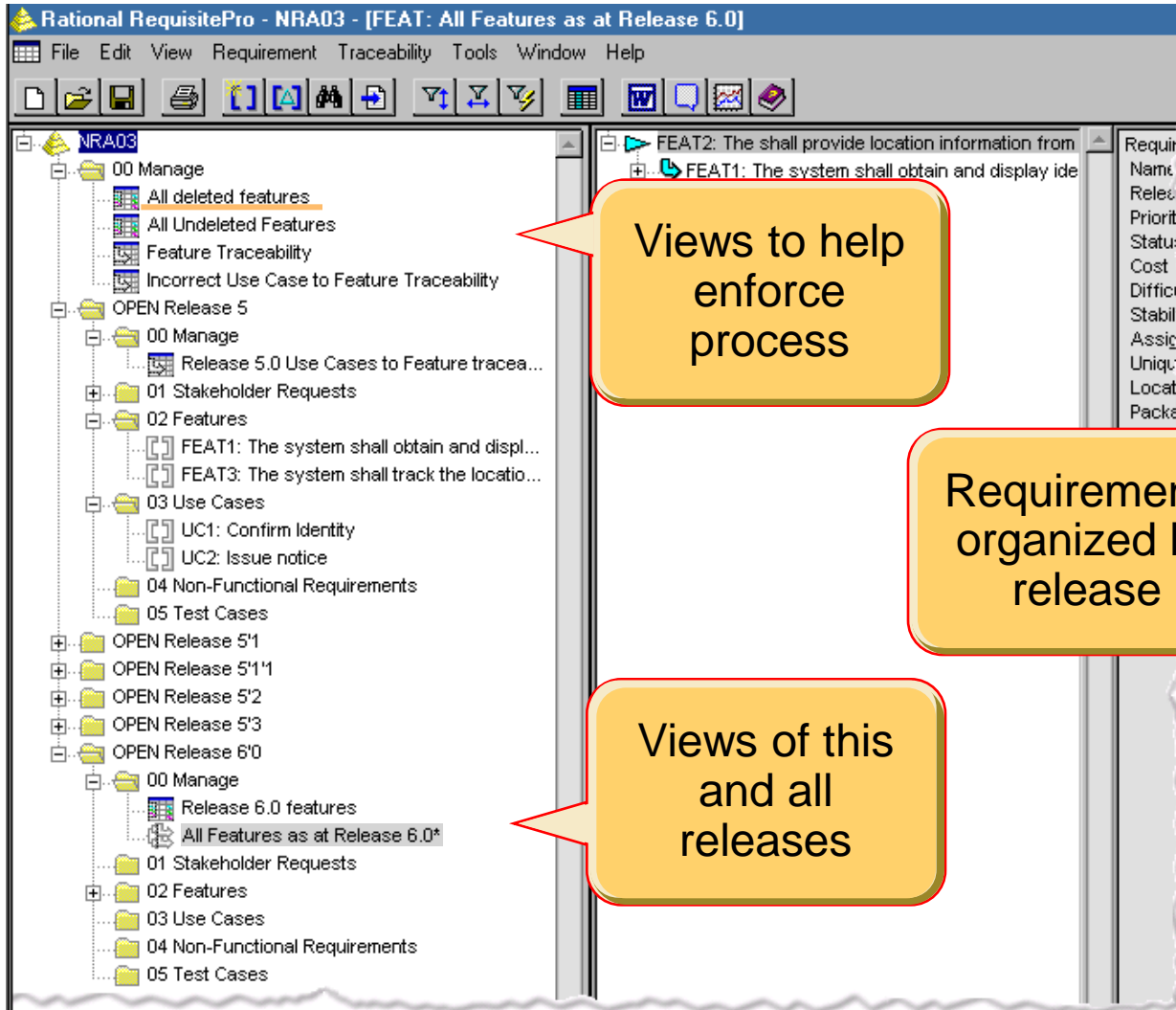
- Not all requirements are equal
- Large numbers of requirements are unmanageable
 - ▶ Group them by purpose; person; importance; timing; layer or a combination of these
- Control who can change requirements
 - ▶ You don't want the programmers changing them!

Create and use attributes

- Attributes are the metadata of the requirements
- Use attributes to perform
 - ▶ Scheduling
 - ▶ Integration with change requests and defect tracking
 - ▶ Correctness analysis
 - ▶ Trend analysis

Tool: IBM Rational RequisitePro 

Using attributes – checking on what is being done when



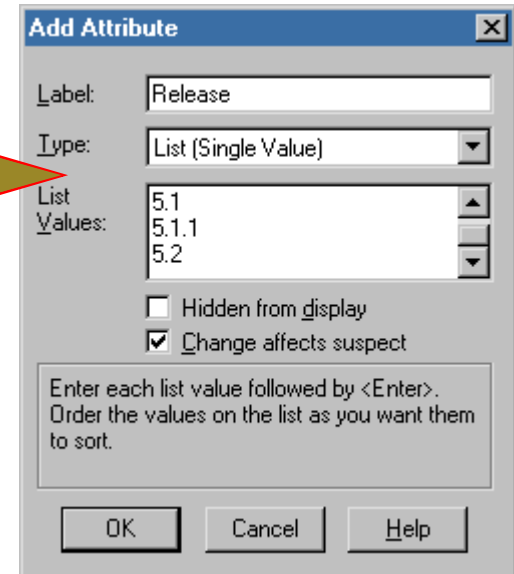
Views to help enforce process

Requirements organized by release

Views of this and all releases

Assists to organize and trace the requirements.

Can find requirements by release quickly.



Trace between the types of requirements

- Tracing the relationship between requirements of different types helps you to perform
 - ▶ Impact analysis
 - ▶ Completeness analysis
 - ▶ Coverage analysis
 - ▶ Testing
 - ▶ Confidence tests

Tool: IBM Rational RequisitePro 

Trace between the types of requirements

- Shows relationship between two requirements.

The screenshot displays the Rational RequisitePro interface with the following components:

- Left Panel (Tree View):** Shows a hierarchy of requirements including STRQ12-22 and Use Cases (UC1-11). The 'All UC->FEAT' view is selected.
- Top Panel (Relationships):** Displays 'Relationships: - direct only'.
- Center Panel (Traceability Matrix):** A grid showing relationships between Use Cases (rows) and Features (columns). Blue arrows indicate the direction of the relationship.

Use Case	FEAT1	FEAT2	FEAT3	FEAT4	FEAT5	FEAT6	FEAT7	FEAT8	FEAT9	FEAT10	FEAT11	FEAT12	FEAT13	FEAT14	FEAT15	FEAT16	FEAT17	FEAT18	FEAT19	FEAT20	FEAT21	FEAT22	FEAT23	FEAT24
UC1: Apply for...																								
UC2: Execute Trade																								
UC3: Get Quote																								
UC4: Manage...																								
UC5: Distribute News																								
UC6: Review Account																								
UC7: Maintain...																								
UC8: Report Tax...																								
UC9: Maintain Web...																								
UC10: Resolve...																								
UC11: Learn System...																								
- Bottom Panel:** Shows the selected Use Case (UC1: Apply for Trading Account) and its corresponding Feature (FEAT1: The system uses the Financial Services Network to enable transfer of funds between other financial services).
- Status Bar:** Indicates 'View saved as STRQ Hierarchy' and '11 requirements'.

Plan and measure



Tool: IBM Rational Method Composer 

Plan and measure

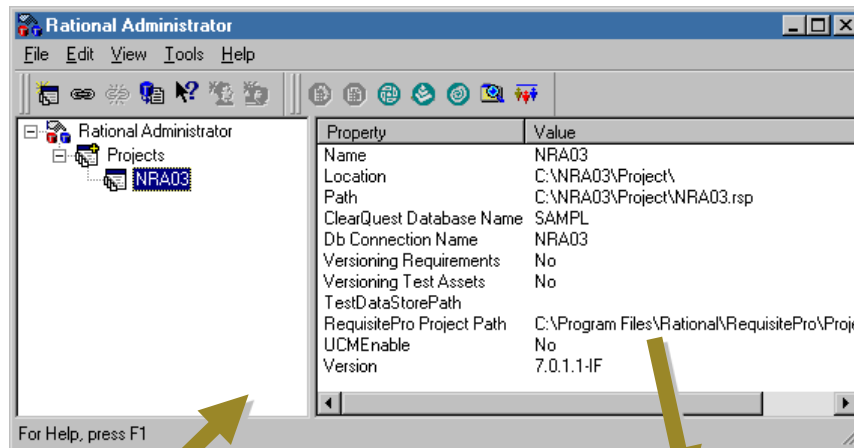
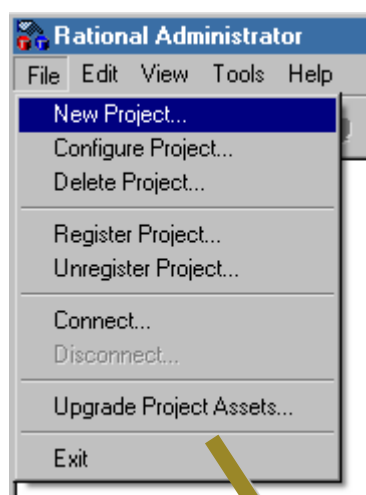
- What process and mechanisms will be used
- Tooling
- How will it be configured
- Measurements and metrics
- Reports
- Requirements change management

Control Change

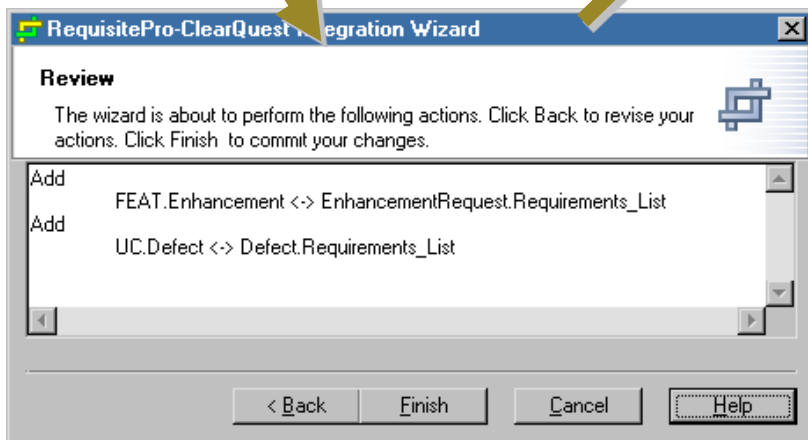
- Control change or it will control you
- Beware the scope creep
- Perform impact analysis
 - ▶ What other changes will occur
- Change will happen – ensure it happens in an orderly manner

Tool: IBM Rational ClearQuest 

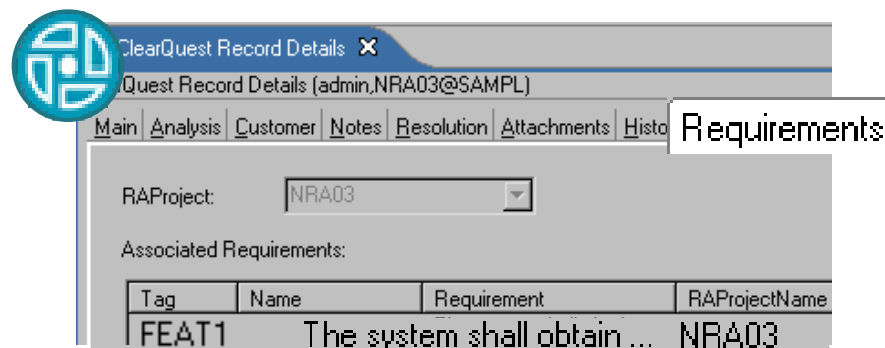
Integrating requirements with change – defects, etc.



Enables link between requirements, enhancements, defects and tests.



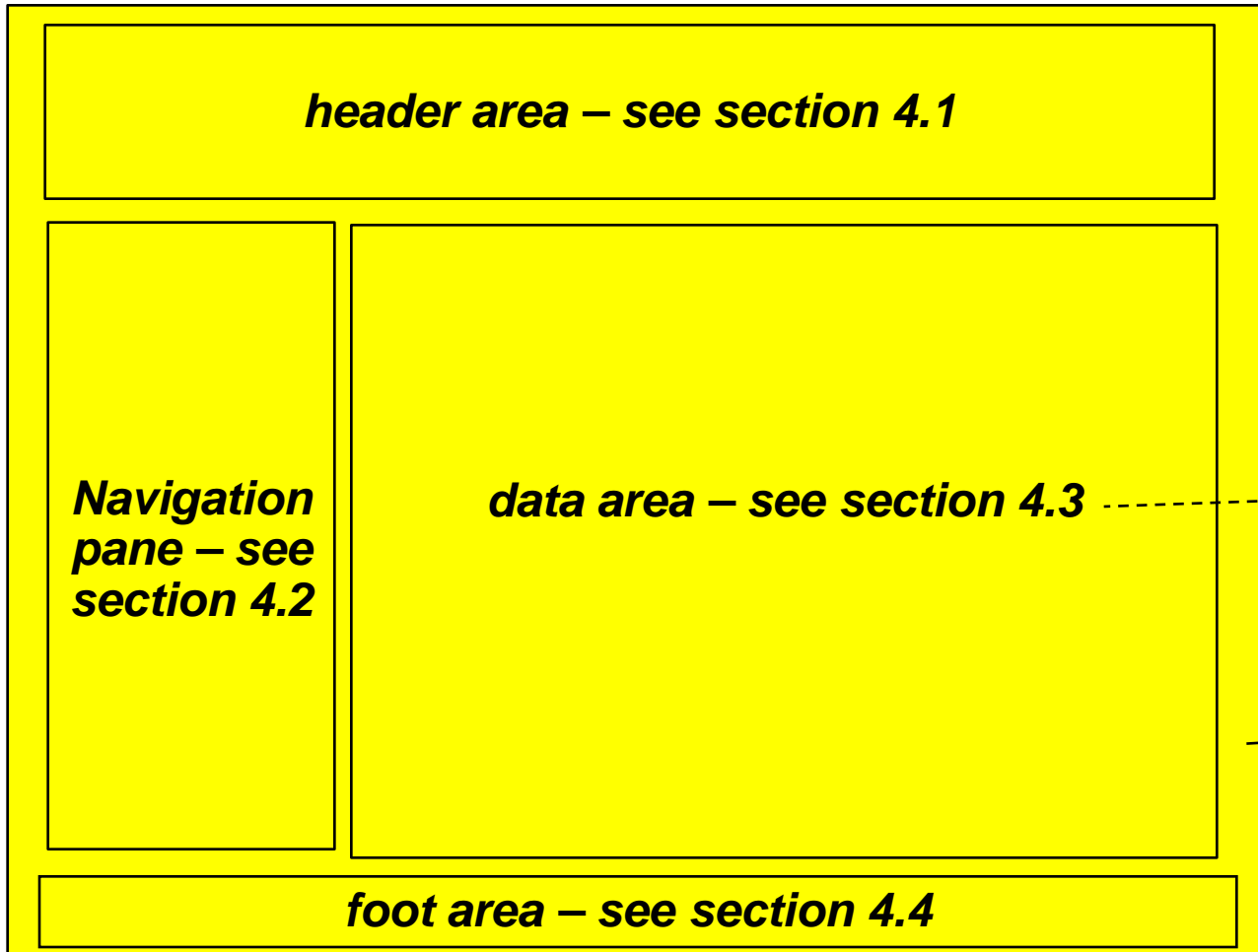
Requirements:	Release	Status	Enhancement
1 - Ft:Y			
FEAT1: The system shall obtain and...	5.0	Approv	SAMPL00000041
* <Click here to create a requirement>		Approved	



Avoid GUI design too early

- Aim for GUI requirements, not design
 - ▶ You are not locked in too early to the solution
 - ▶ Reduces time to get agreement
 - No haggling about where a field goes, or what it looks like
 - ▶ Makes defining the scope quicker
 - ▶ Your job is easier
 - ▶ Gives the GUI designer something to do


Avoid GUI design too early



Use a mudmap or wireframe

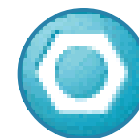
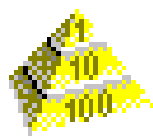
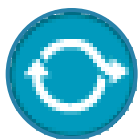
Use notes

use corporate color and layout standards

Tool: IBM Rational Requirements Composer 

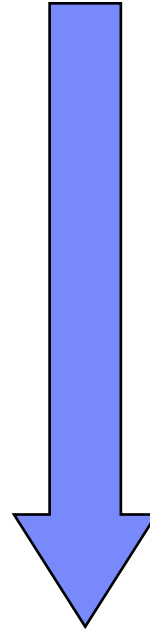
Automate where practical

- No one just uses paper and pencil anymore
- Use the tools that suits your needs
- Allow time to get skilled in the product
- Improve your work practices
 - ▶ You don't want to do bad things quicker



Gradually improve your requirements practices

- *Written*
- *Organized*
- *Structured*
- *Traced*
- *Integrated*



A gradual, cumulative process
- you won't get here tomorrow

The Five Levels of Requirements Management Maturity,
Jim Heumann, The Rational Edge, February 2003

Tool: IBM Rational Method Composer 

Process guidance created with Method Composer

As Real as It Gets!

Welcome to the Real Process

On this site you will find guidance to assist you navigate our process, from requirements to development.

Main Description

Learning

- Getting Started
- Key Principles

Process

Click on an area of the screen for more information.

Resources

- Overview
- Training
- IBM Rational Method Composer
- The Rational Edge

Navigation Links

- Roles
- Work Products (by domain)
- Processes

Risk Reduction → **Complete Code**

Scope ↻ **Rollout**

What this means

The process flow illustrates the overall architecture of ASAP, which has two aspects:

Provides guidance on the new process – what to do when, what to use, etc

DEMO

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- **Conclusion**



What we have covered

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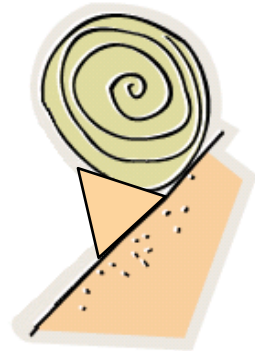
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- Impact analysis not undertaken properly
- Difficult to manage because of large volume
- Not changing scope as needs change
- Test Squeeze



What you can do to stop requirements disappearing

- Use the requirements to gain and maintain agreement
- Document and maintain the requirements set
- Organize your requirements
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- Control change
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What you can expect:

- Reduced errors in requirements set
- Better management – transparency
- Control of scope creep – cost and schedule
- Fewer bugs going into production and having to be fixed in the next lifecycle
- Quicker testing – traceability
- What you expected to see is there

QUESTIONS

Thank You



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