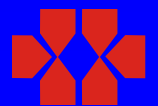
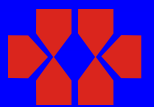
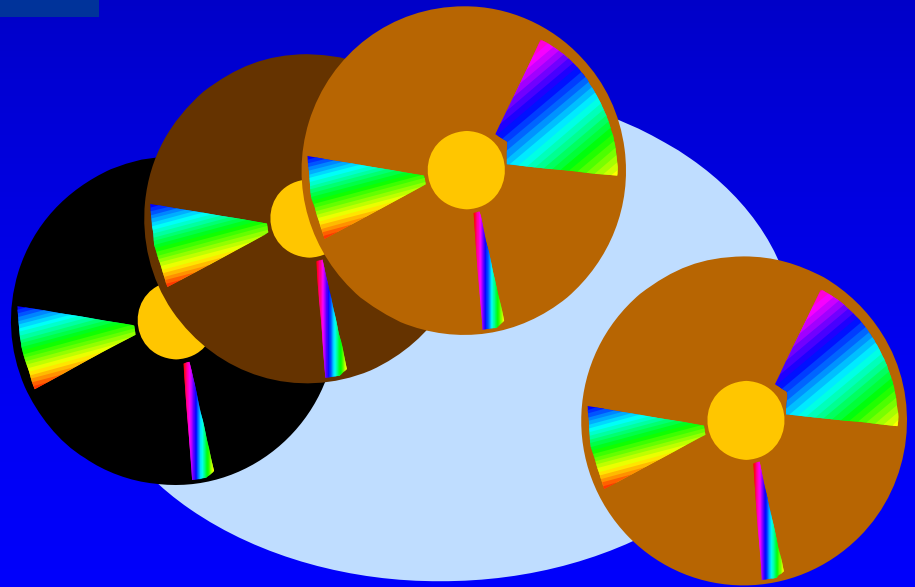


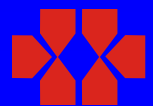
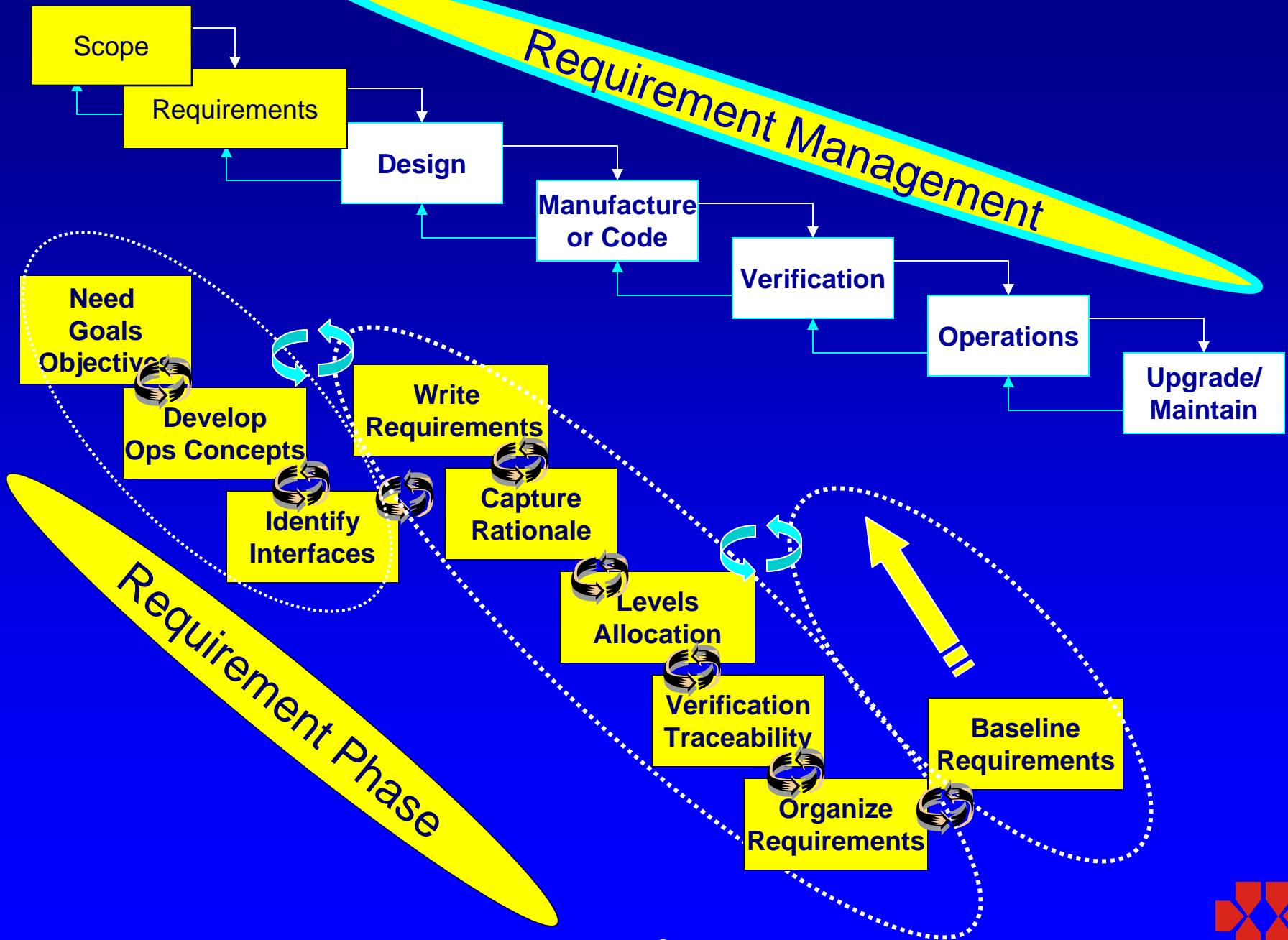
Project Manager's Role in Requirements

Compliance Automation, Inc.

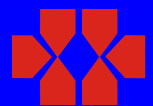
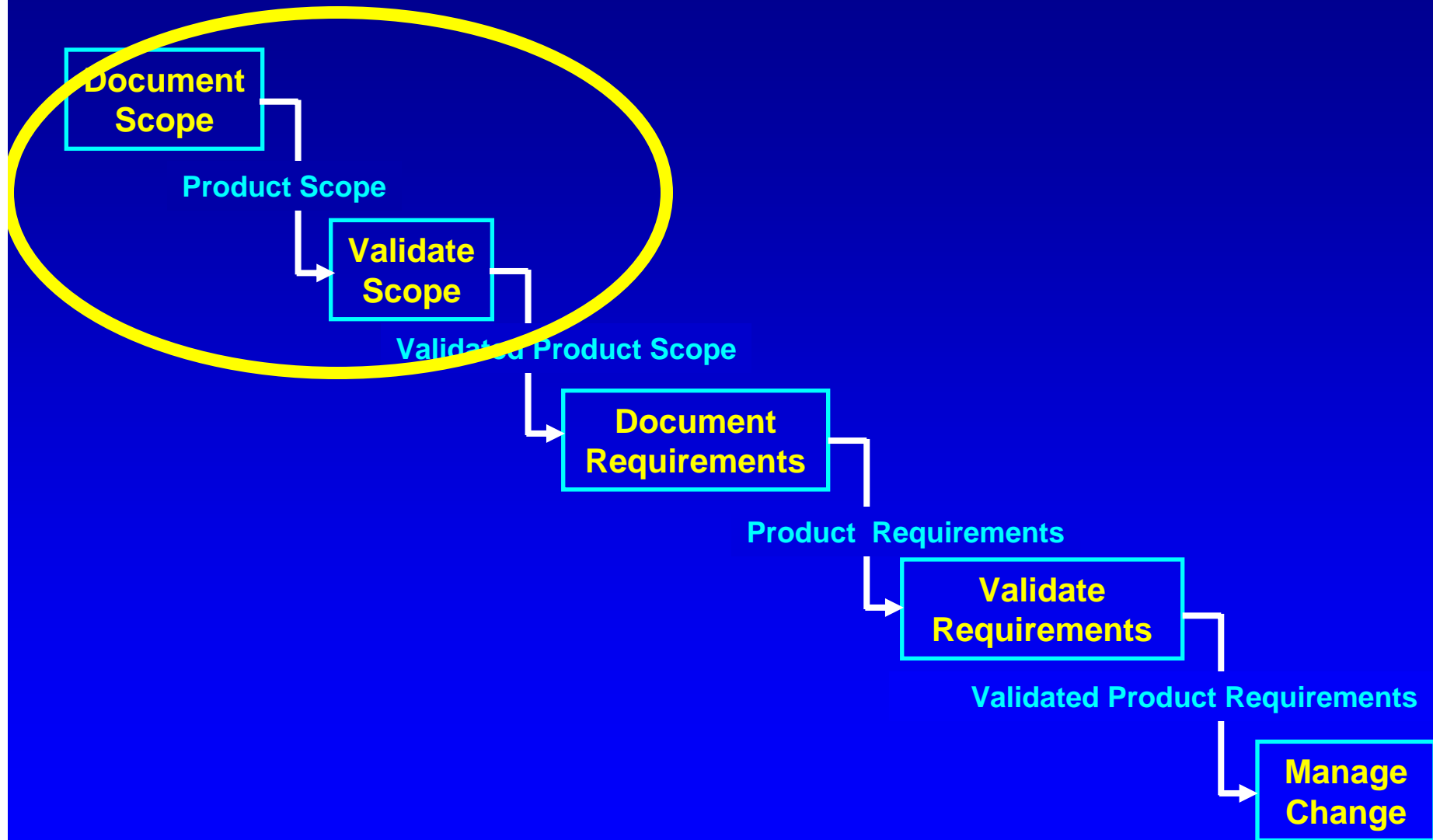




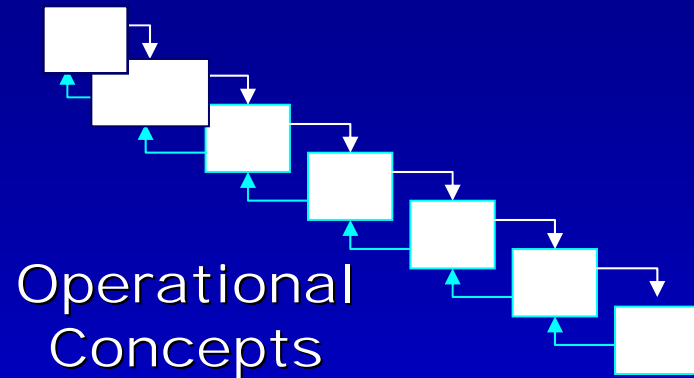
Requirement Management



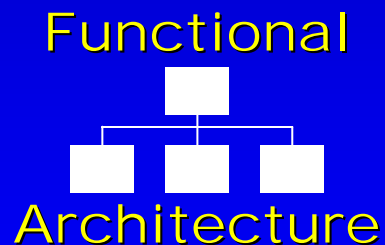
Requirement Management Activities



Product Scope



Stakeholders



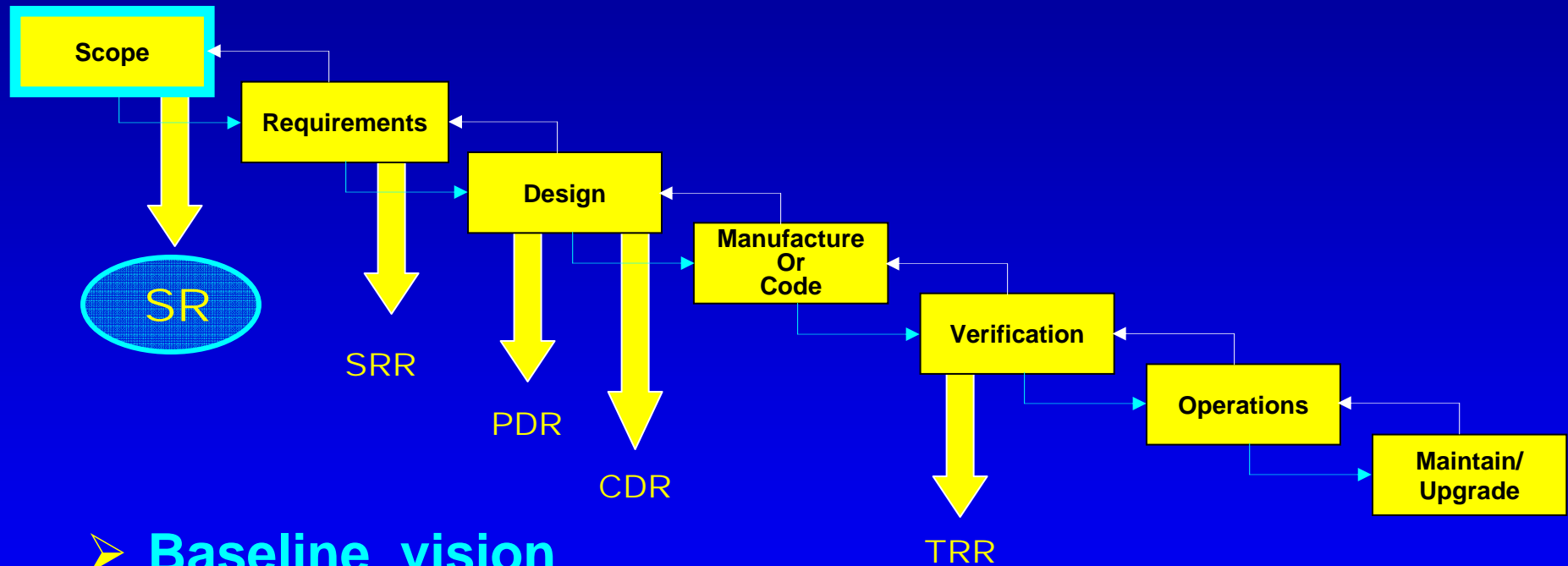
DRIVERS



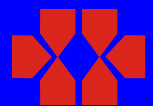
Where are you going?
What are your bounds?



Scope Review

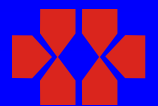


- **Baseline vision**
- **Get stakeholder buy-in**
- **Set expectations**

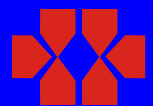
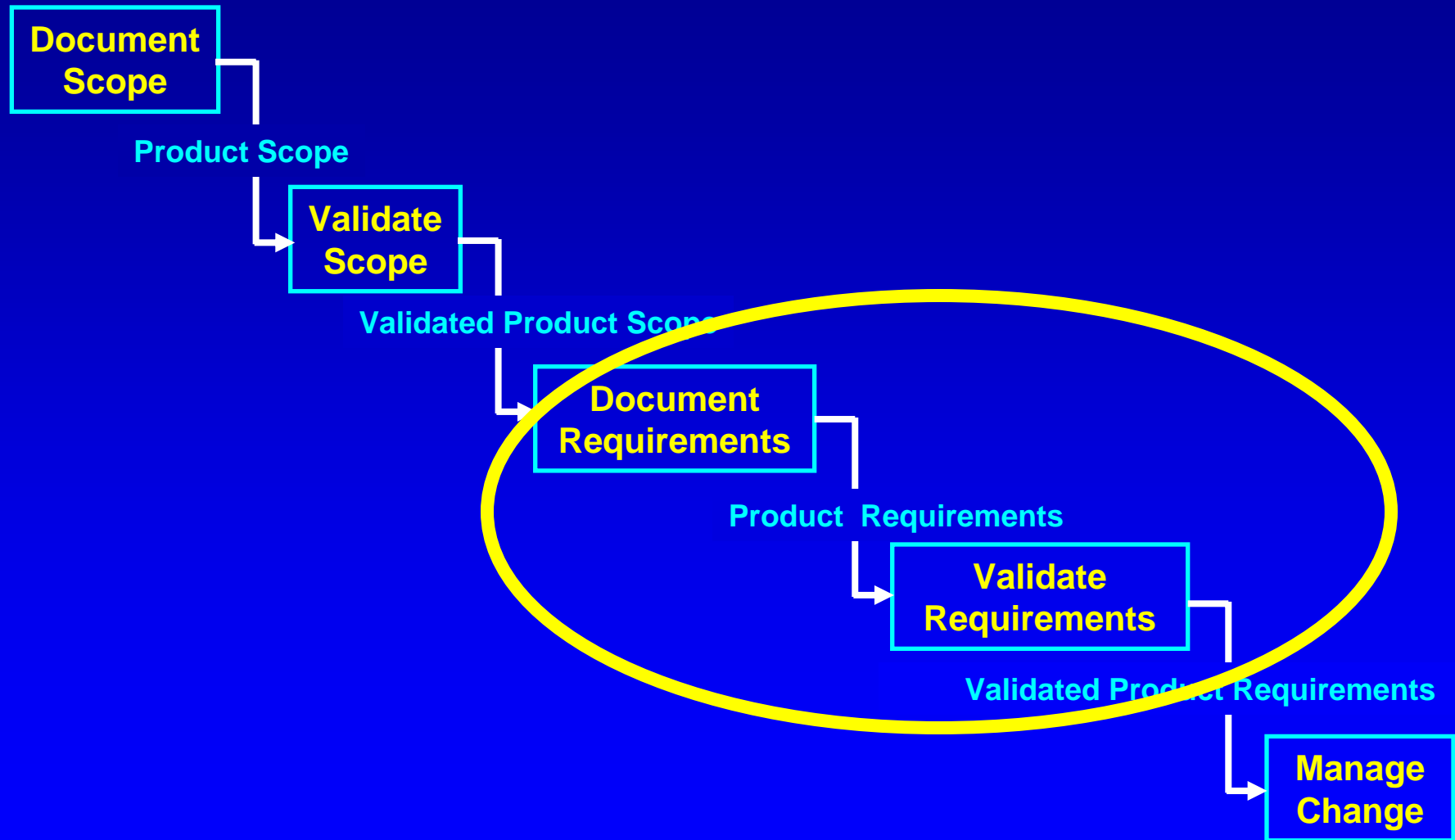


Management's Role in a Scope Review

- ✦ Review and approval of scope information prior to dissemination
- ✦ Ensure the right participants
- ✦ Provide guidelines, standards, and templates
- ✦ Act on participant feedback
- ✦ Document and communicate disposition of participant feedback
- ✦ Obtain approval and sign-off from all participants

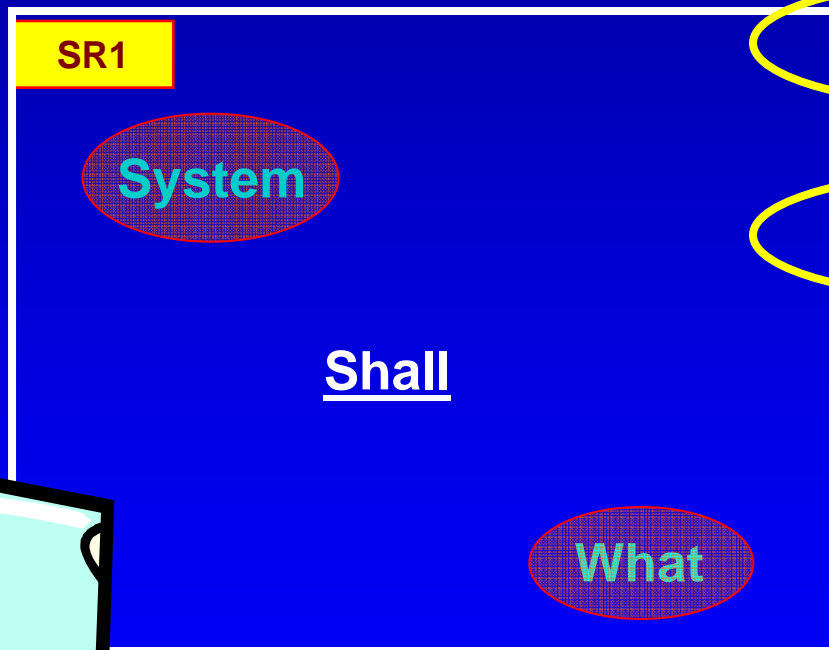


Requirement Management Activities



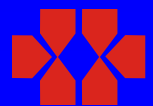
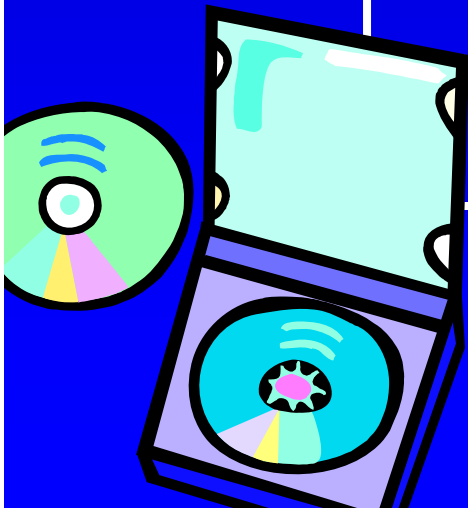
Requirement Attributes

A valid requirement includes attributes



Rationale
Verification
Priority
Risk

Allocation
Traceability



Rationale

Rationale captures why I have the requirement and other information relevant when the requirement was written

- Captured when requirements are written

- Non-generic e.g., unique for each requirement

- Reflects ops concepts, assumptions, drivers, constraints

ROI is high

- Ensures better requirements

- Reduces review time

- Supports maintenance and upgrades

- Captures corporate knowledge



Prioritization

Prioritization assigns relative importance to requirements

- Assigned after we have a set of requirements

- Simple is better

- Has to involve multiple stakeholders and all are not equal

- Has to be maintained through levels of requirements

ROI is medium

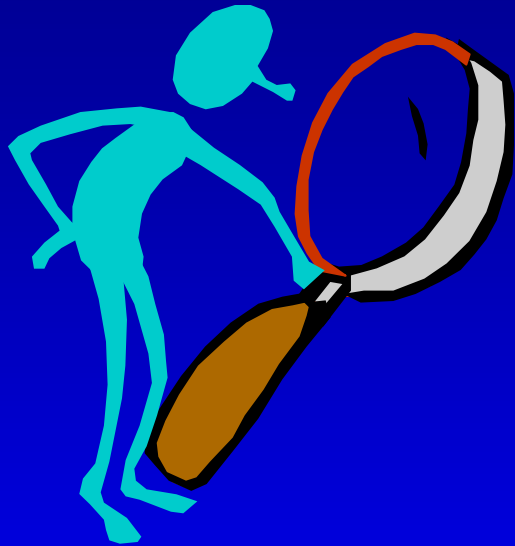
- Enables you to better plan and manage the effort

- Helps you manage the unknown unknowns

- Helps improve communications

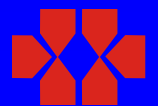


What is Validation

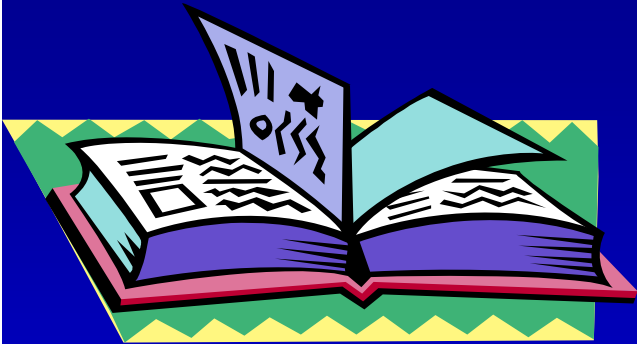


We have:

- ✦ The right requirements
- ✦ Clear, concise, and verifiable
- ✦ Consistent and complete
- ✦ Including their attributes



Who Does Validation



Writers

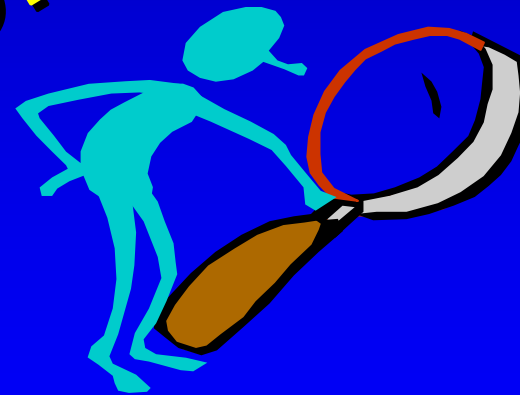


Managers



Developers

Everyone



Reviewers



Continuous Validation Process

Continuous validation holds everyone responsible

Requires standards

Requires training

Management has to enforce discipline and accountability

Management has to allocate resources

ROI is high

Stops the creation of BIG bad documents

Provides continuous improvement

Reduces time for big reviews

Prevents lost time due to rework



Inspections

Inspections identify potential defects (risk factors) as requirements are being written

- Done incrementally as requirement document is being developed

- Uses peers for the inspection

- Uses customized checklists

- Author responsible for defect resolution

ROI is high

- Defects uncovered early in the process

- Reduces requirement risk

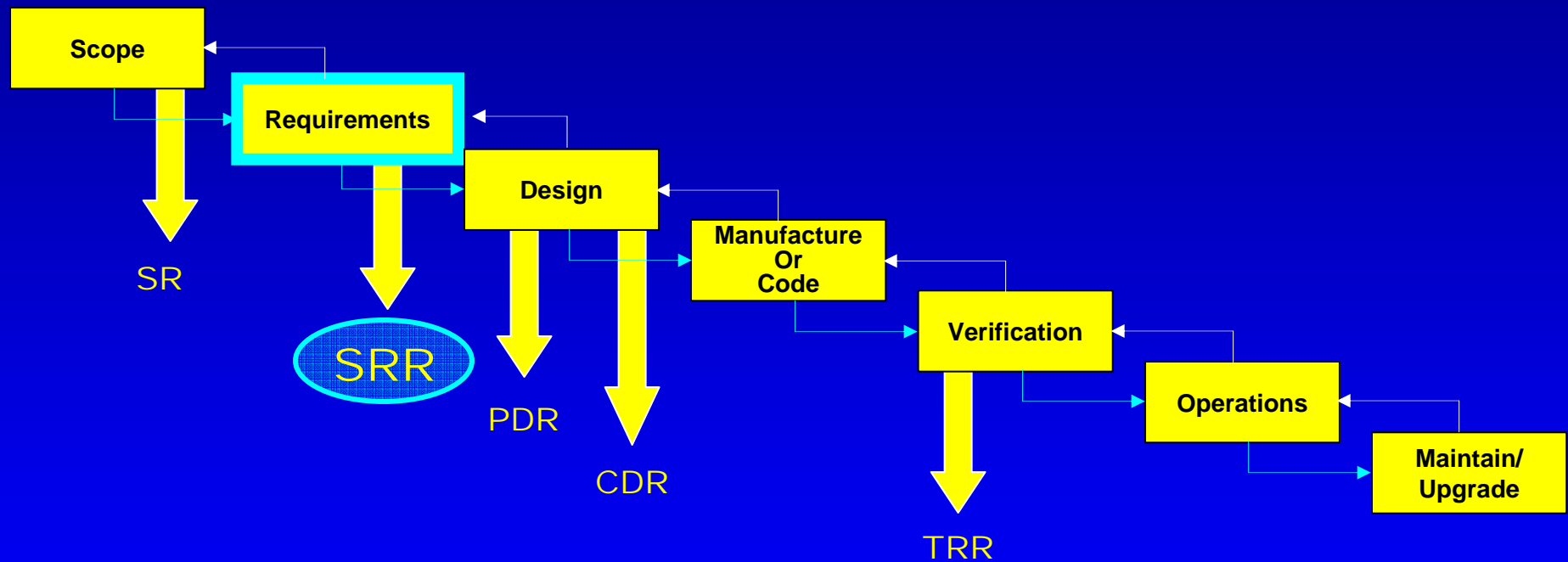
- Improves process

- Reduces formal review time

- Reduces verification time



Discrete Validation Process



Discrete Validation Process

Discrete validation is a key milestone review that requires time and resources

- Involves a wide range of stakeholders

- Requires standards and feedback mechanisms

- Requires training

- Management has to ensure responsiveness

- SRR results in a requirement baseline

ROI is high IF

- The right people are involved

- The products are ready for review

- The participants know what to do

- Management ensures compliance

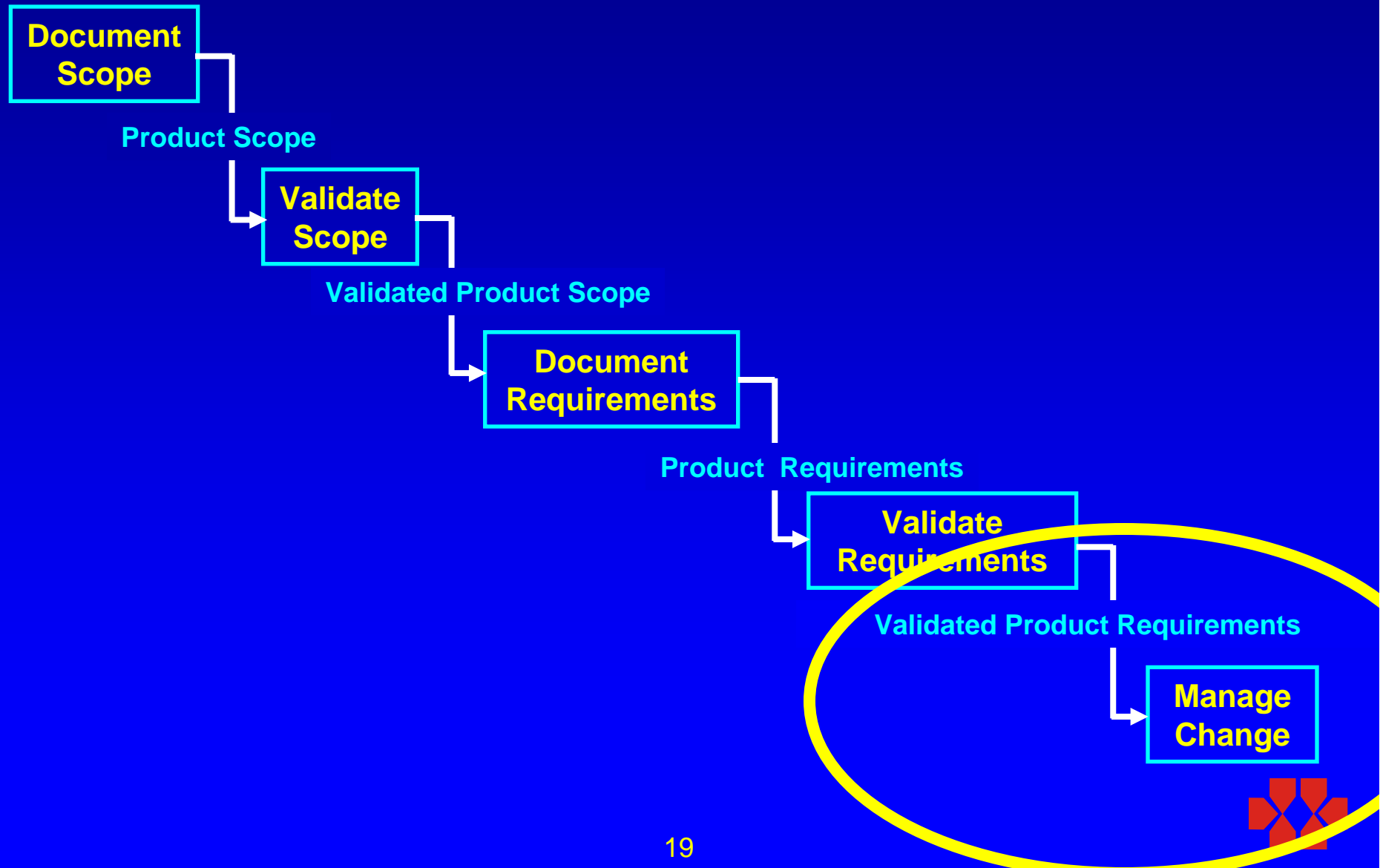


4 ½ Step Requirements Review Process

<i>Step</i>	<i>Review for</i>	<i>Who</i>	<i>How Many</i>
1	Editorial	Person with editorial skills	1-2
2	Goodness	Knows rules; some technical knowledge	2-3
3	Content	All stakeholders	As many as needed
4	Risk	Technical and management knowledge	2-3
4 ½	Editorial	Person with editorial skills	1-2



Requirement Management Activities



What and When

✦ Scope

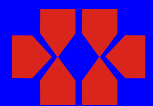
- Any change in scope needs to be integrated in a controlled manner into all documentation

✦ Requirements

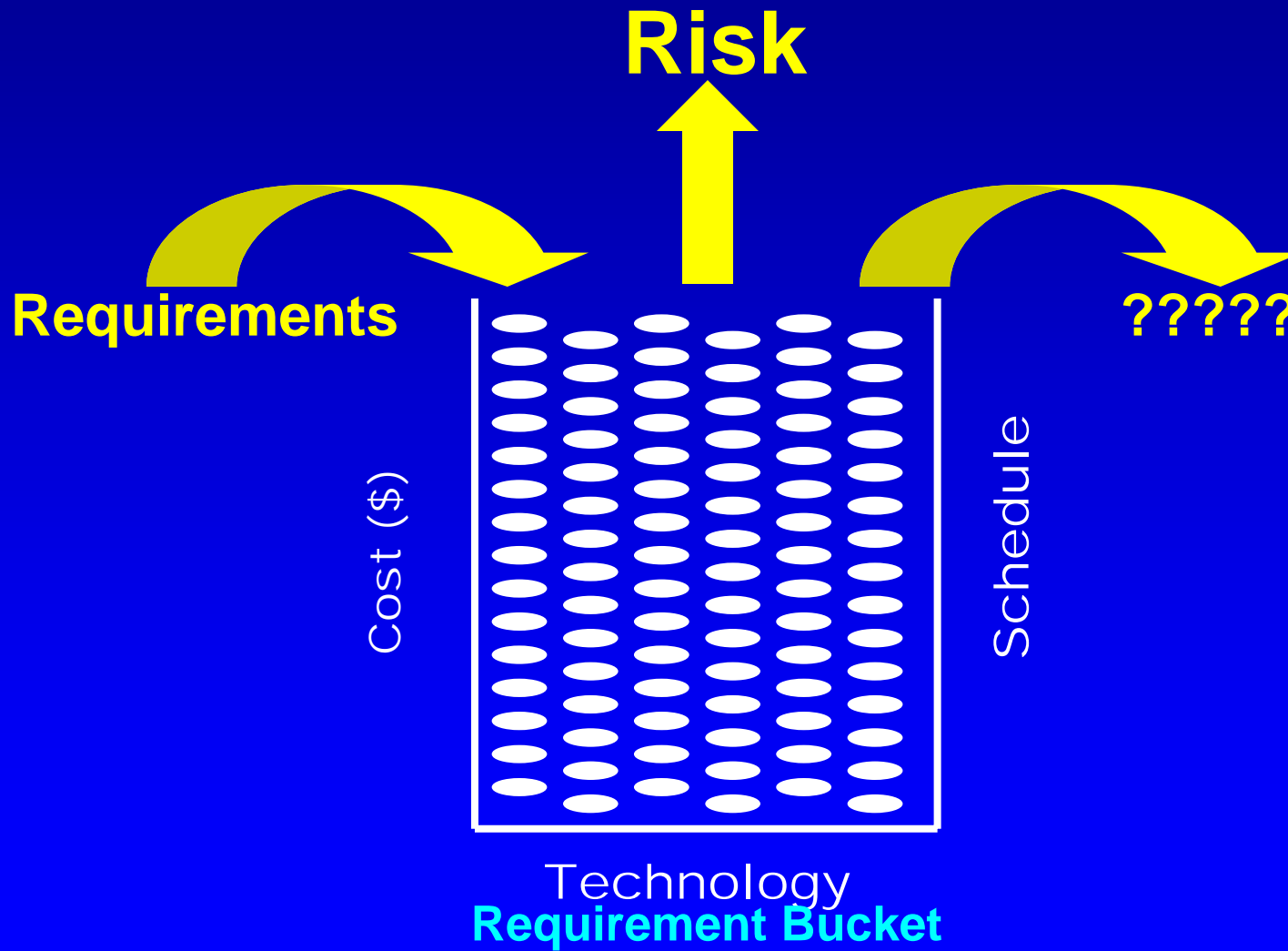
- Before baseline, change as needed
- After baseline, documented process

✦ Metrics of change

- Total amount
- Rate-of-change, up and down
- Resources applied

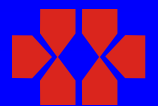


Managing Change



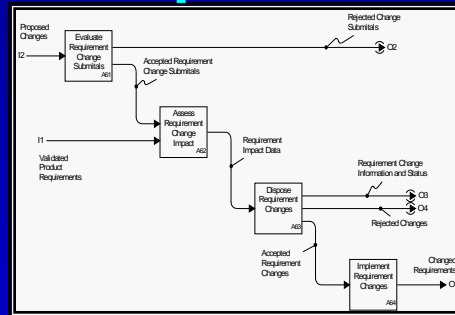
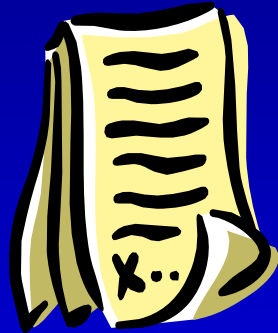
Defense Against Change

- ✦ Define and baseline your scope before writing requirements
- ✦ Do not baseline a bad document
- ✦ Put as much rigor in the baseline as in the changes that will follow
- ✦ “Design for change”

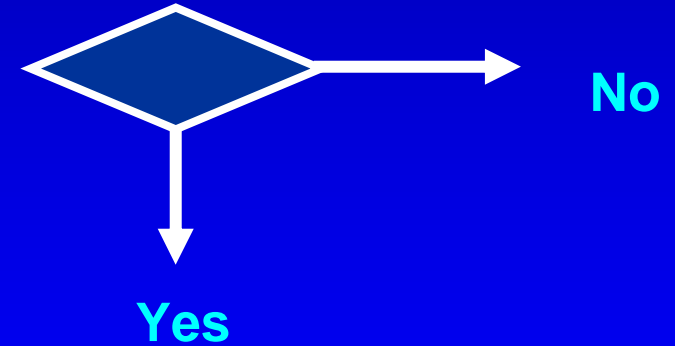


Change Management Process

Documented process

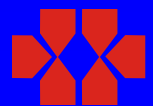


Criteria for change

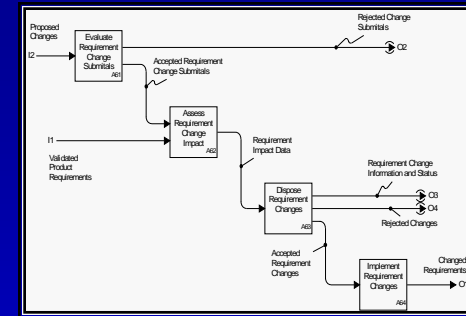
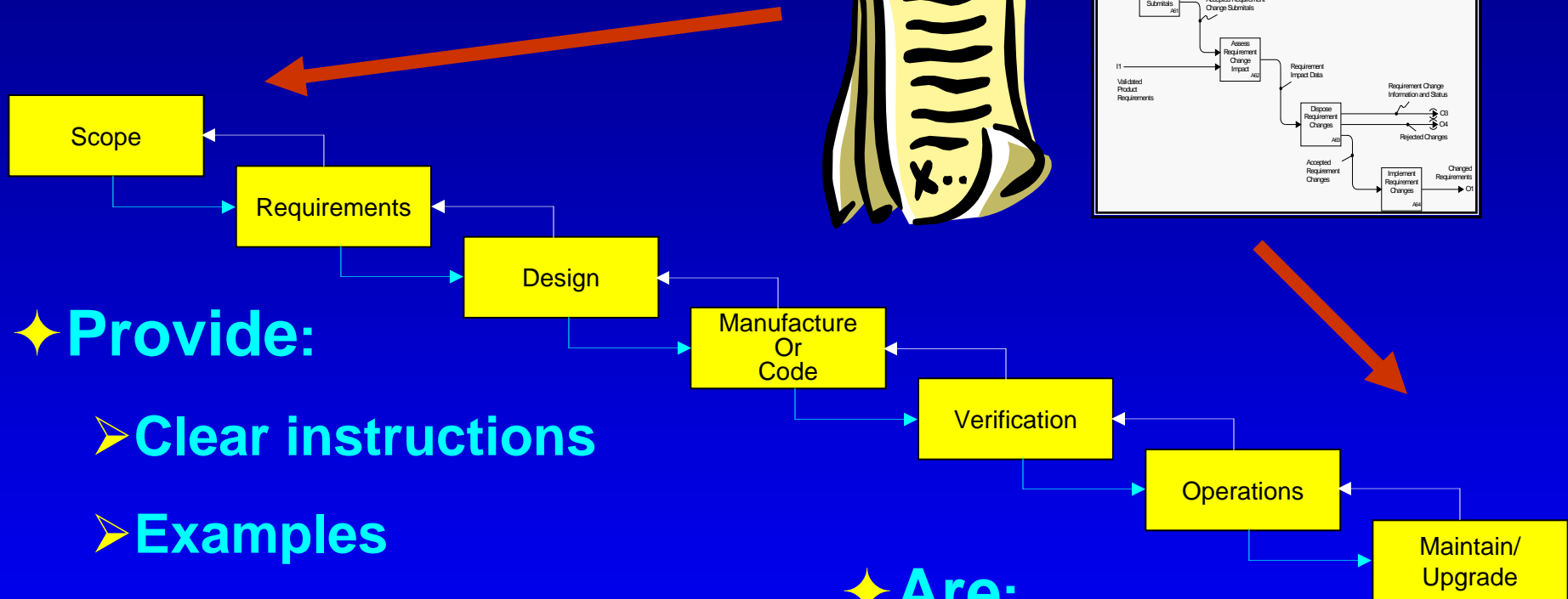
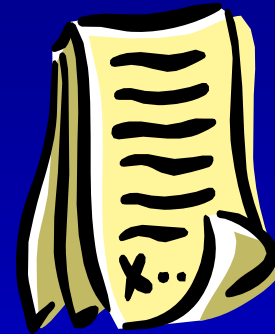


Changes to avoid:

Deferred or
Rushed



Well-Defined Processes



◆ Provide:

- Clear instructions
- Examples
- Succinct/repeatable steps
- Metrics for feedback

◆ Are:

- Tailorable
- Revised when needed



Processes

Requirement processes cover all steps necessary to managing requirements

All participants must be trained in the process

Management should not change the rules in the middle

Management should not abandon under pressure of schedule

ROI is high

Don't waste time or money

Can reuse processes

Can reuse products

Can reuse team

Can ensure compliance



Metrics

Requirement metrics are gathered and assessed to help us get better

What do we do well?

Where are our problems?

What can we do to fix our problems?

Is our fix working?

ROI is high

Focus on largest problems

Take useful corrective actions

Stop repeating mistakes



Requirement Metrics

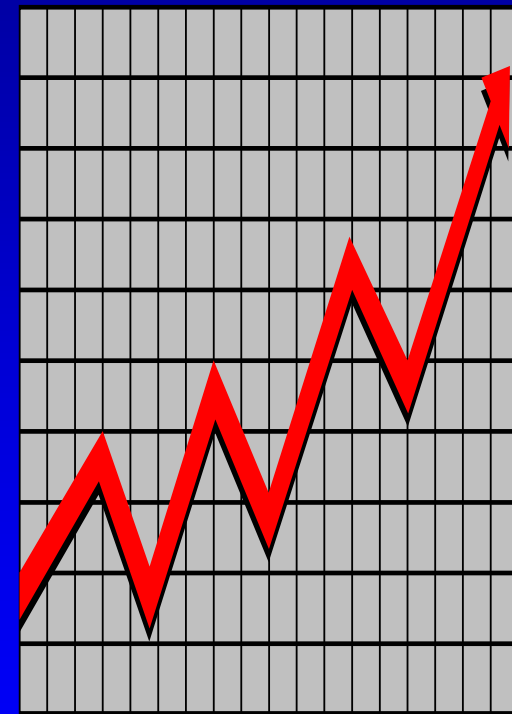
✦ Sources

DR's, CR's, RM tools

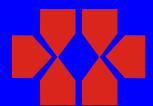
✦ Identify types of problems caused by requirements errors

✦ Identify types and sources of requirements errors

✦ Fix the ones that cause the most problem and that occur the most often



Metrics



Metric Example

Errors in Discrepancy Reports

- ✦ 20 due to misinterpretation by design team
 - 15 did not understand the real use
 - 5 ambiguous terms
- ✦ 3 missing requirements
- ✦ 6 not due to requirements
- ✦ 4 cannot decide how occurred

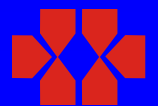
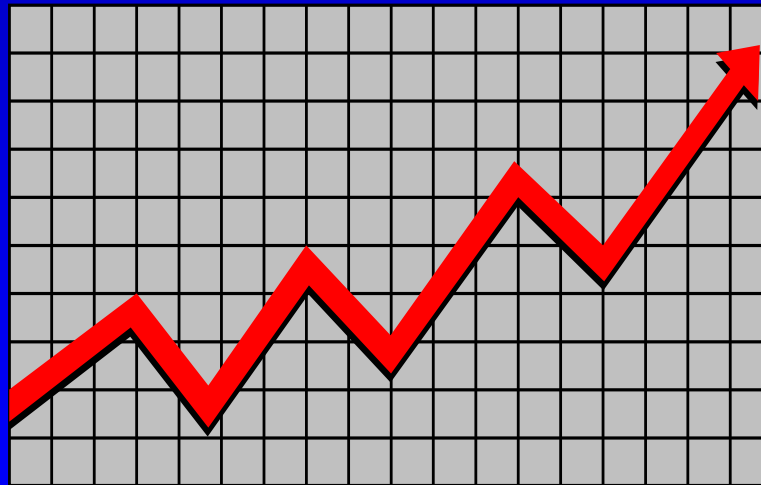
How to find earlier or prevent

- add rationale to requirements
- add ambiguous terms check to review process
- ✦ use standard outline



Managing Metrics

- ✦ Make it part of real work – not added work
- ✦ Do not overdo
- ✦ Start small and simple



Automation

Requirement Management tools capture requirements and attributes and their changes

- Don't use without a process

- Control what goes in, do not collect garbage

- Use for early capture of attributes

- Create meaningful reports – use to manage

ROI high on large projects, less on smaller projects

- Rapidly identify holes and rules violations

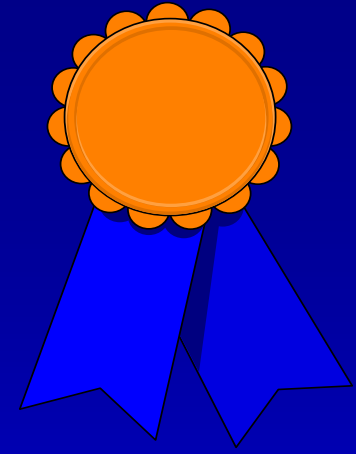
- View from many perspectives

- Organize for analysis, tests, simulations

- Capture corporate knowledge



Good Requirements



- ✦ Are possible if management
 - defines and enforces processes
 - clearly communicates the project vision
 - educates and motivates personnel
 - provides the right resources at the right time
 - makes requirements quality a part of performance reviews
 - measures the impact of requirements



Accountability

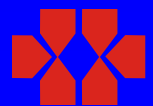


Reward
Good
Requirements

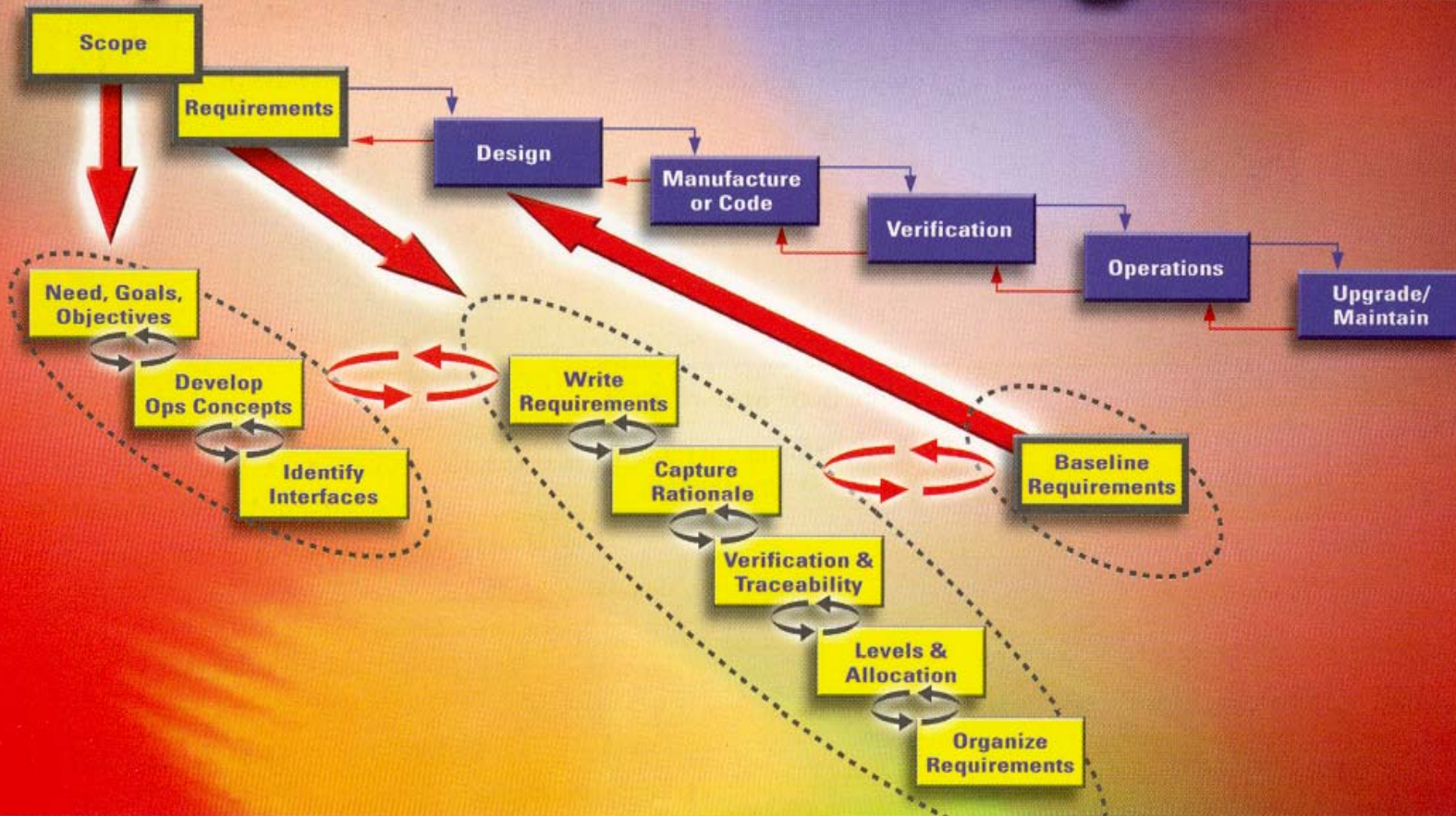
Beware
the
Hero!



Make everyone
responsible for
what they do.



Requirement Management



SEMINARS

ONE DAY

Before Requirements
Writing Good Requirements
Managing Requirements

TWO DAY

Requirement Definition
Requirement Management

THREE DAY

System Requirements

OTHER OFFERINGS

- Conducting a Requirement Review – 1 day
- Writing Performance-Based Statements of Work (SOW) – 2 day
- Inspection Workshop – 1 day
- Inspection Moderator Workshop – 1 day
- Writing Interface Requirements – Advanced 1 day
- Facilitation • Audits

Compliance



Automation, Inc.