



Quality Management III

Elaboration

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Goals of Presentation

CS577a Quality Management (QM)

- The three legs
- CS577a Configuration Management (CM)
 - CM System Approaches & Change Control
- Peer Reviews (AKA wrongly as "Inspections")
 - ROI by Type of Review

Milestones and Reviews

Inception Retrospective

Elaboration Expectations

LCA ARB Expectations with respect to LCP(?) and CTS Doc's

- QMP
- PRP
- Testing

Agile Artifact Review and Peer Review Workshop

Quality Management

The Quality tasks in QM

- Quality Assessment (and Reporting)
 - Peer (team) Reviews
 - Agile (IIV&V) Artifact Reviews
 - Testing
- Quality Tracking (Follow up on the "Reports")
- Quality Improvement

With pre-requisites

- Configuration Management
- Early Defect Finding (Identification) mechanisms
- Defect and Effort Data submittal

CS577a Quality Management

Pre-requisites

- Configuration Management: Described in LCP
- Early Defect Finding (Identification) mechanisms: **PR & AAR**
- Defect and Effort Data submittal: QR

The Quality tasks in QM

- Quality Assessment (and Reporting)
 - Agile (IIV&V) Artifact Reviews (AAR)
 - Peer (team) Reviews: Agile Internal Reviews (AIR)
 - Testing?
 - Problem Reports
- Quality Assessments Tracking (Follow up on the "Reports")
 - Available mechanisms: Bugzilla, Mantis, ClearQuest, ...
- Quality Improvement
 - Iterative reaction to feedback, IIV&V/Peer reviews, ARBs

Cost Schedule Quality Tradeoff

Q, \$, Time:

- Normal projects: Pick two of the three: the other is the "independent" variable.
- MBASE projects: Pick all three: Shrink the "size" (features/capabilities, documentation/project-requirements, LOS, Interfaces, Evolution)

CS577a CM

CM System Approaches (possible)

- For Documents:
 - File naming conventions on Team Website
 - ClearCase Light
- For Prototype Code (especially if more than one prototyper)
 - CVS
 - ClearCase Light
 - ...

Change Control ...

CS577a CM (cont.)

Change Control

- Heavy-weight: change control boards
- Medium-weight: as described in full MBASE guidelines
- Light-weight:
 - Project Manager/Leader oversight
 - Clear (verbally) with client

Peer Reviews in CS577a ROI

Michael Fagan suggests "Goal Levels" [Since 1988]

Goal Level

Process

Process Execution

1	Baseline.	Undefined, Intuitive Process with Reviews/Walk-throughs	Discipline level: Many judgement calls.
2	60% defects found before testing. +10% Productivity.	I0, I1, I2 ... Inspections	Informal Moderator training (0 - 1 day).
3	90% defects found before testing. +25% Productivity.	Formal Exit Criteria. I0, I1, I2 Fagan Inspections Design Change control	Formal Moderator training [for ALL] (3+ days [with FIs]) – ALL changes

The above are first 3 out of 5 of Fagan's Goal Levels

- CS577a teams do Inspections or Agile Internal Peer Reviews
- CS577a teams do not really do Design Change Control or Inspections [Peer-Reviews] of all changes

CS577a defect detection rates and ROI are lower than Fagan's

Milestones and Reviews

In-process Peer Reviews

- High pay-off (project or technical risk reduction)
 - OCD (updates)
 - UML
 - SSRD
 - SSAD

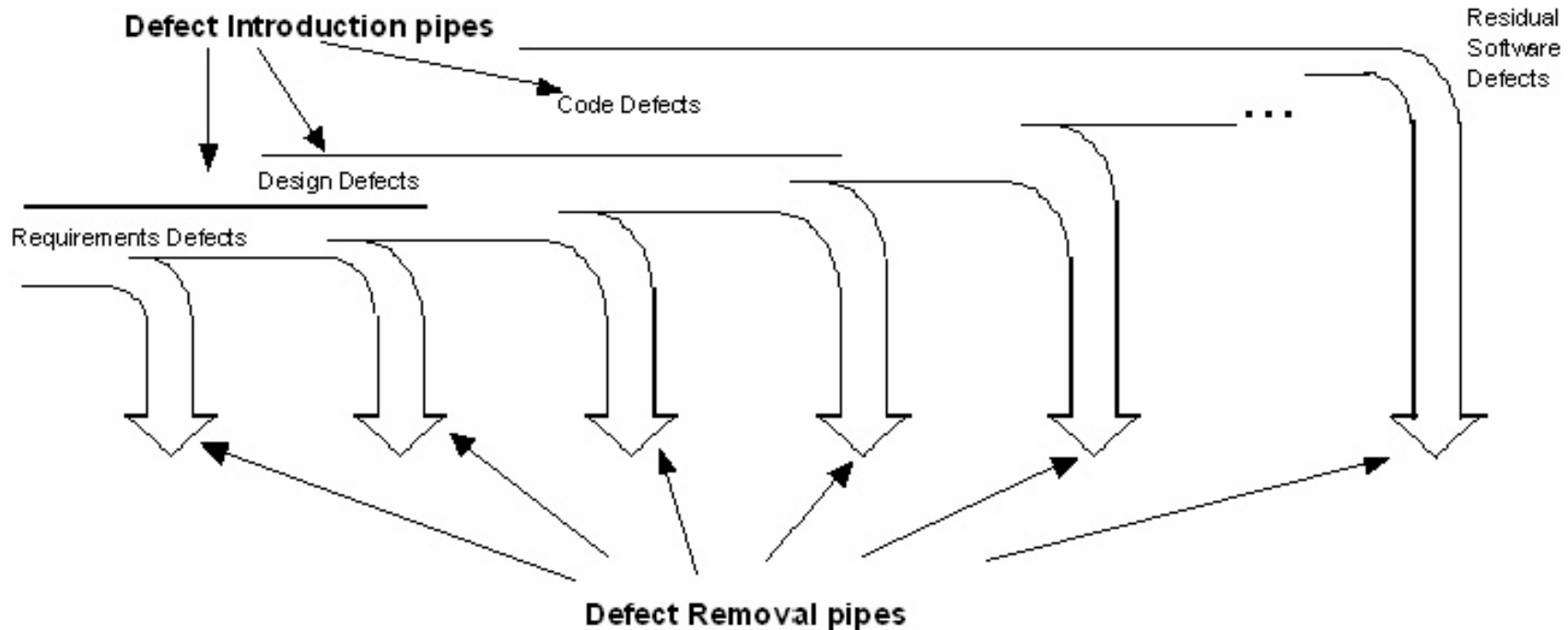
Anchor point "Stakeholder" reviews

- LCO ARB
- LCA ARB

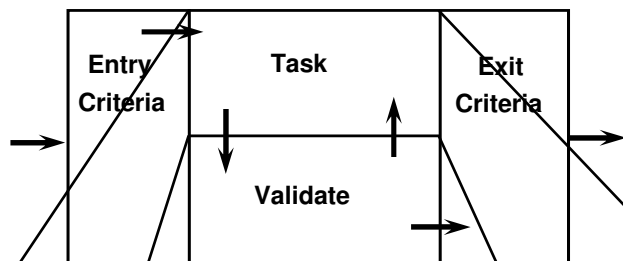
Quality Management Manifestations in CS577 MBASE

**Quality Management
= Quality Assurance + Quality Improvement**

**Quality Assurance and Quality Improvement
require Quality Assessment (against property models)**

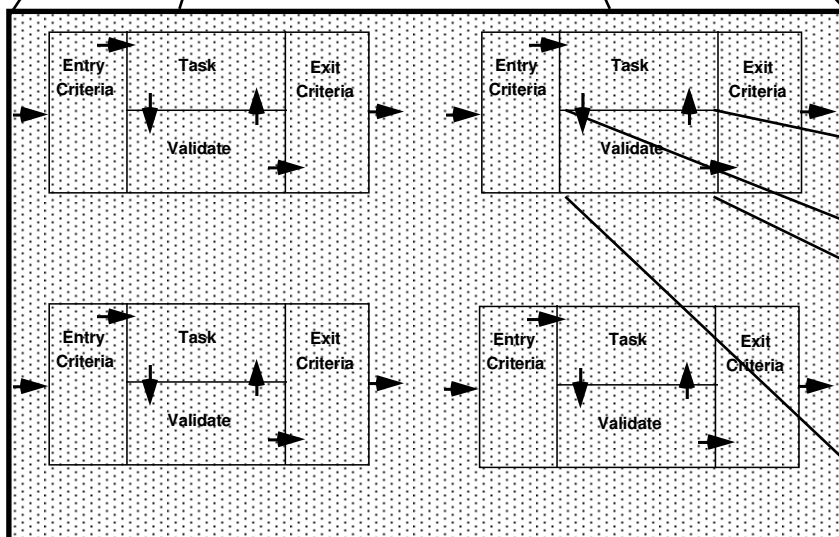


ETVX Paradigm; Sw Devel. Process & Peer Reviews

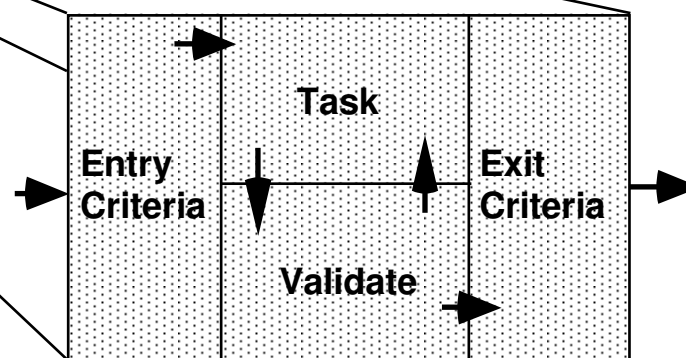


*A software development process,
e.g., specifying, designing, coding*

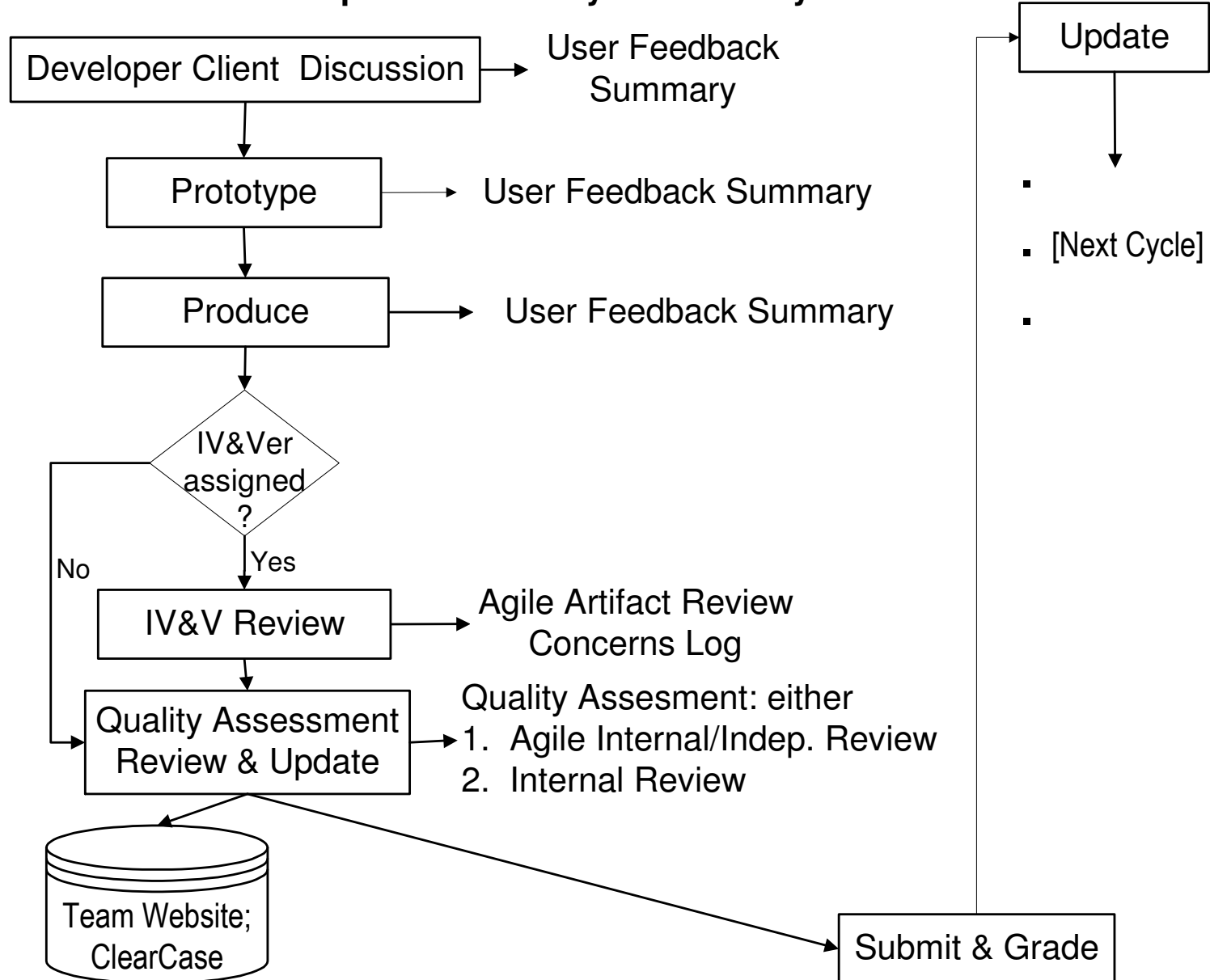
Tasks distributed to team members

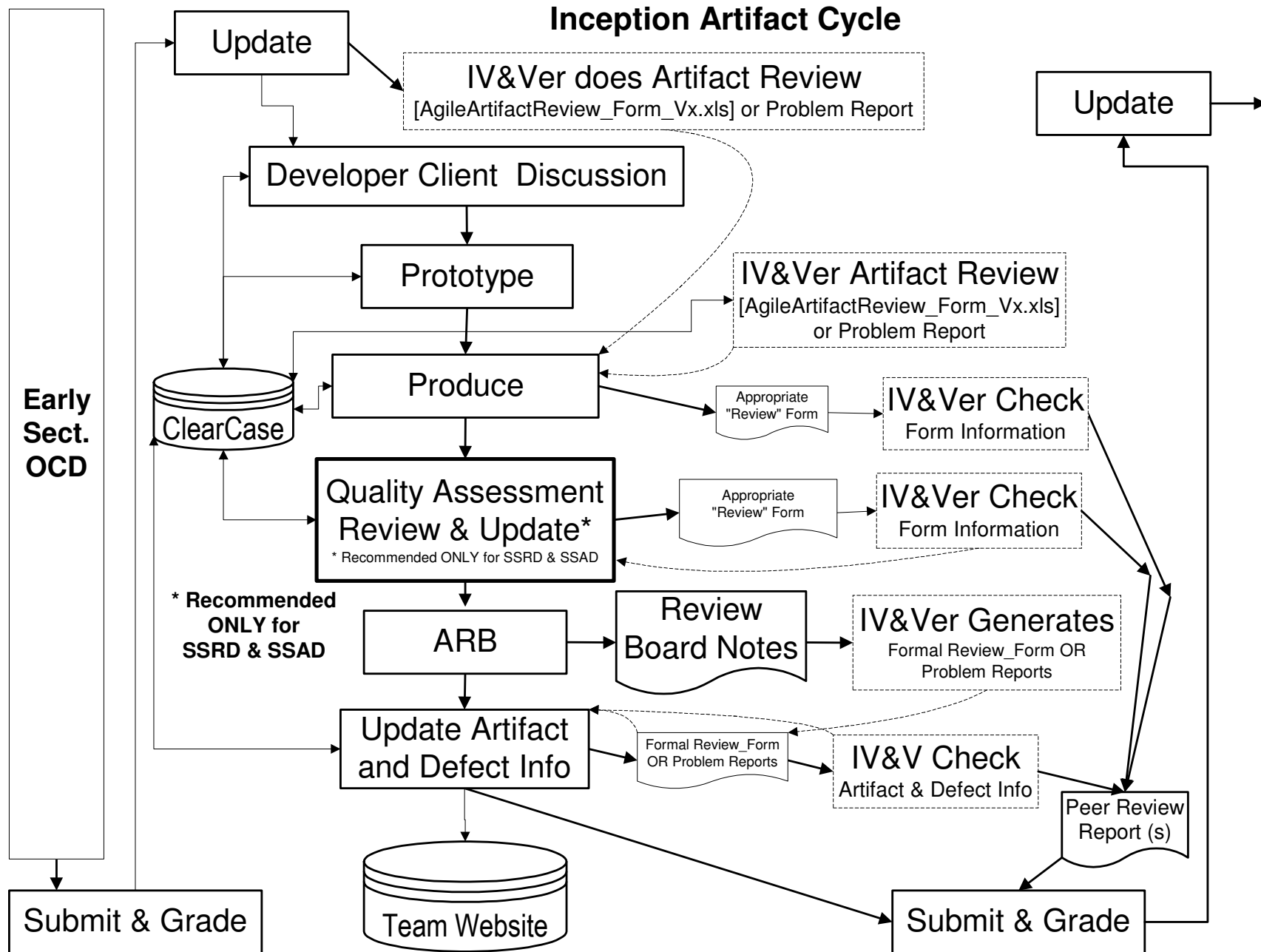


Peer Review



Inception OCD Early Sections Cycle





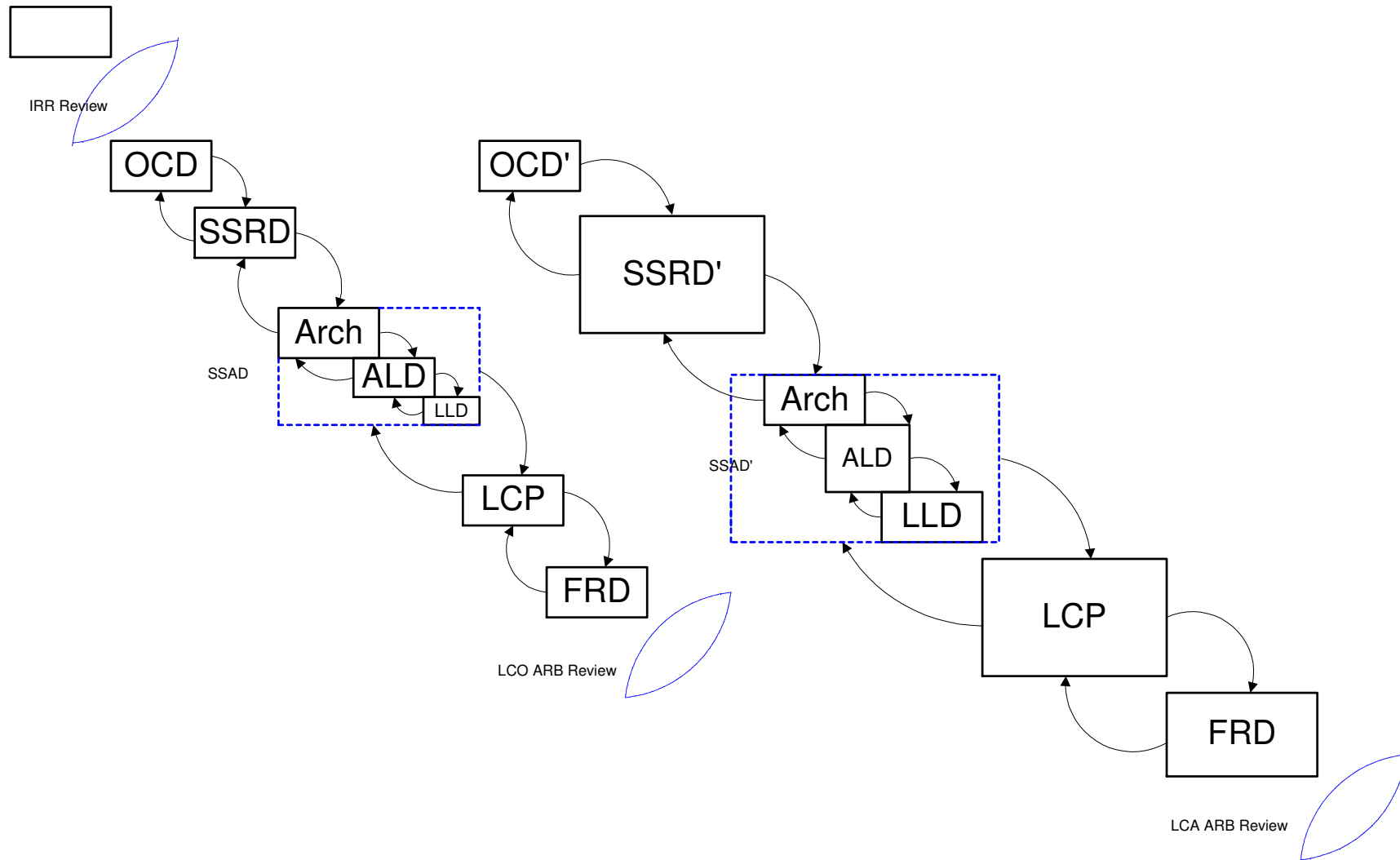
Outline

Inception Retrospective

Elaboration Expectations

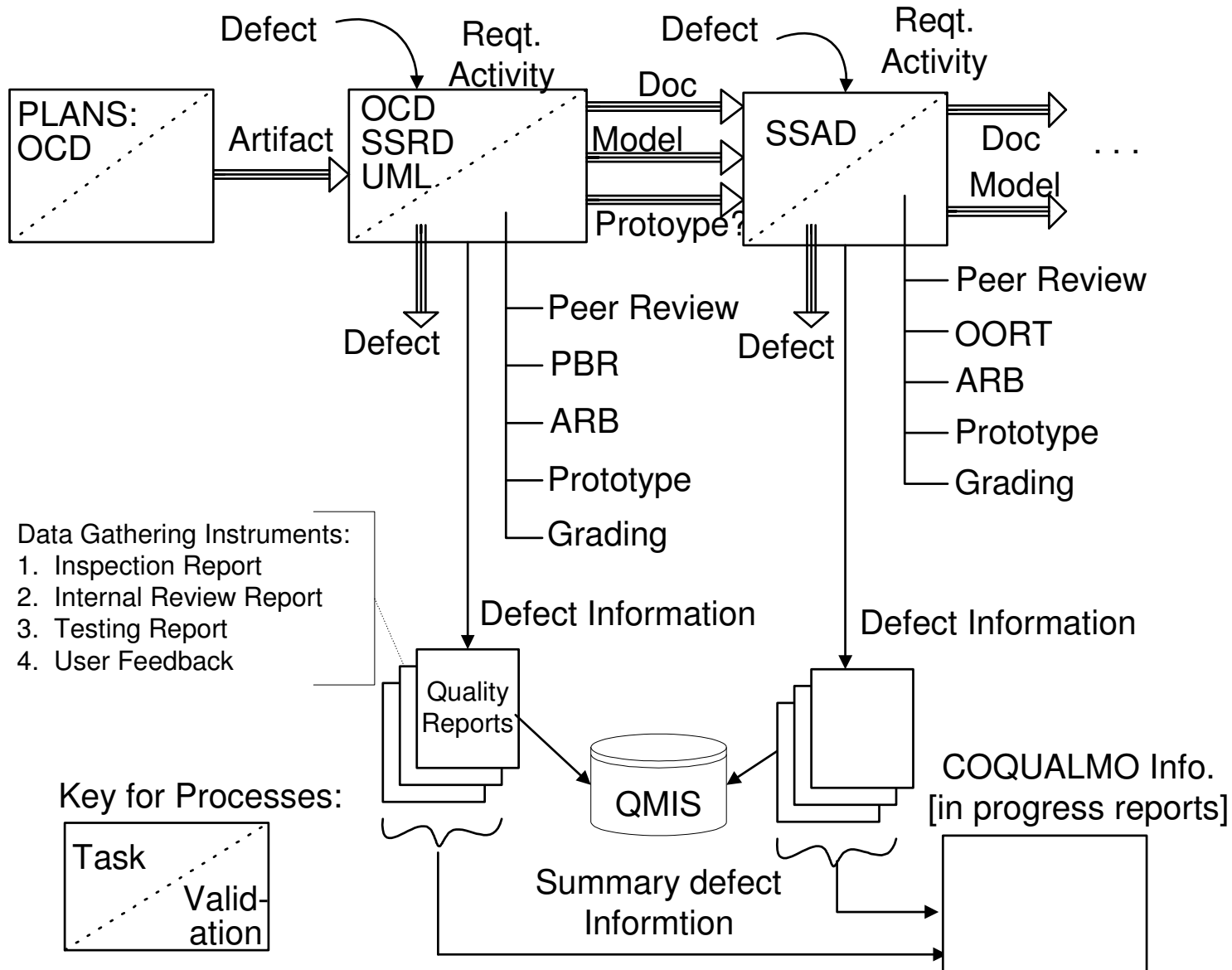
LCA ARB Expectations

Activities Leading up to ARBs

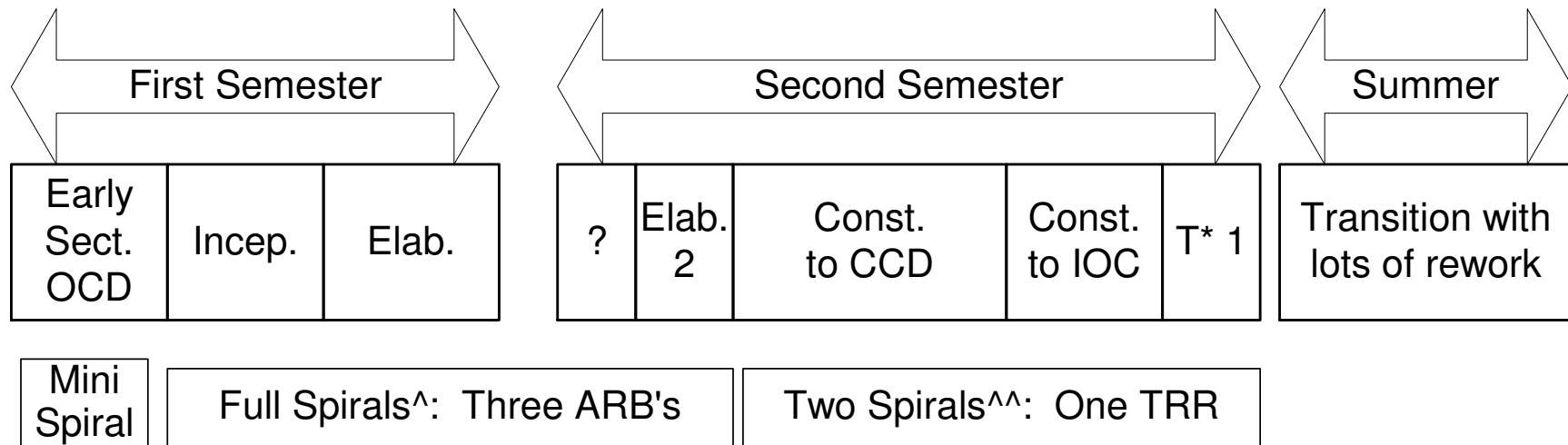


NOTES: Missing CTS docs before LCA ARB!
Dependency or work-order? ALD=? LLD=?

CS577 Model/Document Assessment



MBASE 577ab Lifecycle



* Transition 1: Only two weeks; at best, transition to a real client/sponsor team.

[^] Full spirals include all 8 steps, including stakeholder concurrence.

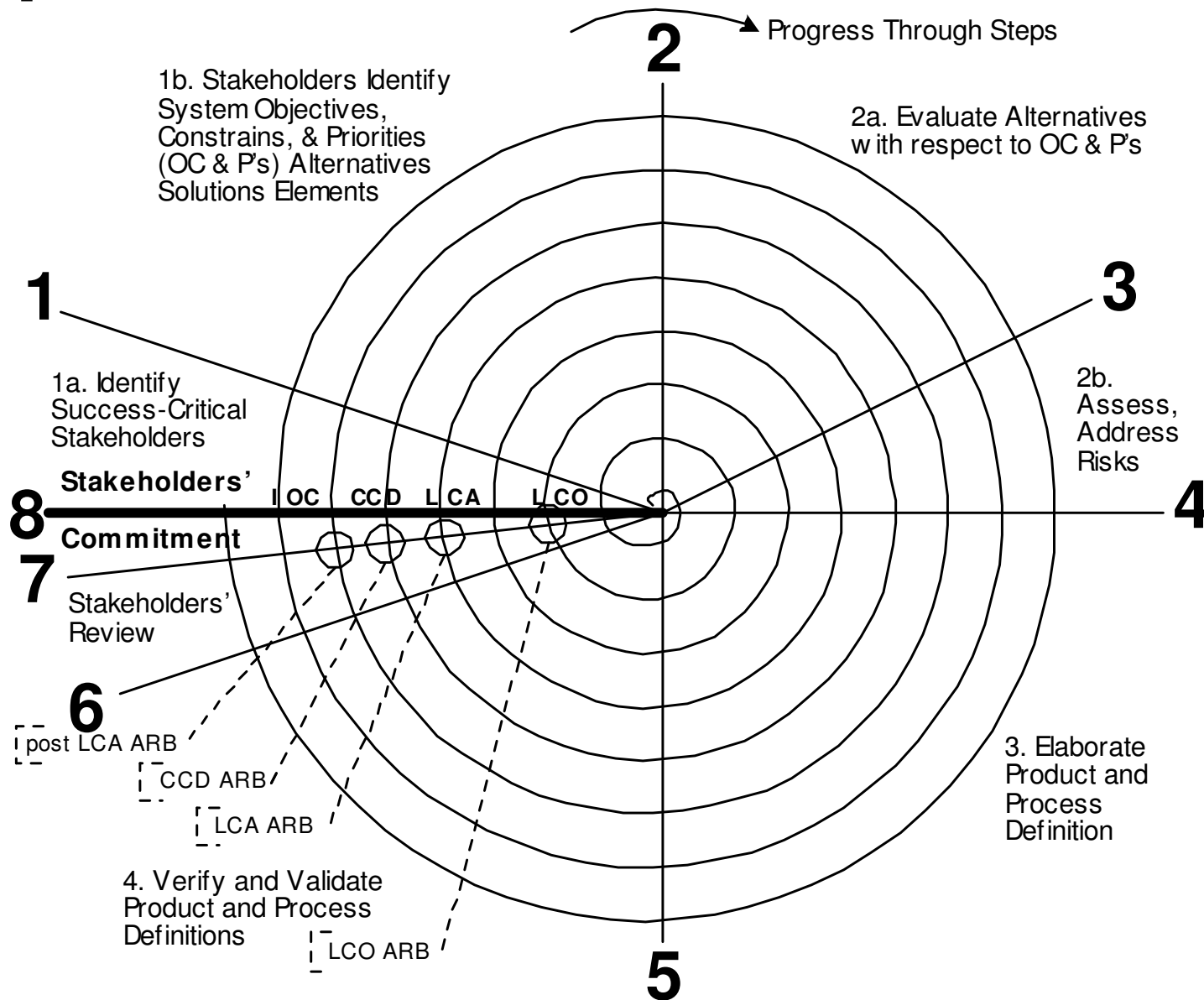
^{^^} Risk driven selection of content of build up to CCD;
risk driven selection of second spiral.

Development management decisions with informal stakeholder concurrence about what is in the "builds".

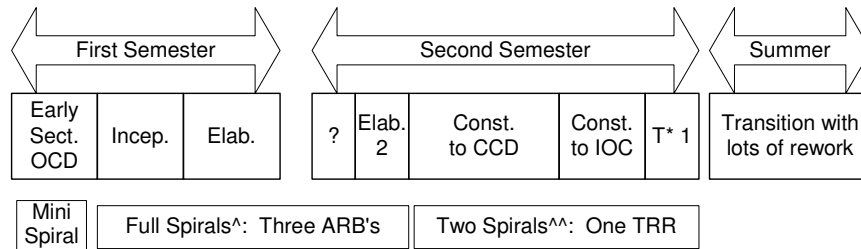
Stakeholder concurrence at the end of second spiral at the TRR;

NOTES: Four or Five Anchor Points? Not all spirals go to anchor points.

Spiral Model with ARBs for CS577



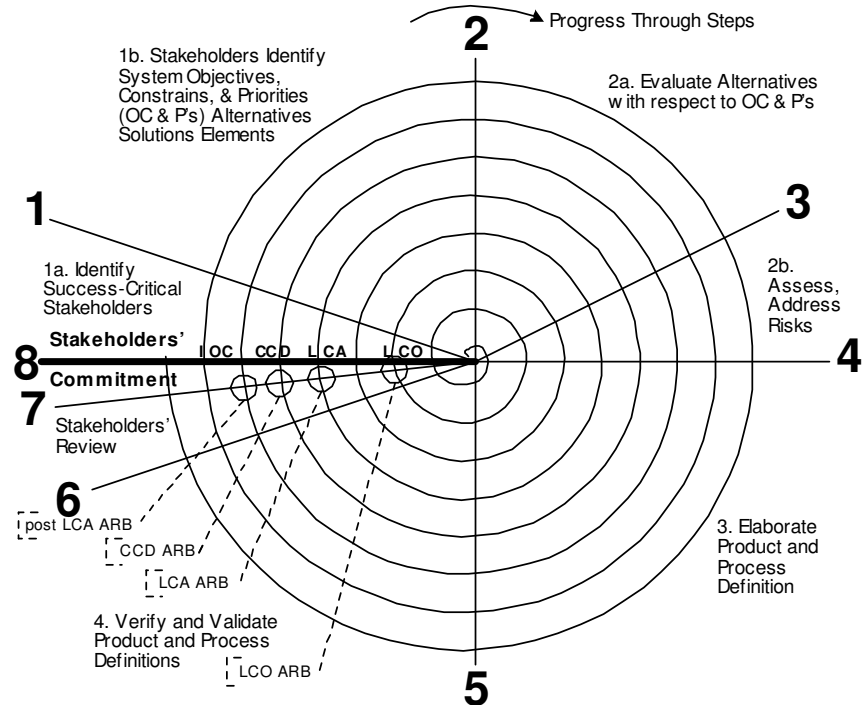
MBASE 577ab Lifecycle & Spiral Model



* Transition 1: Only two weeks; at best, transition to a real client/sponsor team.

^ Full spirals include all 8 steps, including stakeholder concurrence.

^^ Risk driven selection of content of build up to CCD; risk driven selection of second spiral. Development management decisions with informal stakeholder concurrence about what is in the "builds". Stakeholder concurrence at the end of second spiral at the TRR;



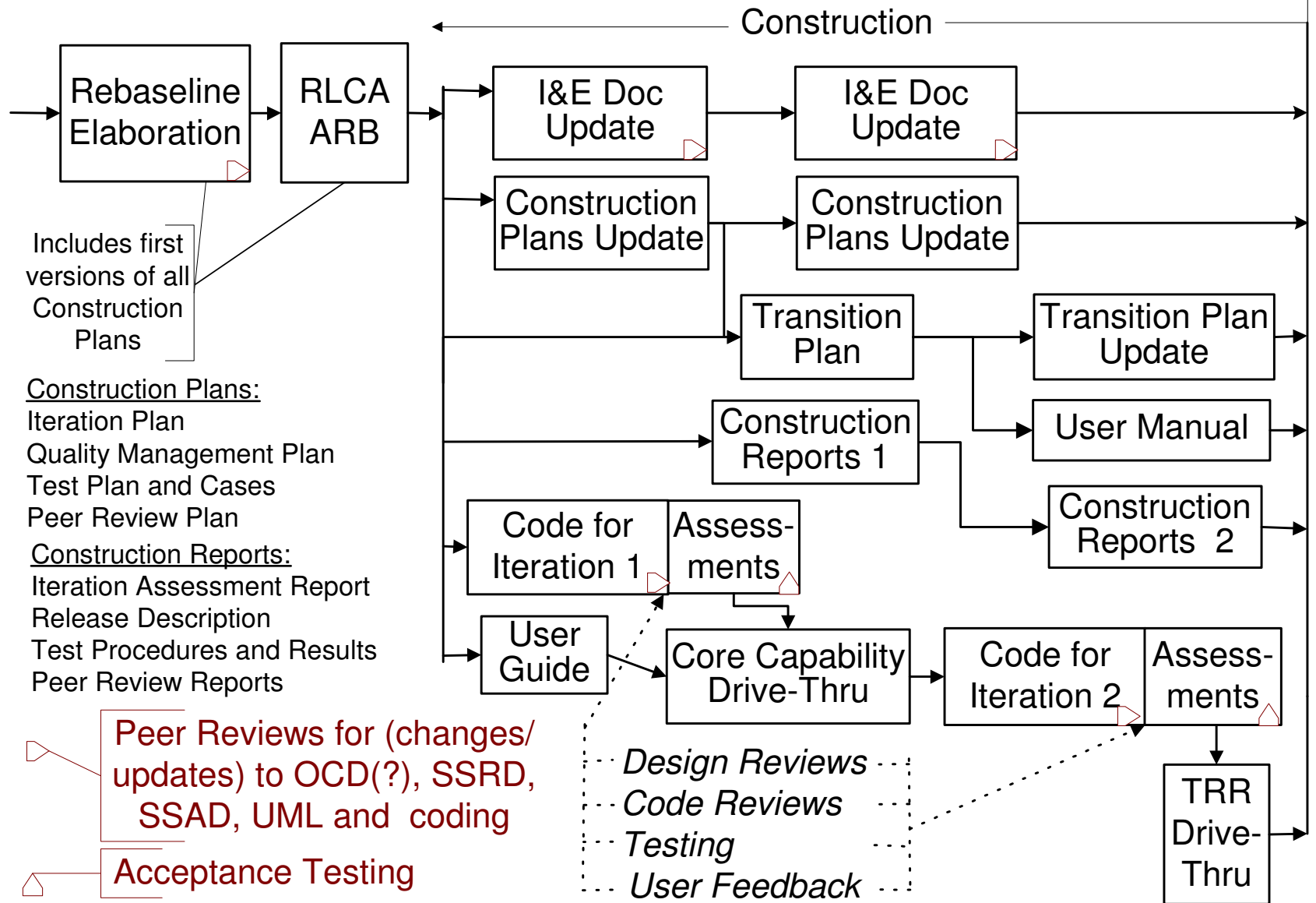
Is CCD an Anchor Point? Does it have an "ARB"?

How many spirals after LCA before TRR?

What is the "post LCA ARB"

577B CTS Artifacts Life Cycle(s) -- Relative Generation Timing

TRR



Elaboration¹ QM Expectations

Team

- Continue with Agile Informal Reviews for documents/models that can lead to high risk for project
- QM Plans in LCP
- Continue to act on IIV&Ver concerns

IIV&V

- Continue with Agile Artifact Reviews
- Continue with "Evaluations" (assigned)
- Develop and document an end to end acceptance test with interaction directly with the client.

¹ CS577a, Elaboration Cycle 1.

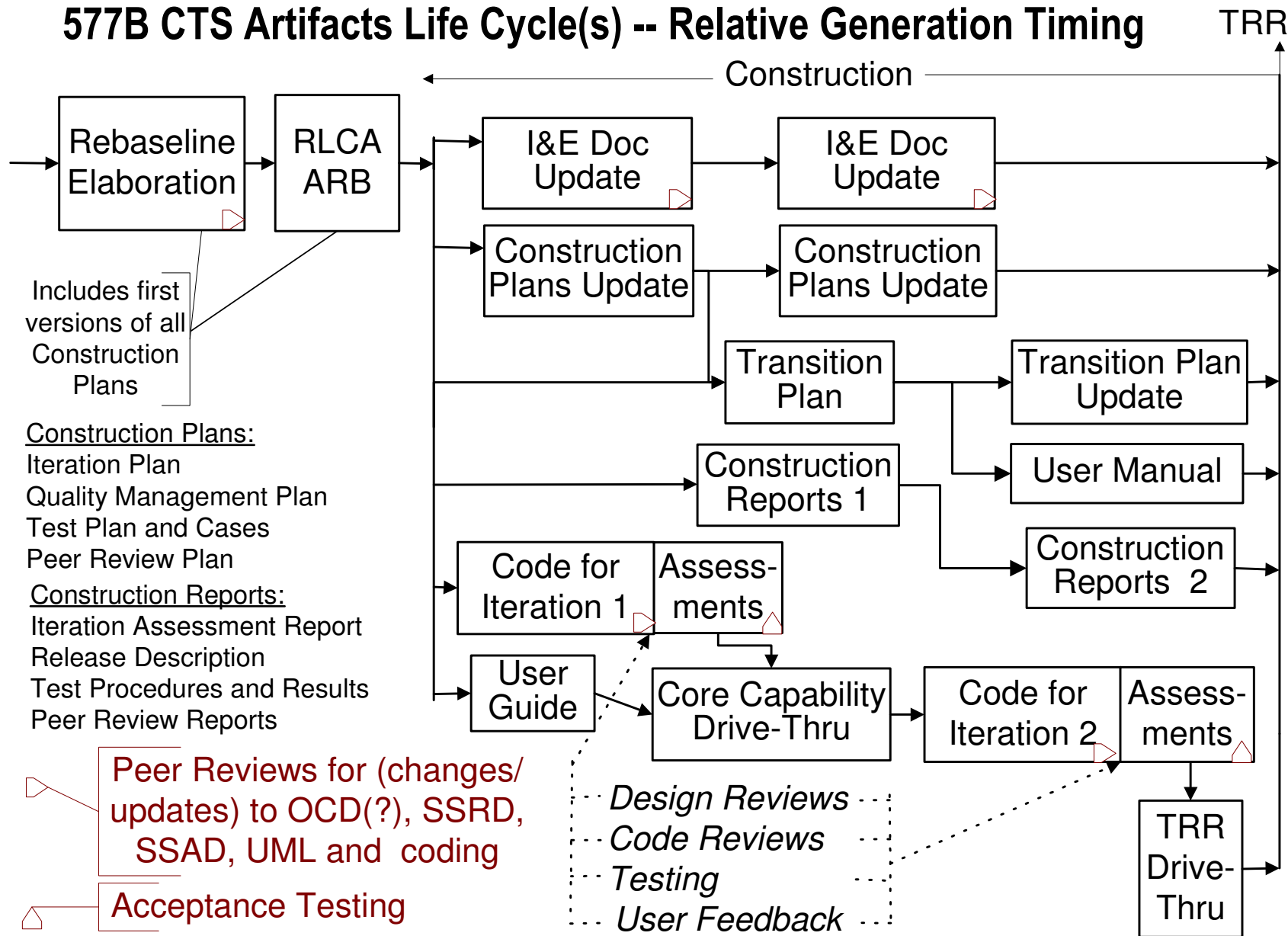
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Elaboration Expectations

LCA ARB Expectations

577B CTS Artifacts Life Cycle(s) -- Relative Generation Timing



LCA ARB Expectations

MS Project covers Re-Baseline and CTS!

Cursory first versions (drafts+) of Construction Plans

- Quality Management Plan
- Test Plan and Cases
- Peer Review Plan

Outline

Inception Retrospective

Elaboration Expectations

LCA ARB Expectations

Agile Artifact/Internal Reviews Workshop
(time permitting)

Workshop: Agile Artifact/Internal Reviews

(Time Permitting)

IIV&V AAR

Reviewing UML Models

IIV&V AAR

See "061103--ec27b=Agile(IIV&V)ArtifactReviewWorkshopV0.doc"

"Concern log" concerns

"Problem/Issue" list issues

Reviewing UML Models

Expand tree

Read diagram

- Are the questions that arise answered within the diagram?
- Are the questions that arise answered in other easily accessed/found diagrams?
- Are there representation problems?

Practice: See "Bookstore RSA Example" in CS577a guidelines