

## Section 02: Life Cycle Architecture Review

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## Resources

- "Anchoring the Software Process", Barry Boehm
- "Architecture Milestone", Doug Johnson
- Lecture from Winter 2005

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## Outline

- Team Conversations (continued)
- Life Cycle Architecture Review milestone

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## Team Conversations – Success Criteria

### "Online Jam Space"

#### Goals:

- everyone benefits (learns something)
- high quality final product
- visibility of individual responsibilities
- everyone feels important
- collaboration with product (we don't hate it)

#### Ways to measure:

- steady updates and milestones
- good grade
- pass the gavel

### "Busta' Sandwich"

#### What makes a team successful:

- good communication
- distribution of work
- redistribution if necessary
- helping each other out
- addressing issues as they come up
- no exclusive ownership by any member
- open management
- effective evaluation

#### How do we measure this:

- no last minute rushes
- no grade
- friction-free workflow & work made
- maintain team friendship to the end
- everyone feels that they contributed

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## What Is an LCA Anyway?

- It's when detailed planning and design are done.
- An elaboration of the LCO review document
  - Requires that the same five elements be addressed
    - But more details and decisions are expected, and fewer open options
  - Use LCO materials as a starting point
    - But no reason to stay too close to it if your team wants to change/adapt some aspects
  - Changes between LCO and LCA are usually needed to improve focus and/or scope.
- Stakeholders must be consulted to approve the decisions and the overall strategy...
  - ... before moving forward to other phases.

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## Basic LCA Elements

- Operational concept
  - Defines user community, environment, what it does and does not do, major benefits
- System requirements
  - All features defined at this stage, including performance, reliability, security
- System architecture
  - Identifies any changes from original architecture, existing packages to be used, areas where change is (proactively) anticipated in the design
- Lifecycle plan
- Feasibility rationale

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## LCA Milestone Deliverables – at a High Level

- Detailed requirements specification document
  - Shows that you understand well what is being built
- Detailed design document
  - Shows that you know how to build it
- Test plan document
- Schedule and task assignments
- Presentation

**Note:** These are all *evolving* documents, not set in stone. The LCA deliverables represent your latest understanding of what the issues are and what solutions you are envisioning.

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## Describing Specifications, Architectures, and Other Beasts

- A specification or design document must be understandable to not only its author.
  - => Standard ways are needed to unambiguously express common relationships in a system.
- Standard notations exist, some of which we will discuss in class
  - Diagrams, description languages, etc.
  - You will be expected to use those in your LCA document.

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## LCA Milestone Deliverables – in a Bit More Detail

- Detailed requirements specification document
  - From the point of view of the customer
  - Techniques: use cases, commonality and variability analysis, prototyping
- Detailed architecture document
  - Technical, reasonably detailed description of:
    - system modules and interfaces between them
    - UI
  - Identifies assumptions and high-risk areas and proposes realistic solutions and/or alternatives
  - Notations: state/dataflow diagrams, sequence diagrams, class diagrams; UML

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## LCA Milestone Deliverables – in a Bit More Detail (cont.)

- Test plan document
  - High level strategy: what will be tested, what won't, and why
  - How you plan to test your product in a disciplined way
    - If you can't test it easily, something is likely wrong with the design.
  - A set of actual test cases, based on an established methodology
    - Methodology: **Structure/Function/Data/Platform/Operations** (SFDDPO)
- Schedule and task assignments
  - The actual plan of work
    - How the project will be specifically split into milestones
    - Who will take on which piece of the puzzle?

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## LCA Milestone Deliverables – in a Bit More Detail (cont.)

- Presentation
  - Before your (true or surrogate) customers
  - Will allow more time to cover important aspects and for audience to dissect weaker points

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