Section 02:
Life Cycle Architecture Review

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Outline

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

Resources

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

Team Conversations – Success Criteria

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.

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
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 (SFDPO)
- 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