ARCHITECTURAL DESCRIPTION DOCUMENT

ISO/IEC STANDARD 42010
Systems and Software Engineering – Recommended
Practice for Architectural Description of Software Intensive Systems.

ARCHITECTURAL DESCRIPTION:
Architectural description is a result of process that is called architecture definition.
An architectural description (AD) is a set of *products* that:
• *Document* an architecture in a way its stakeholders can understand
• *Demonstrate* that the architecture has met their concerns.
• "Products" in this context consist:
• Architectural models
• Scope definition
• Constraints
• Principles

ARCHITECTURAL DESCRIPTION DOCUMENT CONTENT:

1. Document control (versioning)
2. Table of contents
   - 2.1. Introduction to management summary (Executive summary)
   - 2.2. Objectives of AD
   - 2.3. Goals of system being described
   - 2.4. Scope and key requirements
   - 2.5. High level overview of the solution
   - 2.6. Highlighting benefits of the solution, risks and mitigation strategies
   - 2.7. Key decisions that shaped architecture
3. Outstanding issues
   - 3.1. Stakeholders
   - 3.2. Stakeholder groups
   - 3.3. Stakeholder concerns
4. General architectural principles
   - 4.1. Principles that do not fit into any of the views
   - 4.2. Rationale and implications of each principle
5. Architectural design decision
   - 5.1. Decisions that have shaped architecture and rationale behind them
   - 5.2. Alternatives considered and why they were rejected
   - 5.3. Very particular architectural decisions should to go the view itself if such exists
6. Viewpoints
   - 6.1. Selection of viewpoints which helped to develop views, scope and relations
7. Views
   - 7.1. View specific principles and decisions
   - 7.2. Models
   - 7.3. Scenarios
8. Quality property summary
   - 8.1. Improvements to views
   - 8.2. Non view specific artefacts that express quality properties of a system
   - 8.3. (Models and analysis)
9. Important scenarios
   - 9.1. Model of significant scenarios
   - 9.2. System states, environment, external stimulus and system behavior
10. Issues awaiting resolution
    - 10.1. Concerns or design decisions that were not covered yet
    - 10.2. Common for early versions of AD
11. Appendices
    - 11.1. Documents, external references and etc.
    - 11.2. Stakeholder map
    - 11.3. More detailed specification of requirements, scope and etc.
    - 11.4. Requirement – architectural feature map
    - 11.5. Description of architectural decisions
    - 11.6. Explanation of architectural style, design patterns
    - 11.7. More detailed view models
    - 11.8. More detailed scenarios
    - 11.9. Policies, guidelines, standards
    - 11.10. Output of reviews
    - 11.11. Output of consistency checks

ARCHITECTURAL DESCRIPTION CHECKLIST

- All key architectural decisions documented?
- Any decisions that were not made and what is strategy to deal with them?
- Is AD balanced between conciseness, correctness, sufficiency, timeliness, clarity, currency, and precision?
- Is the AD not overusing technical jargon at sections aimed to non-technical audience?
- What is the maintenance strategy for the AD?
- Have you followed the suggested AD content structure?
- Is the presentation format appropriate for the audience?
- Is there are glossary of business or technical terms for unfamiliar readers?
- Are there any issues that require management resolution and are they clearly highlighted?

LIGHTWEIGHT ARCHITECTURE DECISION RECORD

AD record content:

1. **[Title]**
   1.1. Status: [accepted | superseded by ADR-0005 | deprecated | …]
   1.2. Deciders: [list everyone involved in the decision]
   1.3. Date: [YYYY-MM-DD when the decision was last updated]
2. **Context and Problem Statement**
3. **Decision Drivers**
4. **Considered Options**
5. **Decision Outcome**
6. **Pros and Cons of the Options**

More:
http://thinkrelevance.com/blog/2011/11/15/documenting-architecture-decisions

AD record example:
https://github.com/joelparkerhenderson/architecture_decision_record/blob/master/adr_template_madr.md

1. AD RECORD EXAMPLE:

[short title of solved problem and solution]

- Status: [accepted | superseded by ADR-0005 | deprecated | …]
- Deciders: [list everyone involved in the decision]
- Date: [YYYY-MM-DD when the decision was last updated]

Technical Story: [description | ticket/issue URL]

Context and Problem Statement

[Describe the context and problem statement, e.g., in free form using two to three sentences. You may want to articulate the problem in form of a question.]

Decision Drivers

- [driver 1, e.g., a force, facing concern, …]
- [driver 2, e.g., a force, facing concern, …]
- …

Considered Options

- [option 1]
- [option 2]
- [option 3]
- …

Decision Outcome

Chosen option: "[option 1]", because [justification. e.g., only option, which meets k.o. criterion decision driver | which resolves force force | … | comes out best (see below)].

Positive Consequences:

- [e.g., improvement of quality attribute satisfaction, follow-up decisions required, …]
- …

Negative consequences:

- [e.g., compromising quality attribute, follow-up decisions required, …]
- …

Pros and Cons of the Options

[option 1]

[example | description | pointer to more information | …]

- Good, because [argument a]
- Good, because [argument b]
- Bad, because [argument c]
- …

[option 2]

[example | description | pointer to more information | …]

- Good, because [argument a]
- Good, because [argument b]
- Bad, because [argument c]
- …

[option 3]

[example | description | pointer to more information | …]

- Good, because [argument a]
- Good, because [argument b]
- Bad, because [argument c]
- …

Links

- [Link type] [Link to ADR]
- …