软件体系结构学习报告

Documenting Software Architectures

何欣越

1. Documentation Roadmap and Overview：

文档的路线图以及概述：

1. **SAD是如何组织的？How the SAD Is Organized?**
2. Architecture Background: provides information about the software architecture. It describes the background and rationale for the software architecture. It explains the constraints and influences that led to the current architecture, and it describes the major architectural approaches that have been utilized in the architecture.

体系结构背景：提供有关软件体系结构的信息。 它描述了软件体系结构的背景和原理。 它解释了导致当前体系结构的约束和影响，并描述了已在体系结构中使用的主要体系结构方法。

1. Views and Mapping Between Views: specify the software architecture.

视图和视图之间的映射：视图和视图之间的映射指定软件体系结构。

1. Referenced Materials and Glossary and Acronyms provide reference information. Referenced Materials provides look-up information for documents that are cited elsewhere in this SAD. Glossary and Acronyms is an index of architectural elements and relations giving their definition, and where each is used in this SAD.

参考资料，词汇表和首字母缩写词提供参考信息。 参考资料提供了此SAD其他地方引用的文档的查找信息。 词汇表和首字母缩写词是体系结构元素和相关关系的索引，给出了它们的定义以及在此SAD中使用的位置。

1. Architecture Background:

构筑背景:

1. **Problem Background:**

The sub-parts of this section explain the constraints that provided the significant influence over the architecture.

1. System Overview: This section describes the general function and purpose for the system or subsystem whose architecture is described in this SAD.
2. Context: This section describes the goals and major contextual factors for the software architecture. The section includes a description of the role software architecture plays in the life cycle, the relationship to system engineering results and artifacts, and any other relevant factors.
3. Driving Requirements: This section lists the functional requirements quality attributes and design constraints. It may point to a separate requirements document.
4. **Solution Background:**

The sub-parts of this section provide a description of why the architecture is the way that it is, and a convincing argument that the architecture is the right one to satisfy the behavioral and quality attribute goals levied upon it.

1. Architectural Approaches: This section provides a rationale for the major design decisions embodied by the software architecture. It describes any design approaches applied to the software architecture, including the use of architectural styles or design patterns, when the scope of those approaches transcends any single architectural view. The section also provides a rationale for the selection of those approaches. It also describes any significant alternatives that were seriously considered and why they were ultimately rejected. The section describes any relevant COTS issues, including any associated trade studies.
2. Analysis Results: This section describes the results of any quantitative or qualitative analyses that have been performed that provide evidence that the software architecture is fit for purpose. If an Architecture Tradeoff Analysis Method evaluation has been performed, it is included in the analysis sections of its final report. This section refers to the results of any other relevant trade studies, quantitative modeling, or other analysis results.
3. Mapping Requirements to Architecture: This section describes the requirements (original or derived) addressed by the software architecture, with a short statement about where in the architecture each requirement is addressed.
4. Views:

视图:

1. **Primary Presentation:**
2. Is usually graphical
3. Should include a key that explains the notation
4. Shows elements and relations among them
5. Shows the information you want to convey about the view first
6. Should identify elements that are external to scope of the view
7. If external entities are not clearly marked in the diagram, consider adding a context diagram
8. **Element Catalog:**
9. Explains elements depicted in primary presentation and their properties
10. Is usually a table with element name and textual description
11. May contain interface documentation
12. May contain behavior documentation
13. **Variability Guide:**
14. Points where system can be parameterized or reconfigured
15. Maybe the view is a reference architecture
16. **Other Information:**
17. Description and rationale for important design decisions
18. Results of analysis, prototypes and experiments
19. Context diagram
20. **Related Views:**

Relation (Parent, Refinement, Common elements, etc). Name of view and a link to it.

1. Mapping Between Views:

视图之间的映射关系:

Each of the views specified in Views provides a different perspective and design handle on a system, and each is valid and useful in its own right. Although the views give different system perspectives, they are not independent. Elements of one view will be related to elements of other views, and we need to reason about these relations. For example, a module in a decomposition view may be manifested as one, part of one, or several components in one of the component-and-connector views, reflecting its runtime alter-ego. In general, mappings between views are many to many. This section describes the relations that exist among the view. As required by ANSI/IEEE 1471-2000, it also describes any known inconsistencies among the views.

视图中指定的每个视图在系统上提供不同的透视图和设计处理，并且每个视图本身都有效且有用。 尽管这些视图给出了不同的系统角度，但它们并不是独立的。 一个视图的元素将与其他视图的元素相关，我们需要对这些关系进行推理。 例如，分解视图中的模块可以表现为组件和连接器视图之一中的一个，一部分或多个组件，反映了其运行时变更自我。 通常，视图之间的映射是多对多的。 本节描述视图之间存在的关系。 根据ANSI / IEEE 1471-2000的要求，它还描述了视图之间的任何已知不一致性。

1. Referenced Materials:

参考资料:

This section provides citations for each reference document.

All references should be anchored so they can be be linked or transcluded from other pages.

本节提供了每个参考文档的引用。

所有参考均应锚定，以便可以将其链接到其他页面或从其他页面中排除。

1. Glossary and Acronyms:

词汇表和首字母缩写词:

List of definitions of special terms and acronyms used in the SAD. If terms are used in the SAD that are also used in t a parent SAD and the definition is different, this section explains why.

All terms should be anchored (using <div id="what\_to\_link\_to">text</div> so the terms can be be linked or transcluded.

To link to a term just write this: [[Glossary\_and\_Acronyms#your\_term|your term]].

SAD中使用的特殊术语和首字母缩写词的定义列表。 如果在SAD中使用的术语也与父SAD中使用的术语相同，并且定义不同，则本节将说明原因。

所有术语都应锚定（使用<div id="what\_to\_link\_to">text</div>，以便可以链接或排除这些术语。

要链接到术语，只需输入：[[Glossary\_and\_Acronyms#your\_term|your term]]。