**Coding Book**

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1. **Preface: Definitions & Terminology**

**1.1 Basic Definitions**

The foundational definitions for Existence, Executive, and Property issues in Axis2 are based on the framework established by Kruchten: Kruchten, Philippe. "An Ontology of Architectural Design Decisions in Software Intensive Systems." 2nd Groningen Workshop on Software Variability, 2004. These definitions serve as a guiding framework for categorising issues within Axis2. This coding book further specifies how these definitions are interpreted for Axis2, outlining the criteria and guidelines for correctly labelling issues in alignment with Kruchten’s principles.

1. **Guidelines for Certain Issue Types**
2. **Architectural**

ARCH-1: Fixes a security issue to stop unauthorised access by updating how the system is built.(AXIS2-5846)

ARCH-2: Improves security to prevent session hijacking (when attackers take over user sessions).(AXIS2-4739)

ARCH-3: Changes how headers (data markers) are processed to make the system faster.(AXIS2-3959)

ARCH-4: Updates memory handling to help the system run smoothly.(AXIS2-3758)

ARCH-5 : Adds a quicker way to check settings, which makes accessing properties faster.(AXIS2-3422)

ARCH-6: Speeds up retrieving parts from the FactoryRegistry (a kind of storage area).(AXIS2-3399)

ARCH-7: Adjusts synchronisation to make the system run mor efficiently.(AXIS2-3344)

ARCH-8: Adds a way to control what information about the system is exposed for security.(AXIS2-3316)

ARCH-9 : Adds new identity and address handling for improved security and flexibility.(AXIS2-5659)

ARCH-10: Adds support for handling JSON data, making the system more versatile.(AXIS2-5362)

ARCH-11 : Introduces a new component to improve how services are set up.(AXIS2-5322)

1. **Existence**

EXI-1: Adds new settings for address and identity handling, a big change for security.(AXIS2-5659)

EXI-2: Allows the system to handle JSON data in addition to other data types.(AXIS2-5362)

EXI-3: Adds a new piece called ServiceBuilderExtension that changes how services are put together.(AXIS2-5322)

1. **Executive**

EXEC-1: Upgrades to a newer version of the log4j library, improving security and performance.(AXIS2-5993)

EXEC-2: Adds a tool called Maven archetype to make project setup easier.(AXIS2-5230)

EXEC-3: Another Maven archetype tool that simplifies creating new services.(AXIS2-5229)

1. **Property**

PROP-1: Makes the system faster by cutting out slow steps.(AXIS2-4906)

PROP-2 : Improves general speed and performance.(AXIS2-4509)

PROP-3: Makes timeouts (when the system stops waiting) work better.(AXIS2-4859)

PROP-4: Enhances how the system handles errors and logs (records).(AXIS2-4952)

PROP-5: Makes the code easier to read and work with.(AXIS2-5400)

PROP-6 : Fixes an XML processing issue to make the code more understandable.(AXIS2-5404)

1. **Non-Architectural**

NON-ARCH-1: Fixes a bug in service deployment, making it work correctly without changing the architecture.(AXIS2-5231)

NON-ARCH-2 : Adds a Maven archetype tool to help create new services, useful for setup but not a core change.(AXIS2-5230)

NON-ARCH-3: Another Maven archetype addition, making project setup easier but not changing the system itself.(AXIS2-5229)

NON-ARCH-4: Enhances error validation and handling, focusing on better responses without structural changes.(AXIS2-5064)

NON-ARCH-5 : Improves error handling and logging, making logs clearer but not impacting system design.(AXIS2-4952)

NON-ARCH-6 : Enhances how timeouts are handled, improving user experience without altering architecture.(AXIS2-4859)

NON-ARCH-7 : Fixes a minor detail in configuration processing, a small internal improvement.(AXIS2-4828)

NON-ARCH-8: Addresses a bug related to message processing, a minor fix that doesn’t alter the design.(AXIS2-4815)

NON-ARCH-9: Fixes an XML processing bug to make the code easier to understand but doesn’t change the overall design.(AXIS2-5404)

NON-ARCH-10 : Corrects a bug in the Addressing module, which doesn’t require structural adjustments.(AXIS2-5348)

NON-ARCH-11 : Updates the XmlNodeGenerator for better readability and maintainability, a code-level improvement only.(AXIS2-5400)