<Client> Code Review – <Project>

| **Author**: | <?> |
| --- | --- |
| **Date**: | <?> |
| **Version**: | 1.0 |
| **State**: | Released |

## Updates

| **Date** | **Version** | **Reviewer** | **Comments** |
| --- | --- | --- | --- |
| <?> | 0.1 | <?> | Initial Version |

## References

| **Document** | **Version** |
| --- | --- |
|  |  |
|  |  |
|  |  |

**Table of Contents**

[Updates 1](#_heading=h.gjdgxs)

[References 1](#_heading=h.30j0zll)

[**1**](#_heading=h.3znysh7) **High Level Overview 3**

[1.1](#_heading=h.2et92p0) Background 3

[1.2](#_heading=h.tyjcwt) Objectives 3

[*1.2.1*](#_heading=h.3dy6vkm) *Scope 3*

[*1.2.2*](#_heading=h.1t3h5sf) *Out of Scope 3*

[**2**](#_heading=h.4d34og8) **Code Review 5**

[2.1](#_heading=h.2s8eyo1) Summary 5

[2.2](#_heading=h.17dp8vu) Good Practices Identified 5

[2.3](#_heading=h.3rdcrjn) Improvement Areas 5

[**Appendix A**](#_heading=h.26in1rg) **<?> 7**

# High Level Overview

## Background

MuleSoft were engaged to conduct an architecture and code review of the <?>. MuleSoft will be a core component of the <?>

## Objectives

The key objective of the review was to assess the <?>

### Scope

<?>

### Out of Scope

<?>

The table below has been used to highlight the assessment status of each reviewed item in a visual manner.

| Status | Description |
| --- | --- |
|  | The component/subject could not be reviewed as it was unavailable or incomplete. |
|  | The component/subject reviewed does **not need any further attention** |
|  | The component/subject reviewed could benefit from attention but does not pose an immediate risk to the project go-live. |
|  | The component/subject reviewed should be considered for more immediate attention and poses some risk to the project go-live. |
|  | The component/subject reviewed needs **immediate attention.** |

# Code Review

## Summary

| Quality Attribute | Item | Defined? | Overall status | Additional Details |
| --- | --- | --- | --- | --- |
| **Conceptual** **Integrity** | Processes well defined / clear responsibilities | Yes |  |  |
| **Maintainability** | Mavenized | No |  |  |
| Expression/groovy scripts externalized | N/A |  |  |
| Properties per environment | Yes |  | Found one gap. |
| Flows/Components Naming conventions | Yes |  | Found few gaps. |
| Source Control System | Yes |  |  |
| **Maintainability** **Reusability** | Flows Reuse | Yes |  |  |
| Global elements defined | Yes |  |  |
| DW Scripts externalized | Yes |  |  |
| **Maintainability** **Scalability** | Use of up to date components | No |  | Mule runtime observed is 3.8.3 |
| **Performance** | Design Patterns | No |  |  |
| Pool configurations | No |  |  |
| Use of Dataweave | Yes |  |  |
| Listeners Configuration | Yes |  |  |
| Pollers | Yes |  |  |
| Object Stores | No |  |  |
| Cache | No |  |  |
| **Testability** | MUnit tests | No |  | No MUnits |
| **Security** | Use of SSL | No |  |  |
| Policy enforcement | Yes |  |  |
| **Traceability** | Exception Strategies / Error Handling | Yes |  | No reusable framework as such for logging, auditing, error handling, and error codes |
| **Availability** | Reconnection Strategies | No |  | Default configurations |

## Good Practices Identified

| Name: | **Dataweave** |
| --- | --- |
| Quality attributes affected: | Maintainability / Reusability / Testability |
| Description: | Dataweave used for transformations, and are kept in separate DWL files |

| Name: | **RAML** |
| --- | --- |
| Quality attributes affected: | Conceptual Integrity |
| Description: | RAML driven design, and implementation using API-Kit Router. The business process are clear and well separated from one another. |

## Improvement Areas

| Name: | **Integration and Unit testing** |
| --- | --- |
| Impact: | High |
| Quality attributes affected: | Maintainability / Reusability / Testability |
| Problem Description: | Lack of unit tests. Integration and Unit tests act as a descriptor of application-interaction. Tests are a source for fast root cause analysis so less time debugging is needed. |
| Where: |  |
| Suggested Solution: | Use MUnit to build automated tests for integrations and APIs. |

| Name: | **Latest Runtime** |
| --- | --- |
| Impact: | High |
| Quality attributes affected: | Maintainability / Scalability / Portability |
| Problem Description: | Take advantage of last Mule enhancements and fixed issues. |
| Where: |  |
| Suggested Solution: | Migration to Mule Runtime 3.9.x  Ref.: <https://developer.mulesoft.com/download-mule-esb-runtime> |

| Name: | **Design patterns** |
| --- | --- |
| Impact: | High |
| Quality attributes affected: | Performance |
| Problem Description: | No reliability pattern for asynchronous use cases |
| Where: | Project: <?>  File: <?>  Flow: <?> |
| Suggested Solution: | Make use of VM transport. <https://docs.mulesoft.com/mule-user-guide/v/3.9/reliability-patterns> |
| Screenshot: |  |

1. **<?>**

<?>