



- Requirements and Analyses: Requirements Specification Overall Project -

ICAO Centralised AFI Region AIS Data Base

Version: 0.2

Working Draft

Name of Project	ICAO AFI Region Centralised AIS Database (AFI CAD)	
Project Leader	<Project Leader>	
Responsible	<Responsible Person>	Requirements Engineer (Acquirer)
Created on	<Creation Date>	
Last changed	02.08.2010 12:16	
Processing status	X	in Process submitted completed
Document File	C:\1_Document_Management\3_External_Issues\4_Committees-Organisations\ICAO\AFI-Region\081007-09-AAD-SG-3-Dakar\New-Docs-Presentations\AFI-CAD-SG-3-DP03-AI-1-URS-Annex-1--v0.1-Consultant.rtf	
V-Modell Version	Version 1.2.1 English	

Further Product Information

Participating	[not involved] [not involved] [not involved]	User Executive Project Leader
Creation		

Change Listing

Change			Changed Chapters	Description of the Change	Author	State
No	Date	Version				
1		0.1	All	Initial Creation	Rudolph	Draft
2		0.2	All	Post Update AFI CAD SG/3	Rudolph	Draft

Test Listing

The following table shows an overview of all tests – both self-tests as well as tests by independent quality assurance – for the present document.

Date	Tested Version	Notes	Inspector	New Product Status

Content

1. Introduction.....	4
2. Initial Situation and Objectives	5
3. Functional Requirements	6
4. Non-Functional Requirements	7
5. Outline of the Life Cycle and the Overall System Architecture	8
6. Data	9
7. Interfaces.....	10
8. Data and Messages	11
9. Scope of Delivery Overall Project	12
10. Acceptance Criteria	13
11. List of Abbreviations	14
12. List of Literature.....	15
13. List of Figures	16

1. Introduction

The Product Requirements Specification Overall Project includes all mandatory requirements posed on the system to be developed, which describe the overall project in a complete and consistent manner. It is basis for the subdivision into sub-projects.

All relevant system requirements will be determined and documented by the supplier. The core of the Requirements Specification Overall Project comprises the functional and non-functional system requirements and an outline of the overall system design. The design considers the future environment and infrastructure for the system and provides guidelines for technological decisions. The outline of the overall system architecture is the decisive basis for subdividing the overall project into sub-projects.

In addition, the system life cycle phases to be supported will be identified and incorporated as logistic requirements. The delivery terms and acceptance criteria are also part of the requirements.

The functional and non-functional requirements are not only intended as development specifications, but also as basis for the tracing of requirements and the change management. The requirements should be prepared in such a way that traceability and a suitable change management are possible for the entire system life cycle.

The acquirer alone is responsible for the preparation and quality of the Requirements Specification. If required, he may task a third party with the preparation. Generally, the Requirements Specification should not specify technical solutions in order to ensure that architects and developers are not restricted in their search for optimum technical solutions.

...insert text here...

2. Initial Situation and Objectives

This subject illustrates the initial situation and the reasons for executing the project. It describes which deficiencies or problems of existing systems or the current situation have lead to the decision to execute the project and which advantages are expected from the use of the new system.

In addition, all relevant stakeholders of the projects will be appointed and the technical and professional integration of the system to be developed will be outlined. Moreover, the first framework conditions for the development will be identified and deccribed. Framework conditions may include, e.g., technical specifications or safety and security specifications.

...insert text here ...

3. Functional Requirements

Functional requirements describe the system capabilities required by a user for solving a functional problem. The requirements will be derived from the supported business processes and the flow description for using the system.

The functional requirements are defined, e.g., by use cases. A use case describes a concrete, functionally self-contained sub-process. The entirety of the use cases defines the system behaviour. A use case may be described in a simple text format. However, organization-specific patterns for the description are frequently available. In order to determine the functional requirements of data-centred systems, a first functional Data Model will be developed, which is the basis for the later Database Design. The functional data model of the system will be derived from the entities of the domain model.

The functional requirements are the central system development specifications. They will be integrated into the Overall System Specification and concretized as required.

...insert text here ...

4. Non-Functional Requirements

Non-functional requirements are system requirements which are not of a functional nature, but contribute decisively to the applicability of the system. They define, e.g., quality requirements, safety and security requirements or performance requirements.

Non-functional requirements define fundamental characteristics of a system which must be taken into account in the architecture design. They may be used for estimating the development costs and should be described as measurably as possible.

In order to structurize the requirements as simply as possible, requirements which are not clearly defined as functional requirements will be assigned to the non-functional requirements.

...insert text here ...

5. Outline of the Life Cycle and the Overall System Architecture

The specification of user requirements without consideration of possible solutions entails the great risk of defining unrealistic user requirements. It is useful to specify a coordination frame for the integration, systematization, categorization and prioritization of user requirements, in order to facilitate their visualization.

This may be achieved by an overall system architecture which represents the point of view of the user and not the technical point of view of the system analyst or System Architect. This means a functional system architecture embedded in the functional flow of adjacent systems should be prepared. At this early stage, it is hardly possible to develop a technical system architecture.

In case of an Evaluation of Off-the-Shelf Products, the future system components should be identified and specified in the overall system architecture when the Requirements Specification are revised.

In addition, the particular characteristics of the operational environment of the new system shall be described in order to be able to consider primarily the system safety and security requirements. The developer of user requirements should prepare a concept showing which life cycle sections should be covered by the project.

...insert text here ...

6. Data

Data to be stored and data formats or principles (like AICM) need to be described here.

7. Interfaces

Interfaces between the centres of the AFI CAD, and between the AFI CAD and other systems (like AIXM or DAFIF) need to be described here. Also the interfaces between humans and the AFI CAD need to be described here.

8. Data and Messages

Message related data like NOTAM, SNOWTAM etc. need to be described here.

9. Scope of Delivery Overall Project

All items and services to be delivered by the supplier to the acquirer during the project or at its completion shall be listed. Every Delivery requires an acceptance evaluation. The scope of delivery may include the system, system components, an Enabling System, enabling system components, documents, and agreed services.

...insert text here ...

10. Acceptance Criteria

Acceptance criteria specify the criteria to be fulfilled by the Delivery in order to meet the requirements. They should be specified in a measurable way. From a contractual point of view, the acceptance criteria describe the conditions for the decision as to whether the final product fulfills the requirements or not. Acceptance criteria refer to functional and non-functional requirements.

Until the contract is awarded, the acceptance criteria can only be indicated in a general form, e.g., as KO criteria. These criteria define, e.g., that at least 90 % of all evaluation cases must be completed successfully in order to achieve a successful acceptance. These general acceptance criteria should also include the requirement that the supplier must prepare acceptance criteria, the structure and number of which shall be outlined by the acquirer. The acceptance criteria should be structured in accordance with their three decisive components - initial situation, action(s) and expected result. In any case, the expected results of the acceptance must be specified for each acceptance criterion.

The acceptance test is based on the acceptance criteria which are included as requirements in the Evaluation Specification Delivery.

...insert text here ...

11. List of Abbreviations

Abbreviation	Explanation

12. List of Literature

13. List of Figures

End of document

Guidelines for checking the documents

Contentwise and formal directives to the project are to be taken from part 5: V-Modell reference products of the V-Modell-XT and if necessary from an associated evaluation specification document. For checking the product regarding its contentwise consistency related to the already finished products, the following product dependencies are to be checked.

Consistency between Sub-Project Requirements and the Requirements Specification Overall Project

Affected Products:

- Requirements Specification Overall Project
- Requirements Specification

Description:

The Requirements Specifications of sub-projects shall be consistent with the requirements of the Requirements Specification Overall Project.

Project Proposal and Requirements Specification

Affected Products:

- Requirements Specification Overall Project
- Requirements Specification
- Project Proposal

Description:

In the product Requirements Specification or Requirements Specification Overall Project, the information from the Project Proposal concerning framework conditions, system idea and realization plan have to be taken into account.

Project proposal and requirements

Affected Products:

- Requirements Specification Overall Project
- Requirements Specification
- Project Proposal

Description:

The product Requirements Specification or Requirements Specification Overall Project shall take into account the information on general conditions, system idea and realization plan, which is included in the Project Proposal.

Evaluation of the Overall Project Requirements Specification

Affected Products:

- Requirements Specification Overall Project
- Evaluation of the Overall Project Requirements Specification

Description:

The Assessment of the Overall Project Requirements Specification will be based on the requirements (see Overall Project Requirements Specification). Its result will be integrated into an updated version of the requirements. The Assessment of the Overall Project Requirements Specification examines the affordability, economic efficiency and necessity of all requirements.