



System Segment Specification

Requirement- and Systems Engineering



1 Introduction

1.1 Purpose

The main purposes of this document is:

To specify the work that will be undertaken by the Contractor during the lifetime of the contract.

1.2 Scope

This document describes the work that must be undertaken by the Contractor during the lifetime of the contract for the Systems Engineering Support.

1.3 Contractor's responsibility

The Contractor is responsible for providing all necessary support for System Engineering activities. The Contractor's tasks include:

- Requirement Development
- Requirement Management
- Transfer of Competence

1.4 Standards for interpretation of the document

Throughout the specifications, the following standards apply:

"Shall" statements are mandatory.

"Should" statements indicate strong needs where some variation is possible. The vast majority of "Should" statements will become "Shall" statements at contract placement and may incorporate an agreed change to the text.

2 General Requirements

SSS_Kons_14 The Contractor Shall allocate personnel to the following roles:

- Requirement Engineer
- Requirement Manager
- System Engineer trainer

2.1 Requirement Development (RD)

Requirement Development is important in the Procurement Process. Example of specifications are:

- system specifications
- logistic specifications
- statement of work

NDMA has good experience with the use of modelling to create a common understanding of the System of Interest.

Requirement Quality is the baseline for a successful project. NDMA has increased focus on writing well-formulated and correct requirements.



NDMA has adopted the V-model as a method to execute verification and validation activities in the acquisition process.

User requirements are written in the Norwegian language. The majority of NDMA ITTs are executed in the English language.

SSS_Kons_21 The Contractor Shall support NDMA personnel with Requirement Development.

SSS_Kons_22 The Contractor Should describe how support to NDMA in requirement development is performed.

SSS_Kons_23 The Contractor Should have experience with creating models using Sparx Enterprise Architect.

Request for Information: The Contractor is requested to describe what kind of modelling tools would be suitable for NDMA.

SSS_Kons_25 The Contractor Shall support NDMA in writing verifiable requirements.

SSS_Kons_26 The Contractor Should describe how to support NDMA in achieving high level of Requirement Quality.

SSS_Kons_27 The Contractor consultants Should be experienced in using English as a working language, both written and orally.

2.2 Requirement Management (RM)

NDMA Land use IBM Rational DOORS as the preferred requirement management tool.

IBM Rational DOORS is a database consisting of different modules to support the DEx requirement management system.

NDMA Land use DEx Toolkit to utilize information in DOORS.

DEx is a requirements management system. DEx is based on a DOORS database and includes a set of steering documents that identifies information structure, attribute sets, linking rules, Requirements Life Cycle, access rights, freezing of data, change management of frozen data and data exchange.

NDMA uses Technology Readiness Level and Contractor Maturity Model Index as techniques to assist in the evaluation of bids and reduce risk in projects.

SSS_Kons_33 The Contractor Shall support NDMA personnel with Requirement Management.

SSS_Kons_34 The Contractor personnel supporting NDMA with RM shall be experienced with use of IBM Rational DOORS.

SSS_Kons_36 The Contractor personnel supporting NDMA with RM shall be experienced with use of DEx.



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- SSS_Kons_48 The Contractor Should describe how support to NDMA in requirement management is performed.
- SSS_Kons_37 The Contractor personnel supporting NDMA with RM should upon request be present at NDMA's facilities at Kolsås within 3 working days (WD).
- SSS_Kons_39 The Contractor personnel supporting NDMA Shall support NDMA with establishing evaluation matrixes.
- SSS_Kons_40 The Contractor Should describe different techniques to reduce risk when evaluating responses to ITTs; including where they are applicable and strengths and weaknesses with these techniques.

2.3 Transfer of Competence

NDMA aim to increase organisational knowledge in SE. It is essential to train and educate NDMA personnel in RD, first and foremost in writing requirements.

- SSS_Kons_44 The Contractor Shall provide education in RD techniques to NDMA personnel.
- SSS_Kons_45 The Contractor Shall train dedicated NDMA personnel in use of IBM Rational DOORS Requirement Management tool.
- SSS_Kons_47 The Contractor Shall train dedicated NDMA personnel in use of DEx Toolkit.
- SSS_Kons_46 The Contractor Should describe previous experience with training and education of personnel.