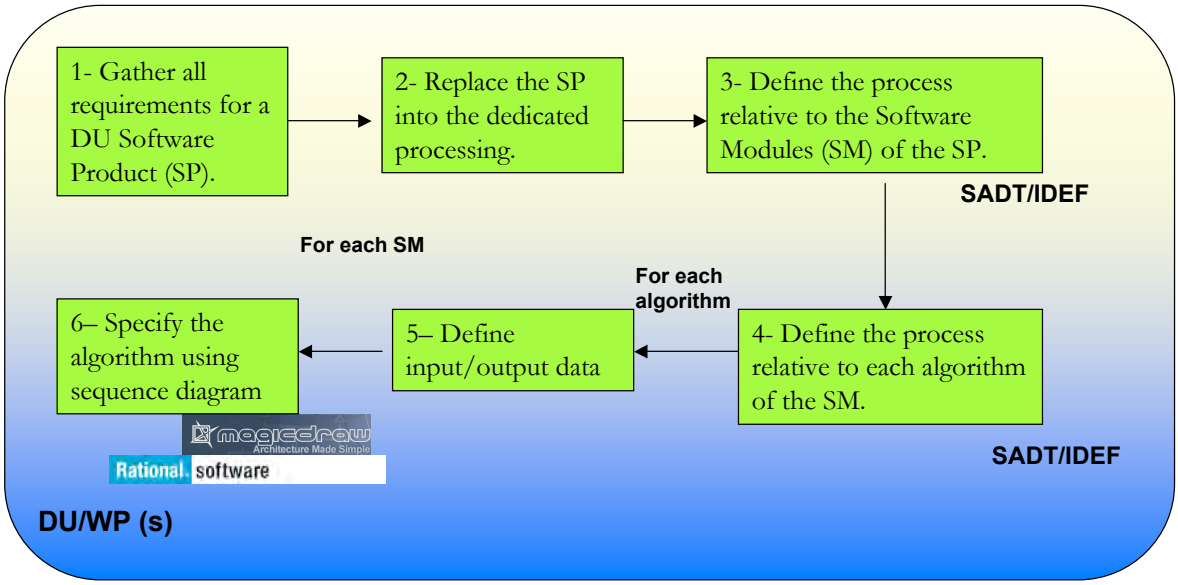
CENTRE NATIONAL D'ÉTUDES SPATIALES

GAIA – CU6

Scenario for writing the content of a SRS document at DU level

prepared by CNES

CU6 Scenario for « Writing a SRS document at DU Level »



SADT (french version): http://www-ic2.univ-lemans.fr/~alissali/Enseignement/Polys/GL/node50.html/

CU6 - Fetch the SRS/DU template in the PAED

- The template of the SOFTWARE REQUIREMENT SPECIFICATION FOR A SCIENTIFIC TOP LEVEL WORK PACKAGE / SOFTWARE PRODUCT / SOFTWARE MODULE shall be used.
- For the CU6, the SRS/DU are written at the Software Product Level.
- In the following slides, an updated version of this template for the CU6 is presented.
- *As an example, the SP "Single transit analysis" will be lightly studied (refer to GAIA-C6 TN-OPM-DK-001 version 3).*

CU6 – How to fill the SRS/DU template - Generalities

1. SCOPE
   Define the main objectives and characteristics of the Software Product (SP).
2. APPLICABLE AND REFERENCE DOCUMENTS
3. GLOSSARY AND TBD/TBC

CU6 – How to fill the SRS/DU template - Overview

4. INTRODUCTION AND OVERVIEW

4.1 OBJECTIVES

The place of the SP into the studied processing is defined in the document GAIA-C6-TN-OPM-DK-001 (SADT figure) and shall be more detailed here.

Example: Figure « Functional view of the spectroscopic daily processing ».

4.1 CONTEXT DIAGRAM

A SADT figure that explains the execution context of the SP (input/output data, producers and consumers) and a text description shall be provided.

Example: Figure « Single transit analysis context model ».

4.2 DECOMPOSITION

A SP is composed of several Software Modules (SM) .

A SADT figure and a text description defining the process with each defined SM shall be provided.

Example: Figure « Single transit analysis SM decomposition ».

CU6 – How to fill the SRS/DU template – For each Software Module

N. SOFTWARE MODULE X

(Example: « Derive Vr for single *line systems & identify multiple line systems* ».)

N.1 OBJECTIVES

The aim of the SM shall be detailed here.

N.2 DECOMPOSITION

A SP can be composed of several algorithms.

A SADT figure and a text description defining the process with each defined algorithm shall be provided.

Example: Figure « Derive Vr for single line systems & identify multiple line systems ».

N.3 FUNCTIONAL REQUIREMENTS

Example

[CU6-WP650-]S-FUNC-10	1.1	Single Transit Analysis	HIGH	AUTO	Draft
	The « Derive Vr for single line systems & identify multiple line systems » function shall select at first the reference spectrum ……				

CU6 – How to fill the SRS/DU template – For each algorithm

N.M ALGORITHM X (Example: « Select the template spectrum »)

N.M.1 PRINCIPLES

N.M.2 FUNCTIONAL REQUIREMENTS

N.M.3 INPUT/OUTPUT DATA DESCRIPTION

Complete definition of each data (name, description, type, frequency, …).

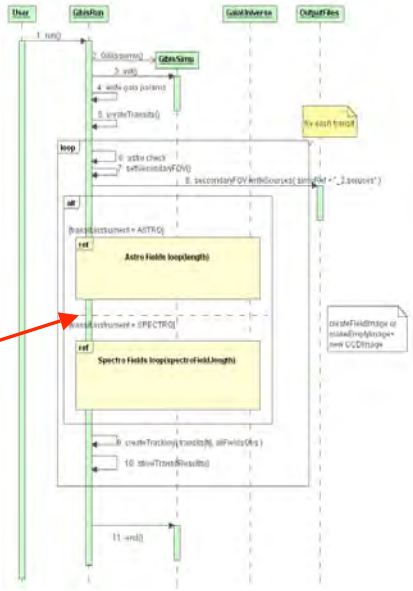
N.M.4 METHOD DESCRIPTION (OR ALGORITHM SPECIFICATION)

N.M.4.O METHOD X

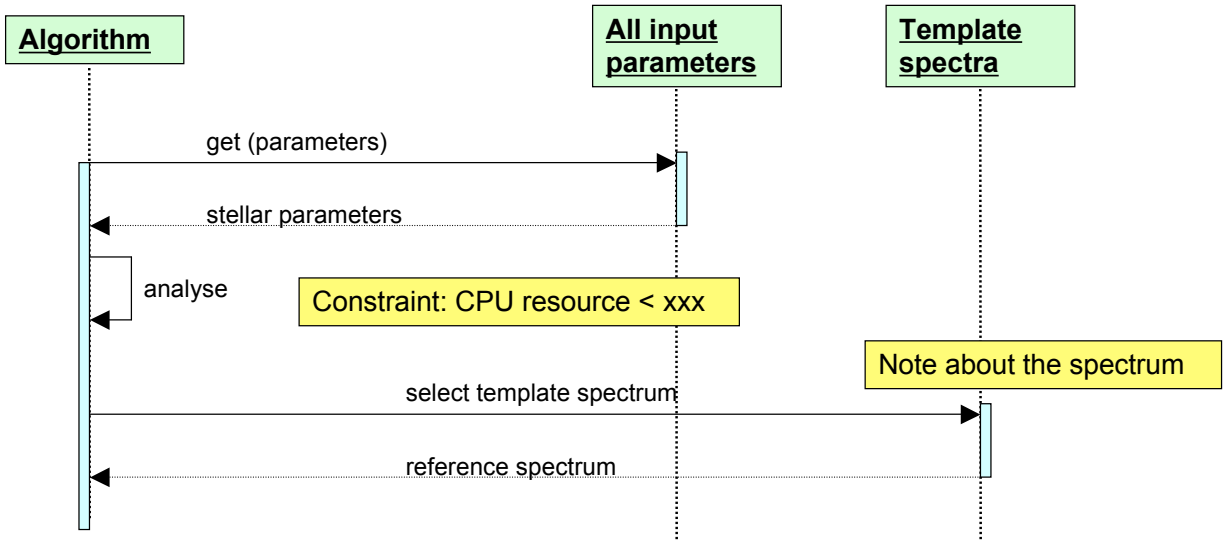
Use sequence diagrams if necessary

N.M.4.P METHOD Y

Use sequence diagrams if necessary



CU6 – Example of sequence diagram – Select reference spectrum algorithm



CU6 – How to fill the SRS/DU template – Other information for each module

N.Q NON FUNCTIONAL REQUIREMENTS AND CONSTRAINTS

N.Q.1 MODULARITY

Example of requirement description: « This module shall be executed in stand alone mode ».

N.Q.2 GENERICITY

Example of requirement description : « This module shall be re-used in other SM or SP... ».

N.Q.3 IMPLEMENTATION CONSTRAINT

Example of requirement description : « In the final model, the best algorithm computing the radial velocity shall be chosen in term of optimization and source results ».

N.Q.4 ……

X. HOW TO USE: EXAMPLES

Y. POSSIBLE OPTIMIZATIONS