# Analysis of COTS tools and Needs Specification (TOP document)

**DATE: 20/03/2023**

## Summary

This document aims at introducing the different documents and reports that concern the activities led to have a good overview of the COTS tools, which services they propose to support consistency, and which ones are missing.

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## Table of Contents

## Evolutions

| Version | Date | Modified § | Modification summary | Modified by |
|---------|------|-----------|---------------------|-------------|
| V1 | 20/03/2023 | all | Creation of the Document | Anouk Dubois |
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# 1    Introduction

## 1.1    Purpose of document

This document aims at introducing the different documents and reports that concern the activities led to have a good overview of the COTS tools, which services they propose to support consistency, and which ones are missing.

This deliverable is a top document and lists the different documents that have been produced to address this topic (COTS services and new needs). These documents are listed in section 1.2.1 and the following sections give an overview of each of them.

## 1.2    Referenced documents

### 1.2.1    S2C referenced documents

| Title | Reference |
|---|---|
| Cartographie des outils de traçabilité<br>Cartography of the traceability existing tools | NT-S085L01-052<br>ISX-S2C-DOC-476 |
| Illustration de l'instanciation du plan de traça AIDA dans SECOLLAB<br>Instanciation of AIDA traceability plan in SECollab | NT-S085L01-053<br>ISX-S2C-DOC-477 |
| Document de spécification des évolutions des outils COTS (synthèse des nouveaux besoins)<br>Needs Specification for COTS evolution | NT-S085L01-051<br>ISX-S2C-DOC-475 |

### 1.2.2    External referenced documents

| Title | Reference |
|---|---|
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|  |  |

## 2 Cartography of the traceability existing tools

Refer to document ISX-S2C-DOC-476 "Cartography of the traceability existing tools" for details.

This cartography gives an overview of the traceability services proposed by the following tools

- SYNDEIA (Intercax)
- KOVAIR Omnibus/ALM (Kovair)
- SES Studio (Reuse Company)

This cartography is formalized in an excel file with a sheet per tool, that describes :

| Technical items | Functional items |
|---|---|
| • 1. Interoperability<br>   • Existant connector<br>   • Possible integration of new tool, Solution?<br>   • Connections Creation and Update<br>   • Used Standard<br>• 2. Extensibility Mechanism<br>• 3.Technology<br>   • 3.1 Is it an Open Source technology<br>   • 3.2 Storage Options<br>   • 3.3 Interface and Data Access | • Purpose of the tool, perimeter adressed by the tool.<br>• Capacity to support the creation of links, to suggest links …<br>• Synthesis Capacity with coverage matrix , and PKI?<br>• Capacity to analyse and display the impact of a change (impact chain)<br>• Capacity of Change management Gestion and suspicious links<br>• Configuration and baseline management..<br>• … |

Concerning SECollab, no licence was provided to test the tool. But a punctual collaboration allowed to get a demonstration of how a traceability plan can be implemented in SECollab (see section 3).

A short overview of the tool capabilities is given below for each tool :

- **SES ENGINEERING Studio (Reuse Company)**
  - A fairly complete tool with more than 40 connectors, especially for SE modeler artifacts, requirements, and simulation artifacts. MBSA is not integrated at all at the moment (maybe cecilia OCAS), but it is possible to add new connectors.
  - A tool at the service of the INCOSE Handbook. It supports the INCOSE process for the entire life cycle
  - Suspicious link capability but no visualization of the whole impact chain. Visualization of the of the modified element and the directly linked other elements.
  - Ability to suggest links (smart traceability), linked to works with Safran.
  - It's easy to view different artifacts in the same window and modify source data.
  - History management capability / archiving of baseline via repository
  - Use of an ontology (to translate and compare artifacts)
  - KPI : coverage of a generic or referent traceability plan has to be confirmed

- **Kovair Omnibus, ALM & API (Kovair):**

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- Several interconnected tools.
- Several connectors are existing, more for the Requirements part (than Enterprise Architect on the SE side).
- A tool that integrates some standards such as ISO 26262 and ASPICE
- Possibility to have a traceability matrix but no "suspicious links" capability and no "impact chains" services.

- **Syndeia (Intercax)**:
    - A fairly complete tool with several connectors, especially for SE modeler artifacts (SysML & Simulation → no Capella), requirement (DOORS).
    - MBSA not integrated at all for the moment, but possible addition of new connectors is possible.
    - A tool at the service of standard tools such as SysML V1 and V2 (OMG). no completeness with ARP(s)
    - Ability of suspicious link but no visualization of the impact chain: only visibility of the modified element and the other directly linked elements.
    - Possibility to export the log of differences in Excel.
    - It's easy to view different artifacts in the same window and modify source data.
    - History management capability / archiving of baseline via repository
    - KPI : coverage of a generic or referent traceability plan has to be confirmed

## 3    Instanciation of AIDA traceability plan in SECollab

Refer to document ISX-S2C-DOC-477 "Instanciation of AIDA traceability plan in SECollab".

This document is the report produced by SodiusWillert, that explains how the AIDA traceability plan has been implemented in SECollab. The presentation starts with a short overview of the tool; it presents the available tool connectors, and the main capabilities of the tool :

- **Share data and model content independent from tools**
    - Publish documents or model content, including diagrams, into a web platform
    - Access shared data from a single access point
- **Review published data and link findings with your CM management system**
    - Reviews can be setup across various data sources and models.
    - Any artifact can be commented in a consistent cross-tool context review
    - Your findings can be linked with your changed management system (IBM CCM/RTC, Jira, Polarion)
    - With its advanced search capabilities in the warehouse, you can easily navigate, analyse content and identify data, model elements or diagrams.
- **Provide a versioned and OSLC enabled graph data repository for file-based or non-OSLC applications**
    - SECollab provides natively a fill OSLC-enabled repository and a standalone version mechanism. You can  publish a model as a new model or as a new version of an existing model.
    - Data and Links are managed consistently with the versions of data across all tools in the SECollab configuration context.
    - Provides version diff and comparison mechanism for any shared content
- **Manage links & types across your unified ontology**
- **Reporting Capabilities**

The report describes then how the AIDA traceability plan has been implemented and gives a lot of views to illustrate it.

## 4  Needs Specification for COTS evolution

Refer to document ISX-S2C-DOC-475 "Needs Specification for COTS evolution"

This document describes some services that are not existing in the COTS tools yet but that could support consistency management, in a relevant way. The focus is made on artefact evolution cases. The new services are among others :

- Improved Suggestion of traceability links when artefacts change;
- Impact analysis : service to help the user to analyse the impact of an artefact change.
- Severity quotation of the impact : service to help the user to evaluate the severity of the impact.

This document is connected with L1.3 deliverable that is a Proof of concept (POC) of dynamic consistency management (how to contribute to consistency in case of an artefact evolution) that aims at illustrating the interest to implement such new services.