TAEF – Test Automation Exchange Framework

Final presentation

TAEF Team

13th of March 2023

etamax
MEMBER OF FEV GROUP

RHEA
GROUP

CGI

Agenda

- Short Introduction (TO)
- Project Presentation (etamax space)
  1) Background & Objectives
  2) Technical Overview: EUDART
  3) Technical Overview: Testing Libraries
  4) Demo
- Conclusion & Future Work

Background and Objectives

The current test automation framework (ART) is heavily focused on the validation of SWT-based applications like SCOS-2000. New technologies are being employed for the new generation of ground segment software. These technologies are more and more web-based.

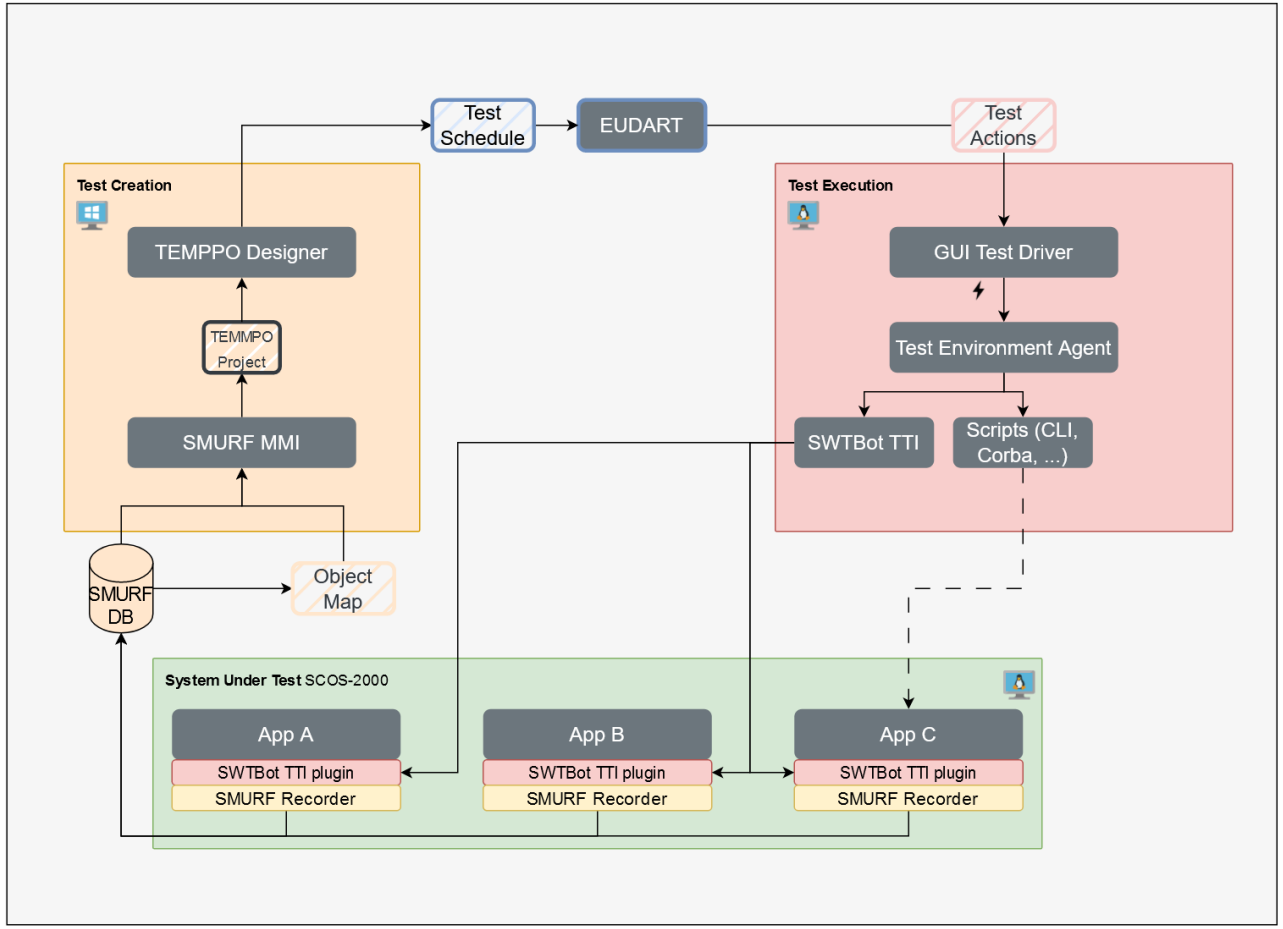
Main goals of the activity

- Update and enhance the existing test automation tools to see if they can be used with the new generation of software ground segment software
- Shorten the loop from test creation to test execution
- Interact with other existing tools from the EGS-CC ecosystem
- Bring framework closer to the ESA Community License requirements

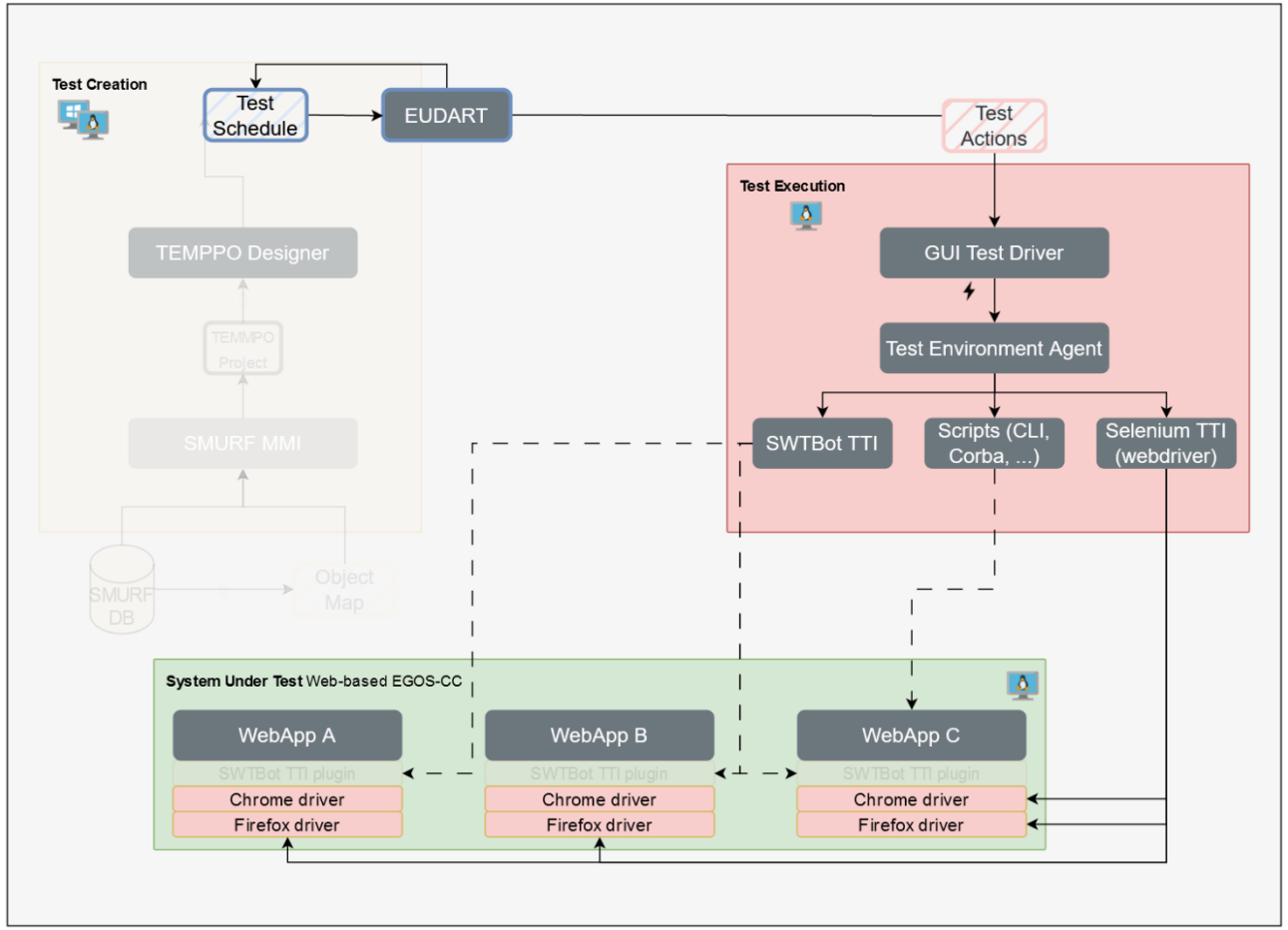
Project Overview

Format	Consortium	Work Breakdown
- Duration of 18 months - Agile Software Development	- etamax space (DE) - CGI (DE) - RHEA(DE) - ITTI (PL) – Consultant	**Engineering** - Testing Framework analysis - OTX and EUDART XML compatibility analysis **Implementation** - EUDART update/enhancement - ART-MMIT update/enhancement - Selenium Test Actions - EGOS-CC Test libraries - EGS-CC test libraries - OTX export (Atena-EUDART) **Testing** - Validation of new test libraries using enhanced EUDART

ART - Context before TAEF activity



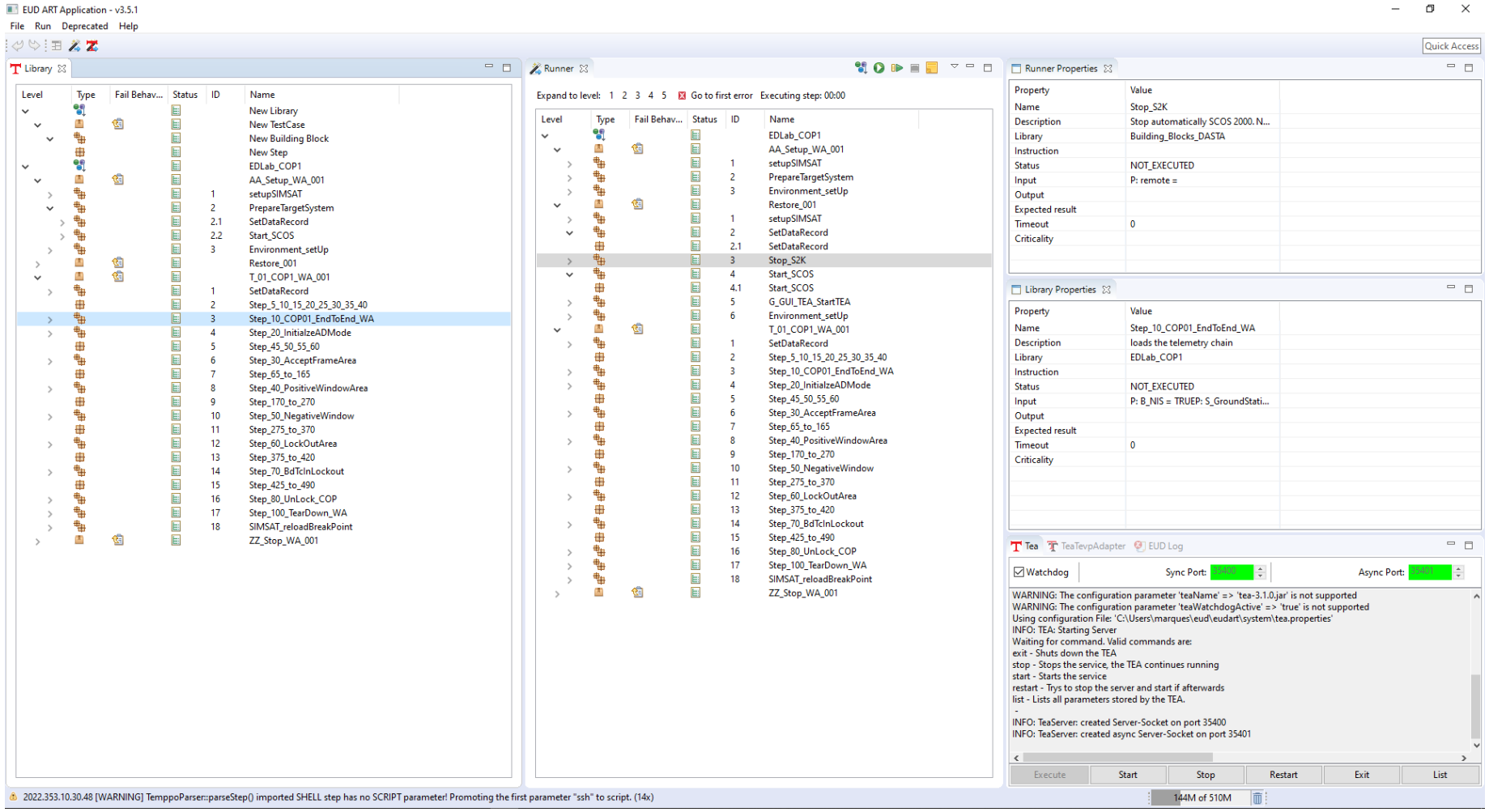
ART - Update and focus during TAEF activity



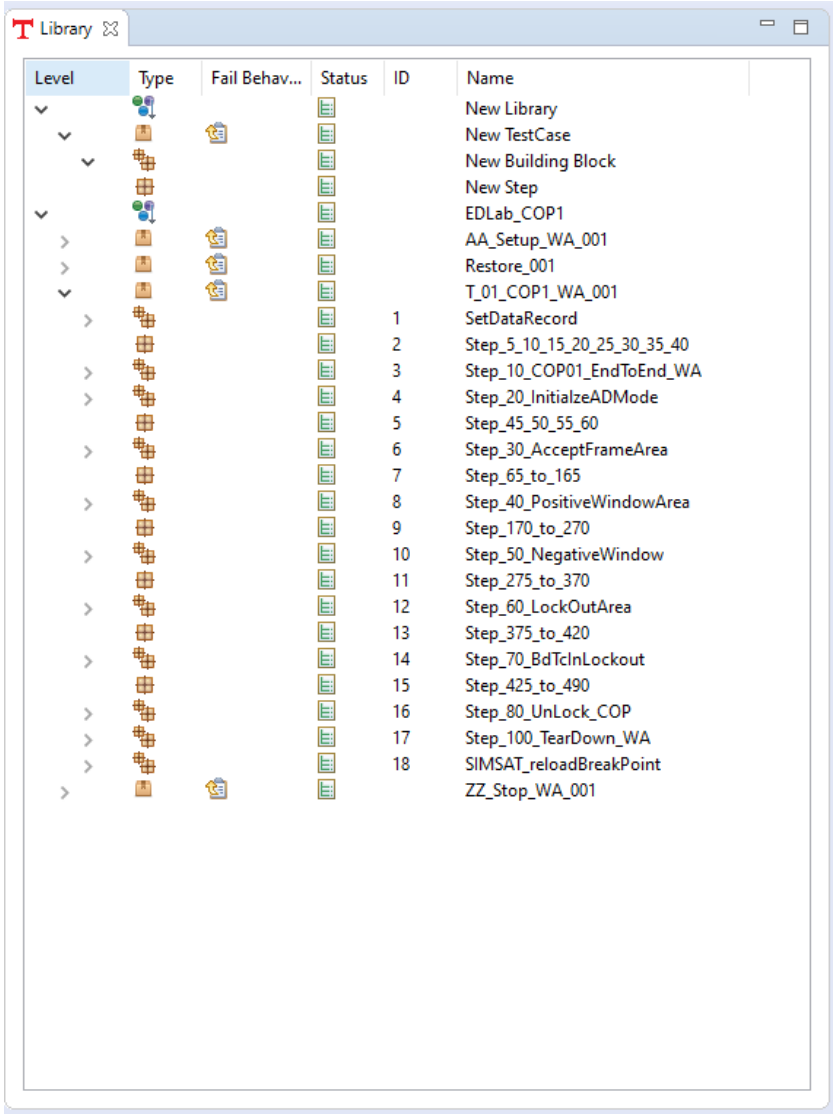
ART– Main changes and updates

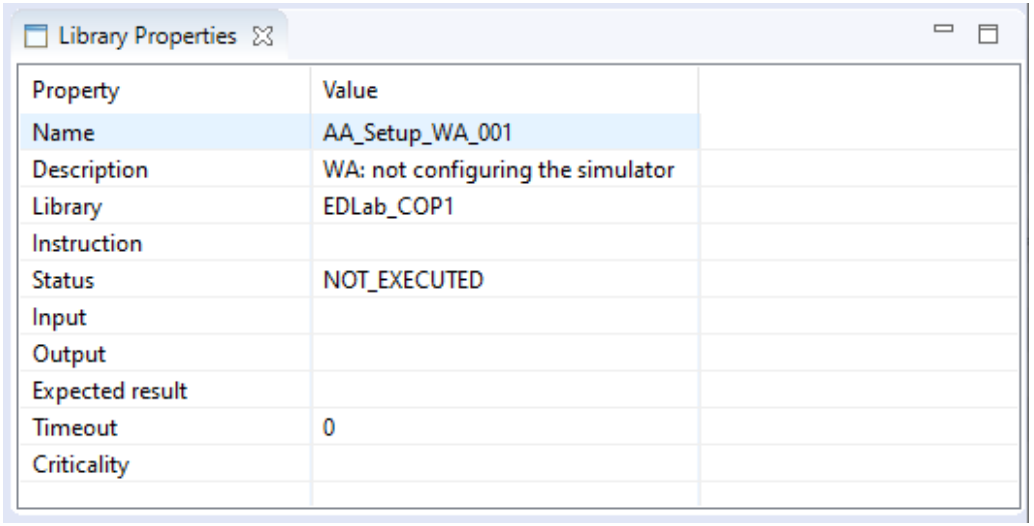
- EUDART
  - Update of all the EUD libraries from EUD3 to EUD4 (OPEN 4.1.7)
  - Upgrade to SLES15 baseline (previously SLES12)
  - Update to Java 11 from Java 8
  - Creation of an Eclipse-RCP target platform to achieve a stable build based on ESA's Nexus
  - Alignment of headless maven build and eclipse development environment build
  - Creation of CI/CD pipelines in Gitlab for build, test and deployment to Nexus
  - Addition of build profile to build EUDART for Windows
  - Disabling of unused components and clean-up of some of the legacy code
  - Introduction of new perspective for creation of test cases based on existing test cases and exported tempo libraries
- ART/MMIT
  - Introduction of generic TTIs using reflections to improve extendibility of framework
  - Several bug fixes and updates of MMIT components like the GTD, TEA and the SWTBotTTI

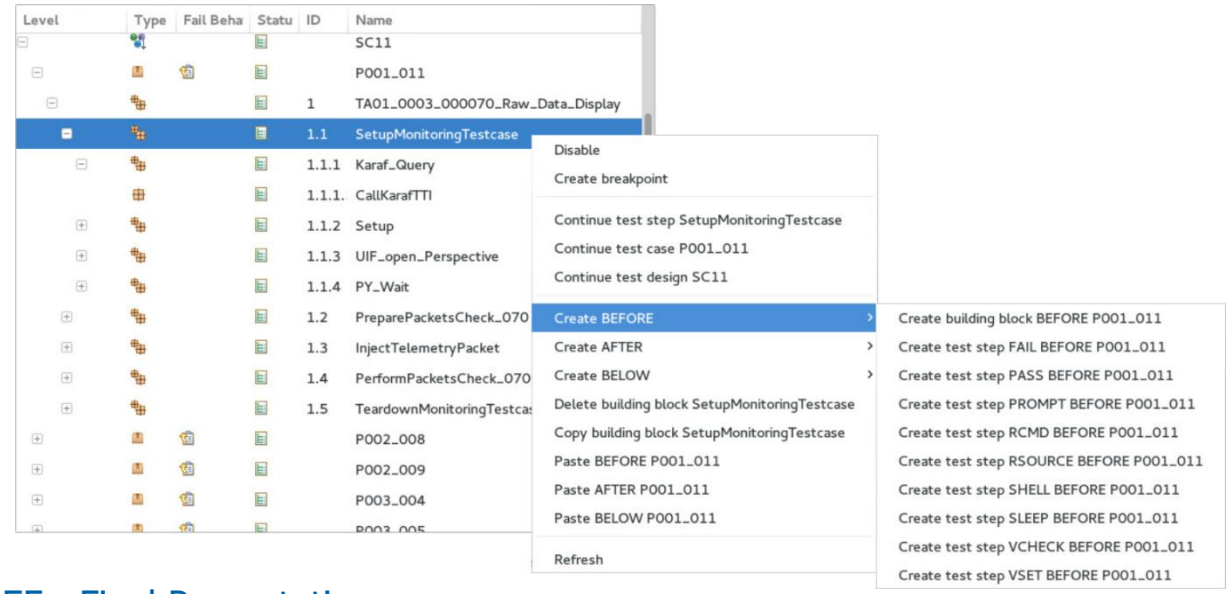
EUDART – Test Creation Perspective



EUDART – Library View







Testing Libraries

etamax MEMBER OF FEV GROUP

To support the creation of test cases for EGS-CC and EGOS-CC the following compatible with ART generic testing libraries were created

EGS-CC

- TestItemsWebUI
  - Generic web-based UI library containing basic actions like Click, Type, Drag, Drop, Open Browser, …

EGOS-CC

New libraries and example tests for FBO, TFI and ASA components and updates to existing libraries

- LibItemsMiconysCC
- LibItemsGen
- TestItemsJUICE
- TestItemsBepi
- TestExecutionEGOSCC

Demo

Microsoft Teams
[TAEF] FP Demo prep
2023-03-09 14:36 UTC
Recorded by
Pinto, Mário
Organized by
Pinto, Mário

Conclusion & Future Work

MEMBER OF FEV GROUP

Conclusions

- The ART right now offers the possibility to have a **shorter loop from test creation to test execution**
- With the new testing libraries and SeleniumTTI the ART **supports testing of web-based applications** using the same type of workflow that is known form SWT-based testing
- EUDART is a tool that is fairly difficult to maintain and update
- Selenium can be used together with ART or standalone using test written in Python

Possible Future Work

- Further enhancement to EUDART to cover additional functionality provided by TEMPPO Designer
- Development of a new generation testing framework tailored from the beginning to the new ground segment software systems and using state-of-the-art technologies

etamax space GmbH

Lilienthalplatz 1
38108 Braunschweig
Tel +49 (0)531.866688.0
Fax +49 (0)531.866688.99

www.etamax.de
info@etamax.de