

AFNeT & ProSTEP iViP STEP AP242 Benchmark



Test report for the STEP AP242 Benchmark #2 *PDM test case - Short Report*

March 2017

Preamble

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The mission of AFNeT & ProSTEP iViP associations is to promote the use of digital technologies in the extended enterprise and in cross-company, cross-domain collaboration scenarios. To reach this goal, these two associations are strongly involved in the development and the support of deployment of PLM interoperability standards.

3D Model Based interoperability in global engineering and manufacturing of complex products relies on international open standards. The industries request the pre-qualification of PLM editor interoperability solutions; this function is ensured by the Implementor Forums.

Thus, AFNeT & ProSTEP iViP associations have contributed to the launch and development of the STEP AP242 (ISO 10303-242) initiative since 2010. The availability of the first COTS STEP AP242 solutions for PDM interoperability is a key achievement of this challenge.

Today, we are pleased to provide you the results the STEP AP242 Benchmark #2 report, focused on PDM test case. The report on CAD test cases will be provided as a separate document in April 2017.

New editions of this Benchmark report will be published, addressing additional software & functionalities.

This work has been realized with the support of Airbus, Dassault Aviation, Daimler, Daher, MBDA, Liebherr, Zodiac Aerospace, ASD-SSG, GALIA, GIFAS, PFA, VDA, AFNeT & ProSTEP iViP Members and the AFNeT & ProSTEP iViP Benchmark Team.

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Related websites

AP242 project: <http://www.ap242.org/>
AP242 Benchmark: <http://benchmark.ap242.org/>
PDM-IF: <http://www.pdm-if.org/>
CAx-IF: <http://www.cax-if.org/>

1 Introduction

ISO 10303 STEP AP242 is available for the Automotive and Aerospace industries, as well as many other branches of the manufacturing industry, as a unique product standard for Managed model based 3D engineering data interoperability. STEP AP242 has been released as “International Standard” (IS) in August 2014. Multiple COTS applications have been tested by the CAx Implementor Forum and the PDM Implementor Forum.

STEP AP242 applications become increasingly important for CAD and PDM interoperability in the manufacturing industries. This project will allow our communities to reach a status of maturity for these applications. The benchmarking activities are needed to apply quality control to AP242 based implementations.

Therefore, AFNeT and ProSTEP iViP decided to conduct the STEP AP242 Benchmarks and to support the user community that will drive the project, with the support of several industry associations (ASD SSG, GALIA, GIFAS, PFA, VDA) and manufacturers, for getting an independent assessment of COTS STEP AP242 interfaces.

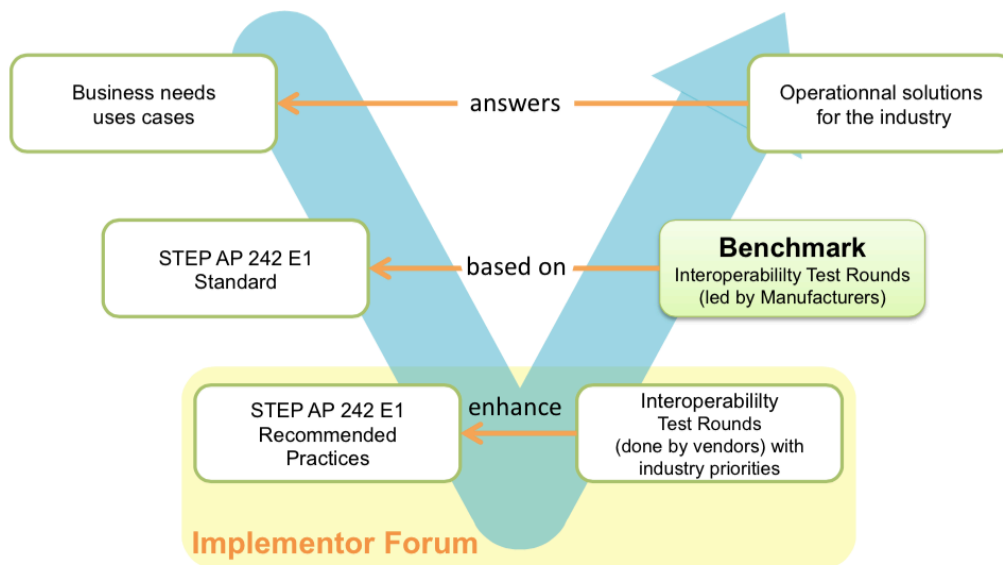


Figure 1 – V cycle for STEP AP242 solutions

The objective of this Benchmark is to provide a public status of STEP AP242 functionalities available for operational use, tested by the industry and to identify limitations of the tested PLM COTS AP242 applications.

This project is composed of two work packages:

- CAD work package managed by AFNeT;
- PDM work package managed commonly by AFNeT and ProSTEP iViP.

The organization of this Benchmark is based on the following principles:

- business priorities defined by the industry stakeholders supporting the STEP AP242 Benchmark;
- AP242 interoperability functionalities already tested by the CAx-IF and PDM-IF;
- tests based on STEP AP242 COTS solutions available on the market or on their way to be shipped to the industry.

This document presents the test results of the PDM work package which cover the tests of the following AP242 PDM functionalities:

- exchange of PDM Information using AP242 BO Model XML including Assembly Validation Properties;
- references to CAD and non-CAD documents;
- management of changes.

Since PLM vendors and CAD integrators constantly enhance the functionalities and robustness of their STEP AP242 interfaces, the results of this Benchmark provide a snapshot of the functionalities tested at a certain moment in time for a specific version of the vendors' solutions. New editions of this Benchmark report will be published, addressing additional software & functionalities.

2 References and terms

2.1 Reference documents

ID	Name	Status version	Date	Link
[1]	Recommended Practices for STEP AP242 BO Model XML Product and Assembly Structure	Release 1.1	May 20, 2016	https://cax-if.org/joint_testing_info.html#recpracs
[2]	STEP AP242 Edition 1 BO Model Schema	IS	August 2014	http://standards.iso.org/iso/ts/10303/-3001/-ed-1/tech/xml-schema/bo_model/bom.xsd
[3]	Test Suite for the PDM work package of the STEP AP242 Benchmark #2	1.2	March 3, 2017	http://benchmark.ap242.org

Table 1 – Reference documents

2.2 Terms

AVP	Assembly Validation properties
CAD	Computer-aided design
CAX-IF	CAX Implementor Forum
COTS	Commercial off-the-shelf
PDM	Product Data Management
PDM-IF	PDM Implementor Forum
IS	International Standard
ISO	International Organization for Standardization
LTA	Long-term archiving
PDF	Portable Document Format (ISO 32000)
3D PDF	3D viewer format defined by PDF/E (ISO 24517)
PLM	Product Lifecycle Management
Part 21	ISO 10303-21
STEP	Standard for the Exchange of Product model data
STEP AP242	Application protocol: Managed model-based 3D engineering (ISO10303-242:2014)
XML	Extensible Markup Language