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OVERVIEW

The first production release of ODA STEP SDK is not only a significant improvement for ODA SDAI implementation (which is also a base for ODA IFC toolkit), but a step forward to support for many EXPRESS-based formats which are united under a set of ISO-10303 specifications. However, the most significant features, as support of complex instances, dynamic approach for working with arbitrary EXPRESS schemas and interpretation of EXPRESS language source code allow to create and manage models of any standardized or custom EXPRESS-based format, including IFC, CIS/2 or STEP Application Protocols (STEP APs).

The geometrical part of STEP APs implementation uses ODA Core rendering mechanisms and is based on ODA Solid Modeler, the visualization of both faceted and solid geometry is supported.

AP242 format contains Product Manufacturing Information (or PMI) data which makes the format self-sufficient for all documentation needs. ODA STEP SDK supports such PMI data visualization including dimensions and text.

The visualization of StepX files which contain assemblies of parts stored within STEP files is also supported by STEP SDK.

Later this year we are planning to release a dedicated OpenSTEPViewer which will support visualization of all supported STEP formats, and will have plugins for STEP models investigation, validation and statistics.

WHAT'S NEW 2022

- Late-bound C-Style SDAI and ODA C++ API allow to work with STEP Application Protocols data
- Support for complex instances creation
- Dynamic approach of working with arbitrary EXPRESS schema object model without precompiled sets of C++ classes
- Reference and Alias sections of Step Physical File are available for r/w access (10303-21:2016)
- Additional semantic constructions, built-in functions and statements are supported by the EXPRESS interpreter. The interpreter is a part of ODA SDAI, a foundation for both ODA IFC and new STEP SDKs
- AP203, AP214, new AP242ed3, AP209, AP238, StepX DomainModel, CIS/2 and IFC schemas are supported for both data access and model creation
- ISO 10303-42 and other parts are implemented as base for visualization for all supported STEP formats
- Support for AP242 PMI data visualization, as texts and dimensions
- OpenSTEPViewer, a dedicated viewer for STEP files, will be available later in 2022. It will include additional features as a TreeView plugin for model investigation and Validation Tool for STEP models checks against SDAI/EXPRESS-schema interpretable and non-interpretable rules