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ENGINEERING SOFTWARE

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Ref: Internal Document - AutoCAD Plant 3D 2011 – Updates RS01311

1. OBJECTIVE

This document contains a summary comparison between AutoCAD Plant 3D 2011 system and EPLANT-Piping V2014.2. Although the current version of AutoCAD Plant 3D is the 2015 one, the current analysis is considered still valid and it is limited to update the EPLANT features (AutoCAD and ZWCAD compatibility and 2D Plans).

2. COMPARISON

EPLANT-Piping V2014	AutoCAD Plant 3D 2015
It is an open system and there are no limitations to create new components. It allows adding new connecting points directly on the 3D models.	It is an open system, but definition of new objects requires computer programming knowledge. It does not allow adding new connecting points in the 3D models.
Data structure is simple, transparent and well documented. The description of each material is automatically generated using its building parameters.	Data structure is obscure, redundant, proprietary and not documented. It easy allows generating inconsistent bill of materials with no relation with the objects really used.
Project material can be always 100% compliant with specifications because changes in specifications and dimensional catalog can be automatically applied to 3D models..	It has no control over specification and catalog changes.
It is compatible with AutoCAD from 2004 to 2015 and with ZWCAD+2012, 2014 and 2015.	It only works on AutoCAD 2015.
It uses the AutoCAD native format for any object. Data are associated using Xdata and, in this way, accessible without the application also.	Objects have a proprietary definition. Data are hidden in binary form.
Projects up to 3000 lines have been generated with EPLANT-Piping using limited computers, compatibles with the light file structure and the computational efficiency of the system. Exemple: 500 equipments + 3000 lines = 20 Mbytes within the possibilities of any machine.	The size of P3D models is **30 times of EPLANT** and most of the processes are very slow. It could be that this intrinsic limitations place an upper limit of about 200-300 piping lines for a project, even using a high performance machine.
It is not possible to manually modify	It allows to manually modify the descriptions

component characteristics once they are placed in the models. It is only possible to change the diameter, piping and insulation specs and gasket thickness, but only when the spec allows the change. This protects against data manipulation.	associated to each component, creating the condition for a lack of consistency.
It uses branch tables to automatically select for branch components.	It uses branch tables to automatically select for branch components.
It has no provisions for maintaining line connectivity during component moving, but it is easy to reconstruct it deleting and placing again the relevant components.	It can automatically maintain connectivity moving components, at least in theory, but in practice there are several cases when connectivity will fail and the delete and place it again sequence is to be used.
Using the internal extractor any isometric can be always extracted, although if the line geometry is complicated it may require little graphical adjustments. It can also generate PCF interchange files with Isogen. In this case, an Isogen license is required to produce the isometric dwg files.	Isometrics are extracted using an embedded Isogen license. There are cases when the isometric is produced with mistakes (documented with examples) thus requiring a partial manual redrawing.
2D views are plane drawings.	2D views are plane drawings.
2D views and related notes are automatically updated in case of changes in the source 3D models.	Missing.
EPLANT-Piping is a sophisticated material management system. It automatically integrates the material of the whole Project generating Material Requisitions, grouping materials according to providers and manages revisions.	P3D has only one material report: material by line and model.
The integration with EPLANT-P&ID is very simple and intuitive. It can also work with manually loaded lists.	Rigid and with the only option to use AutoCAD P&ID.