

TecSurge 



PDMS to S3D Plant Migration

Webinar on April 6th, 2016

Session 1: Europe / Asia Pacific starts at 3pm Singapore

Session 2: Americas / Europe starts at 11pm Singapore

Your presenters



- Raghu Krishnamoorthy - Service Manager



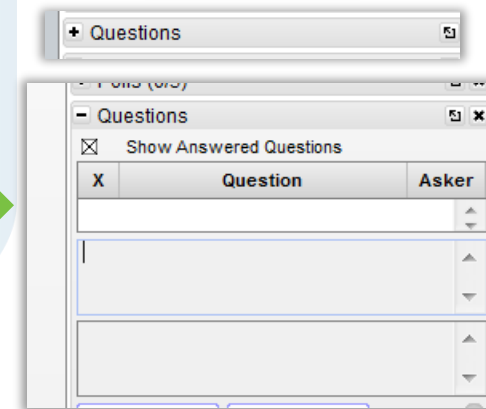
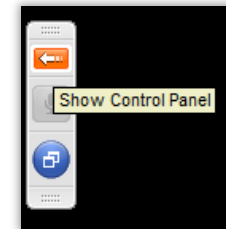
- Patrick Mackinlay - Principal Consultant



- Marc Albani - Marketing Director

House keeping

- This webinar will be recorded.
- All lines are muted, in order to avoid background noise.
- We will make the recording available in our follow up.
- The webinar will take around 40 minutes before we start the Q&A session.
- To ask a question, please use the panel on your screen.
- Please respond to the quick polls during the webinar.
- Please give us your feedback on the exit survey.



Vision of TecSurge



We will be the leader in Managed Services by delivering complex engineering software applications that are ready for use and enable our clients to maximize Return On Investment.

In other words:

“TecSurge is passionate about making the use of complex engineering software easy.”

Mr. Anton Schreibmueller, President & CEO of TecSurge.



Our business



- **Three business lines**



- TecSurge OnDemand
 - sharpen your business focus



- TecSurge Academy
 - boost your knowledge



- TecSurge Service
 - expand your capability

Agenda

- **Drivers for Migration**
- Migration options
- The TecSurge Approach
- Deliverables
- Case studies
- Getting Started
- Q&A



The challenge

- There are several reasons why you may need to migrate a model from PDMS to Smart 3D:
 - Source model (e.g. FEED) supplied by a 3rd party in PDMS format
 - Execution in PDMS with handover requirement in S3D
 - Change of platform and retention of access to legacy data



Why migrate?

- Depending upon the specific scenario, there may be several options considered:
 - Do nothing, and continue to operate two technologies with limited integration
 - Reference the existing plant model (several methods exist)
 - Undertake a plant model migration project
- Successful plant model migration delivers the following:
 - Increased efficiency via full integration of 3rd party design information
 - Successful project delivery by meeting client requirements
 - Reduction of costs associated with legacy technology



When should I migrate?

- Plant model migration is not a fully automated process:
 - Requires planning and strict quality control
 - Significant numbers of resources, both specialist and designer
 - Timeframes measured in weeks or months, not days
- In principle, our advice is to begin planning your migration as soon as possible:
 - Reduce risks of meeting external milestones
 - Understand the time and cost involved
 - Avoid time and cost by migrating sooner
 - Ensure access to project personnel



Quick Poll

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- **Migration options**
- The TecSurge Approach
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Migration overview

- Plant model migration involves four main stages of activity:
 1. Migrate specifications and catalogues
 2. Migrate the model data
 3. Checking and corrections
 4. Migrate deliverables
- TecSurge has the expertise and experience to address all four phases:
 - Industry knowledge across projects, standards and technologies
 - Expertise with the most popular plant design systems
 - Migration automation tools target Smart 3D from intermediate format (currently supporting PDS and PDMS)
 - Automated checking tools compare source and destination data
 - Experience to manage the manual retouching work for models and drawings



Migration options

- There are three major options available:
 - Manual re-modelling (in-house)
 - Commercial tools (in-house)
 - Subcontracting to service provider



Manual re-modelling is labour intensive

- Advantages
 - Produces “native” result
 - Leverages existing skills
- Disadvantages
 - Un-productive use of resources
 - Requires large numbers of personnel
 - Significant amount of manual checking
 - Increased license and infrastructure costs
 - Resource constraints limit scheduling flexibility
- Summary: it’s hard work, and requires significant project coordination and resources



Commercial tools are complex to use

- Advantages
 - May reduce manpower and time
- Disadvantages
 - Steep learning curve
 - Investment for a one-off requirement
 - Tools may not produce “native” results
 - Significant manual checking
 - Tools demand perfect input data
 - Do not address all aspects of migration (e.g. specifications, symbols and drawing migration)
 - Additional license costs
- Summary: it's technically complex, may not produce the results needed, and still requires manual effort



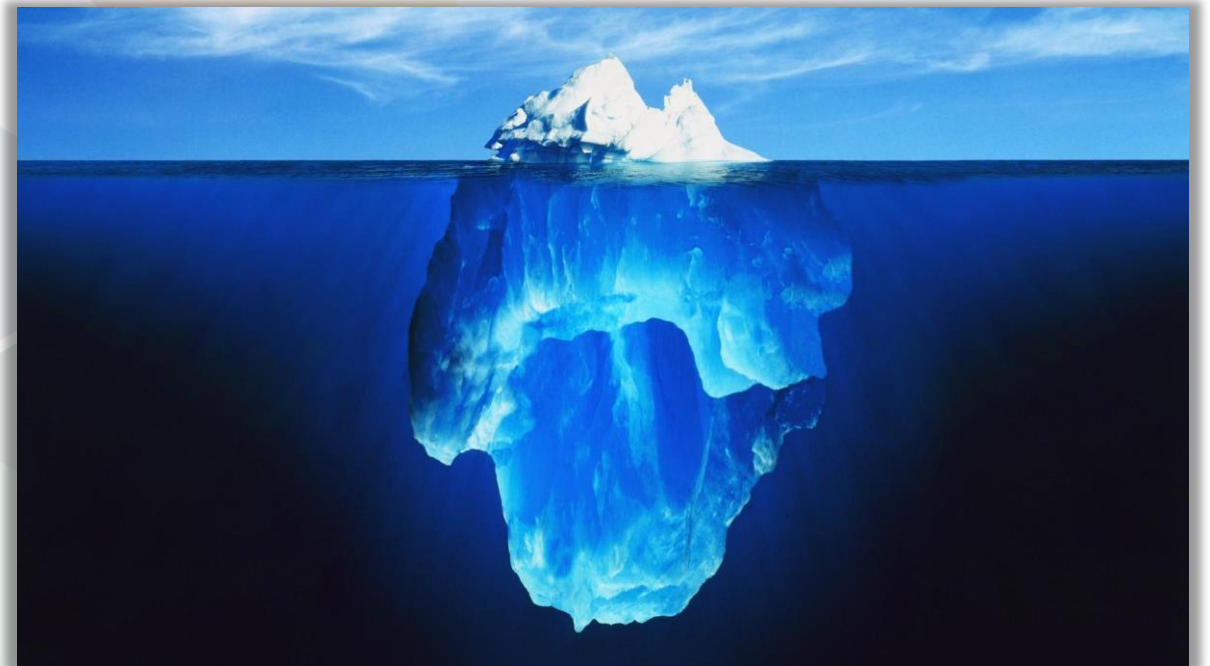
Our approach is a packaged solution

- Advantages
 - Fixed price and duration
 - Up-front agreement on quality
 - Limited customer resource commitment
 - Consulting advice available at every step
 - Professionally project managed
 - No hidden or additional costs
 - No learning curve or wasted investment in skills or tools
- Summary: as a specialist, TecSurge uses automation and experience to deliver the results you need as a packaged solution with transparent pricing, schedule and quality



Migration options summary

- On the surface, plant model migration looks simple. Without experience, it's easy to overlook the hidden dangers:
 - Uncontrolled budget and time
 - Difficulties measuring/monitoring quality
 - Infrastructure and licensing costs
 - Specification and catalogue migration
 - Drawing and deliverable migration
 - Hierarchy and attribute migration
 - Unproductive use of resources
 - High investment for one-off scenario



- TecSurge takes care of all of these issues, offering you a solution with a fixed price, schedule and agreed quality

Quick Poll

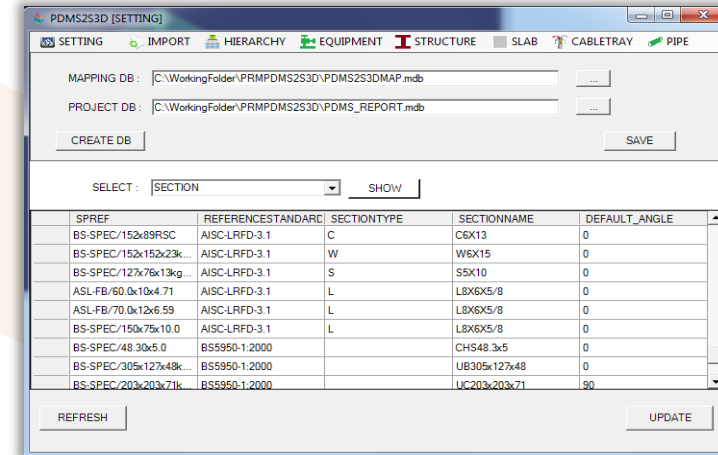
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- **Deliverables**
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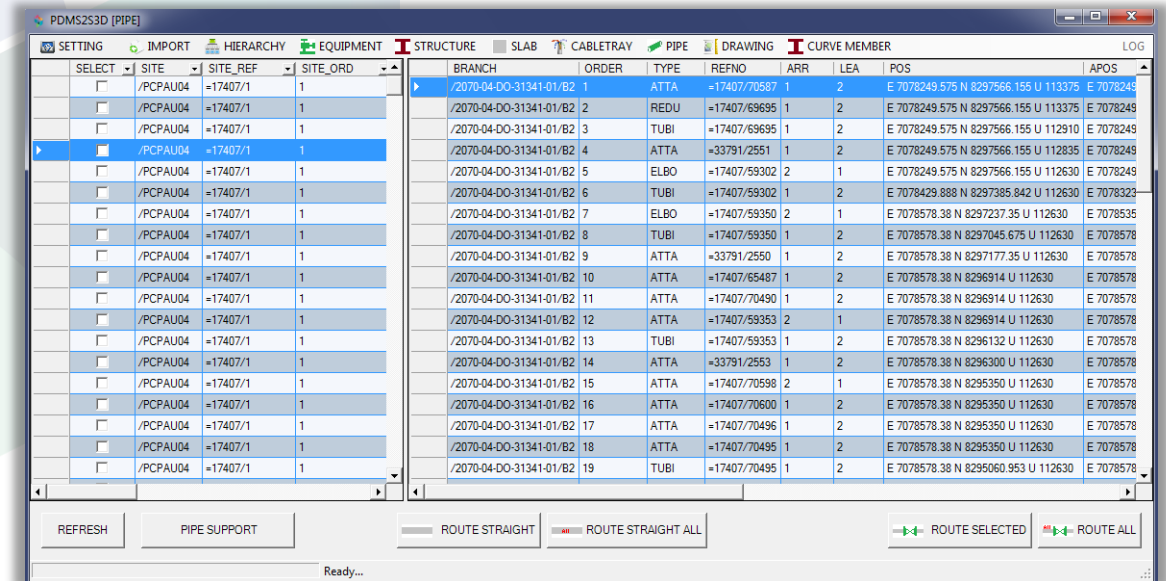


TecSurge Approach

- Analyse individual customer and project requirements
- Extract data from PDMS
- Prepare migration environment
- Automated migration into S3D
- Manual touch up
- Automated quality check
- Generation of drawings and reports
- Handover of deliverables



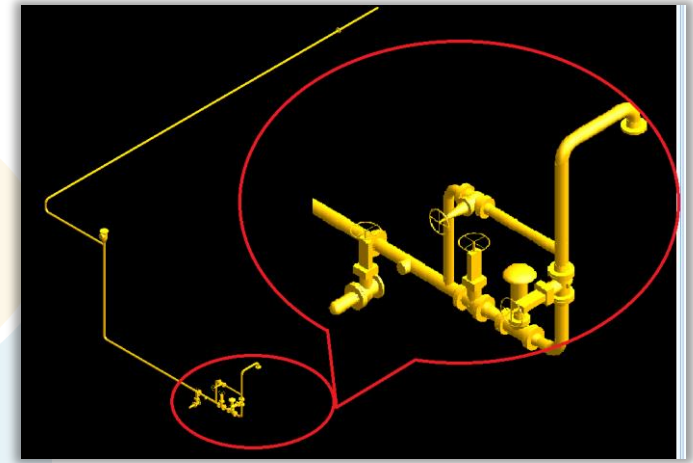
TecSurge Mapping



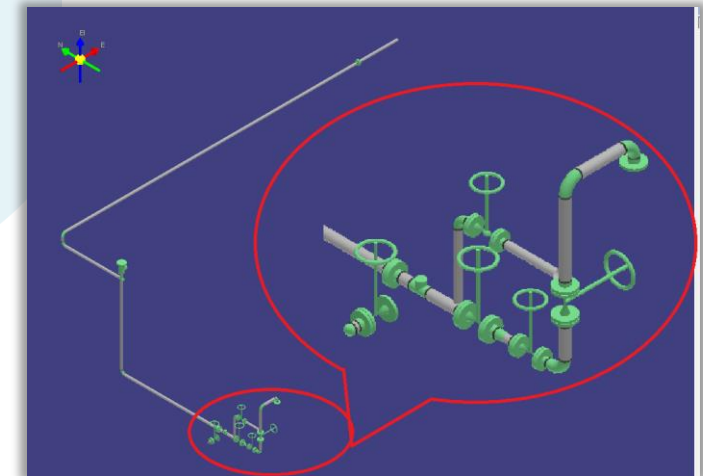
TecSurge Automation Tool

Piping

- Requires identical piping specifications and dimensional data
- Piping is automatically remodelled line by line from start to finish
- Line list attributes are carried along
- Hangers and supports are auto-placed at exact location
- Manual tidy up supported by a Quality Control tool ensures that the remodelled piping is identical



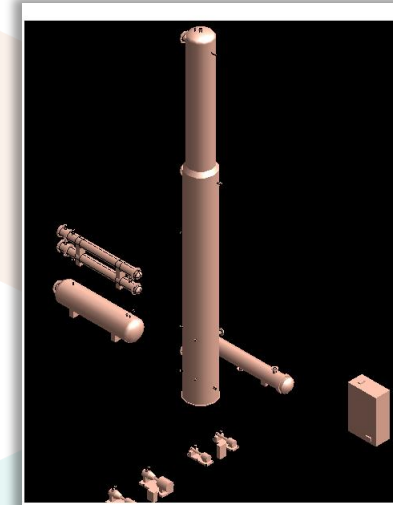
PDMS Model



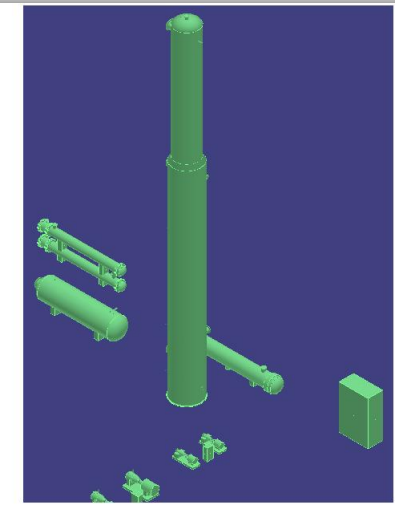
Automated migrated model in S3D without manual tidy-up

Equipment, nozzle tags & attributes

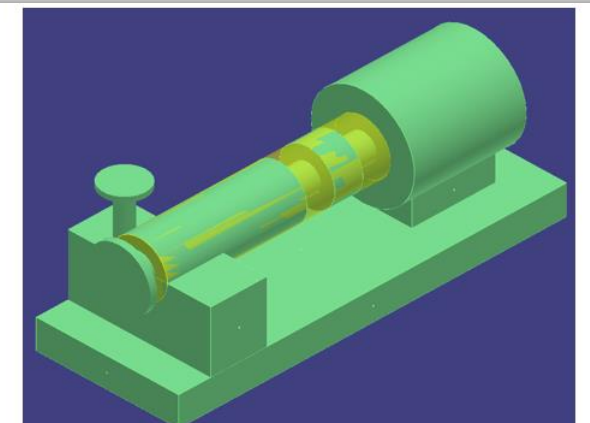
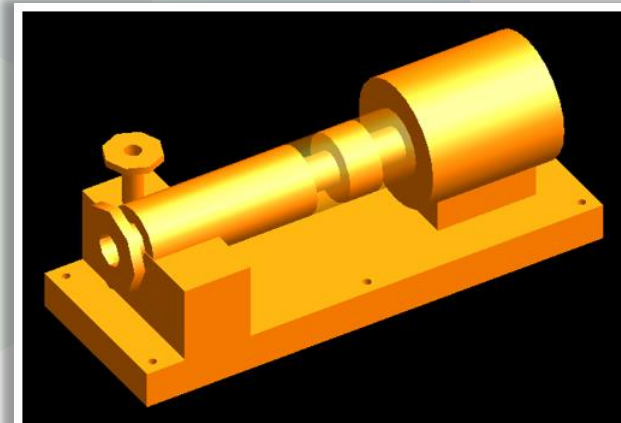
- Equipment modelled in PDMS migrated to S3D
- PDMS equipment primitives migrated as equivalent S3D shape
- Nozzles migrated as intelligent S3D nozzles associated with the equivalent objects
- Aspects maintained between both systems
- Equipment and nozzle tags and properties assigned based on the PDMS value



PDMS Model

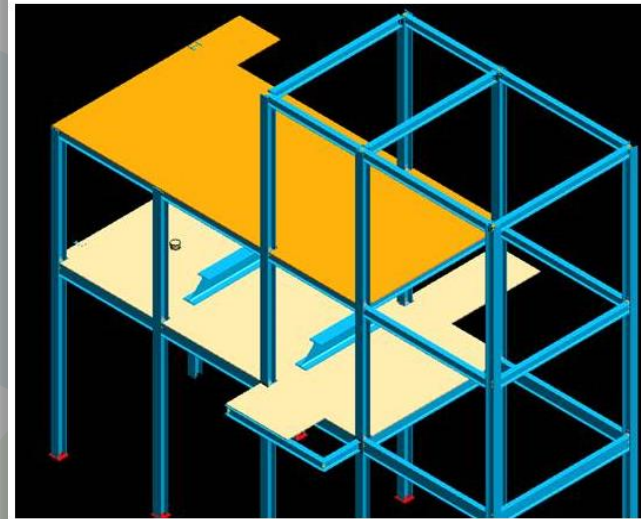


Automated migrated model in S3D without manual tidy-up

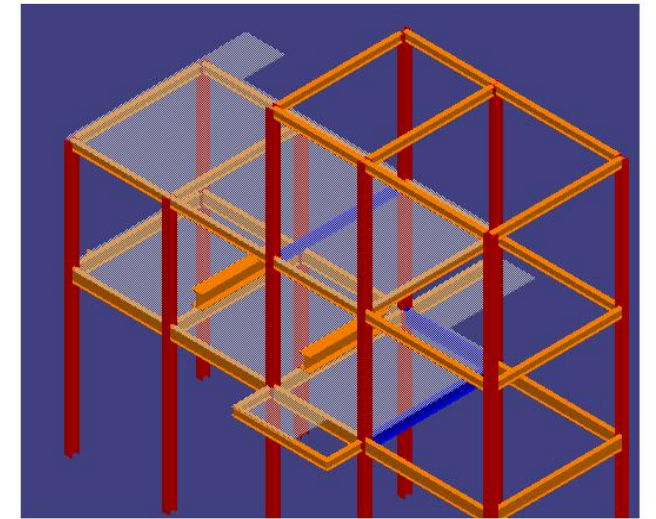


Structure

- Full migration including material information
 - Linear and curved members
 - Fireproofing
 - Frame connection
 - Slab and opening
- Quality checking and touch up



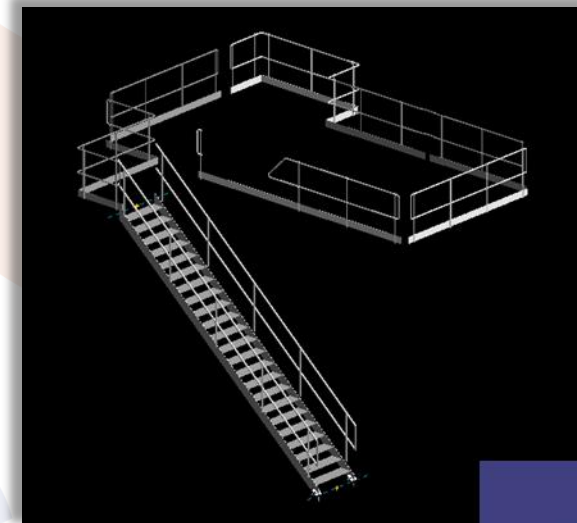
PDMS Model



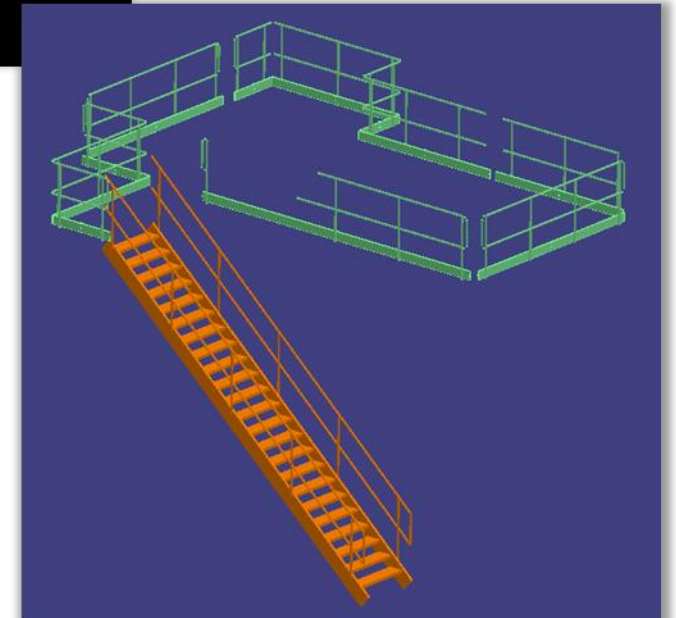
Automated migrated model in S3D without manual tidy-up

Handrails, stairs & ladders

- In PDMS handrails, stairs & ladders are modelled using the Access, Stairs and Ladders (ASL) module
 - Equivalent objects can be automatically migrated
 - Other objects may require manual remodeling in S3D



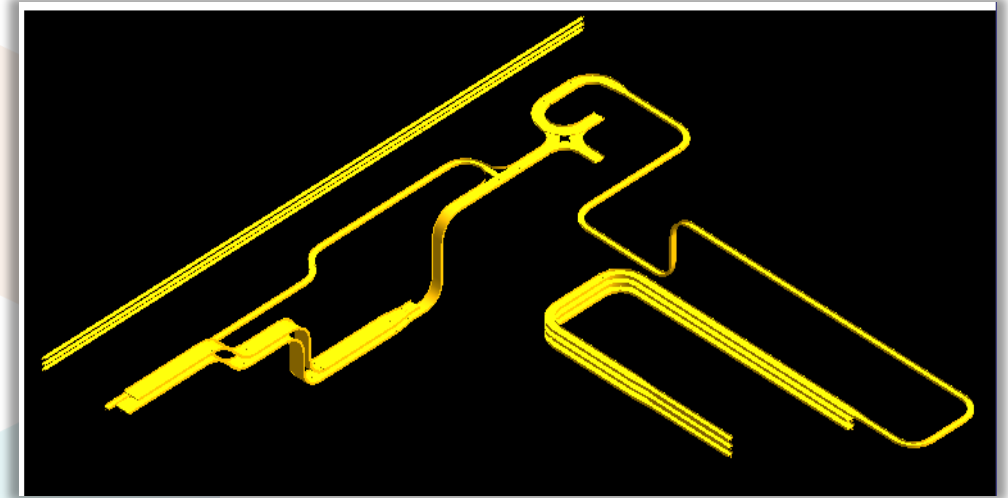
PDMS Model



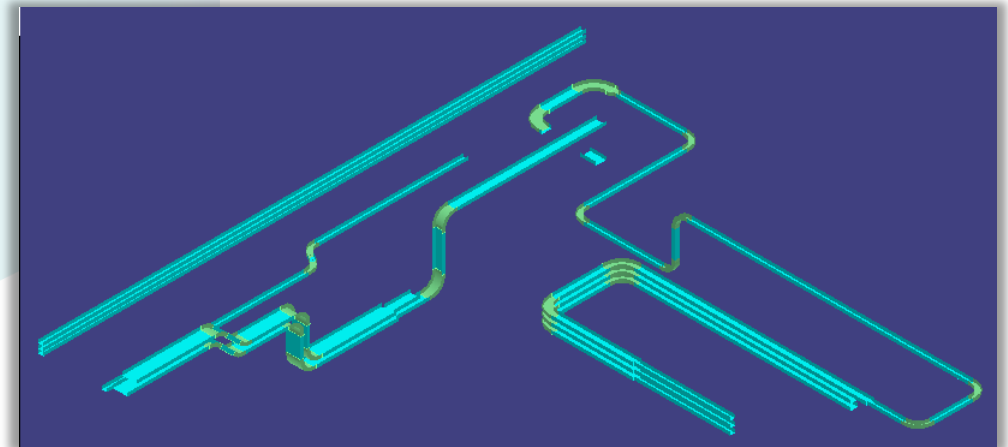
Automated migrated model in S3D without manual tidy-up

Electrical and Instrumentation

- Cable trays are automatically remodeled
- Quality check and manual touch up ensures that the modelled cable tray is identical
- Cable tray attributes will be carried along
- E&I equipment is migrated by automation tool































PDMS Model



Automated migrated model in S3D without manual tidy-up

Hierarchy and attributes

- Migrated model will be moved into the proper System hierarchy
- PDMS UDA attribute values transferred to equivalent attributes in S3D
- Naming rule assigned
- To-do entries cleared

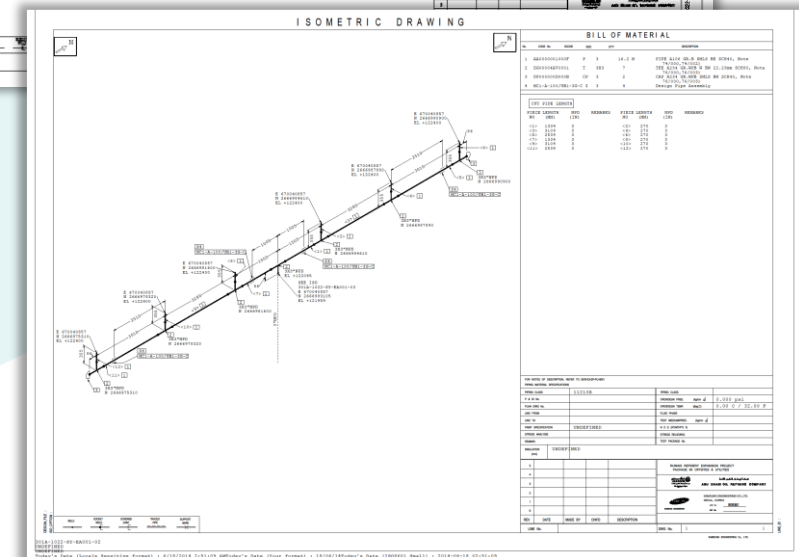
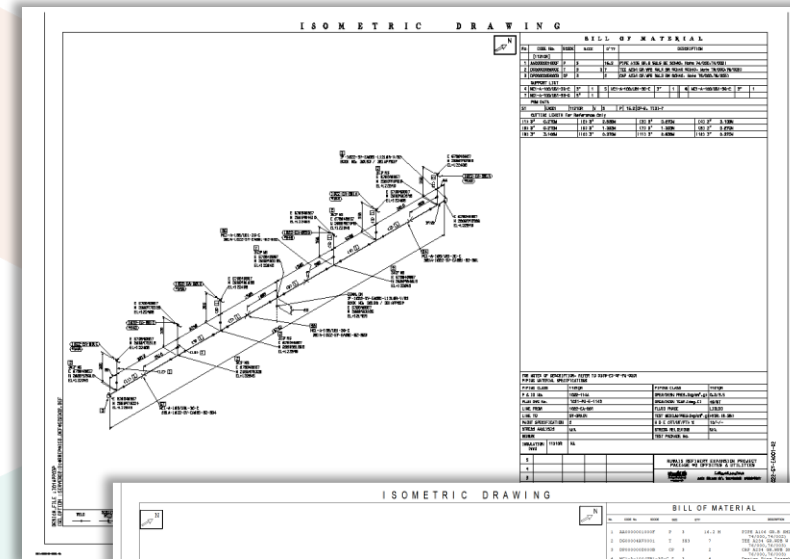
PDMS		SP3D	
 SITE		 AREA SYSTEM	
 ZONE			
	PIPE	 PIPING SYSTEM	
	STRUC TURE	 STRUCTURE SYSTEM	
	ELECTRICAL	 ELECTRICAL SYSTEM	
	INSTRUMENT	 ELETRICAL SYSTEM	
	EQUIPMENT	 EQUIPMENT SYSTEM	
 PIPE		 PIPELINE SYSTEM	
 BRANCH		 PIPE RUN	
 PIPE [CABLE TRAY]		 CABLEWAY	
 STRU		 STRUCTURE SYSTEM	
 FRMW		 STRUCTURE SYSTEM	
 SBFR		 STRUCTURE SYSTEM	
 SCTN		 MEMBER SYSTEM	
 EQUIPMENT		 EQUIPMENT	
 SUBEQUIPMNENT		 COMPONENT	
 NOZZLE		 NOZZLE	

PDMS and S3D System Hierarchy

Drawings

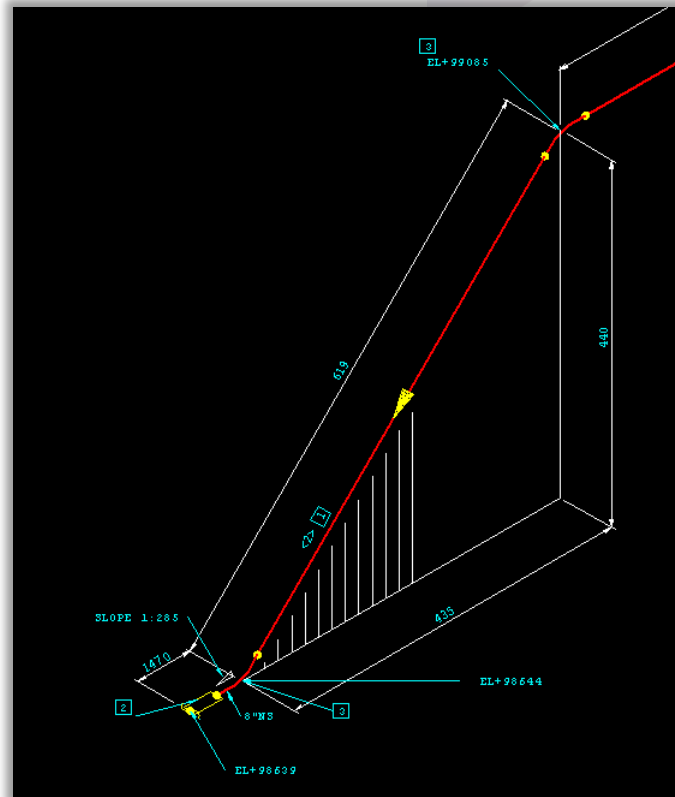
- Isometric drawing
 - Extracted directly from S3D after model migration and touch up
 - Comparing extracted drawing with source drawings
 - Maintain same isometric sheet split point
 - Update title, line list and revision information
 - Optionally embed source drawing in S3D

- Orthographic drawing
 - Intelligent drawing extraction
 - Drawing volume migrated to S3D
 - Update title, line list and revision information
 - Optionally embed source drawing in S3D

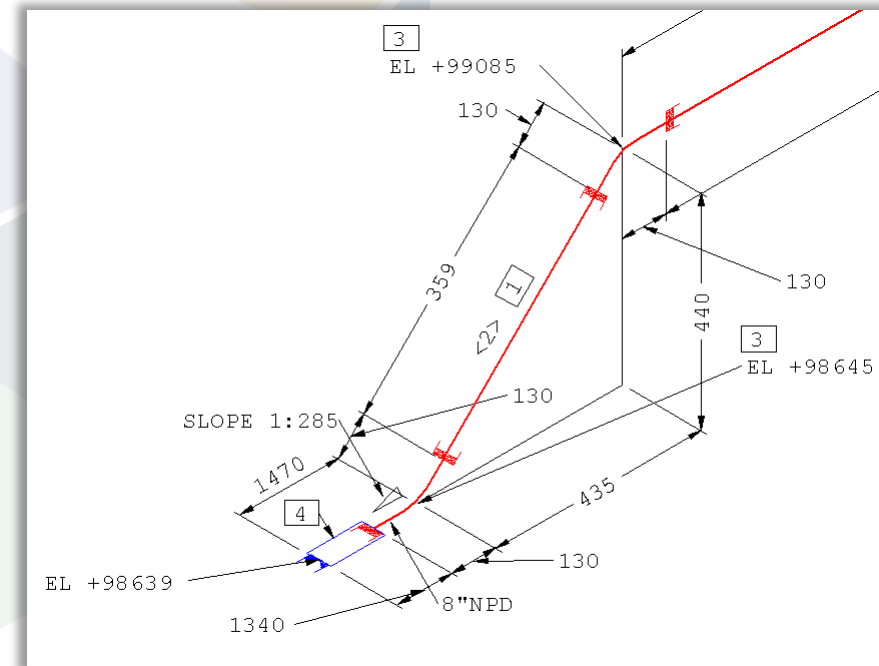


Extracting intelligent drawings

- Content is identical but data representation may vary



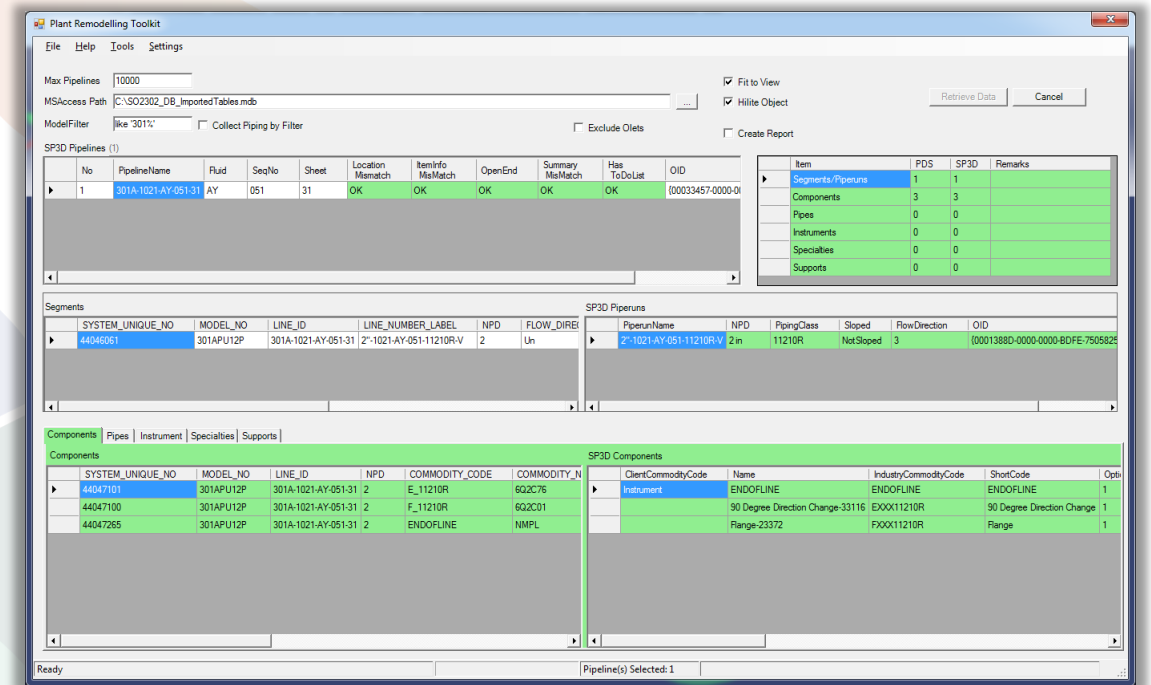
PDMS drawing Sample



Drawing extraction to S3D Sample

Quality Assurance

- TecSurge ensures quality targets are met by using several techniques throughout the migration:
 - Comparison of Topology & Component sequence
 - To-do entries
 - Open end
 - Comparison of Bill of Material
- TecSurge developed in-house automation to support automated comparison of PDMS and S3D models, and semi-automated rectification of any discrepancies identified

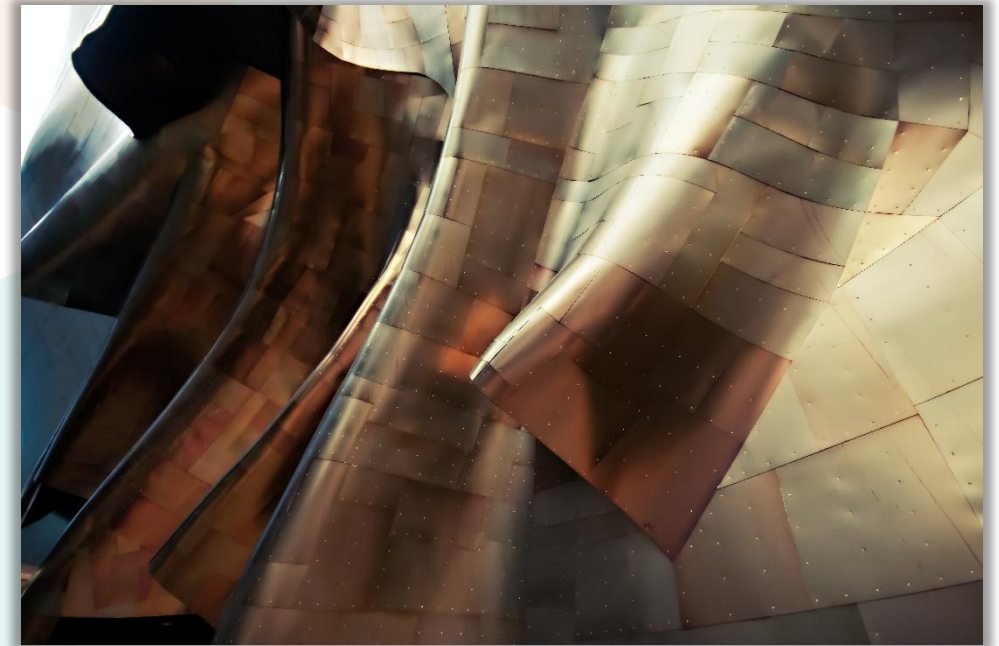


TecSurge quality control toolkit

Deliverables

Standard project deliverables for TecSurge are

- S3D archive containing:
 - Piping specifications and catalogue
 - Remodelled and quality checked piping, pipe supports, equipment, structure, civil and cable trays
 - Piping isometric drawings
 - General arrangement drawings
 - Report Template
 - To-do list
- Optional MDR to production environment
- Interim backups or review models delivered at agreed milestones prior to completion in support of customer review
- Standard project progress reports and issue registers



Quick Poll

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Case Study 1: Productivity

- Client handover requirement: **SmartPlant 3D 2011 R1 on Oracle Database**

Item	Project
Piping material specifications	60
Process equipment	1,900+
Electrical & instrumentation	100+ layouts
Piping isometrics	24,000+
Arrangement drawings	500+
Time	3.5 months

- Result: Client has requested additional plant model migration services

Case Study 2: Flexibility

- Client handover requirement: **SmartPlant 3D 2011 R1 on Oracle Database**

Item	Pilot	Project
Piping isometrics	~80	12,000+
Process equipment	12	290+
Structures	1 module	8 modules
Electrical & instrumentation	50 trays	1,500+ trays
Arrangement drawings	10	900+

- Result: Client has requested TecSurge to bid on full migration scope

Expertise

Our experts support any and all technology platforms based on your needs, in order to provide objective and trusted advice.

- Any combination of plant design systems
- Independent and cross platform expertise
- Objectively offer the best services and solutions
- Expertise in commercial software



TecSurge Service Benefits

Scalable

- Delivery organization
- Efficiency via automation
- Innovation and creativity

Adaptable

- Team of experts
- Broad expertise
- Experience

Simple

- We speak your language and understand your issues
- Standardised and tailored
- Application and vendor independent



TecSurge Service Delivers



Professional Project Management

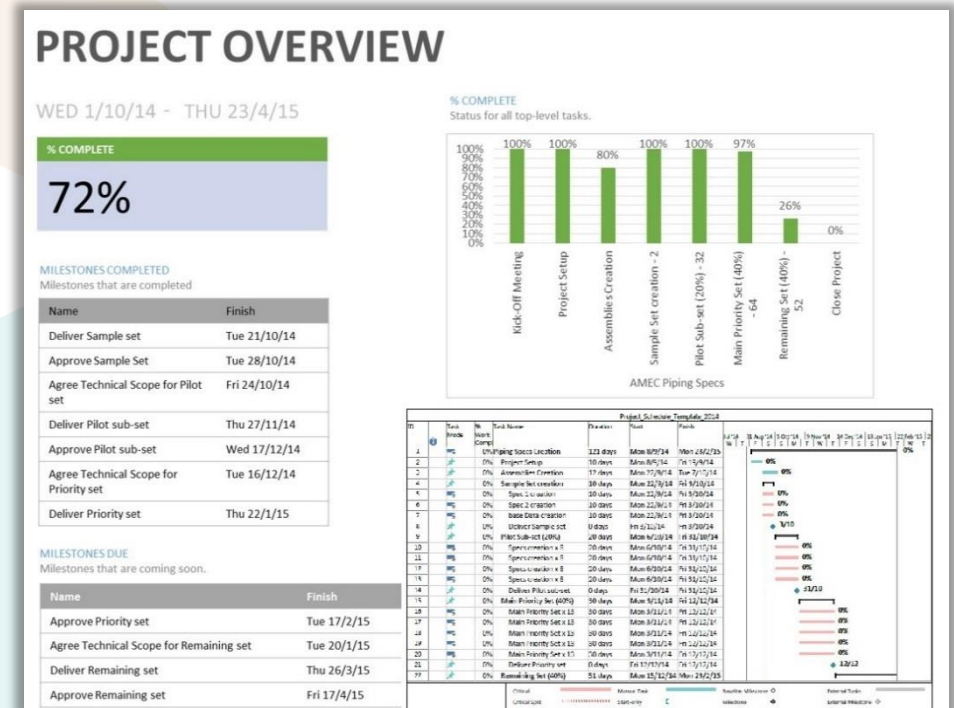
- Every project has a project manager who is in charge of customer communication and reporting.
- The project manager monitors the project scope, budget and schedule.

Quality Management

- The professional services team at TecSurge is always looking for opportunities to improve quality and reduce cost.
- TecSurge has a long history of building and utilising automation technologies, which allows us to deliver the highest quality results within tight schedules.

Fast and Efficient

- Our intimate familiarity and understanding of the technology ensures we are able to identify and apply the best available methods, ensuring we can efficiently scale our capability to meet your toughest challenges.



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Getting started

1. [Contact us](#) for a questionnaire and to discuss your needs.
2. Complete the process.
3. Start enjoying the benefits of TecSurge PDMS to S3D Data Migration!

Plant Remodelling Services (PDMS into SP3D) - Questionnaire

Question	
A. General Questions	
a. What is the purpose of the PDMS and S3D model? (e.g. Feedmodel translation as a starting point, Brownfield project for tie-in and reference, As-built documentation translated)	
b. Is this for a proposal or real project?	
c. When will the service start, when will it be awarded?	
d. What is the duration, hence when is the result required?	
e. Which company has created the PDMS model?	
B. For Piping Catalog and SPEC Conversion:	
a. How many Piping Specifications have been used in PDMS?	
b. Are the Piping Specs already available in S3D or do you want CAXperts to create them?	
i. If you want to have S3D piping specs created by CAXperts, Do you use SPRD or do you prefer manual conversion from PDMS specs into S3D specs?	
Are the required Specs available in SPRD?	
c. Which standards on dimensional data and materials are used for piping components (ANSI, DIN, JIS, ...)? (Please enclose the piping class data and materials if possible)	
d. Are you using special piping spec types and materials (jacket, tubing, plastic, glass, etc)?	
e. Are the PDMS dimensions (parameters) checked based on standards (Face to Face Values)? (Please provide details so that it needs to be seen if they need to be customized also in S3D)	
f. Are some special customized Piping components used in PDMS? (Please provide details so that it needs to be seen if they need to be customized also in S3D)	
C. For Electrical Catalog and SPEC Conversion:	
a. Do you wish to have cable tray SPEC and Catalog converted from PDMS to SP3D? (This is required so that Cable Trays can be modeled in S3D directly.)	
b. Are some special customized cabletray components used in PDMS? (Please provide details so that it needs to be seen if they need to be customized also in S3D)	
D. For Piping Conversion:	
a. Number of Pipe lines (line list) and Isometric Drawings do you have?	
b. Do you have underground Piping in PDMS? Does it also need to be converted to S3D?	
c. Is it a one to one relationship between PDMS and SP3D Piping Specification?	
d. Is it required that the converted lines can be extracted by Isogen or is a pure model translation sufficient?	
e. Does the customer want to have own involvement or is a complete delivery required by CAXperts?	
f. What is the requirement for Pipe Supports?	
i. Only logical is sufficient?	
ii. Do you want to convert physical pipe supports?	
1. If "Yes"	
How many physical pipe supports (total number and types) are there?	
Do you require the generation of a catalogue?	
E. For Equipment Conversion:	
a. How many numbers of Process equipment need to be converted?	
b. How many numbers of non process equipments are there?	
c. Was the modeling done using Primitives?	
d. Do you have any models imported?	
F. For Civil & Str...	
a. W...	

Thank You



- We are looking forward to making your experience with TecSurge PDMS to S3D Plant Migration an easy one.
- Please complete the exit survey.
- For business inquiries, please contact Rengan Jayakrishnan, Global Sales Manager at rengan.jayakrishnan@tecsurge.com.
- Connect with us on [LinkedIn](#).
- For more information, please visit www.tecsurge.com
- You will receive a follow up email including the recording of this webinar.