"Standards in Action"

A brownfield operations example

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Executive Summary

- Brownfield Plant Operator has a heritage of 3D models ('n'000's) that have been developed over the years

- There was no 'overarching' catalogue, model management or change management environment in place, which resulted in this significant 'asset' of information being under-utilized

- There was no coordinated process of updating, 'as-building', checking, project alignment etc. which meant that many of the models did not match either 'what was out on the plant' or 'what anyone planned to be on the plant' – as such exposed decisions cost and risk

- Since there was no coordinated refreshing of the models, they were on multiple versions of the originating software, which would have resulted in a significant cost exercise to refresh to the latest version

Engagement

- Model Management – provide a CAD neutral way to capture, catalog, manage, distribute and access this wealth of information. Provide accessibility for operations, maintenance, turnaround, process, reliability and projects groups

- Content management and evolution – provide an 'a la carte' menu of solutions so that the business was not exposed to a high cost, software version alignment and content refresh exercise

- Business Integration – 3D is a critical business information resource for many purposes, but it remains an island of information without integrating into the core business processes

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A range of options (a la carte) to optimize/minimize cost/schedule and improve integrity…

1. Capture / manage what you have (native 3D models and databases) and make it available in a neutral manner (e.g. without the source tool needed at the desktop)

    "*Provide stakeholders a solution with shared access to their 3D models*"

2. Minor plant modification where 3D model **is** up-to-date but will not materially change

3. Minor plant modification where the 3D model **is not** up-to-date, and will not materially change, but is not cost effective to recreate the model

4. Minor plant modification where the 3D model **is not** up-to-date, and will not materially change, but is not cost effective to laser scan

5. Major plant modification where size of model, global workshare etc are important

Core Information Management Capabilities

Engineering Content Management (EngCM)

Product structure management

Document management

Document control

Visualization & Collaboration

Collaboration Web Portal

Data navigation and hotspotting

Application agnostic
multi-format visualisation
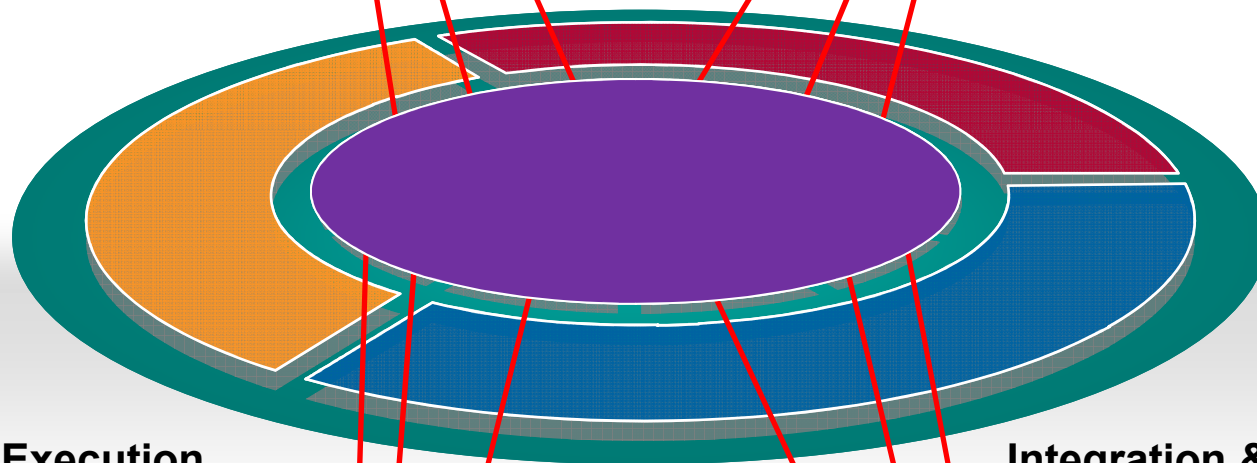
Definition & Execution

Workflow definition & execution

Configuration management

Progress management

Integration & Interoperability

Data validation & transformation

Data warehouse & segregation

Application integration

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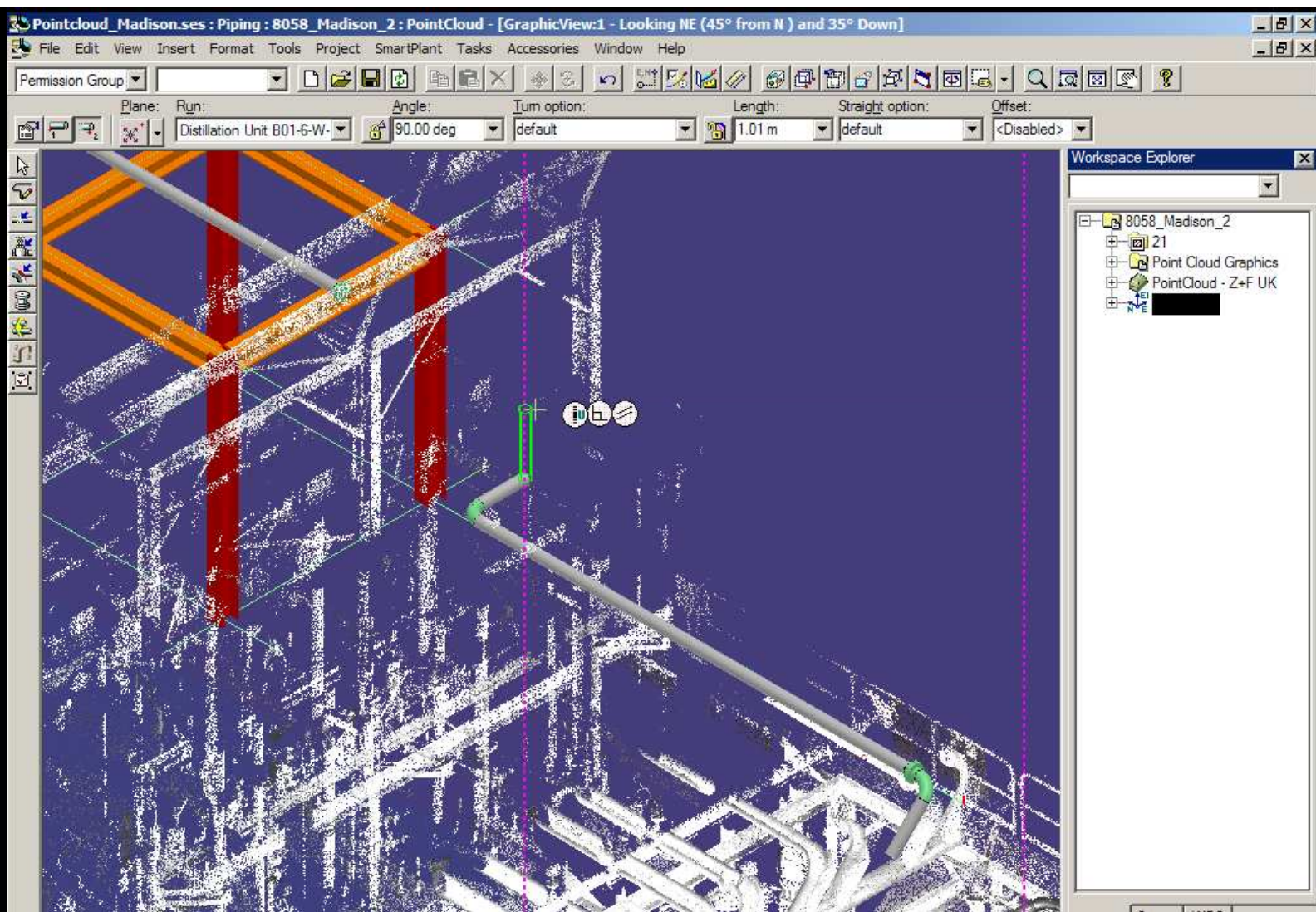
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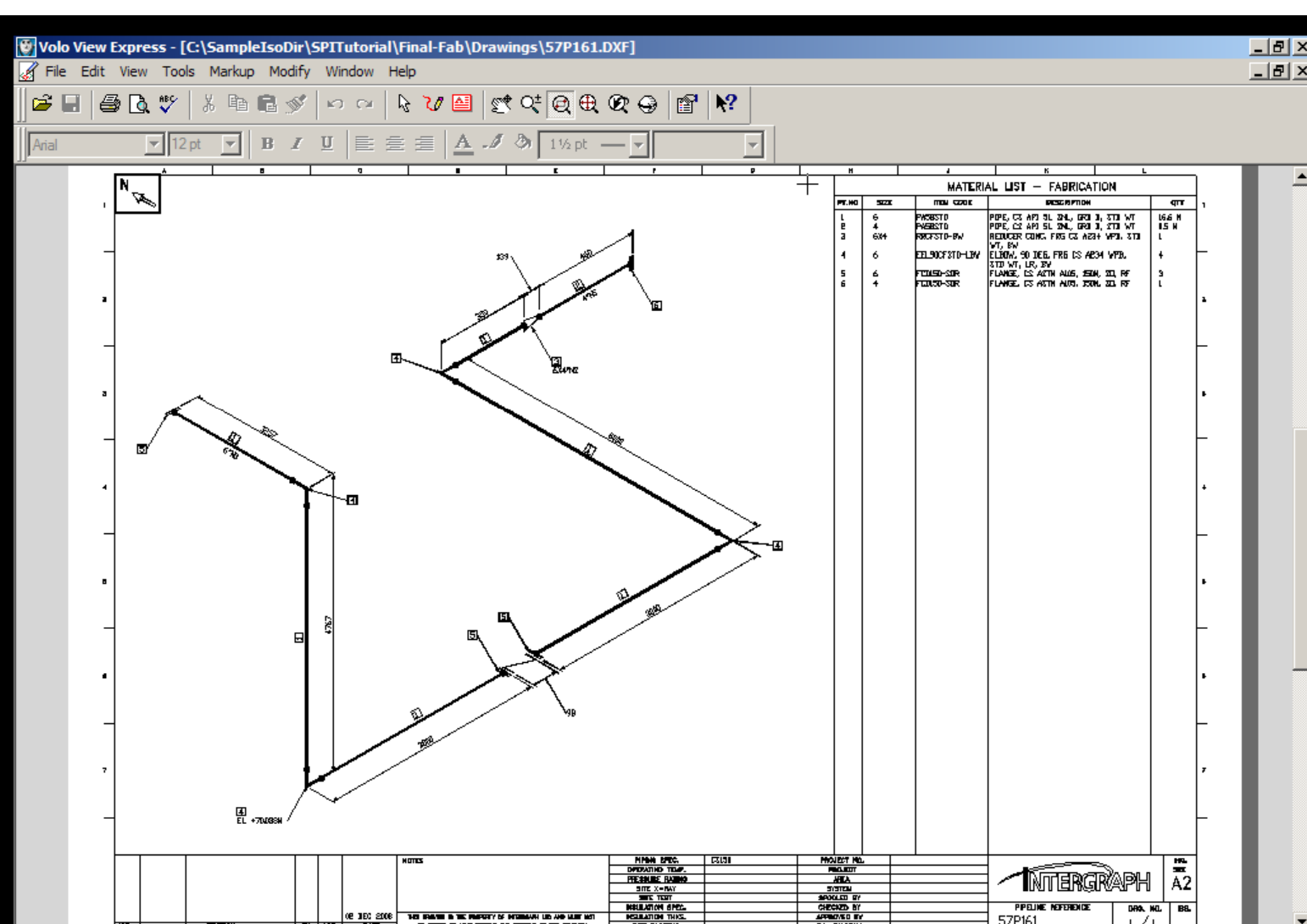
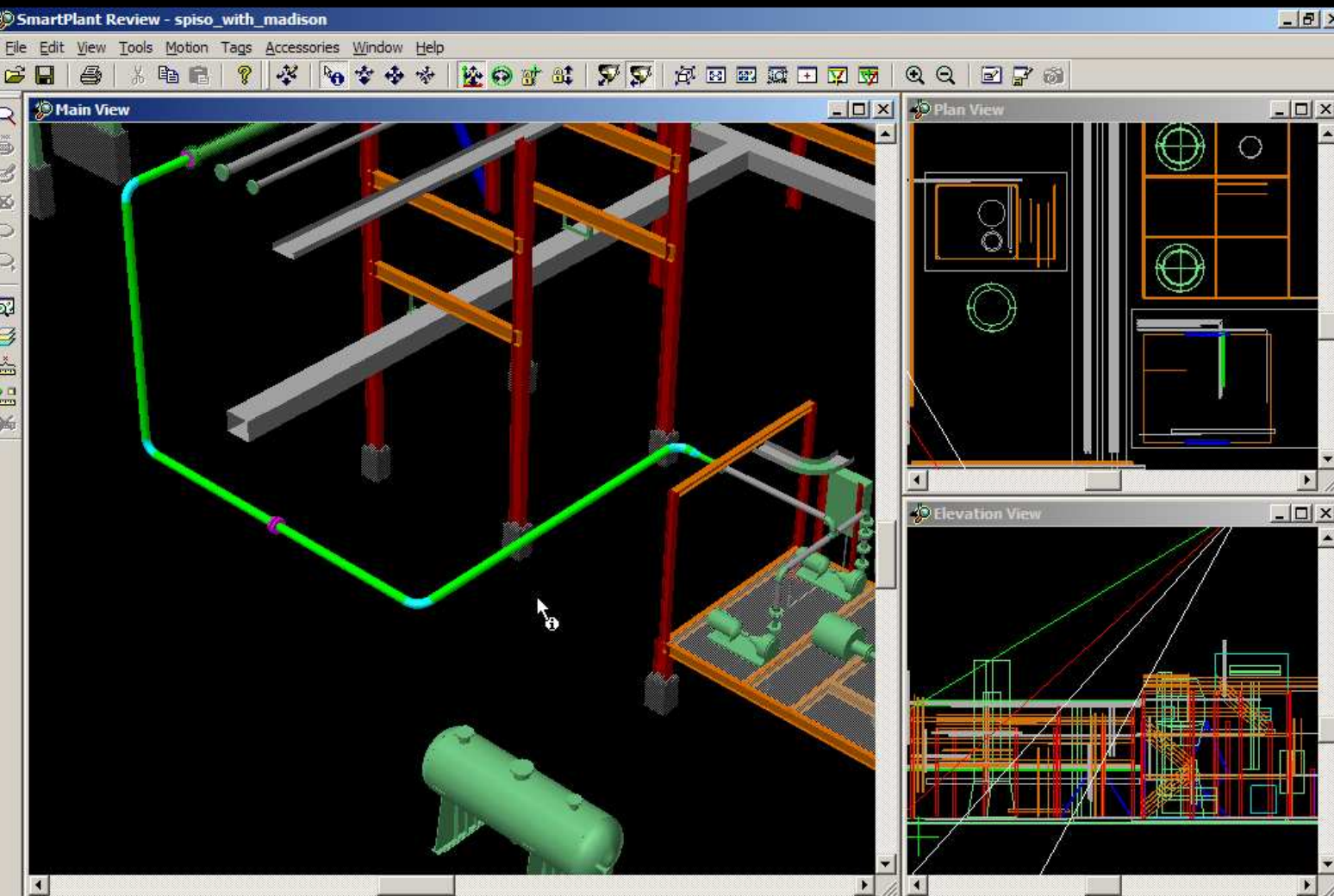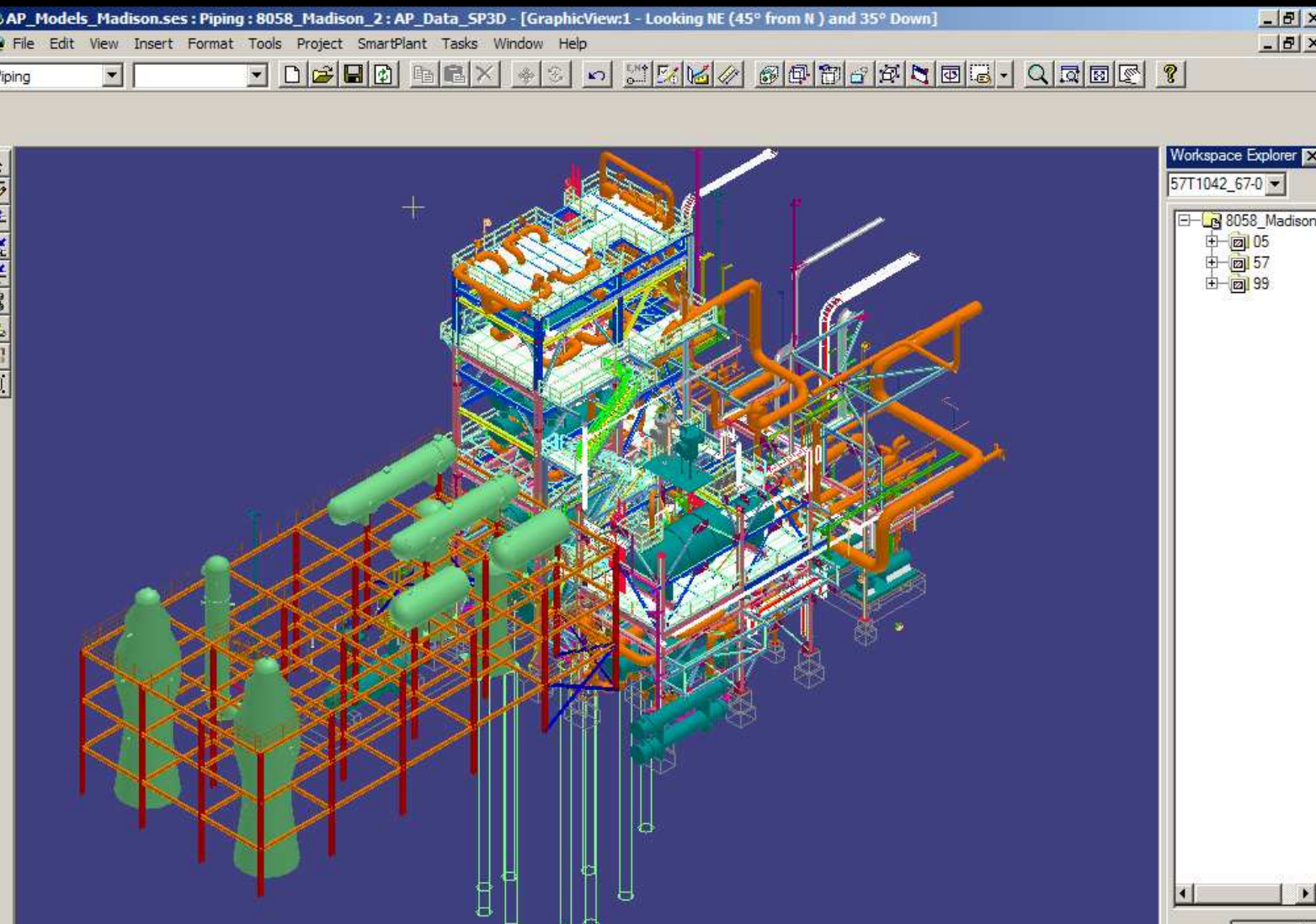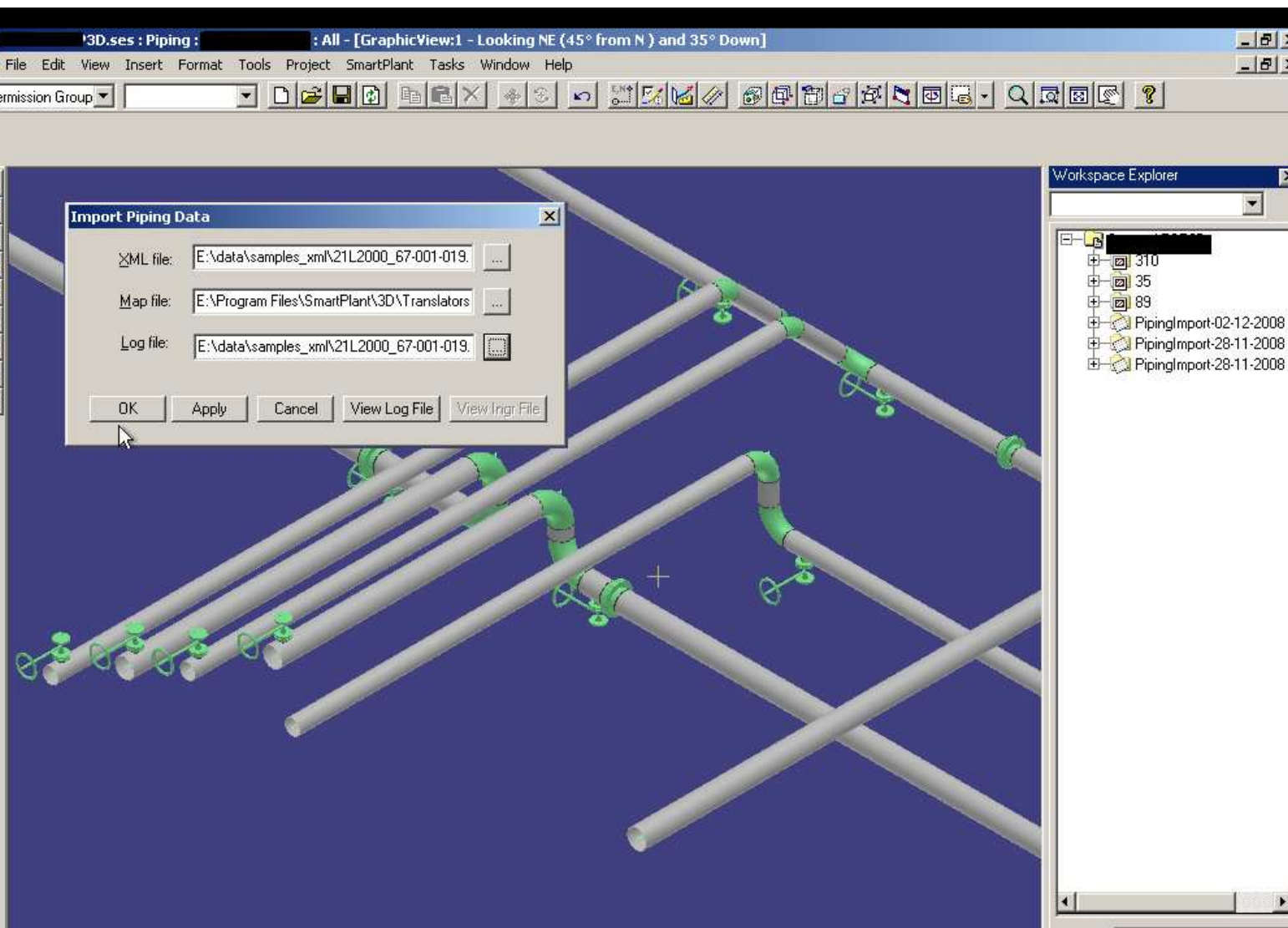or plant modification where the 3D model **<u>is not</u>** up-to-date, and
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consistency

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During load of legacy models extract tag information

Compare against master tag registry

Validate the tags before loading them into SPF

Report on any exceptions which are flagged back to EPC for correction

Process is repeated as each new version is checked back in

Client has a better idea of the true quality and state of their model data

Has a program by which they can monitor the improvement of that quality as they move though sustaining engineering projects

Benefits

Hybrid approach for existing native content and neutral ISO15926 content reduced the cost and risk exposure for the customer

A comfortable learning exercise not a research project…

Provided an approach to data take on and conversion at the pace that suited projects that were planned for execution

As needed conversion and not all-or-nothing…

Provided a range of tools to suit the task at hand, not a one-size-fits-all
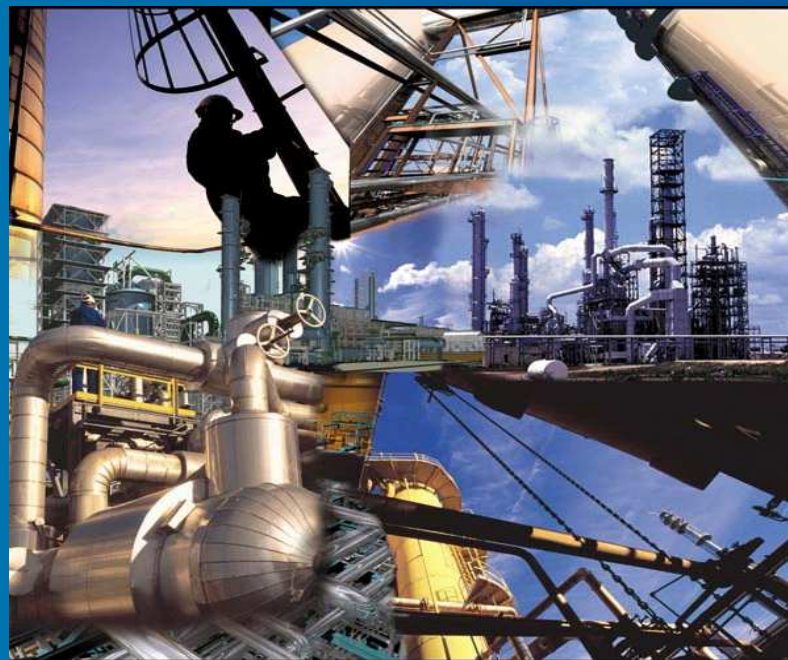
Not I have a hammer, go look for nails…

Allowed all of the content to be exposed/accessible to all stakeholders with the tools they were familiar with, and for those that didn't have the native tool provided a common, neutral interface

Obviated any fear of proprietary, content 'lock-in'…

Harmonized existing legacy with latest generation tools

Provided a bridge to future projects

– evolve into new tools and new work processes

INTEGRATING THE ENTERPRISE