ASD FEED SOLUTION

ASD FEED Solution: Building on continuous innovation over the past 10 years with Automatic Pipe Routing, ASD introduces the Stand-Alone and Integrated FEED solutions comprised of vastly improved and new software modules to provide a complete solution for FEED projects. Over 10 projects have been completed with these ASD Solutions, successfully, and implementations are growing in numbers.

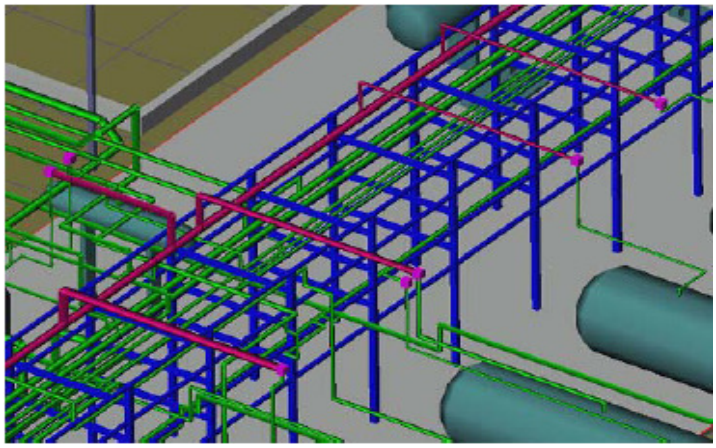
Stand-Alone FEED Solution: This solution does not require any external Databases, CAD tools, or applications. This package provides a complete solution for 3D Plant layout & automation for conceptual / FEED stages of applications.

OptiPlant (Improved): Optiplant combines 3D conceptual modeling with automated pipe routing to develop a conceptual 3D model rapidly. With Optiplant, clients are delivering an accurate, high- quality, and interference checked 3D Piping and equipment layout for all types of Process, Offshore and Power generation Plant facilities, within an extremely compressed schedule.

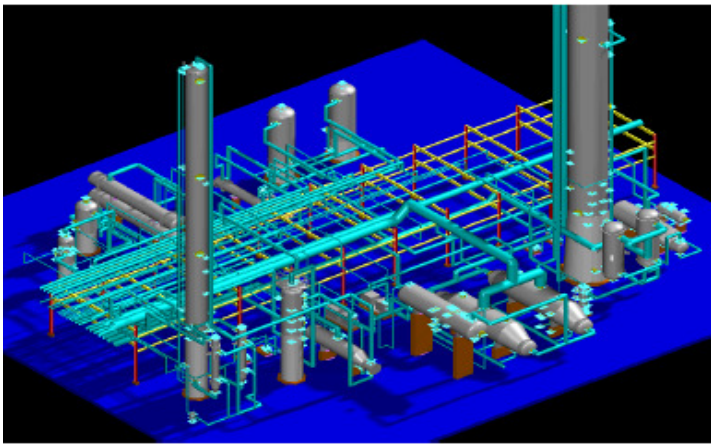
OTHER COMMON MODULES
Plant Drafter (new)
Pipe Support Optimizer (PSO) (Improved)
Web3D (new)

Integrated FEED Solution: ASD has packaged and improved its flagship product, the Pipe Router, to provide a FEED solution integrated to ANY Detail Design Package. Whether your Detail Design platform is PDS, PDMS, AutoPLANT, SmartPlant 3D, or PlantSpace, the iFEED solution can leverage any existing 3D model and provide an efficient method for delivering a FEED project with all piping data being re-usable for the Detail Design.

Pipe Router: The ASD Pipe Router is available on 2 CAD platforms: Microstation and Aveva's PDMS Engine. By leveraging an existing equipment and structural model, the Pipe Router provides interference free 3D automatic pipe routing of a large batch of lines, quickly. The Pipe Router provides the option for routing with rule-based nozzles or to nozzles modeled on the imported equipment.



- ✓ Detailed Imported 3D Model
- ✓ Quality 3D Clash free Pipe Centerlines
- ✓ Automation of Piping Design
- ✓ Intelligent Transfer to PDS / PDMS for Detail Design



- ✓ Conceptual 3D Model
- ✓ Optimized Plot Plan / Layout
- ✓ Accurate early MTO
- ✓ Automation of Estimate generation

ASD FEED PACKAGE

THE KNOWLEDGE e-CONNECTION COMPANY

Core Router Improvements

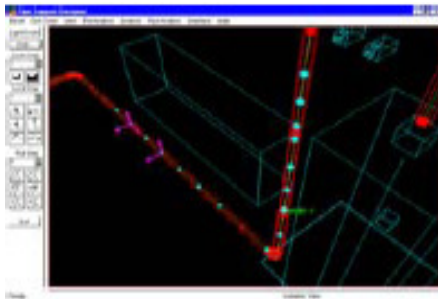
- Removal of Oracle to provide a lower cost and easier maintenance solution
- Rule based nozzle placement now with more rules and customizable rules for all parametric equipments.
- Batch routing is 3 to 4 times faster than before. For example, a batch of 500-600 lines routes in about 30 minutes with all important in line components automatically placed
- An expanded library of Piping design data to support accurate routing and component placement criteria
- Improved and Faster User Interaction through consolidation of all major functions into a single menu

ASD's FEED solution package has been improved based on the following trends:

- Information available during early concept and FEED is sufficient for ASD solution execution. A 3D model can be developed with the basic information available (i.e. Plot Plan, Paper PFD's/P&ID's)
- Although standard routing rules and practices are built-in, User have the ability to change piping configuration based on their Company or project specific criteria through easy input templates
- Application is significantly broadened by our Global Clients to the following types of plant
  - ✓ Oil and Gas plants
  - ✓ Offshore Platforms and FPSO's
  - ✓ Pharmaceutical
  - ✓ Refinery and Chemical
  - ✓ Coal-based Ethanol

Pipe Support Optimizer

- ✓ Automatic pipe support location and support type optimizations for hot and critically loaded pipe
- ✓ Stress, displacement and support reaction requirement verification.
- ✓ As result, the pipe lines with supports added can be extracted for stress isometric generation.

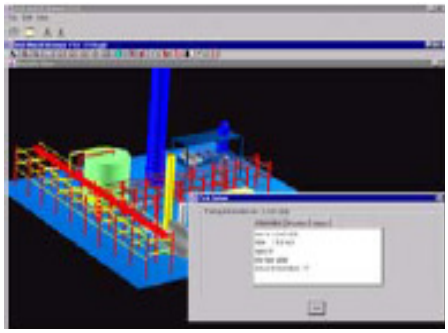


Plant Drafter

- ✓ 2D plant drafter can automatically create equipment and piping General Arrangement drawings suitable for information exchange at the FEED stages of application

Web 3D

- ✓ ASD's Web 3D visualization and web collaboration tool can be used for reviewing the 3D model from remote locations and documenting design comments in form of red-line remarks



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