

Platform Design: How to Approach Designs in a Platform Environment

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Who is Tennant?

*Helping to create a cleaner,
safer world*

Tennant is a world leader
in industrial and
commercial floor and
street maintenance
equipment



Tennant Statistics

- Chris Killingstad, President and CEO
- **2,500 employees worldwide**
 - 1,800 North America
 - 600 Europe
 - 100 International
- **Six manufacturing centers**
 - Minnesota (2)
 - Michigan
 - Uden, The Netherlands
 - Northhampton, UK
 - Qingpu, China – planned 2006
- **NYSE symbol TNC**

Platform Design:

Is “a defined set of parts, sub-systems, interfaces and manufacturing processes that are shared among a set of products, thus allowing the development of derivative products with cost and time savings.”¹

¹ Meyer, M. and Clark, K., “*Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms*,” *Administrative Science Quarterly* 35, 1990.

How to Approach Designs in a Platform Environment

What's this presentation going to cover?

3 Main Topics

- **Suppression by Expression**
 - Used on Assemblies
 - Individual components
 - Combination of components across assemblies
- **Modeling Spreadsheet**
 - Control Design Parameters
 - Control Component Options
- **Positioning of systems**
 - Alleviates the Difficulties of Mating Components

Suppression by Expression: It's not just for features.

- You can control the suppression of a Sub-assembly, a single component, or groups of components across different sub-systems **without** Advanced Assemblies License (component filters)
- Suppressed components can be toggled on and off the Assembly Navigator (ANT) to simplify the ANT structure display
- You can control the suppressions in one easy location: the modeling spreadsheet

Modeling Spreadsheet

It's more than just MS Excel.

- Allows you to collect all defining data in one simply to use location
- Allows you to send design changes through all the components in your assembly at one time
- Does not require WAVE
- All components are independent
- Does require some forethought in the design

System Sketches: Using sketches in the Layouts.

- Mating component to component is a cumbersome project and can become unpredictable
- Mating components to other components in different layouts causes the creation of WAVE geometry
- Mating systems or components to sketches is more reliable and allows you the flexibility of the sketch
- Sketches can be easily copied across layouts

Questions?

- FAQ's

- Q: What really happens to the expressions during the spread sheet update?
- A: They are replaced. Even locked expressions are replaced. (NX2)
- Q: How do you get rid of all the extra expressions in the parts that show up?
- A: Run a part cleanup: Turn on WP and Comp's and Delete Unused Expressions. (Do **Not** turn on Delete Spreadsheet Data and beware of any part cleanup MACRO's!)
- Q: How much time does it really take to set this up?
- A: Not much. But you need to decided on your driving expressions first.