TATA TECHNOLOGIES

Preparing Your Bill of Materials for ERP Integration

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Preparing Your Bill of Materials for ERP Integration

Introduction

In today's fast-paced manufacturing environment, efficiency and accuracy are paramount. One way to achieve this is by effectively managing your Bill of Materials (BOM) using Autodesk Vault's equivalence value property mapping. This approach not only helps in combining like items but also ensures seamless integration with your Enterprise Resource Planning (ERP) system. Let's explore how you can leverage this powerful feature to optimize your BOM management.

Understanding Equivalence Value Property Mapping

Equivalence value property mapping in Autodesk Vault allows you to define relationships between files and items. This is particularly useful when you have multiple items that are functionally identical but may have different part numbers, stock numbers or descriptions. By mapping these properties, you can ensure that like items are treated as equivalent, simplifying your BOM and reducing redundancy.

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Steps to Implement Equivalence Value Property Mapping

1. **Access Vault Settings**: Open Autodesk Vault and navigate to the administration tools. Select the 'Vault Settings' option to access the configuration settings.
2. **Define Equivalence Properties**: Under the 'Behaviors' tab, select 'Properties'. Here, you can define the equivalence properties that will be used to identify like items. For example, you might map properties such as part number, description, and material.
3. **Set Up Property Mapping**: Choose the 'Equivalence Value' property from the list and select 'Edit'. Configure the mapping direction to be bi-directional, ensuring that changes in either property will reflect across all equivalent items
4. **Combine Like Items**: Once the equivalence properties are set up, Vault will automatically combine like items in your BOM. This reduces the number of line items and simplifies the overall structure

Integrating with ERP Systems

Integrating your BOM with an ERP system is crucial for maintaining consistency across your manufacturing processes. Here's how you can achieve this:
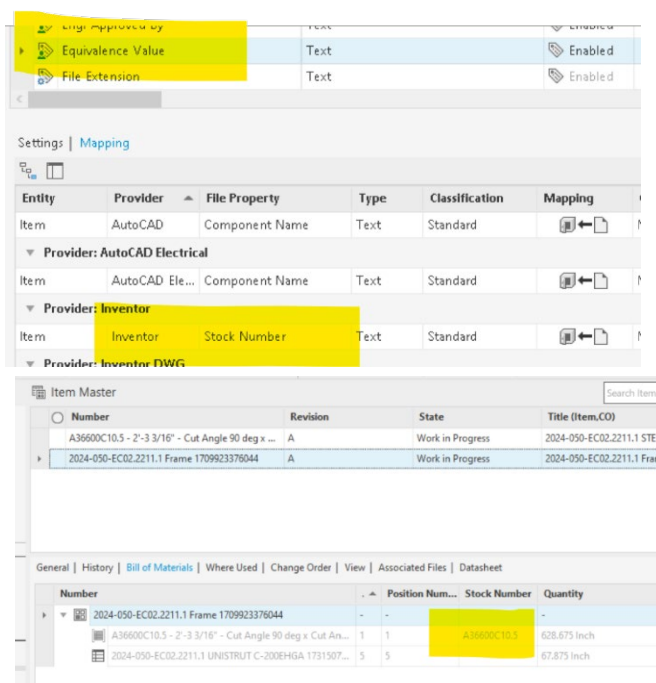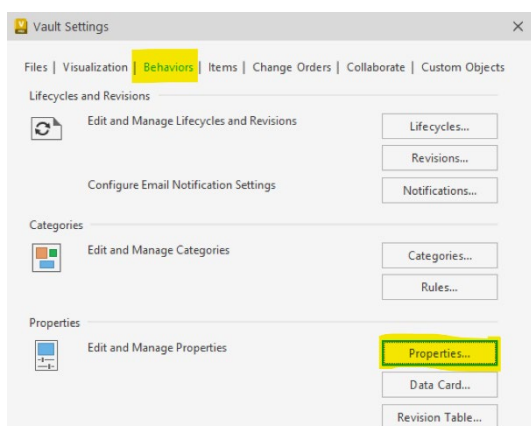
1. **Export BOM from Vault**: Use Autodesk Vault to export your BOM in a format compatible with your ERP system. Common formats include CSV, XML, and Excel.
2. **Map ERP Fields**: Ensure that the fields in your exported BOM match the corresponding fields in your ERP system. This may involve some initial setup to align the data structures.
3. **Import into ERP**: Import the BOM into your ERP system. The equivalence value property mapping ensures that like items are already combined, reducing the risk of errors and inconsistencies.
4. **Automate Updates**: Set up automated processes to regularly update your ERP system with the latest BOM data from Vault. This keeps your inventory, production schedules, and procurement processes in sync.

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Benefits of Equivalence Value Property Mapping

- Reduced Redundancy: By combining like items, you minimize the number of unique entries in your BOM, making it easier to manage and understand.

- Improved Accuracy: Equivalence value property mapping ensures that all equivalent items are treated consistently, reducing the risk of errors.

- Seamless Integration: With a simplified BOM, integrating with ERP systems becomes more straightforward, enhancing overall efficiency

- Enhanced Collaboration: Teams across different departments can work with a unified BOM, improving communication and collaboration.

Use Cases

- **Inventory Management:** Identify excess or shortage more effectively.
- **Quality Control:** Maintain accuracy for compliance and inspections.
- **Procurement Efficiency:**
  - *Example:* Frame Generator – Automatically calculate total length of stock materials like C channels or pipes.
  - *Example:* Routed Systems – Consolidate required lengths of flexible hoses for procurement.

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Conclusion

Tata Technologies specializes in enterprise integration, helping manufacturers unify their digital tools. Autodesk Vault provides a strong foundation for managing BOM data, but success relies on strategic property mapping and metadata alignment.

Our team understands that while metadata structures are often similar across companies, naming conventions vary. We help standardize and configure your Vault environment for optimal ERP integration.

By reducing redundancy, improving accuracy, and enhancing collaboration, you can drive greater efficiency and productivity across your organization.

References

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2. A collaborative and integrated way of design and simulation part II. Link to the MODSIM webinar II
3. The blog series on Simulation topics with the latest and greatest about SIMULIA product updates. Link to Blog Posts

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