Agenda

- Introduction to DMS
  - What is DMS?

- Four Core Competencies of DMS
  - ECAD Library Management
  - Component Management
  - CAD Design Process Integration
  - Enterprise ECAD Management (& Integration)
More than Library Management

What is DMS?

- **DMS (Data Management System)** is Mentor Graphics’ integrated solution for the Expedition Enterprise PCB Design flow that will provide:
  - Enterprise CAD Library Management
  - Synchronized Multi-Site Library Distribution
  - Immediate Component Information to the Designer’s Desktop
  - WIP Partlist/BOM Management
  - Enterprise ECAD Configuration Management
  - Enterprise Integration – Links to PDM/ERP/CIS and other Business Systems

- DMS is core to the success of all Enterprise/Multi-Site customers using the Expedition design flow
- DMS stores, relates, and manages ECAD data
Types of Data Stored in DMS

What is DMS?

Computer Aided Design (CAD) Data
- Part Requests
- Library Mappings
- Schematic Symbols
- PCB Footprints
- Pads/Padstacks
- Drill Holes

Expedition Design Data
- Reuse Blocks (IP)
- Shopping Lists
- Parts List/Bill of Materials (BOM)
- Variants
- Configurations (e.g. DxDatabook)

Part Attributes
- Part Numbers
- Part Status
- Substances/Materials
- Values (resistance/capacitance etc)
- Simulation Models
- Documents/Datasheets
- MFG & MFG Part Numbers
- Compliance Restrictions
Where is the data stored?
- DMS is an ECAD infrastructure that stores data in an object-oriented database

How does it communicate with other systems and tools?
- Transactions are managed by a data server
Multiple Data Management Interfaces

- **Librarian**
  - DMS Desktop
  - DMS Librarian/Library Flow Manager

- **Component Engineer**
  - DMS Desktop
  - Library Researcher

- **Designer/Generic User**
  - DMS Desktop
  - DxDatabook
  - Part Request Manager
  - Library Researcher

- **Administrator**
  - DMS Desktop
  - Administrator Client
  - XML Console
  - Import Manager
Integrates Key Areas of the Design Process

DMS 4-Core Areas

1. **ECAD Library Management**
   - Parts Request, Library Distribution, Integrity

2. **Component Management**
   - Part Searching, Filtering, Compliance

3. **CAD Design Process Integration**
   - Part Selection, Instantiation & Assignment
   - Work In Progress Partlist/Bill of Material Management

4. **ECAD Management & Integration**
   - Deploy ECAD Configurations
   - Integrate with 3rd Party Business Systems (PLM, MRP, etc ...)
Core Area 1
ECAD Library Management
Core Area 1 – Seamlessly Integrates Multiple Disciplines

**Enterprise Library Management**

- DMS Component Engineer
- ECAD Administrator
- ROHS Library
- Military Library
- DxDatabook Configuration
- ECAD Configurations
- DMS
- EcAD Librarian (Site1)
- Librarians Working in Library Manager DMS Sandbox
- EcAD Librarian (Site2)
- Engineers Working in DxDesigner
- Electrical Engineer (Site1)
- Electrical Engineer (Site2)
- Electrical Engineer (Site3)

ECAD Part Requests & WIP Design Part lists for where-used
Core Area 1

CAD Library Management ↔ Librarian

- Multi-Site Library Management with Familiar Interface
- Secure Library Access with Object-Level Locking
- ECAD Parametrics are Indexed During Check-In
  - Google-like search (corporate reuse)
  - Compare parametrics (differences)
- Automated Library Distribution
- ECAD LifeCycle Status
- Detailed CAD Graphical Previews
  - Pin Mappings
  - Symbols
  - Cells, Padstacks, pads, holes, etc.
- Datasheet management
- Extended Where-used

DMS Librarian/Library Flow Manager
Core Area 1

Part Request Manager

- Web-Based Part Requests
- Add Files/Attachments
  - Datasheets
  - Local symbol
  - Simulation models
- Integrated into Library Authoring Tools
- Customizable Web-Based Form Editor
- Optional Customizable Work Flow
Core Area 1

Part Request ↔ Design Engineer

- Quick access to submitted requests
- Visibility into ECAD objects being created by Librarians
- Visibility into completion status of each object
- Automatic email updates/notifications
- Eliminates the need to contact the librarian
Core Area 1

Part Request ↔ Librarian/Comp Eng

- Adds Part Request Process to Library Manager
  - Eliminates need for email
  - Link to PRM Web Pages
  - Approve/Reject requests
  - Add CAD views to requests
  - Manage CAD complete status
  - Release ECAD views

- Part Request Actions Based on User Rights

- Available Tracking of Library Metrics
Component Information Management

Core Area 2 – Component Repository Driving Part Selection

- Approved Parts List
- Compliance
- Advanced Searching & Comparison
- Obsolescence
- Where Used
- Bill of Materials
- Collaboration
- Part Models
- Datasheets

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Core Area 2

Component Information ⇔ Comp Eng

- Supply-Chain Datamodel
  - Manufacturers
  - Manufacturers Part Numbers

- Property Management
  - Release Checking
  - Property Typing
  - Unit/Pattern Matching

- Bulk Modification

- Document Management

- Multiple Approved Vendor Lists (Production Libraries)

- Corporate Search Presets

- Compliance Management

NOTE: In many organizations the Component Engineer = ECAD Librarian
Core Area 2

Component Information ↔ Librarian

- Synchronize Component Data with 3rd Party Suppliers
- Multiple Components → Generic Library Mappings
  - Bulk Load Part Series
- Where-Used Comp → Library
- Link to ECAD Graphical Preview including Symbol/Cell Alternates
- Support Multiple ECAD Libraries with a Single Component Model
- User Role/Access Rights
  - ECAD data owned by Librarian
  - Manage Multiple CIS Integrations
Core Area 2

Component Information ↔ Designer

- Immediate Access to Enterprise
  - Part Obsolescence
  - Cost & LeadTime
- Source for Part Selection/Instantiation
- Preferred Parts – Component Filtering
- Component Comparison
- History Tracking of Part Changes
- Visual Indication of Part LifeCycle
- Access to Part Alternatives

NOTE: Simulated images from DMS Library Researcher
Core Area 3
CAD Design Integration
Core Area 3 – Integrated into Expedition Enterprise

CAD Design Process Integration

- Symbol Instantiation
- Part Assignment/Refinement
- Design Compliance Audits
- Export BOMS in Multiple Formats
- Design Part List Management
  - Variants
  - Function-Managed Variants
- BOM Status & Release Management
- BOM Check In / Out
- Document Management
Core Area 3

DxDesigner Integration

- DxDatabook Component Source
- Search Logical/Logical-Physical Reuse Blocks (IP)
- Production Libraries
  - Component Filtering
  - Optimized Product-Based Libraries
- Links to Detailed Part Information
  - Graphical Preview (w/ Mapping Lines)
  - Properties & Documentation
- Instantiation & Part Assignment
  - Approved Part Rules (non-obsolete parts)
  - Replace Rapid Prototype Parts with Approved Parts
- Save BOM to DMS
Core Area 3
Manage Design BOMs/Variants

- BOM Extracted from Design Database
  - Cross-probe & highlight
  - Major/minor versioning
  - Persisted links to ECAD & Component data
  - BOM Compare mechanism
  - Instantiate from BOM
  - Export BOM meta data subset
    - Thermal, Stress, etc ...

- BOM Status and Release Management
Core Area 4
ECAD Mngmt & Integration
Enterprise ECAD Management

- Support Multiple ECAD Releases
- DMS can be deployed with Java Web-Start
- Create/Version/Deploy Expedition Configuration Files
- Multi-Site Administration from a Single Server
- User/Role Management
- Email Notification
- Express Install Provides OOTB Server Installation & Setup
- No Database or Server Experience Required
- Push-Button Server Upgrades/Migration
- Dedicated Application to Administer the DataFusion Server
Core Area 4

Enterprise Web Application Toolkit

- DMS Connector
  - DxDatabook Configuration
  - Filter DxDatabook using Component Filters

- DMS Browser
  - Deploy/Install DMS Desktop via Web
  - Application Auto-Upgrades from Server

- Library Researcher
  - Web interface into Library/Component Data (no install required)

- LDAP Integration Service
  - User Management & Authentication from LDAP servers

- Part Request Manager
  - Web-based Part Request Application

- DataFusion Tunnel (HTTPS Access)
  - Secure 3rd Party Gateway
Core Area 4
Integration with Business Systems

- Bring Data From other business systems to the engineer’s desktop (DMS does not have to “own” the data)
  - Part Availability
  - Lead Time
  - Inventory Information
  - Cost
  - Part Obsolescence
  - RoHS/Compliance
Enterprise ECAD Integration Formats

Choose from Multiple Integration Options

- ASCII Interface - Import and Export delimited text files
- XML Interface - Import and Export XML Files/Documents
- API – Extensive Application Programming Interface
- EDX – MGC Enterprise Exchange Format*

NOTE: The EDX format is being implemented/released in phases