

The Model Based Enterprise and Its Impact on Small Business

Presented by:
Mitzi Whittenburg, CPCCM, Fellow

June 19, 2014

Joint Base McGuire-Dix-Lakehurst Industry Day

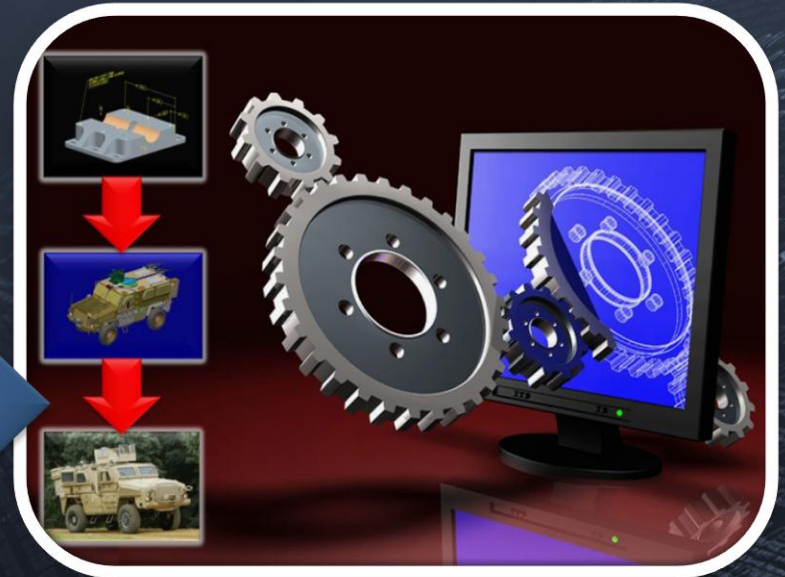
- **Mitzi Whittenburg, CPCM, Fellow**
 - Project Manager, UTRS
 - Government Support Contractor
- **Experience:**
30 years of procurement experience
- **Education:**
Holds a MBA in Acquisition & Government Contracts and a master's degree in Financial Planning from the University of Dallas and an undergraduate degree from Texas Christian University
- **Accomplishments:**
Recipient of a 2010 DoD Nunn-Perry at BAE Systems award for managing an excellent Mentor-Protégé agreement with a small disadvantaged Native American 8(a) woman-owned business
Specializes in small business mentoring, procurement analysis and supply chain best practices including leading strategic sourcing teams
Member of the NCMA Picatinny Chapter Executive Committee and recently published an article in the *NCMA Contract Management Magazine* entitled *Acquisition Strategy: Technology is the Key*



Transforming the DoD



**From
This**



To This

Drawing Based

Master 2D Drawing

Model Centric

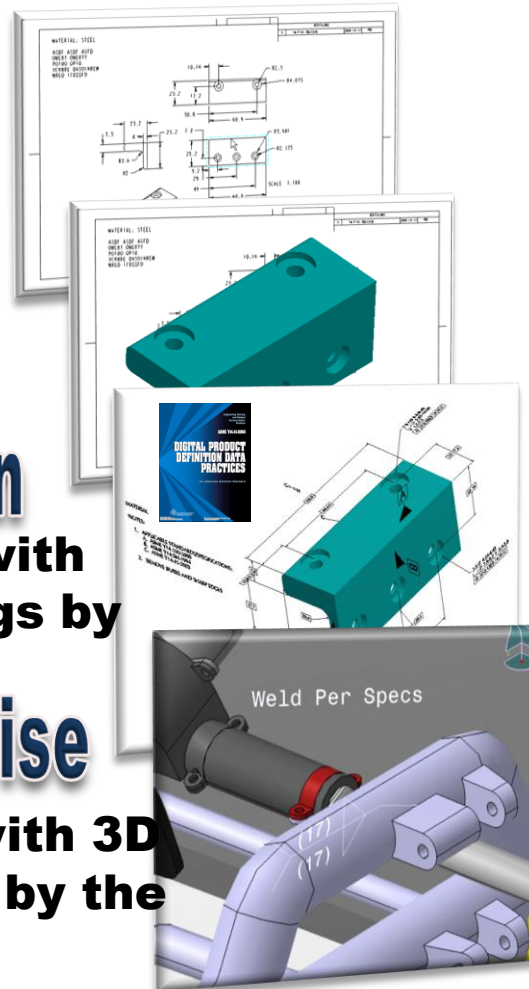
**3D CAD Model with
Master 2D Drawing**

Model Based Definition

**Master 3D CAD Model with
3D Drawing, 2D Drawings by
exception**

Model Based Enterprise

**Master 3D CAD Model with 3D
Drawing fully leveraged by the
Supply Chain**



**The
Journey**

There are many problems centered around the Technical Data Package (TDP), here are some examples:



Legacy Systems

- 2D TDP, if any
- Outdated
- Hard to manufacture from



No TDP

- Never Purchased
- Deemed too expensive
- Resides at the OEM



No Current OEM

- Original OEM out of business
- TDPs, if available are incomplete



Sustainment

- TDP may, or may not, exist
- Must reverse engineer
- Late in the lifecycle

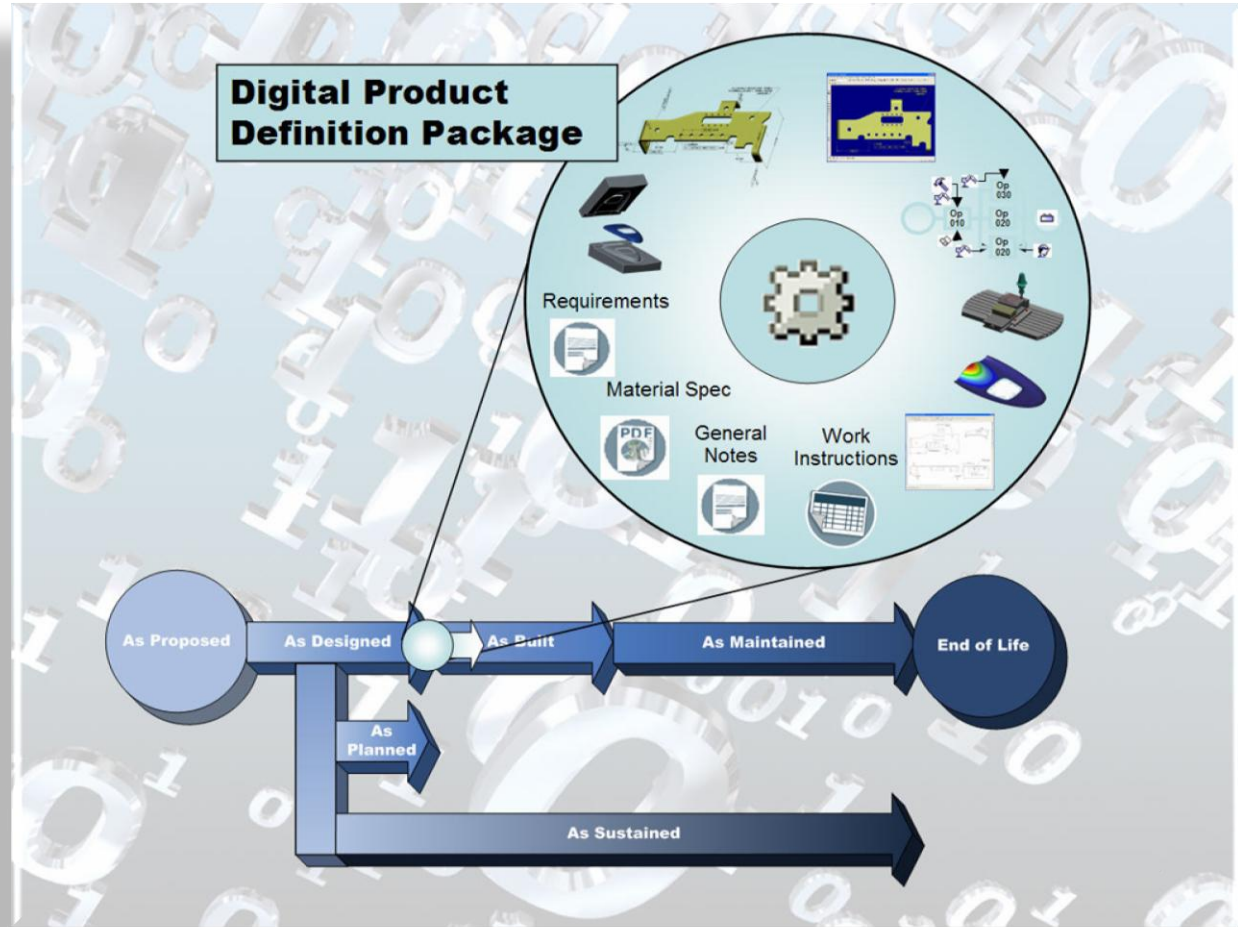
What are we talking about today?

- The DoD is modernizing how it receives technical data for weapons systems
- MIL-STD-31000A defines a Technical Data Package (TDP) and has been modified to support this modernization
- The effort is the cornerstone of moving the DoD to a Model Based Enterprise that can enable substantial efficiency gains, thus cost reductions in this fiscally challenging environment



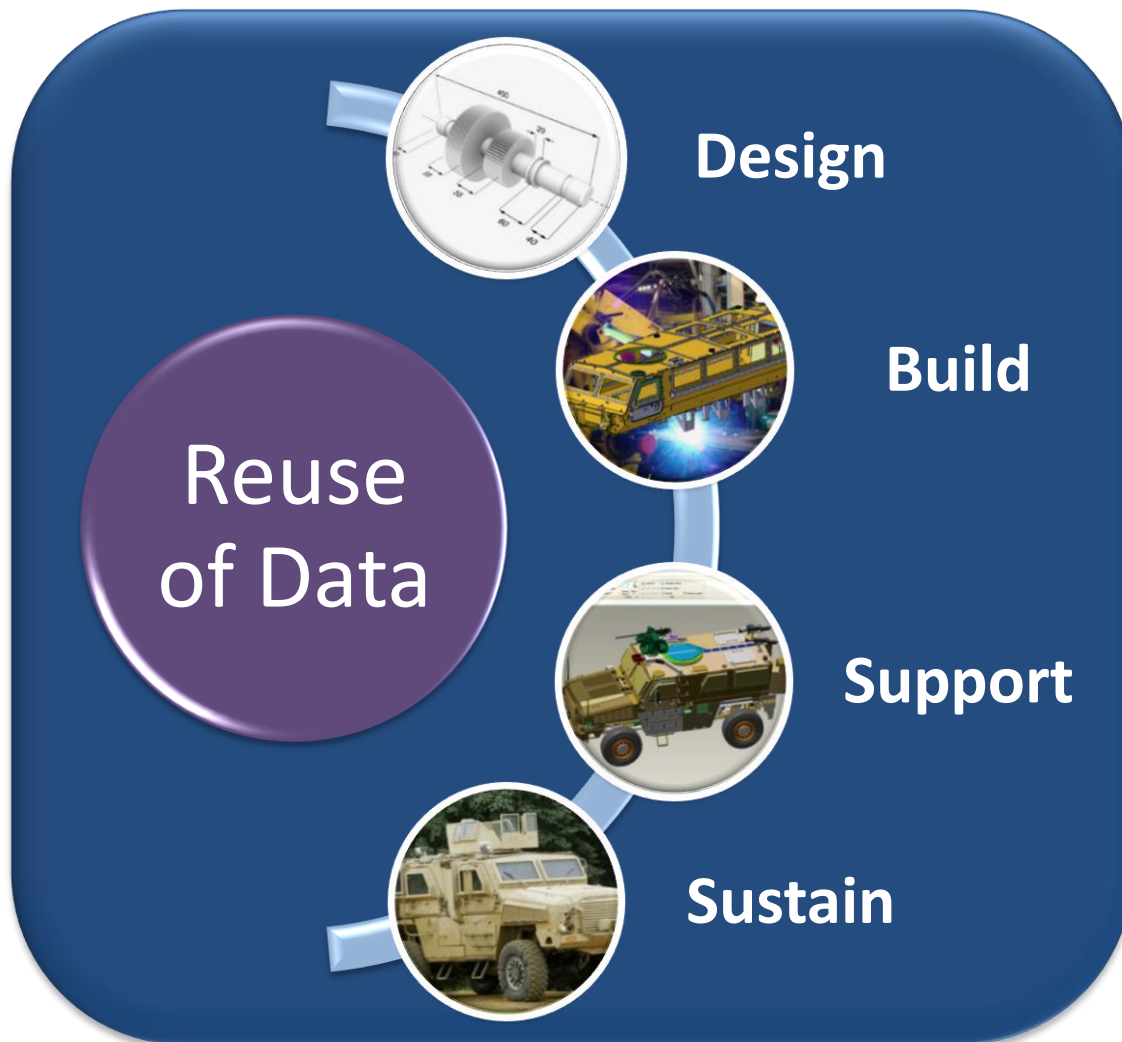
What is the TDP?

- 3D Geometry
- Associated Product Manufacturing Information (PMI), Annotations, and Notes
- Product Meta Data (i.e. Revision, Used On, Legal Noticed)
- Other Associated Documents
- Configuration Management
- Security



3D TDP Reuse

A 3D TDP enables the reuse of data throughout the lifecycle, without it the data must be reverse engineered or re-mastered



Why are we doing this?

The main purpose of the 3D TDP is to provide all Downstream users a 3D data set that they can reuse without re-mastering the data.

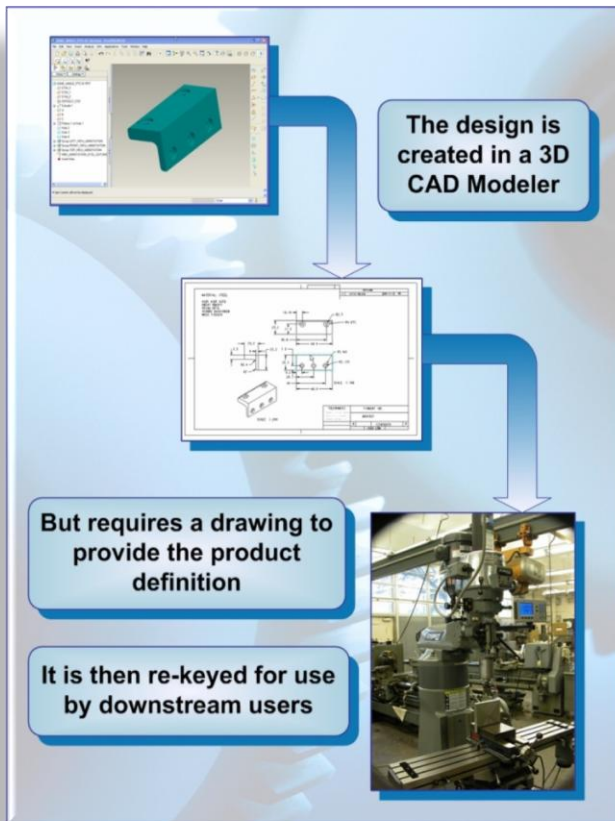
For suppliers this means they will have the ability to drive their CAM software straight from the model along with numerous other processes.

All of this reduces the time to mission for the Warfighter.



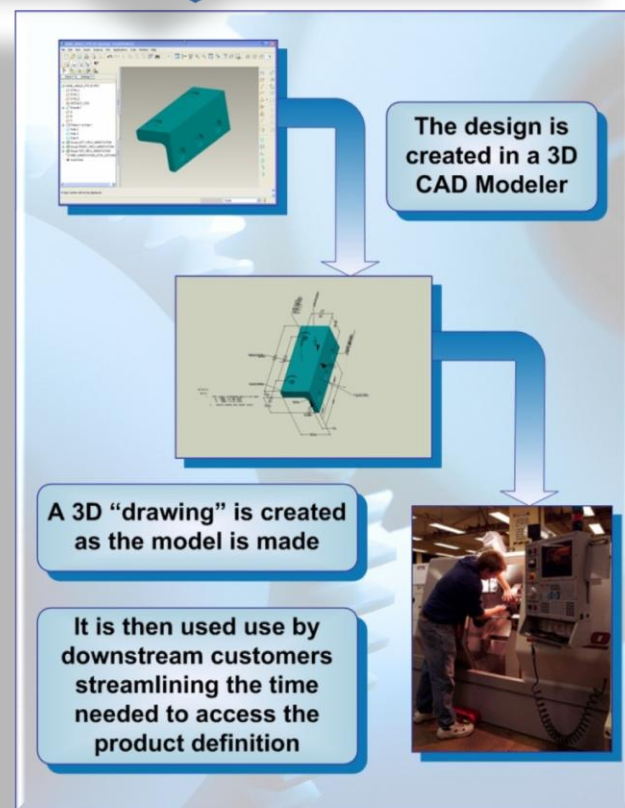
Why Should You Care...

- It reduces errors and cost by limiting the number of times an object is re-mastered
- It dramatically cuts the time to mission
- It allows for increased collaboration and less ambiguity
- It is the direction the DoD is heading for TDPs



Traditional Approach

MBE Approach



The Cost of a Drawing Based TDP

■ Acquisition

- Inability to source
- Increased cost of changes
- Data re-mastered for MFG
- Increased ambiguity
- Schedule delays

■ Sustainment

- Reverse engineered TDP
- Depot start up delays
- Tech pubs delayed
- Decreased readiness
- Increase rework

Studies show that 50% of an engineer's time is lost due to dealing with "bad" data

Cost



Time



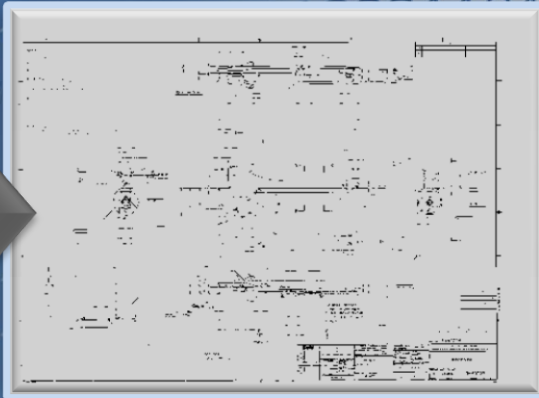
A Changing Culture...

- Over the past 7 years the DoD has been making a concentrated effort to update not only its infrastructure but its process to be more on par with industry
- MBE has been a focus of many ManTech projects aimed at changing the culture from a Drawing based one to a true MBE environment
- Standards and Policies have been released in many areas to not only certify the model as the master but to procure a complete Technical Design Package whenever possible for reuse in sustainment
- To this end MIL-STD-31000 (the TDP standard) has been updated to be compatible with a 3D MBD

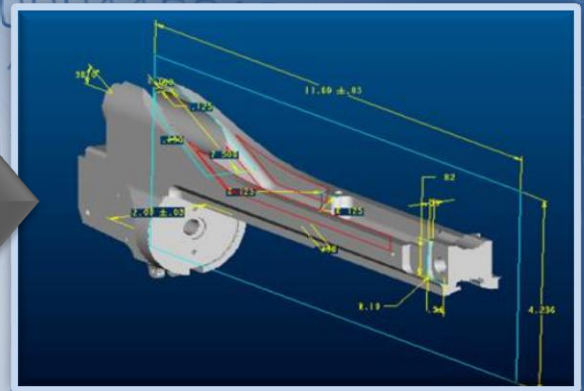


Why a Schema? Enabling Reuse Through Organization

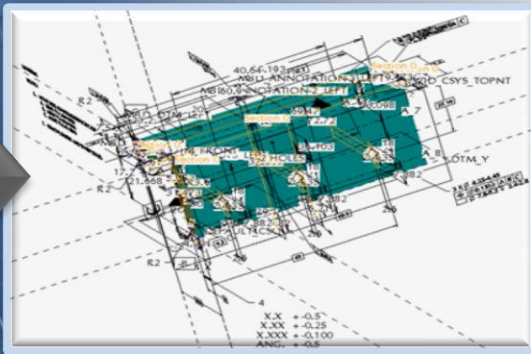
From
This



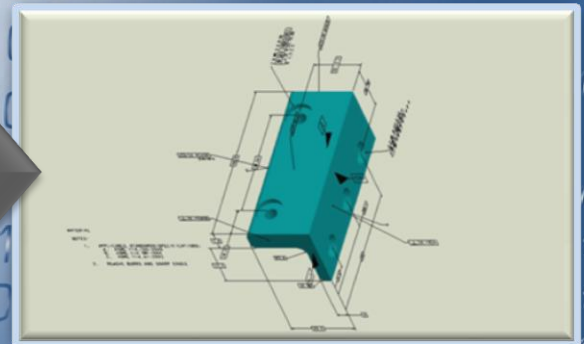
To
This



From
This



To
This



- **The DoD is making the switch to a MBD based 3D TDP**
- **It will be CAD Agnostic**
- **It will facilitate re-use of the data**
- **It will contain the complete product definition**
- **It will help reduce the time to mission**
- **It will revolutionize the industry**
- **It is ready**



MBE Capability Index


Level 6	<ul style="list-style-type: none">• MBD With Automated TDP and On Demand Enterprise Access• Primary Deliverables: Digital Product Definition Package and TDP via the web
Level 5	<ul style="list-style-type: none">• Model Based Definition With Automated Technical Data Package• Primary Deliverables: Digital Product Definition Package and TDP
Level 4	<ul style="list-style-type: none">• Model Based Definition With Data Management• Primary Deliverable: 3D Annotated Model and Light Weight viewable via PLM
Level 3	<ul style="list-style-type: none">• Model Based Definition• Primary Deliverables: 3D Annotated Model and Light Weight viewable
Level 2	<ul style="list-style-type: none">• Native CAD Based Manufacturing• Primary Deliverables: 2D drawing and Native CAD Model
Level 1	<ul style="list-style-type: none">• Model Based Manufacturing• Primary Deliverables: 2D Drawing and Neutral CAD Model
Level 0	<ul style="list-style-type: none">• Model Centric Drawings for Design and Manufacturing• Primary Deliverable: 2D Drawing



Image by DoD Live



For more
information go to
[www.model-based-
enterprise.com](http://www.model-based-enterprise.com)



Thank you
for your time and
consideration

