Building Information Management and Modeling (BIM) & Facility Electronic Operations and Maintenance Support Information (eOMSI) Training

October 2015

Training Objectives

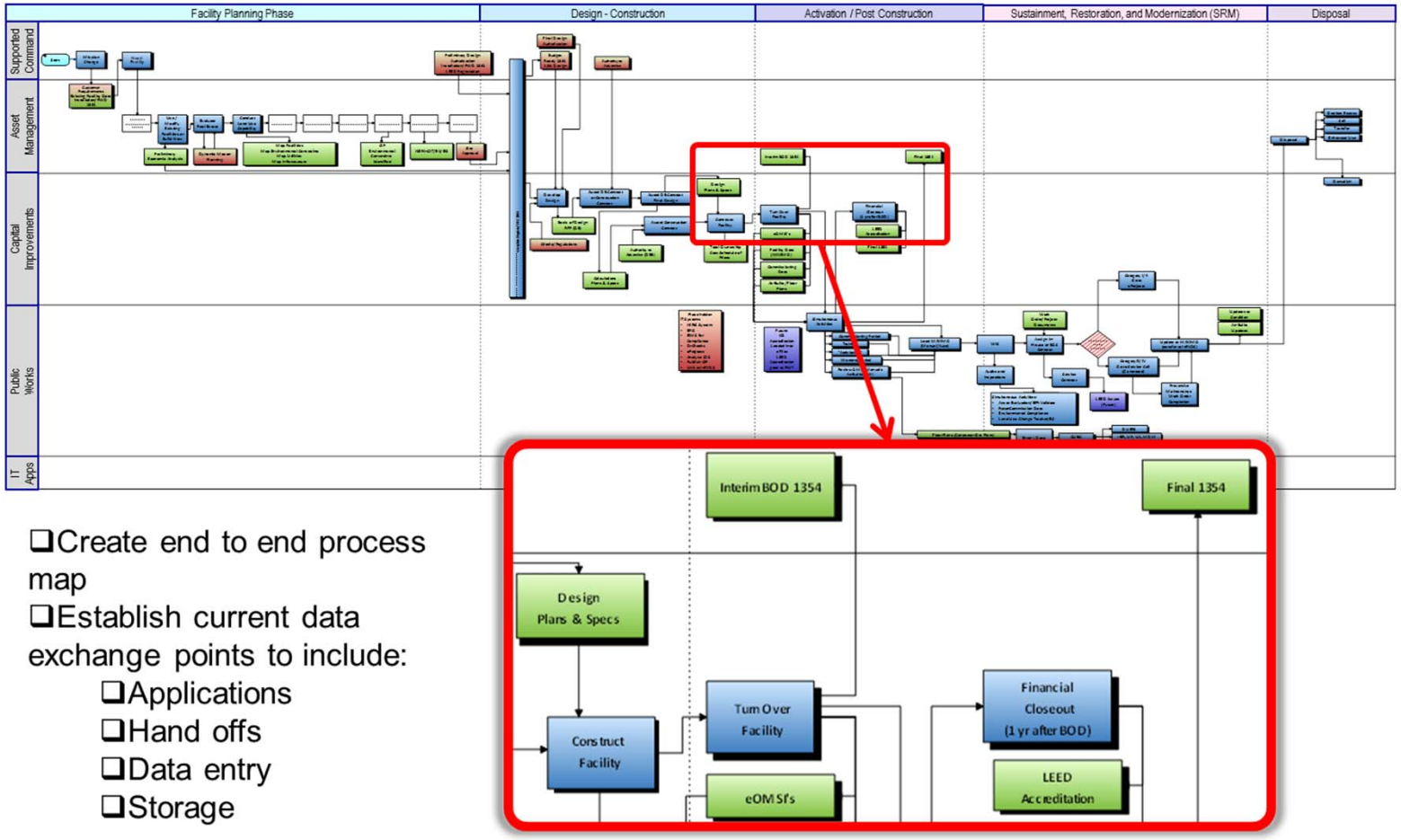
1. **NAVFAC Phased BIM Implementation Plan**
2. **eOMSI Facility Data Workbook (FDW)**
3. **eOMSI/OMSI Specifications Package**
4. **FC 1-300-09N BIM Requirements**

Phased BIM Implementation Plan

- BIM is a process that generates, collects and maintains data throughout the lifecycle of a facility
- NAVFAC's BIM process began looking at software; but this was not **THE** solution
- Realizing software was not the answer, we began to look at **facility lifecycle data** requirements across the command

Phased BIM Implementation Plan

Top Level Life Cycle Process Map



- ❑Create end to end process map
- ❑Establish current data exchange points to include:
  - ❑Applications
  - ❑Hand offs
  - ❑Data entry
  - ❑Storage

Phased BIM Implementation Plan

- We found that, during design and construction, Capital Improvements generated +90% of facility data to support Public Works' facility lifecycle maintenance mission

- As a result of facility data mapping, NAVFAC's BIM evolved into a collaboration between Capital Improvements and Public Works Business Lines

- This led to the development of our BIM Definition and BIM Goal

Phased BIM Implementation Plan

BIM Definition:

- To develop a comprehensive strategy for collecting, managing, and sharing **required** data / information to accurately support facility life cycle from early planning to building disposal

BIM Goals:

- **Standardize** data processes and data format for facility life cycle sustainment
- Data entered once, used repeatedly, used consistently and maintained current

Phased BIM Implementation Plan

What BIM is for NAVFAC:

- **eOMSI Data Deliverables** for facility life cycle sustainment, restoration and modernization (SRM)

- Part I: eOMSI Manuals:
  1) Product and Drawing Information
  2) Facility Information

- Part II: eOMSI Facility Data Workbook (FDW)

Phased BIM Implementation Plan

What BIM is **Not** for NAVFAC:

- A specific software solution e.g. REVIT, Bentley, etc.

- NAVFAC will not require industry to purchase specific software, BIM solution is vendor neutral for parametric modeling

- A modeling solution

Phased BIM Implementation Plan

Policy:

ECB 2014-01 - NAVFAC's Building Information Management and Modeling (BIM) Phased Implementation Plan, October 2015

Purpose:

Provide overall NAVFAC policy and guidance on implementation of Building Information Management and Modeling (BIM) deliverables, roles, and responsibilities

Phased BIM Implementation Plan

Applicability (ECB 2014-01):

Applies at all Navy Installations, Joint Bases, Department of Defense (DoD) Agencies, or Field Activities where NAVFAC PW is the maintenance provider of the facility that meet the following requirements:

1) New construction greater than or equal to $1M
2) Major renovation greater than or equal to 50% of the Plant Replacement Value or greater than or equal to $3M
3) In-House Design Bid Build (DBB) teams presently not required to use BIM due to limited network capacity and capability

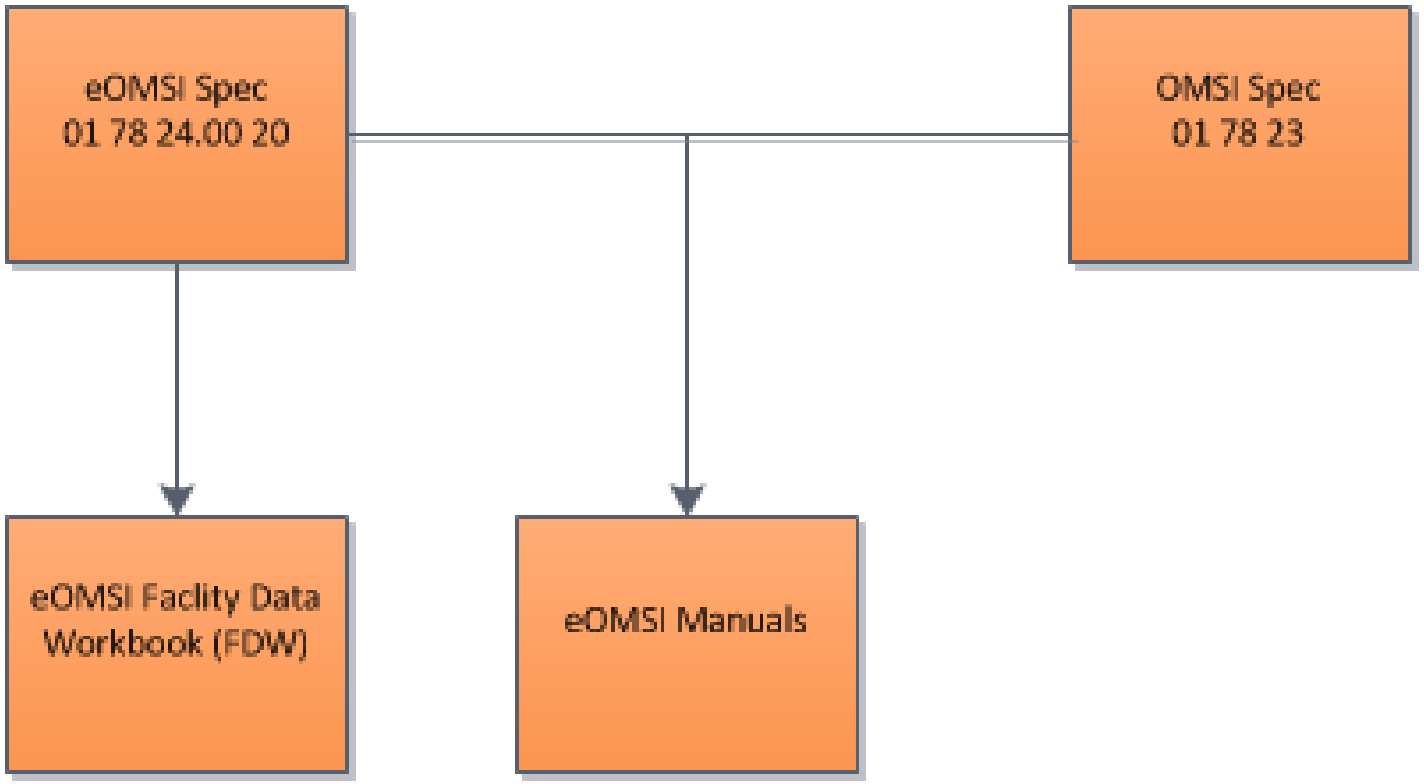
Design-Build (DB) projects require BIM & eOMSI

A/E Design-Bid-Build (DBB) projects require BIM & eOMSI

IH Design-Bid-Build (DBB) require eOMSI only

Phased BIM Implementation Plan

NAVFAC eOMSI:



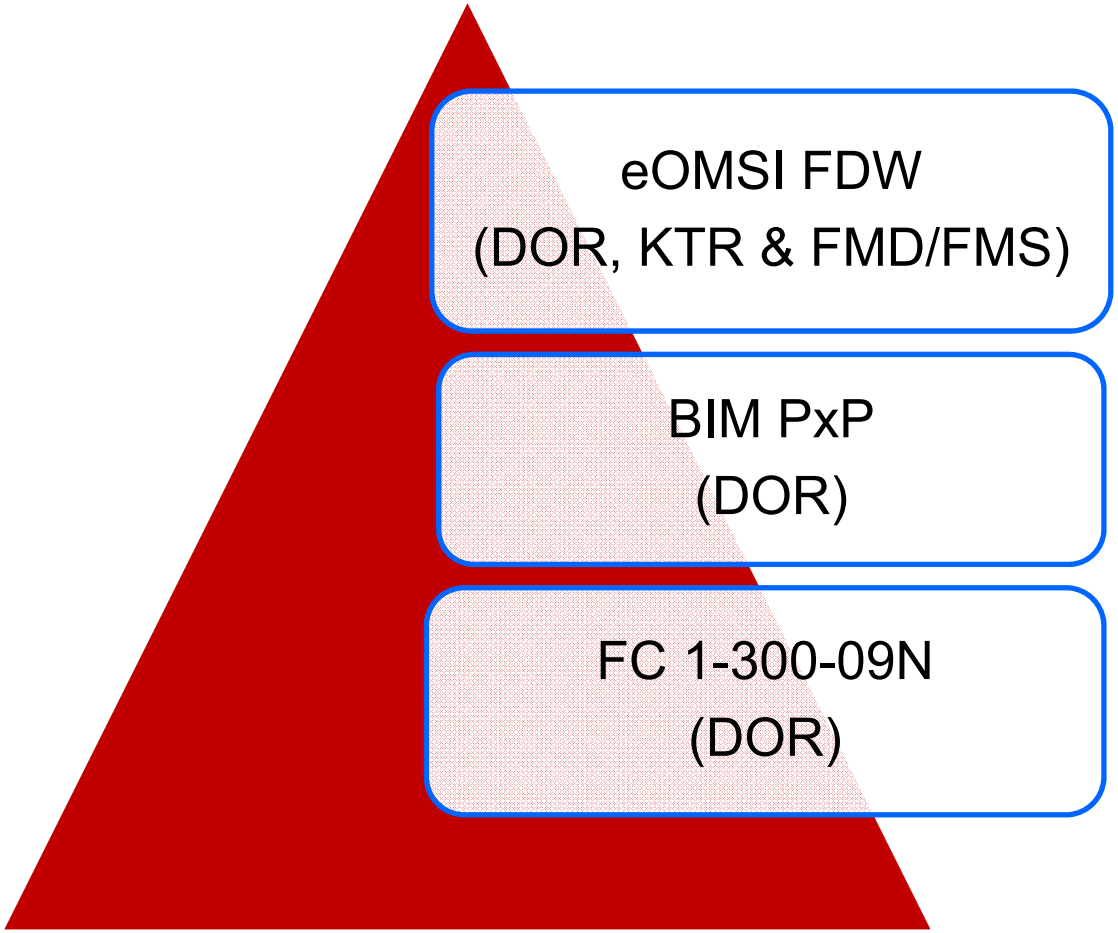
Phased BIM Implementation Plan

3D Parametric Modeling Becomes Effective **FY16**

1. **eOMSI Facility Data Workbook (FDW) -** Excel workbook which contains the Model & Facility Data Matrix (used to define Mastersystems, Systems and Subsystems included in the Model and associated Level of Detail (LOD)
2. **BIM Project Execution Plan (PxP)** – A quality control document for Design-Build projects completed by the DOR that identifies BIM objectives, goals, & modeling applications.
3. **Facilities Criteria (FC) 1-300-09N NAVY AND MARINE CORPS DESIGN PROCEDURES** – It contains definitions, minimum modeling requirements, submittals, & reviews for the DOR to follow during design of 3D parametric models. The **FC 1-300-09N** will be referenced in the **Design-Build Request for Proposals (RFP)**

Phased BIM Implementation Plan

NAVFAC BIM:



Cost of eOMSI & BIM Deliverables

- The implementation of eOMSI & BIM deliverables will not increase the cost of doing business with NAVFAC:
  - A majority of A/E firms and construction contractors utilize parametric modeling (since 2005); by NAVFAC implementing this technology it improves efficiencies between Gov't & industry
  - By formalizing 3D parametric modeling & facility data requirements, NAVFAC standardizes electronic deliverables across the command for industry to incorporate
  - Electronic Deliverables:
    - eOMSI Manuals – Current requirement, no cost impact
    - eOMSI Facility Data Workbook – Existing data KTR currently provides Gov't in a new format (spreadsheet), no cost impact
    - 3D parametric model - Industry standard, now a standard NAVFAC Gov't requirement, no cost impact

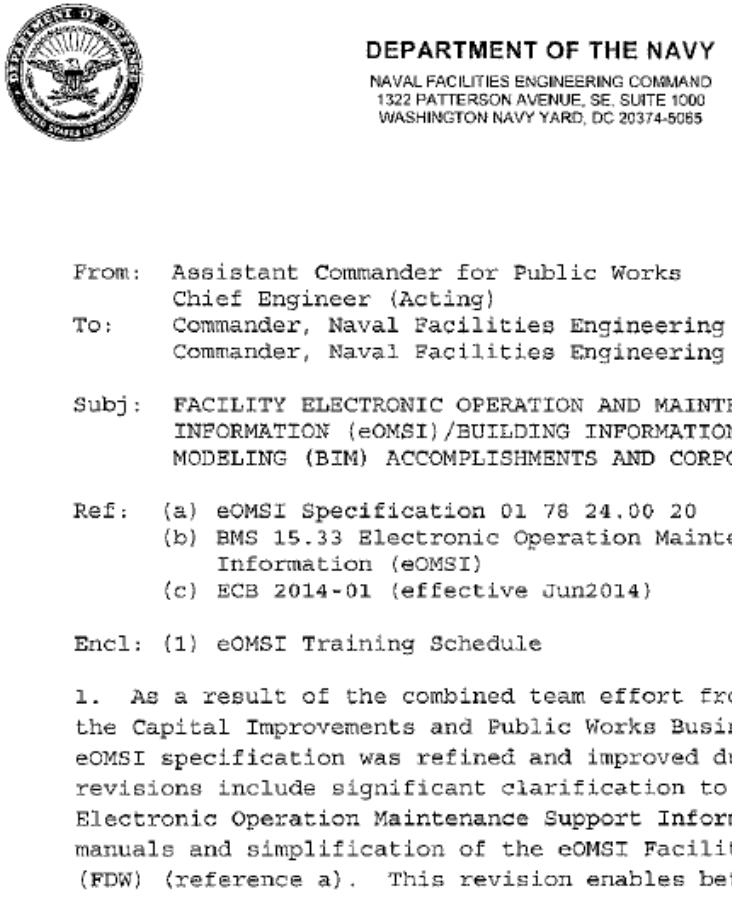
Phased BIM Implementation Plan

NAVFAC BIM/eOMSI page
is a ***WORK IN PROGRESS*.**
It is located at the
Whole Building Design Guide

http://www.wbdg.org/bim/navfac_bim.php

Refer to this page for updates to our program

PW Expectations



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
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From: Assistant Commander for Public Works
Chief Engineer (Acting)
To: Commander, Naval Facilities Engineering
Commander, Naval Facilities Engineering

Subj: FACILITY ELECTRONIC OPERATION AND MAINTI
INFORMATION (eOMSI)/BUILDING INFORMATIO
MODELING (BIM) ACCOMPLISHMENTS AND CORP

Ref: (a) eOMSI Specification 01 78 24.00 20
(b) BMS 15.33 Electronic Operation Maint
Information (eOMSI)
(c) ECB 2014-01 (effective Jun2014)

Encl: (1) eOMSI Training Schedule

1. As a result of the combined team effort fr
the Capital Improvements and Public Works Busi
eOMSI specification was refined and improved d
revisions include significant clarification to
Electronic Operation Maintenance Support Infor
manuals and simplification of the eOMSI Facili
(FDW) (reference a). This revision enables be

1. …This revision enables better life cycle management and reduced total ownership costs of our facilities by improving the transition of facilities from CI to PW in the field… …The eOMSI Spec and FDW continue to be revised as we receive feedback from the field to improve our eOMSI/ Building Information Management & Modeling (BIM) process…
2. …The purpose of this letter is to emphasize the importance of continued cooperation between CI and PW in the field to enforce this specification and utilize the information during the design, construction, operations, and maintenance of our facilities; specifically inputting inventory data into Maximo. Inventory and data management in MAXIMO should not be considered as a new requirement…
3. …Please ensure your command's full support for this training and use of this improved eOMSI specification. We need to properly enforce eOMSI on our contracts, thoroughly review and accept the deliverables, and most importantly utilize the information effectively by incorporating inventory data into MAXIMO to support ongoing life cycle management….

Quick slide on BIM

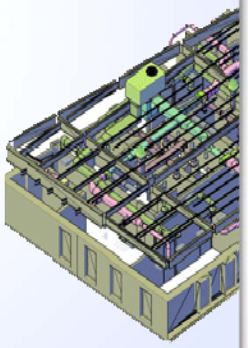
You may start hearing "BIM" or "BIMM"

NAVFAC BIM page: http://www.wbdg.org/bim/navfac_bim.php

Building Information Management and Modeling
(Building Information Management/Modeling)

Pronunciation: /bɪm/

1. (Industry Process, Acronym) A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.



"Analogous to GIS, it is a facility level information system."

What does BIM have to do with eOMSI and PW?

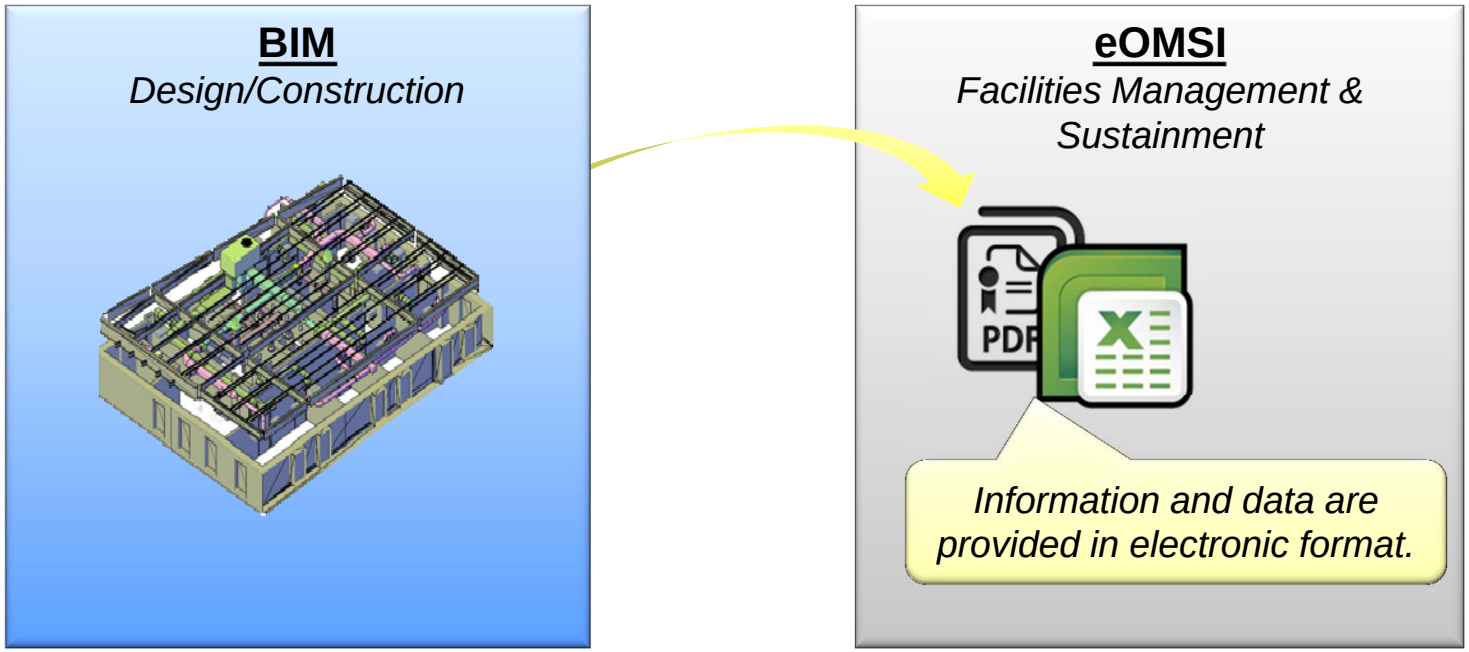
Everything
&
Nothing

Starting FY16, CI will begin to utilize BIM to model new projects and BIM will generate eOMSI data.

For the foreseeable future ***PW will not utilize the BIM model, only the data.***

What is eOMSI?

***Electronic Operation and Maintenance Support Information*:**
Contractor provided facility asset information that helps the Facility User and PWD Staff effectively Operate, Maintain and Repair a Facility.



eOMSI Concept

Collaboration between PW and CI

- Minimal amount of effort during design phase
- Establishes contact between Public Works (PW) and Capital Improvements (CI)

Encourages Feedback

- Gives PW a voice in the design process to provide lessons learned and feedback to CI

Consistent Data

- Provides consistent verifiable data

eOMSI Concept

- Data provided by the contractor during construction:
  - *From facility information in design drawings and construction submittals*
  - *From data gathered during field verification*

- Provides information for the facility user and the Public Works staff to maintain and operate the facility

- eOMSI is process that connects CI and PW data streams. Standardization of this information will:
  - *reduce duplicated efforts*
  - *increase the accuracy and completeness of information*
  - *reduce the total cost of ownership*

Current State vs Future State

- How are we currently loading assets?
  - Manually, one at a time as necessary
    - Labor intensive
    - Higher opportunity for error
- How will eOMSI make things better for PWD?
  - Ensures that FMD/FMS is involved from the beginning.
    - Enables maintenance feedback to CI
    - Strengthens communication
  - Ensures all assets are ID'ed and properly uploaded

New assets will be created in bulk. Time consuming manual entry not required.

Principal eOMSI Elements

eOMSI

eOMSI Manual

- Detailed document containing product and drawing information and facility information

eOMSI Facility Data Workbook

- Excel workbook inventory list of assets with required data fields. File will be converted to a flat file and uploaded to Maximo to create the new assets

eOMSI Manual

Product & Drawing Information

- Operation and Maintenance Data
- Record Drawings
- Utility Record Drawings

Facility Information

- General Facility & System Description
- Basis of Design
- Floor Plans
- Floor Coverings, Wall & Ceiling Surfaces
- Windows
- Roofing
- HVAC Filters
- Plumbing Fixtures
- Lighting Fixtures
- Equipment Listing
- System Flow Diagrams
- Valve List
- Riser Diagrams

eOMSI Facility Data Workbook (FDW)

Position	Name	Responsible Party	Explanation
1	AssetNum	KTR	Asset identification used by the KTR to uniquely identify assets or equipment (e.g. FAN001, AHU003)
2	Description	KTR	Primary Asset Name (100 Character Limit)
3	Long Description	KTR	Additional Relevant Information (e.g. size, capacity, limits, etc…) (1000 Character Limit)
4	MASTERS		
5	SYSTEM		
6	SUBSYST		
7	Building N		
8	Asset Qua		
9	Replacem		
10	Contract N		

SAMPLE KTR FACILITY DATA FILE

Each facility component or piece of equipment will be a new row. Refer to Model & Facility Data Matrix for guidance on which fields are applicable to specific components & equipment.

Position	1	2	3	4	5	6	7
Name	AssetNum	Description	Long Description	MASTERSYSTEM	SYSTEM	SUBSYSTEM	Building Number
Explanation	Asset identification used by the KTR to uniquely identify assets or equipment (e.g. FAN001, AHU003)	Primary Asset Name (100 Character Limit)	Additional Relevant Information (e.g. size, capacity, limits, etc…) (1000 Character Limit)	Reference values from Model & Facility Data Matrix tab (MASTERSYSTEM)	Reference values from Model & Facility Data Matrix tab (SYSTEM)	Reference values from Model & Facility Data Matrix tab (SUBSYSTEM)	Current Building # in MAXIMO for renovation work. Will be provided by GVT for new construction
	BA2201638	FOUNDATIONS, WALL FOOTINGS		A10 - FOUNDATIONS	A1010 - STANDARD FOUNDATIONS	A1010110 - STRIP FOOTINGS	WNY-212
	BA2201640	FOUNDATIONS, STRUCTURAL SLAB ON GRADE		A10 - FOUNDATIONS	A1030 - SLAB ON GRADE	A1030120 - PLAIN/REINFORCED	WNY-212
	BA2201641	BASEMENT WALL CONSTRUCTION		A20 - BASEMENT CONSTRUCTION	A2020 - BASEMENT WALLS	A2020110 - CIP CONCRETE	WNY-212
	BA2201642	FLOOR CONSTRUCTION, CONCRETE SLAB, PLANK OR		B10 - SUPERSTRUCTURE	B1010 - FLOOR CONSTRUCTION	B1010220 - CIP CONCRETE BEAM AND SLAB	WNY-212
	BA2201644	WOOD STRUCTURAL FRAME		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020102 - WOOD DECK AND RAFTER	WNY-212
	BA2201645	STEEL STRUCTURAL FRAME		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020108 - STEEL DECK, BEAMS AND BAR JC	WNY-212
	BA2201643	ROOF CONSTRUCTION, CONCRETE STRUCTURAL FRAM		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020122 - CIP CONCRETE ROOF CONSTRUCT	WNY-212
	BA2201646	EXTERIOR WALLS, BRICK		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010125 - SOLID BRICK - SINGLE WYTHE	WNY-212
	BA2201648	EXTERIOR WALLS, VINYL SIDING		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010148 - WOOD CLADDING W/STUD BACKI	WNY-212
	BA2201647	EXTERIOR WALLS, STUCCO		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010151 - STUCCO WALL	WNY-212
	BA2201651	EXTERIOR WINDOWS (BA2201596)		B20 - EXTERIOR ENCLOSURE	B2020 - EXTERIOR GLAZED OPENINGS	B2020102 - WOOD WINDOWS	WNY-212
	WNY212-01	EXTERIOR WINDOWS, ALUMINUM		B20 - EXTERIOR ENCLOSURE	B2020 - EXTERIOR GLAZED OPENINGS	B2020106 - ALUMINUM WINDOWS	WNY-212
	BA2201653	DOORS, EXTERIOR METAL DOORS		B20 - EXTERIOR ENCLOSURE	B2030 - EXTERIOR DOORS	B2030220 - STEEL DOORS	WNY-212
	BA2201654	ROOF, BUILT UP		B30 - ROOFING	B3010 - ROOF COVERING	B3010105 - BUILT-UP	WNY-212
	BA2201657	INTERIOR PARTITIONS - CMU WALLS		C10 - INTERIOR CONSTRUCTION	C1010 - PARTITIONS	C1010102 - CONCRETE BLOCK	WNY-212
	BA2201655	INTERIOR PARTITIONS - FRAMED WALLS		C10 - INTERIOR CONSTRUCTION	C1010 - PARTITIONS	C1010126 - DRYWALL W/STUD FRAMING	WNY-212
	BA2201660	DOORS, INTERIOR METAL		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020114 - METAL DOOR	WNY-212
	BA2201659	DOORS, INTERIOR WOOD		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020120 - WOOD DOOR/WOOD FRAME	WNY-212
	BA2201661	DOORS, INTERIOR GLAZED		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020120 - WOOD DOOR/WOOD FRAME	WNY-212
	WNY212-02	WALL FINISHES, WALL COVERINGS		C30 - INTERIOR FINISHES	C3010 - WALL FINISHES	C3010230 - WALL COVERING	WNY-212
	WNY212-03	WALL FINISHES, TILE		C30 - INTERIOR FINISHES	C3010 - WALL FINISHES	C3010300 - WALL TILE	WNY-212
	BA2201667	FLOORING, CARPET		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020901 - CARPET	WNY-212
	BA2201666	FLOORING, RESILIENT		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020903 - COMPOSITION SHEET	WNY-212
	BA2201665	FLOORING, TILE		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020910 - PORCELAIN TILE	WNY-212
	BA2201668	CEILING, DRYWALL / GYPSUM BOARD		C30 - INTERIOR FINISHES	C3030 - CEILING FINISHES	C3030110 - DRYWALL	WNY-212
	BA2201669	CEILING, TILE		C30 - INTERIOR FINISHES	C3030 - CEILING FINISHES	C3030210 - ACOUSTICAL	WNY-212
	BAN000003999	PASSENGER ELEVATORS		D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212
	BAN000003999	PASSENGER ELEVATORS		D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212
	BANC000020052	PASSENGER ELEVATORS	TENSION GEARED	D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212
	CONV001W212	CONVERTER					
	CONV002W212	Cooling Generating Systems,Condenser, DX, Air Cooled,					
	CHIL004W212	CHILLER, RECIP AIR COOLED - ROOF					
	COND003W212	CONDENSER, DX, AIR COOLED					

Instructions | Model & Facility Data Matrix | Required Facility Asset Fields | KTR Sample Facility Data File

MODEL AND F

STEP 1: Is

STEP 2: Se / Sl

CLASSIFICATION ID	
A10	A10 - FOU
A1010	A1010 - ST
A1010110	A1010110 -
A1010210	A1010210 -
A1010250	A1010250 -
A1020	A1020 - SP
A102005	A102005 -
A1020110	A1020110 -
A1020120	A1020120 -
A1020130	A1020130 -
A1020140	A1020140 -
A1020160	A1020160 -
A1020210	A1020210 -
A1030	A1030 - SL
A1030120	A1030120 -
A20	A20 - BASE
A2010	A2010 - BASEMENT EXCAVATION	SYSTEM
A2020	A2020 - BASEMENT WALLS	SYSTEM
A2020110	A2020110 - CIP CONCRETE	SUBSYSTEM
A2020140	A2020140 - CONCRETE BLOCK	SUBSYSTEM
A2020150	A2020150 - WOOD	SUBSYSTEM
B10	B10 - SUPERSTRUCTURE	MASTERSYSTEM
B1010	B1010 - FLOOR CONSTRUCTION	SYSTEM
B1010220	B1010220 - CIP CONCRETE BEAM AND SLAB	SUBSYSTEM
B1010238	B1010238 - PRECAST CONCRETE BEAM AND PLANK	SUBSYSTEM
B1010244	B1010244 - LIGHT GAUGE STEEL FLOOR SYSTEM	SUBSYSTEM

Instructions | Model & Facility Data Matrix | Required Facility Asset Fields | KTR Sample Facility Data File | KTR Facility Data File

Ready

- DOR will select the Mastersystem, System and Subsystem data records during Design Phase
- Construction Contractor (KTR) will complete the records with the assistance of the government

What is eOMSI FDW?

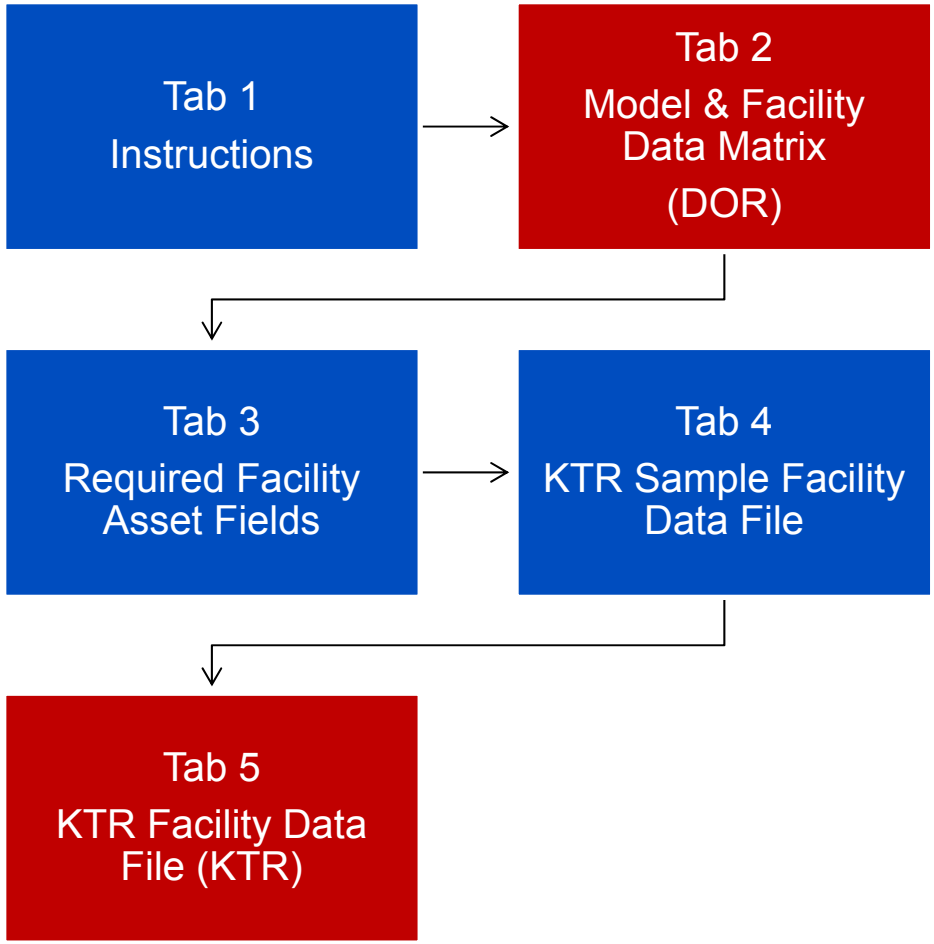
- Excel Spreadsheet
- Identifies Mastersystems, Systems and Subsystems of a Project
- Lists all Installed Assets for Facility
- Easy To Use = YES
  - If you can use Excel you can use the FDW
- Living Project Document
  - Never break up the tabs
  - Updated throughout the life of the Project from Design through BOD

eOMSI Facility Data Workbook

Available on Whole Building Design Guide
http://www.wbdg.org/bim/navfac_bim.php

- Section 1 – Instructions Tab
  - Worksheet Overview
- Section 2 – Model & Facility Data Matrix Tab
  - Completed by the DOR
- Section 3 – Required Facility Asset Fields Tab
  - Maximum of 17 data fields per subsystem
- Section 4 – KTR Sample Facility Data File Tab
- Section 5 – KTR Facility Data File Tab

eOMSI Facility Data Workbook



General Workflow

- **Design Phase:**
  - **Model & Facility Data Matrix Tab:**
    - DOR defines Mastersystems and Systems
    - DOR (with FMD assistance) refines the Matrix by identifying the Mastersystems, Systems, Subsystems throughout Design Phase
- **Construction Phase:**
  - **KTR Facility Data File Tab:**
    - KTR populates as equipment is installed & facility is built
    - FMD Reviews eOMSI FDW and with CI CM field verifies a sample list of Mastersystems, Systems, & Subsystems

Instructions Tab

- **Layout Mimics Workflow**
- **Notes (Letters) and Keys (Numbers)**

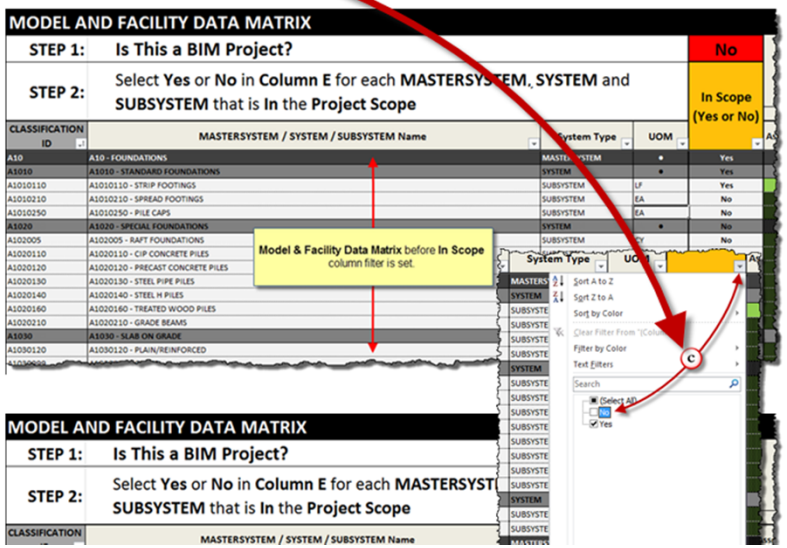
2.2 Non-BIM Project Instructions (cont.)

Notes:

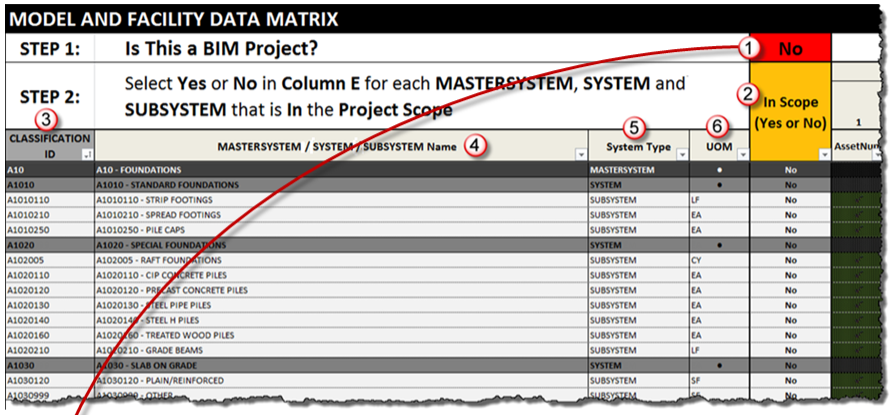
(a) The **DOR** shall refine the list throughout the Design phase of the project.

(b) By completion of the Design phase, the **DOR** shall identify all **MASTERSYSTEMS, SYSTEMS** and **SUBSYSTEMS** within the scope of the project.

(c) The **DOR** shall use the **Column Filter** (of the **In Scope** column) to hide all **MASTERSYSTEMS, SYSTEMS** and **SUBSYSTEMS** NOT within the scope of the project. Select the in cell drop down of the **In Scope** (**"Yes"** or **"No"**) cell and **UNCHECK "No"** from the list (this will hide all rows with **"No"** selected in the cell).



MASTERSYSTEM, SYSTEM, SUBSYSTEM Name Section



1	Identifies if the project is a BIM project (**"Yes"** or **"No"**) Editable: **Yes** Edited By: **DOR**
2	Indicates if the **MASTERSYSTEM, SYSTEM** or **SUBSYSTEM** is within the Scope of the project (**"Yes"** or **"No"**) Editable: **Yes** Edited By: **DOR**

Model & Facility Data Matrix Tab

- **Matrix Components**
- **How to Use the Matrix**
  - Selecting Mastersystems, Systems and Subsystems
  - Filtering out Unused Systems
- **Who Is Responsible for the Matrix**
  - DOR maintains the Matrix; coordinated with FMD/FMS
- **What is the Matrix Used For?**
  - 1st step in defining eOMSI MAXIMO data
  - Q/C check of design elements
  - Specification cross check

eOMSI Facility Data Workbook

A10 – D50 Typical Mastersystems for Navy MCON (<5'), Major Renovation, or Facility Systems Replacement

Description	Listname	UOM
A10 - FOUNDATIONS	MASTERSYSTEM	SF
A20 - BASEMENT CONSTRUCTION	MASTERSYSTEM	SF
B10 - SUPERSTRUCTURE	MASTERSYSTEM	SF
B20 - EXTERIOR ENCLOSURE	MASTERSYSTEM	SF
B30 - ROOFING	MASTERSYSTEM	SF
C10 - INTERIOR CONSTRUCTION	MASTERSYSTEM	SF
C20 - STAIRS	MASTERSYSTEM	RISER
C30 - INTERIOR FINISHES	MASTERSYSTEM	SF
D10 - CONVEYING	MASTERSYSTEM	EA
D20 - PLUMBING	MASTERSYSTEM	EA
D30 - HVAC	MASTERSYSTEM	EA
D40 - FIRE PROTECTION	MASTERSYSTEM	EA
D50 - ELECTRICAL	MASTERSYSTEM	EA

eOMSI Facility Data Workbook

J10 – Q10 Typical Mastersystems for Utilities Project

Description	Listname	UOM
J10 - Electric Utilities	MASTERSYSTEM	EA
K10 - Potable Water Utilities	MASTERSYSTEM	EA
K20 - Non-Potable Water Utilities	MASTERSYSTEM	EA
K30 - Fire Protection Water Utilities	MASTERSYSTEM	EA
K40 - Salt Water Utilities	MASTERSYSTEM	EA
L10 - Steam Utilities	MASTERSYSTEM	EA
L20 - High Temp Hot Water Utilities	MASTERSYSTEM	EA
L30 - Domestic Hot Water Utilities	MASTERSYSTEM	EA
L40 - Chilled Water Utilities	MASTERSYSTEM	EA
M10 - Sanitary Sewer Utilities	MASTERSYSTEM	EA
M20 - Industrial Wastewater Utilities	MASTERSYSTEM	EA
M30 - Oily Wastewater Utilities	MASTERSYSTEM	EA
M40 - Storm Water Utilities	MASTERSYSTEM	EA
N10 - Natural Gas Utilities	MASTERSYSTEM	EA
N20 - Propane Utilities	MASTERSYSTEM	EA
P10 - Compressed Air Utilities	MASTERSYSTEM	EA
Q10 - Multiple Commodity Utilities	MASTERSYSTEM	EA

Required Asset Fields Tab

- Third Tab of eOMSI FDW
- Provides an explanation of each Asset Field
- Informative Only, nothing to edit

REQUIRED FACILITY ASSET FIELDS

Position	Name	Responsible Party	Explanation
1	AssetNum	KTR	Asset identification used by the KTR to uniquely identify assets or equipment (e.g. FAN001, AHU003)
2	Description	KTR	Primary Asset Name (100 Character Limit)
3	Long Description	KTR	Additional Relevant Information (e.g. size, capacity, limits, etc…) (1000 Character Limit)
4	MASTERSYSTEM	DOR	Reference values from Model & Facility Data Matrix tab (MASTERSYSTEM)
5	SYSTEM	DOR	Reference values from Model & Facility Data Matrix tab (SYSTEM)
6	SUBSYSTEM	DOR	Reference values from Model & Facility Data Matrix tab (SUBSYSTEM)
7	Building Number	GVT	Current Building # in MAXIMO for renovation work. Will be provided by GVT for new construction
8	Asset Quantity	KTR	Quantity in correct unit of measure as defined in UOM field of the Model & Facility Data Matrix
9	Replacement Cost	KTR	Installed cost (material and labor)
10	Contract Number	GVT	Provided by GVT
11	Task/Delivery Order Number	GVT	Provided by GVT
12	Warranty Expiration Date	KTR	MM/DD/YYYY
13	Installation Date	KTR	MM/DD/YYYY
14	Room Number	KTR	Room Number of installed equipment
15	Manufacturer	KTR	Manufacturer name of installed equipment
16	Model	KTR	Model number of installed equipment
17	Serial #	KTR	Serial number of installed equipment

Sample KTR Facility Data File Tab

- Fourth Tab of eOMSI FDW
- Provides KTR with an example
- Informative Only, nothing to edit

SAMPLE KTR FACILITY DATA FILE

Each facility component or piece of equipment will be a new row. Refer to Model & Facility Data Matrix for guidance on which fields are applicable to specific components & equipment.

Position	1	2	3	4	5	6	7	8	9
Name	AssetNum	Description	Long Description	MASTERSYSTEM	SYSTEM	SUBSYSTEM	Building Number	Asset Quantity	Replacement Cost
Explanation	Asset identification used by the KTR to uniquely identify assets or equipment (e.g. FAN001, AHU003)	Primary Asset Name (100 Character Limit)	Additional Relevant Information (e.g. size, capacity, limits, etc...) (1000 Character Limit)	Reference values from Model & Facility Data Matrix tab (MASTERSYSTEM)	Reference values from Model & Facility Data Matrix tab (SYSTEM)	Reference values from Model & Facility Data Matrix tab (SUBSYSTEM)	Current Building # in MAXIMO for renovation work. Will be provided by GVT for new construction	Quantity in correct unit of measure as defined in UOM field of the Model & Facility Data Matrix	Installed cost (material and labor) from schedule of values, bid proposal, etc.
	BA2201638	FOUNDATIONS, WALL FOOTINGS		A10 - FOUNDATIONS	A1010 - STANDARD FOUNDATIONS	A1010110 - STRIP FOOTINGS	WNY-212	552	$28,704.00
	BA2201640	FOUNDATIONS, STRUCTURAL SLAB ON GRADE		A10 - FOUNDATIONS	A1030 - SLAB ON GRADE	A1030120 - PLAIN/REINFORCED	WNY-212	17588	$105,528.00
	BA2201641	BASEMENT WALL CONSTRUCTION		A20 - BASEMENT CONSTRUCTI	A2020 - BASEMENT WALLS	A2020110 - CIP CONCRETE	WNY-212	764	$48,132.00
	BA2201642	FLOOR CONSTRUCTION, CONCRETE SLAB, PLAI		B10 - SUPERSTRUCTURE	B1010 - FLOOR CONSTRUCTION	B1010220 - CIP CONCRETE BEAM AND SI	WNY-212	66312	$1,193,616.00
	BA2201644	WOOD STRUCTURAL FRAME		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020102 - WOOD DECK AND RAFTER	WNY-212	17588	$471,491.98
	BA2201645	STEEL STRUCTURAL FRAME		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020108 - STEEL DECK, BEAMS AND BA	WNY-212	17588	$257,079.25
	BA2201643	ROOF CONSTRUCTION, CONCRETE STRUCTURA		B10 - SUPERSTRUCTURE	B1020 - ROOF CONSTRUCTION	B1020122 - CIP CONCRETE ROOF CONS	WNY-212	17588	$140,704.00
	BA2201646	EXTERIOR WALLS, BRICK		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010125 - SOLID BRICK - SINGLE WYTH	WNY-212	567	$14,175.00
	BA2201648	EXTERIOR WALLS, VINYL SIDING		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010148 - WOOD CLADDING W/STUD B	WNY-212	3486	$49,776.45
	BA2201647	EXTERIOR WALLS, STUCCO		B20 - EXTERIOR ENCLOSURE	B2010 - EXTERIOR WALLS	B2010151 - STUCCO WALL	WNY-212	20178	$322,848.00
	BA2201651	EXTERIOR WINDOWS (BA2201596)		B20 - EXTERIOR ENCLOSURE	B2020 - EXTERIOR GLAZED OPENINGS	B2020102 - WOOD WINDOWS	WNY-212	875	$1,890,436.37
	WNY212-01	EXTERIOR WINDOWS, ALUMINUM		B20 - EXTERIOR ENCLOSURE	B2020 - EXTERIOR GLAZED OPENINGS	B2020106 - ALUMINUM WINDOWS	WNY-212	395	$454,250.00
	DA2201650	DOORS, EXTERIOR METAL DOORS		D20 - EXTERIOR ENCLOSURE	D2030 - EXTERIOR DOORS	D2030220 - STEEL DOORS	WNY-212	4	$0,000.00
	BA2201654	ROOF, BUILT UP		B30 - ROOFING	B3010 - ROOF COVERING	B3010105 - BUILT-UP	WNY-212	16805	$168,050.00
	BA2201657	INTERIOR PARTITIONS - CMU WALLS		C10 - INTERIOR CONSTRUCTION	C1010 - PARTITIONS	C1010102 - CONCRETE BLOCK	WNY-212	5376	$69,888.00
	BA2201655	INTERIOR PARTITIONS - FRAMED WALLS		C10 - INTERIOR CONSTRUCTION	C1010 - PARTITIONS	C1010126 - DRYWALL W/STUD FRAMING	WNY-212	52656	$315,936.00
	BA2201660	DOORS, INTERIOR METAL		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020114 - METAL DOOR	WNY-212	59	$15,367.68
	BA2201659	DOORS, INTERIOR WOOD		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020120 - WOOD DOOR/WOOD FRAME	WNY-212	105	$81,574.31
	BA2201661	DOORS, INTERIOR GLAZED		C10 - INTERIOR CONSTRUCTION	C1020 - INTERIOR DOORS	C1020120 - WOOD DOOR/WOOD FRAME	WNY-212	4	$8,141.34
	WNY212-02	WALL FINISHES, WALL COVERINGS		C30 - INTERIOR FINISHES	C3010 - WALL FINISHES	C3010230 - WALL COVERING	WNY-212	4751	$23,755.00
	WNY212-03	WALL FINISHES, TILE		C30 - INTERIOR FINISHES	C3010 - WALL FINISHES	C3010380 - WALL TILE	WNY-212	4953	$59,436.00
	BA2201667	FLOORING, CARPET		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020901 - CARPET	WNY-212	66960	$334,800.00
	BA2201666	FLOORING, RESILIENT		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020903 - COMPOSITION SHEET	WNY-212	1390	$4,170.00
	BA2201665	FLOORING, TILE		C30 - INTERIOR FINISHES	C3020 - FLOORING	C3020910 - PORCELAIN TILE	WNY-212	2637	$23,733.00
	BA2201668	CEILING, DRYWALL / GYPSUM BOARD		C30 - INTERIOR FINISHES	C3030 - CEILING FINISHES	C3030110 - DRYWALL	WNY-212	2700	$13,500.00
	BA2201669	CEILING, TILE		C30 - INTERIOR FINISHES	C3030 - CEILING FINISHES	C3030210 - ACOUSTICAL	WNY-212	52201	$313,206.00
	BAN000003999	PASSENGER ELEVATORS		D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212	1	$86,362.49
	BAN000003999	PASSENGER ELEVATORS		D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212	1	$86,362.49
	BANC000020052	PASSENGER ELEVATORS	TENSION GEARED	D10 - CONVEYING	D1010 - ELEVATORS AND LIFTS	D1010110 - HYDRAULIC ELEVATORS	WNY-212	1	$140,000.00
	CONV001W212	CONVERTER		D30 - HVAC	D3020 - HEAT GENERATING SYSTEMS	D3020939 - OTHER	WNY-212	1	$2,345.00
	CONV002W212	Cooling Generating Systems,Condenser, DX, Air C		D30 - HVAC	D3020 - HEAT GENERATING SYSTEMS	D3020939 - OTHER	WNY-212	1	$1,875.00
	CHIL004W212	CHILLER, RECIP AIR COOLED - ROOF		D30 - HVAC	D3030 - COOLING GENERATING SYSTI	D3030135 - CHILLER, RECIP, AIR COOLE	WNY-212	1	$53,000.00
	COND003W212	CONDENSER, DX, AIR COOLED		D30 - HVAC	D3030 - COOLING GENERATING SYSTI	D3030901 - CONDENSER, DX, AIR COOL	WNY-212	1	$8,268.75

KTR Facility Data File Tab

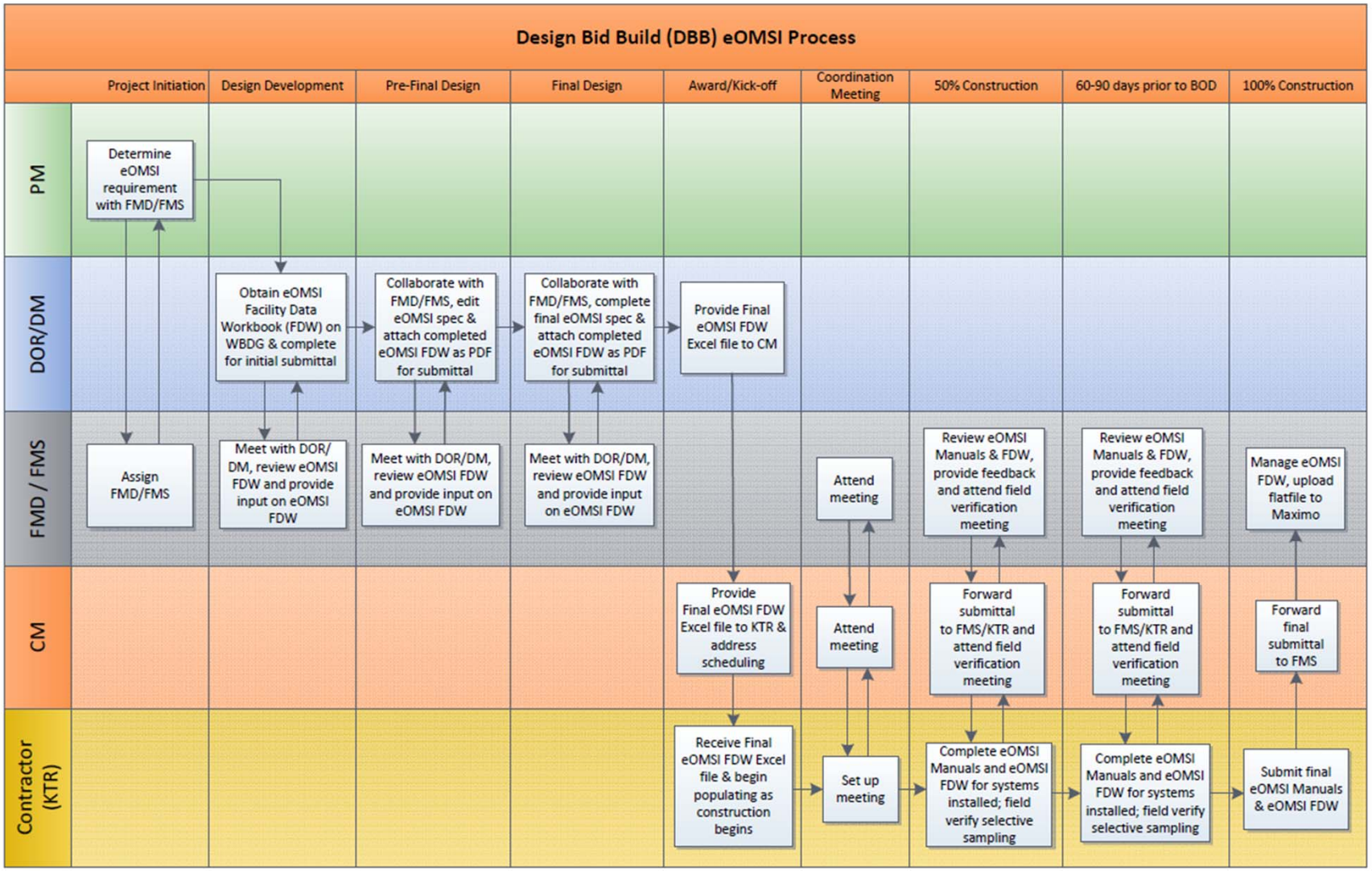
- Fifth Tab of eOMSI FDW
- KTR completes FDW based on Mastersystems, Systems & Subsystems selected by DOR
- Final FDW is modified by DPW FMS into a flat file for MAXIMO upload

KTR FACILITY DATA FILE

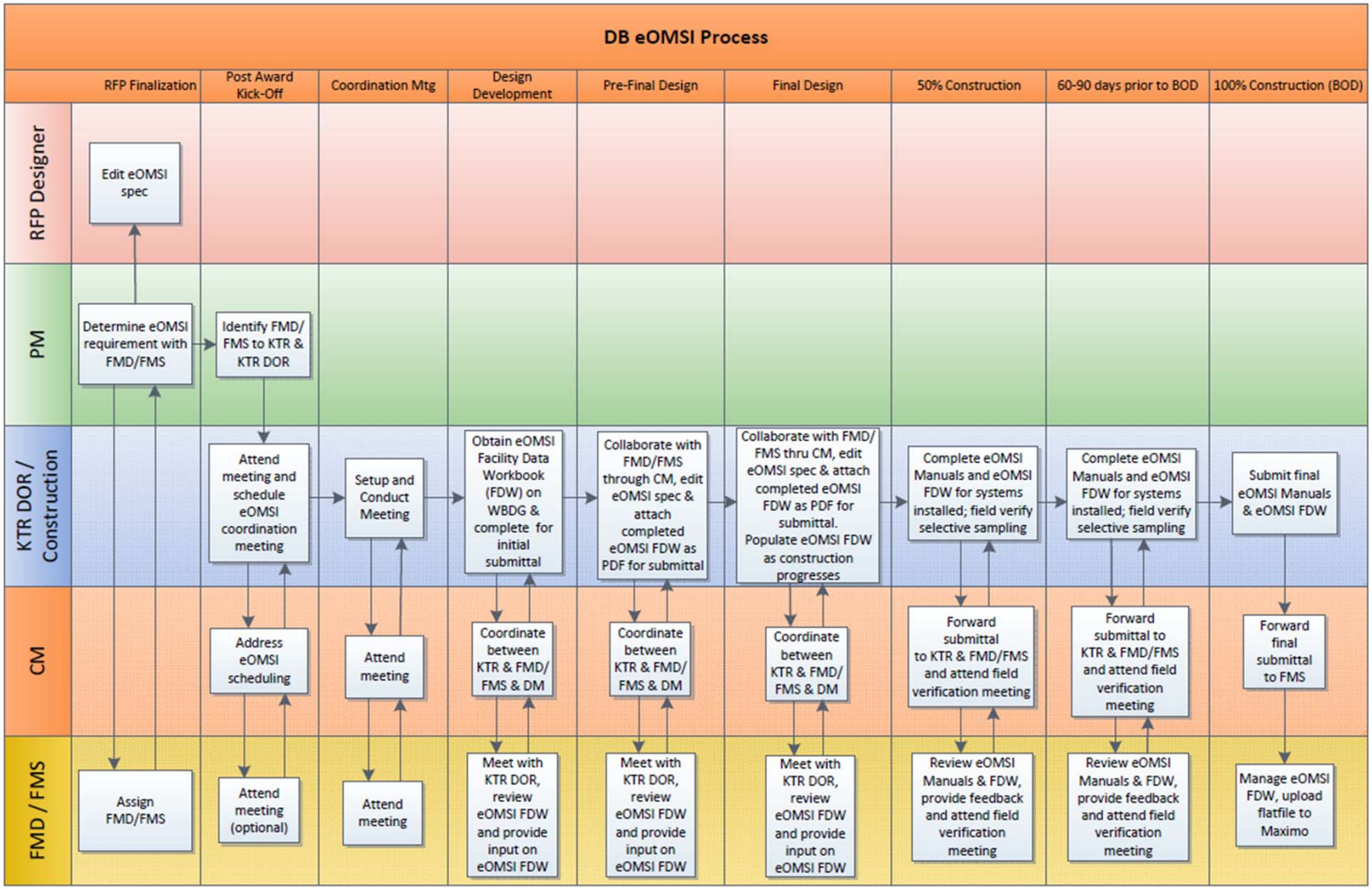
Each facility component or piece of equipment will be a new row. Refer to Model & Facility Data Matrix for guidance on which fields are applicable to specific components & equipment.

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Name	AssetNum	Description	Long Description	MASTERSYSTEM	SYSTEM	SUBSYSTEM	Building Number	Asset Quantity	Replacement Cost	Contract Number	Task/Delivery Order Number	Warranty Expiration Date	Installation Date	Room Number	Manufacturer	Model	Serial #
Explanation	Asset identification used by the KTR to uniquely identify assets or equipment (e.g. FAN001, AHU003)	Primary Asset Name (100 Character Limit)	Additional Relevant Information (e.g. size, capacity, limits, etc…) (1000 Character Limit)	Reference values from Model & Facility Data Matrix tab (MASTERSYSTEM)	Reference values from Model & Facility Data Matrix tab (SYSTEM)	Reference values from Model & Facility Data Matrix tab (SUBSYSTEM)	Current Building # in MAXIMO for renovation work. Will be provided by GVT for new construction	Quantity in correct unit of measure as defined in UOM field of the Model & Facility Data Matrix	Installed cost (material and labor) from schedule of values, bid proposal, etc.	Provided by GVT	Provided by GVT	MM/DD/YYYY	MM/DD/YYYY	Room Number of installed equipment	Manufacturer name of installed equipment	Model number of installed equipment	Serial number of installed equipment

DBB: eOMSI Submittal Process



DB: eOMSI Submittal Process



UFGS 01 78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI)

PURPOSE:

To obtain organized data of the actual items and equipment provided in construction, for transfer of this data into MAXIMO for maintenance and operation purposes, & as a record for the Facility Manager's use.

SCOPE:

- **Use this same section for DBB and DB**
- **ECB 2014-01: Defines project thresholds that require eOMSI:**
  - Use for new construction greater than or equal to $1M
  - Use for Major renovation greater than or equal to 50% of the Plant Replacement Value or greater than or equal to $3M
- **If meets threshold, use BOTH UFGS 01 78 24.00 20 and UFGS 01 78 23, OPERATION AND MAINTENANCE (O&M) DATA**
- **If not, just use 01 78 23, O&M DATA**
  - Have PW FMD inventory/review items for MAXIMO input

UFGS 01 78 24.00 20 - Organization

PART 1 GENERAL

1. References
2. Definitions and Abbreviations
3. eOMSI Meeting Schedules
4. Submittal Scheduling
5. Units of Measure
6. Submittals

PART 2 PRODUCTS

1. eOMSI Files Format:
   - eOMSI Manual Organization
   - eOMSI Manual Compact Disk Label
2. eOMSI Manual
   - Product and Drawing Information
   - Facility Information
3. eOMSI Facility Data Workbook (FDW)

PART 3 EXECUTION

1. Field Verification

Section Notes to the Designer

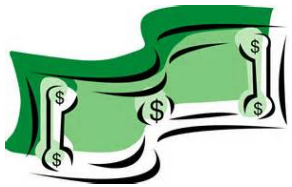
Tailoring Options:

- DBB
- DB
- eOMSI Facility Data Workbook (FDW)
- Commissioning Authority
- NAVFAC EURAFSWA
- NAVFAC FE

Section Organization:

- eOMSI Manual
- eOMSI FDW

and…..



ECB 2014-01

$ LIMITS!

When to use the eOMSI Facility Data Workbook (FDW):

- Set up for use with NAVY MAXIMO facilities only right now!
- Marine Corps interested but awaiting their requirements/specifics
- Not required for Army and Air Force facilities

General Section Notes (cont.)

- **Contact your NAVFAC PW Facility Management Division (FMD) who will assist CI team to edit Section and FDW!**

How To Download eOMSI Facility Data Workbook (FDW)

1. Go To: http://www.wbdg.org/ccb/NAVGRAPH/graphtoc.pdf
2. Locate 01 78 24.00 20 in the UFGS Number column.
3. Select the eOMSIFacilityDataWorkbook.zip link in the Graphic Hyperlink column.
4. Save the .ZIP file to your desktop or network share
5. Extract the eOMSI Facility Data Workbook from the .ZIP file to your project folder.

1.1 References/1.2 Definitions & Abbreviations

1.1 References:

- FC 1-300-09N Navy and Marine Corps Design Procedures (April 2015)

1.2 Definitions used in Section and FDW:

- eOMSI Manual
- eOMSI Facility Data Workbook (FDW)
- Systems
- CADD
- KTR (used in FDW)

1.3 eOMSI Meetings

- **Describes the meetings required throughout Construction (and Design for DB only)**
- **Contains tailoring for easy pre-editing of DB and DBB, and for Commissioning Authority and Facility Data Workbook**

1.3.1 Pre-Construction Meeting (for DBB) or Post-Award Kickoff Meeting (for DB):

- Ensure all parties understand what is required to put together the eOMSI Manuals, and fill in FDW throughout construction
- Ensure parties understand when submittals of the FDW must be provided
- Include eOMSI submittals in the construction schedule

1.3 eOMSI Meetings (Cont.)

1.3.2 eOMSI Manual and FDW Coordination Meeting:

- **Who to include in this meeting:**
  - Key Contractor personnel:
    - eOMSI FDW Preparer
    - QC Manager
  - Commissioning Authority (if applicable)
  - Government DM
  - Government CM
  - NAVFAC PW FMD/FMS on project
- **Schedule initial meeting to clarify requirements and resolve issues**
  - Have more if needed as part of regular QC meetings

1.3 eOMSI Meetings (Cont.)

1.3.3 Facility Turnover Meetings:

- References NAVFAC Red Zone (NRZ) in UFGS 01 30 00 ADMINISTRATIVE REQUIREMENTS or UFGS 01 31 19.05 20 POST AWARD MEETINGS

- Ensures the eOMSI Manuals and FDW become part of Red-Zone checklist, and are received

1.4 Submittal Scheduling

Describes **what** to provide for the three eOMSI submittals and **when**:

1.4.1 eOMSI, Progress Submittal:

- **When construction is 50% complete**
- **Ensures Contractor is putting together the Manuals and completing the FDW as construction progresses**
- **Ensures components and systems are documented before being covered up/enclosed in walls, foundation**

1.4.2 eOMSI, Prefinal Submittal:

- **eOMSI Manual and FDW should be complete**
- **The size (& length) of the project determines when to submit:**
  - Smaller projects **60 days** prior to **BOD** (suggested)
  - Larger projects **90 days** prior to **BOD**
- **If it is not complete, send it back!**

1.4 Submittal Scheduling/1.5 Units of Measure

1.4.3 eOMSI, Final Submittal:

- Manuals and FDW must be complete and accurate
- Submit at BOD

1.4.4 Final eOMSI Submittal Translation: (if applicable)

- Only applies to Overseas locations with languages other than English

1.5 Units of Measure:

- Imperial or Metric

1.6 Submittals

- **Standard UFGS Submittals Article**
- **eOMSI Manual and Facility Data Workbook (FDW) Submittals**
  - Level of completion and what needs to be submitted from paragraph 1.4 SUBMITTAL SCHEDULING

eOMSI, Progress Submittal

eOMSI, Prefinal Submittal

eOMSI, Final Submittal

PART 2: PRODUCTS

2.1 eOMSI FILES FORMAT

2.2 eOMSI MANUALS

2.3 eOMSI FACILITY DATA WORKBOOK (FDW)

2.1 eOMSI Files Format

Administrative-type requirements for Manuals and FDW:

- Number of copies
- CD or DVD
- eOMSI Manuals as PDFs
- eOMSI FDW in Excel

2.1.1 eOMSI Manual Organization:

- **Bookmarked by:**
  - Product and Drawing Information
    - Organize by CSI MasterFormat numbering System and Titles
  - Facility Information

2.1.2 eOMSI Manual CD Label and Disk Holder or Case

2.2 eOMSI Manuals

- **2.2.1 Product and Drawing Information**
- **2.2.2 Facility Information**

2.2.1 Product and Drawing Information

Compiled and organized Product Data (i.e. cut sheets), Certifications, Data Packages, and approved Shop Drawings submitted in the technical spec sections

2.2.1.1 O&M Data:

- **From UFGS 01 78 23, OPERATION & MAINTENANCE DATA: Remember to edit these paragraphs for what is in the project!**
- Paragraph 1.7 describes the Data Package content, i.e.:
  - Operating Instructions
  - Safety Precautions and Hazards
  - Normal Operations
  - Emergency Operations
  - Preventive Maintenance
  - Submittal Data
  - Warranty Information
- Moving training requirements from 01 78 24.00 20 to here

2.2.1 Product and Drawing Information (Cont.)

2.2.1.2 Record Drawings:

- **Copy of PDF of the Record Drawings (if prepared by Contractor)**
  - For DBB, use paragraph and coordinate with UFGS 01 78 00 if the Contractor is preparing the Record Drawings;
  - For DBB, delete this paragraph if A/E doing Record Drawings by PCAS
  - Always use for DB
  - Record Drawing preparation IAW FC 1-300-09N & UFGS 01 78 00

2.2.1.3 Utility Record Drawings:

- Using Record Source Drawings, show and document details of actual installation of utility systems; annotate and highlight the eOMSI information in PDF Format for the manual
  - Utility Schematic Diagrams
  - Enlarged Connection and Cutoff Plans

2.2.2 Facility Information

Drawing Schedules with Manufacturer's Data

Remember to edit these paragraphs for what is in the project!

2.2.2.1 General Facility and System Description

- Function of the facility
- Edit systems

2.2.2.2 Basis of Design

- Use for DB Only
- Provide a copy of the final Basis of Design

2.2.2.3 Floor Plans

2.2.2.4 Floor Coverings, Wall Surfaces, & Ceiling Surfaces

2.2.2 Facility Information (Cont.)

2.2.2.5 Windows

2.2.2.6 Roofing

2.2.2.7 HVAC Filters

2.2.2.8 Plumbing Fixtures

2.2.2.9 Lighting Fixtures

2.2.2.10 Equipment Listing

- Major equipment list

2.2.2.11 System Flow Diagrams

- Normal Operations

2.2.2.12 Valve list

2.2.2.13 Riser Diagrams

WINDOW SCHEDULE

NO	STYLE	SIZE			PROTECTION		MANUFACTURER	SERIES	REMARKS
		WIDTH	HEIGHT	MATERIAL	SHUTTER	IMPACT			
101	3060 CASEMENT	3'-0"	6'-0"	ALUM		YES	PGT WINGUARD		
102	3060 CASEMENT	3'-0"	6'-0"	ALUM		YES	PGT WINGUARD		
103	3060 CASEMENT	3'-0"	6'-0"	ALUM		YES	PGT WINGUARD		
104	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
105	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
201	3020 AWNG	3'-0"	2'-0"	ALUM		YES	PGT WINGUARD		
202	2040 CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		W/ 1'-10" HIGH TRANSOM ABOVE
203	2040 CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		W/ 1'-10" HIGH TRANSOM ABOVE
204	2040 CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		W/ 1'-10" HIGH FALSE TRANSOM ABOVE
205	2040 CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		W/ 1'-10" HIGH FALSE TRANSOM ABOVE
206	ARCH DBL. CASE.	4'-0"	6'-0"	ALUM		YES	PGT WINGUARD		
207	3060 CASEMENT	3'-0"	6'-0"	ALUM		YES	PGT WINGUARD		
208	2S CASEMENT	3'-1"	6'-4"	ALUM		YES	PGT WINGUARD		
209	2S CASEMENT	3'-1"	6'-4"	ALUM		YES	PGT WINGUARD		
210	2S CASEMENT	3'-1"	6'-4"	ALUM		YES	PGT WINGUARD		
211	ARCH CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
301	ARCH DBL. CASE.	3'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
302	ARCH DBL. CASE.	3'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
303	ARCH CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
304	ARCH CASEMENT	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
305	FIXED GLASS	1'-8"	4'-10"	ALUM		YES	PGT WINGUARD		
306	FIXED ARCH TOP	3'-0"	6'-4"	ALUM		YES	PGT WINGUARD		
307	FIXED GLASS	1'-8"	4'-10"	ALUM		YES	PGT WINGUARD		
308	FIXED GLASS	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
309	FIXED GLASS	2'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
310	ARCH DBL. CASE.	3'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
311	ARCH DBL. CASE.	3'-0"	4'-0"	ALUM		YES	PGT WINGUARD		
312	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
313	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
314	FIXED ARCH TOP	3'-0"	2'-8"	ALUM		YES	PGT WINGUARD		
315	FIXED ARCH TOP	3'-0"	2'-8"	ALUM		YES	PGT WINGUARD		
316	2330 CASEMENT	2'-3"	3'-0"	ALUM		YES	PGT WINGUARD		
317	FIXED GLASS	3'-2"	3'-0"	ALUM		YES	PGT WINGUARD		
318	FIXED ARCH TOP			ALUM		YES	PGT WINGUARD		SEE REAR ELEVATION FOR DIMENSIONS
319	FIXED GLASS	3'-2"	3'-0"	ALUM		YES	PGT WINGUARD		
320	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
321	3060 CASEMENT	3'-0"	5'-0"	ALUM		YES	PGT WINGUARD		
322	ARCH DBL. CASE.	3'-0"	4'-0"	ALUM		YES	PGT WINGUARD		

2.3 eOMSI Facility Data Workbook (FDW)

- **NOTES:**
  - Contact FMD/FMS for guidance and assistance in editing FDW and identifying the Mastersystems, Systems, and Subsystems!
  - For DBB, preliminarily edit FDW and attach to this section (electronically in PDF package)
  - For DB, DOR edits the section, & coordinate with NAVFAC PW FMD/FMS
  - Brackets and tailoring in paragraphs for DBB and DB

- **Description of Tabs:**
  - Instructions Tab
  - Model & Facility Data Matrix Tab
  - Required Asset Fields Tab
  - KTR Sample Facility Data File Tab
  - KTR Facility Data File Tab

3.1 Field Verification

Verify data in the Workbook to what's installed!

- Perform at **50%** construction completion to ensure accuracy and capture items that will be covered up by finishes, etc.
- Perform no less than **60 days** prior to BOD to ensure all items captured and accurate
- **Sample** data by choosing 5 Mastersystems and 5 items under each of them (Who chooses items for verification?)
  - Modify and Choose Project Systems to Sample (Conveying, Plumbing, HVAC, Fire Protection, & Electrical)
- Must be 100% accurate, or need to redo!

Related Criteria Revisions Status

- **UFGS 01 78 23, OPERATION AND MAINTENANCE DATA**
  - Currently in Final Tri-Service review
  - Target AUG 2015 Release
  - Moved training requirements from 01 78 24.00 20 to here
  - Referenced from 01 78 24.00 20 for Operation and Maintenance Data
  - Contains alternative paragraph for O&M Manuals if 01 78 24.00 20 is not used
- **UFGS 01 78 00 CLOSEOUT SUBMITTALS**
  - Under full revision by USACE
  - Major revision to As-Built, Record Drawings and Record Model with reference to FC 1-300-09N
  - Change published in July 2015 release while revision continues - defined Record and As-Built Drawings and reference FC 1-300-09N

Related Criteria Revisions Status

- **UFGS 01 30 00 ADMINISTRATIVE REQUIREMENTS**
  - Updated Availability of Source Files for Record Drawings
  - Under Revision with targeted August 2015 Release
- **DBB SAES**: COMPLETED
  - Updated to require FDW for DBB AE Projects
- **FC 1-300-09N DESIGN PROCEDURES**
  - Level of completion of Facility Data Workbook throughout Design Phases
  - Added BIM Modeling requirements
  - Change 1 published April 2015
  - Change 2 targeted for FY 15 to clarify PxP submittal in phases
- **BMS**: CI DB and DBB processes
- **Data Storage Requirements**

BIM's Impact on IHD

Design Submittals remain unchanged from DOR:

Refer to FC 1-300-09N Design Procedures

Preliminary Design (CH 12-4.5.3)

Final Design (CH 12-4.5.4)

BIM Modeling not applicable for IHD

BIM Modeling Requirements

FC 1-300-09N Update: Added Chapter 12-5 Building Information Management/Modeling (BIM) Requirements

- BIM applicability, definitions, procedures & submittals (Section 12-5)
- eOMSI FDW applicability, definition & submittals (Section 12-3.2)
- Instructions to DOR and KTR on how BIM models are developed

BIM Modeling Requirements (Cont'd)

Applicability:

- ECB 201-01: Applies to projects at Navy Installations, Joint Bases, Department of Defense (DoD) Agencies, or Field Activities where NAVFAC PW is the maintenance provider that meet the following: $1M New Construction; or 50% PRV Major Renovation

Definitions:

- Project Execution Plan (PxP)
- 3D Parametric Modeling Application
  - Parametric = Parameter
  - Data driven

BIM Modeling Requirements (Cont'd)

Definitions:

- Model - Entire facility/building
- Model Element - Individual building components: Walls, Doors, Windows, Pumps, Air Handlers, etc.
- Element Data:
  - Physical Size - Length, Width, & Height
  - Material Definitions - Wood, Metal, Plastic, Color
  - Required Facility Asset Fields - up to 17 in eOMSI FDW

BIM Modeling Requirements (Cont'd)

Definitions:

- Design Model – 3D parametric model by the DOR
- Record Model – KTR modifies Design Model as facility is constructed & equipment installed
- See Figure 12-4 Drawing and Model Progression
- eOMSI FDW - Excel workbook containing Facility Mastersystems, Systems & Subsystems for PW MAXIMO upload

BIM Modeling Requirements (Cont'd)

Procedures:

- Model File Naming Conventions
- Design Model Naming Convention (DOR)
- Record Model Naming Convention (KTR)

BIM Modeling Requirements (Cont'd)

Procedures:

- Minimum Modeling Requirements
  - Use of Parametric Modeling software is required
  - Model and Facility Data Matrix
    - Created and Refined throughout Design phase
    - DO NOT break up the spreadsheet!!!
  - One Model for Each Discipline
  - Each discipline model (ARCH, STRUCT, MEP) linked & documented in PxP
- Data driven schedules
  - Finish, Equipment, Lighting, Plumbing & Door Schedules

BIM Modeling Requirements (Cont'd)

Submittals:

- Visual Review Report
  - DOR document that compares FDW to Model Elements
  - Ensures all items identified in Model and Facility Data Matrix tab are present in Model
  - Identifies Model Elements that are not selected in the FDW
- Design Clash Detection
  - Confirms DOR conducted clash detection & found no clashing Model Elements
- BIM Submittals are in ADDITION to the submittals we receive for Non-BIM projects

QUESTIONS???