

MHS BIM Objectives

Building World Class Healthcare

<http://www.tricare.mil/ocfo/ppmd/index.cfm>



The MHS has unofficially had nine primary focused BIM objectives guiding various efforts. The use of defined objectives gives the MHS a deliberate approach for implementing BIM use as an enabling tool to support the mission of the MHS, specifically in the FLCM of its direct care facilities and healthcare research laboratories. These objectives are the premise of the proposed PIP for minimum BIM requirements. The list of objectives is not static, but rather dynamic to support the needs of the MHS. They are chosen in a deliberate fashion and are used to allow the MHS to focus on real and tangible solutions; implementing BIM strategically, while helping the MHS avoid uses of BIM that may be more whimsical than practical.



Building Information Modeling

Working Smarter!



Band	Objectives and Description
LOD	1. <u>Level of Detail (LOD)</u>. Clearly define the level of level of effort/detail (LOE/LOD) in the BIM and associated submittals. a. Use existing industry standards where possible. (e.g. AIA & VA LOD, and defined in a BIM Executive Guide) b. Standardize BIM expectations and language within the MHS projects to reduce confusion during contract, design and construction. i. Stretch Goal: Relative to BIM implementation: coordinate standardization with VA and other healthcare systems to achieve mutual objectives more effectively within the AEC industry.



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Validation	2. <u>PFD Validation</u>: Automate the validation of the contracted program requirements during the design process. Validating the program for design (PFD) in an efficient and effective manner in the design submittal process. a. The primary goal of this objective is to effectively automate the integration of the PFD requirements to include space criteria (UFC 4-510-01 Appendix A) comparisons in real time. This enables the entire team to eliminate time intensive space take-offs, and to more effectively assess current design status relative to contracted program while increasing the confidence of accuracy. b. This objective has significant benefits to both the MHS services and agents reviewing submittals, but also to the design teams tasked with developing the program and criteria into actionable designs and the builders as they bring the facility into reality, and further as that information is carried into the operations and maintenance. c. This objective also allows planning data to be carried across the various stages of the FLCM to enable longitudinal analysis supportive of a feedback loop in a continuous learning organization. 3. <u>Equipment Validation</u>: Automate the validation of the medical equipment requirements during the design and construction process. Validating the PRC (Project Room Contents) in an efficient and effective manner during the design submittal process is a key element of this objective. a. The primary goal of this objective is to automate the validation process of the design submittals against the PRC provided in the project contract. This enables the entire team to eliminate time intensive take-offs, allowing all members of the team to more effectively assess current design status relative to contract requirements while increasing the confidence of accuracy. b. Refer to objective discussion 2.b above. c. This also supports and enables more accurate design integration of the medical equipment and significantly reduces the man-hours involved in the design development of the medical equipment plans. d. The effort also allows a more automated coordination and integration of initial MILSTD 1691 Database details allowing earlier concept engineering analysis. Further the effort supports a more real-time update of the engineering requirements as the design team refines the medical equipment details in design development and final design. e. There are also secondary benefits related to IO&T coordination.



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Integration of Data to DMLSS	4. <u>DMLSS- Facility Management (FM) Integration</u>: The focus of this goal is to automate the loading of new RPIE information into the DMLSS-FM module and more effectively coordinate the information needed from design and construction to support effective operations and maintenance of our facilities. a. This objective works to streamline the process steps required to effectively and accurately get the RPIE items loaded in the DMLSS-FM in a timely fashion such that they are available to the facility manager (FM) at BOD. The current process is non-standard, manual and often unique to each project. Currently even small projects can take months after BOD to get loaded by a process that is often highly manual and replicating information that is often a duplication of data entry effort already performed at least once by other members of the AEC team. b. This objective works to reduce the total effort required by the designer, construction contractor and service staff collecting, organizing, validating, standardizing and entering into multiple systems (e.g. databases, spreadsheets, etc.) to ultimately get it into the DMLSS-FM model. 5. <u>DMLSS-Equipment & Technology Management (E&TM) integration</u>: The focus of this objective is to automate the hand off of information through procurement and loading into the DMLSS-E&TM module effectively. a. This effort will predominately focus on standardizing information to be handed off for procurement from the design in such a way that it better facilitates the structure of the data passed from IO&T planning to procurement to DMLSS-E&TM for importing. b. Stretch Goal: Over time the efficacy of passing this data directly to the medical logistic procurement system will be considered. c. Stretch Goal: Over time the efficacy and benefit to the MHS to link the DMLSS-E&TM data to the BIM/CAD models will be considered.
Energy	6. <u>Energy</u>: The primary focus of this objective is to use BIM to more effectively and efficient support energy modeling of the design to allowing the team to make substantive sustainability (e.g. energy) decisions, support the MHS's ability to assess the performance over time and potentially support a degree of accountability towards energy independence. a. The primary focus of this objective is to allow timely and concurrent energy analysis of alternative design solutions. This would support energy decisions that synchronized with the design development process, rather than lagging too far behind the ongoing design decisions. b. The use of BIM integrated various assessment tools (e.g. Trace 700) can significantly increase the design teams ability to determine impacts of alternatives and better support more collaborative discussions among the various team members. c. The use of BIM also is more supportive of down-stream fabrication operations which support the ability to enable more shop fabrication, reducing onsite construction. Shop fabrication has proven to increase overall quality and accuracy in many aspects of the MEP and building envelope construction, which are key factors in translating energy efficient design into reality.

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Planning Feedback	7. <u>Planning & Programming Analysis</u>: Effective, relational and accurate data from requirements and design development, construction, transition and operations back to planning policy development. a. The primary focus of this objective is to roundtrip Space Data on cost back to Planning (PPD) – create an effect feedback loop. b. The handoff of data to DMLSS-FM will also support higher accuracy of relating facility data back to MHS healthcare datasets such as M2.
Transition Support	8. <u>Initial Outfitting & Transition (IO&T) Support</u>: Effectively integrate the transition planning an execution with planning and design development. This objective targets integrating the transition planning and initial outfitting (IO) procurement process more effectively with the design development and construction execution. a. Transition planning is enhanced when synchronized with the design and construction. The effective exchange of information between transition planning teams and the design and construction teams will reduce conflicts, rework and confusion. b. Stretch Goal: Support the automation IO (LOGCAT C) purchases to facilitating the initial outfitting procurement and installation process.
FLCM Interoperability	9. Interoperability of Required Elements across the FLCM. a. Support means and methods in the industry that enable and are complimentary to effective exchange of information as we execute the MHS objectives on BIM. i. This includes support of common industry standards whenever possible. (e.g. IFC, IFD, Omni-Class, etc.) b. Execute our objectives in such a way that supports and enforces interoperability of data exchanges across the FLCM within the AEC industry. c. Ensure that data silos are broken down as we execute BIM objectives, facilitating a common language emphasizing and supporting the exchange of data seamlessly. d. Supports integration to other MHS systems and avoids creating legacy system solutions. e. Keeping the end, beginning and middle pieces in mind when executing BIM to support common objectives. f. Avoid trend implementation of BIM solutions. i. Trend BIM solutions are ideas that have not been articulated to a defined MHS objective, but are the result of whim over practical solutions to stated objectives. g. Support federal initiatives to synchronize data to allow integrated disaster relief or response in a national emergency. (e.g. http://www.ahrq.gov/prep/havbed/havbed5.htm)