Architecture Committee Report
August 8, 2019

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Ed Moshinsky, Co-Chair
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Status – August 2019

- **Meeting Bi-Weekly, w/Separate Sub-Committee Meetings as Req'd:**
  - MOSA Recommendations Sub-Committee (Bob Scheurer, et. al.)
  - Revisions to MOSA Recommendations and White Paper (Steve Thelin, et. al.)
  - MOSA Metrics Sub-Committee (Modularity / Openness) (Charles Domercant, et. al.)
- **Currently 62 Members (+2 Since June Report) – Cross-Section of Industry & Govt.**
  - Incl. DoD/Services Sponsors: Philomena (Phil) Zimmerman, Monique Ofori, Kyle Hurst, et. al.
  - About 1/4 are regularly engaged participants
- **Top Focus Area: Modular Open Systems *Approach* (MOSA)**
- **21 SE Conference Abstracts Accepted for Architecture/MOSA Track (All Day Wed. Oct. 24 and Thurs. Oct. 25 A.M.) – 10 Abstracts in 2018**
- **Several Committee Members Participating in MOSWG Events**
  - Steve Thelin Brief of Committee's MOSA Recommendations at MOSA Industry Meeting
  - Many Team Members Participating in MOSA Standards WG

Status – August 2019 (Continued)

- **Response to DoD Inquiry: "*What does Industry need from OSD to show OSD's commitment to MOSA*?" (Ed Moshinsky Coordinating)**
- **Inquiry by Phil Zimmerman: How to make architectures and architecting more useful.**
- **Future Architecting/Architecture Topics Under Consideration:**
  - Measuring MOSA / MOSA Metrics (Derived from Recommendations)
  - Architectures in Mission Engineering, Digital Engineering, etc.
  - Architecture Frameworks (UAF etc.)
  - Reference Architectures

Back-Up/Reference Material

Architecture Committee Current Membership

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Summary of MOSA White Paper Recommendations

(Rev. B2 - 20190726)

1. **Develop MOSA strategy early in an acquisition process:** Explicitly state MOSA objectives, desired outcomes, and the strategy/plan for getting there at all appropriate levels.
2. **Define MOSA implementation approach (Acquirer & supplier roles):** Define levels of modularity and openness for each level of design, planned partitioning, what and how interfaces are to be controlled, and the domain in which commonality is desired.
3. **Define interfaces in terms of MIL-STD-881D taxonomy levels of detail (2 and 3 digit level, i.e. major system levels; For example, 4-digit level would be a radar system, air frame, propulsion, power, etc.):** MIL-STD-881D is important for establishing a common language and needs to be used consistently
4. **Apply MOSA in software architectures at appropriate levels of abstraction and complexity:** Develop a software taxonomy similar to 881D to guide development of software MOSA along with the targeted applicable software domain
5. **Implement MOSA as part of a larger and more robust Digital Engineering strategy**
6. **Incorporate cybersecurity strategy in a MOSA application at the time of initial design, not as a later addition:** Design-in SSE up front and as part of the system architecture
7. **DOD and industry work together to define how to evaluate MOSA and certify as MOSA compliant:** Define MOSA metrics, evaluation process, certification requirements, and create library of MOSA certified systems
8. **Develop and implement enablers with appropriate investment to affect culture change required for successful widespread adoption of MOSA**: Includes OSMP, MOSA in Technical Reviews, and MOSA Strategy Defined at all levels of the system
9. **Create library of MOSA-Certified systems and interfaces: Re-useable a**rchive for follow-on impr.
10. **Define a means for comparing and specifying standards and interfaces for a MOSA enabled environment:** Critical for assigning interfaces/types in an architecture and identifying gaps

Architecture Committee Near-Term Discussion Topics

- Enterprise Architecture (EA) – Ed Moshinsky
- Mission Engineering, Including MIM Feeding EA – Ed Moshinsky
- Architecture for Standards – Tom Murphy
- What is the minimal set of data defining "openness"? – Phil Zimmerman via Tom Murphy
- Proper Segregation of Functional Design – Tom Murphy
- Meta Data – Tom Murphy

Future Architecture Committee Long-Term Position Paper Topics Under Consideration

1. **Bridging Requirements to the System Architecture/ Design via Functional Analysis**
2. **Model Portability and MOSA (to enable rapid start-up and implementation of system architectures)**
3. **DoDAF 2.02 – Identify Changes to Accommodate Mission Engineering, Digital Engineering, MOSA, etc.**
4. **Architecting/SE Tools: Involvement with tool identification, implementation recommendations, etc.**
5. **Reference Architectures: Value Proposition, Adequacy, and Use**
6. **Architectures and Architecting Utilization in Digital Engineering, Mission Engineering, MBSE, etc.**