Headquarters U.S. Air Force

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State of the AF Standardization Program

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13 October 2020

Standardization Priorities

Non-Gov Stds

Engage Standards Development in Critical Technology Areas

Quantum Tech
Artificial Intelligence
Microelectronics

Specialty Stds

Promote Standards Development in Specialty Engineering

MOSA
Cyber Resilience
Microelectronics
Digital Eng, MBSE, HSI, ESOH
Advanced Mfrg

Overage Stds

Reduce the Number of Overage Stds.
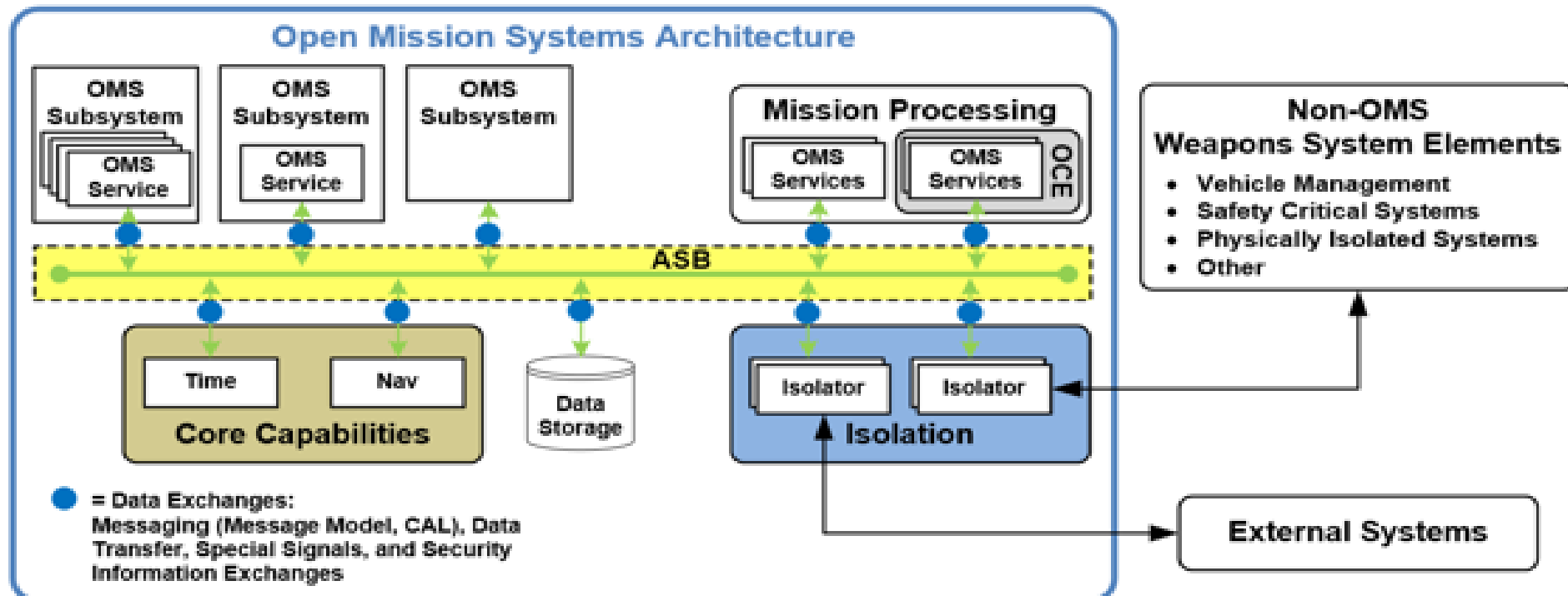
Maintain Relevance of Current Stds.

Non Government Stds

- **2019 update to AFI 60-101 *Air Force Standardization Program* reiterated use of NGS first and encourages USAF personnel participation in NGS bodies**

- **Coordinated training for AF personnel from DSPO and NIST to specifically address Air Force participation in NGS bodies**

- **Significant efforts to improve access to NGS though the AFMC led NGS purchase consolidation efforts and ongoing POM submissions**

- **2020 data call on DAF participation in NGS revealed:**
  - **Over 170 individuals actively engaged in NGS bodies**
  - **USAF representation in ~50 different NGS bodies**
  - **Over 50 instances of USAF personnel having voting rights**
  - **Over 30 instances of subcommittee/committee leadership**

- **Common problem: prioritizing technical SME's time and effort on NGS activities with additional leadership demands**
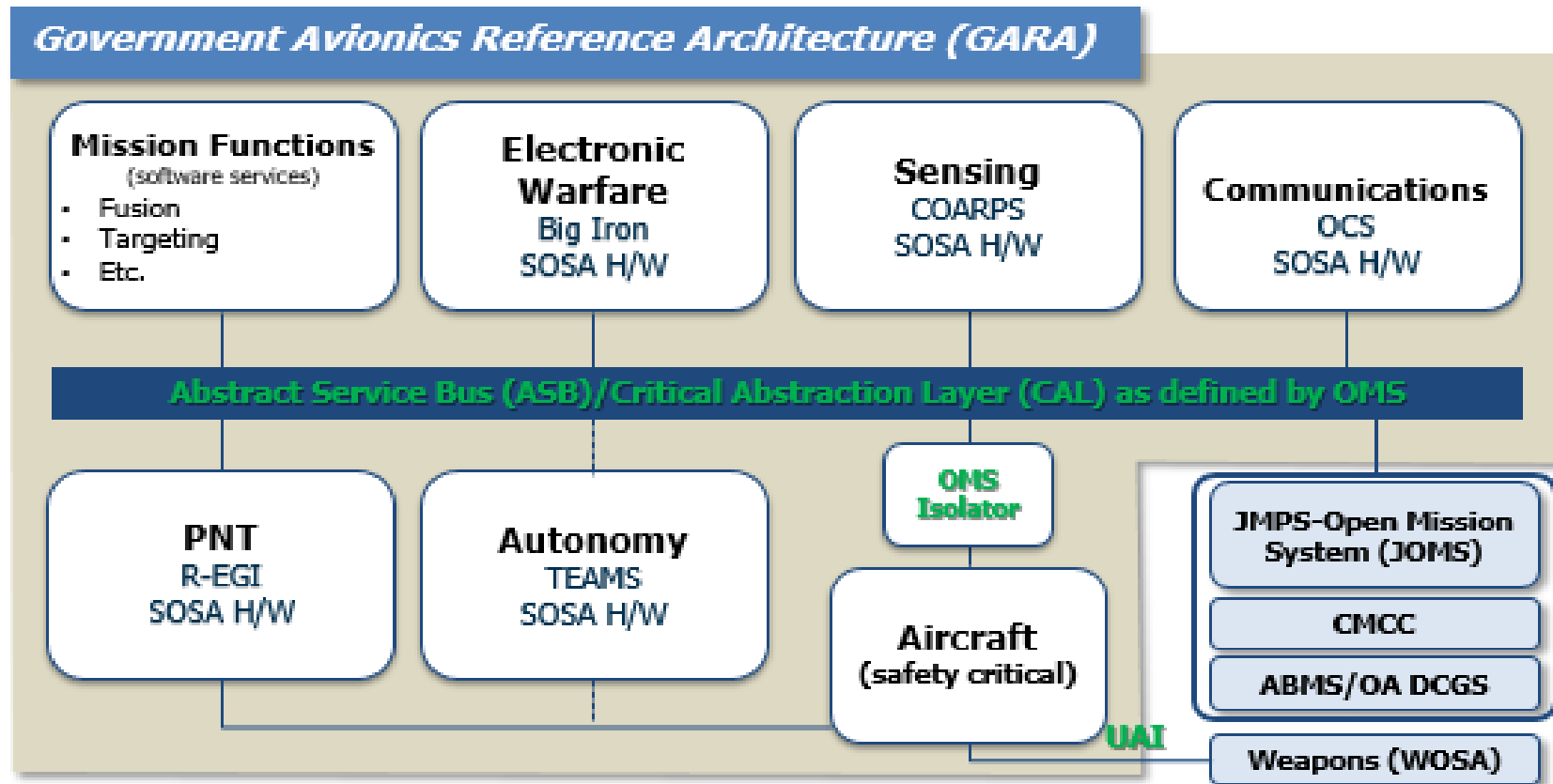
Specialty Engineering

- **Standards are the foundation of a Modular Open Systems Approach; ongoing efforts include Open Mission Systems (OMS), Sensor Open System Architecture (SOSA), Weapon Open Systems Architecture (WOSA) Common Payload Interface Standard (CoPaIS), and more**

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Specialty Engineering

- **Multiple initiatives underway to align these existing and emerging reference architecture standards to maximize synergy, reduce duplicative work, and ensure coverage of all critical application areas**

Government Avionics Reference Architecture (GARA)

| Mission Functions (software services) • Fusion • Targeting • Etc. | Electronic Warfare Big Iron SOSA H/W | Sensing COARPS SOSA H/W | Communications OCS SOSA H/W |

Abstract Service Bus (ASB)/Critical Abstraction Layer (CAL) as defined by OMS

| PNT R-EGI SOSA H/W | Autonomy TEAMS SOSA H/W | OMS Isolator / Aircraft (safety critical) | JMPS-Open Mission System (JOMS) / CMCC / ABMS/OA DCGS |

UAI   Weapons (WOSA)

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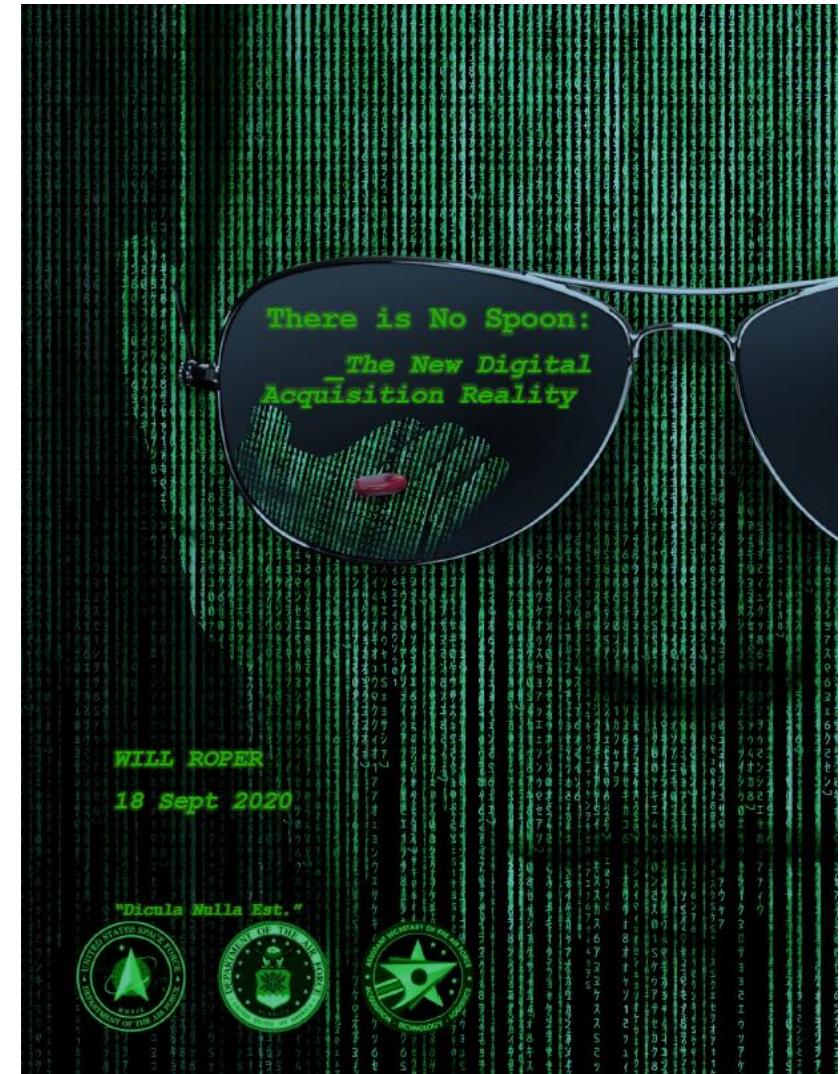# *Additional Standardization Activities*

- **Supporting OSD, Tri-service Working Groups advancing standardization**
    - **Digital Engineering, Modular Open Systems, Human Systems Integration, etc**

- **Supporting OSD/DSPO led initiatives to develop standards and reference architectures in emerging technology areas**
    - **Microelectronics; directed energy; Position, Navigation, and Timing (PNT); etc**

- **Connecting SMEs to SAE, IEEE, and other standards developing organizations to ensure AF and DoD equities are included in emerging NGS**

- **Digital Engineering, paired with Agile Development and Open Architectures, will create a paradigm shift in government acquisition**
  - **Must develop models with sufficient accuracy to become a substitute for reality**
  - **Connect models, leverage supporting data, and integrate analytic tools into a single, government owned tech stack**
  - **Automate where able to enable "Dev*Ops"**

Standardization of data formatting and sharing, modeling, architecture design, and more are _foundational_ to enable a digital modernized acquisition future

There is No Spoon:
_The New Digital
Acquisition Reality

WILL ROPER
18 Sept 2020

"Dicula Nulla Est."

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Overage Document Reduction

- **Standardization Management Office (SMO) at Wright Patterson acts as Preparing Activity (PA) for various technical SMEs across AFMC**

  - **Run overage forecasting twice a year and reaches out to SMEs in advance of ASSIST automated notification**

  - **Established new Preparing Activity dedicated on finding new owners for documents whose technical leads retired, changed jobs, etc**

- **AFRL has revamped their Specs & Standards review approach**

  - **Established 52 "specialty areas" and assigned a lead scientist or engineer to each**

  - **From 2017 to today reduced the number of overage documents from 342 to 10 (all actively undergoing revision)**

- **Most common problems:**

  - **Locating appropriate technical SME to lead rewrite effort**

  - **Slow document coordination for length, complex, or high visibility documents**

Summary

- **The Air Force Standardization Program is a strong, vibrant, and dedicated community**

- **Current focus:**
  - **Increasing AF involvement and engagement with non government standards efforts, especially in critical technologies**
  - **Advancing standardization activities in specialty engineering areas like MOSA, MBSE, and HSI**
  - **Maintaining the currency of our existing documentation**

- **Primary POC(s):**
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Questions?

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