



FACE Business Overview

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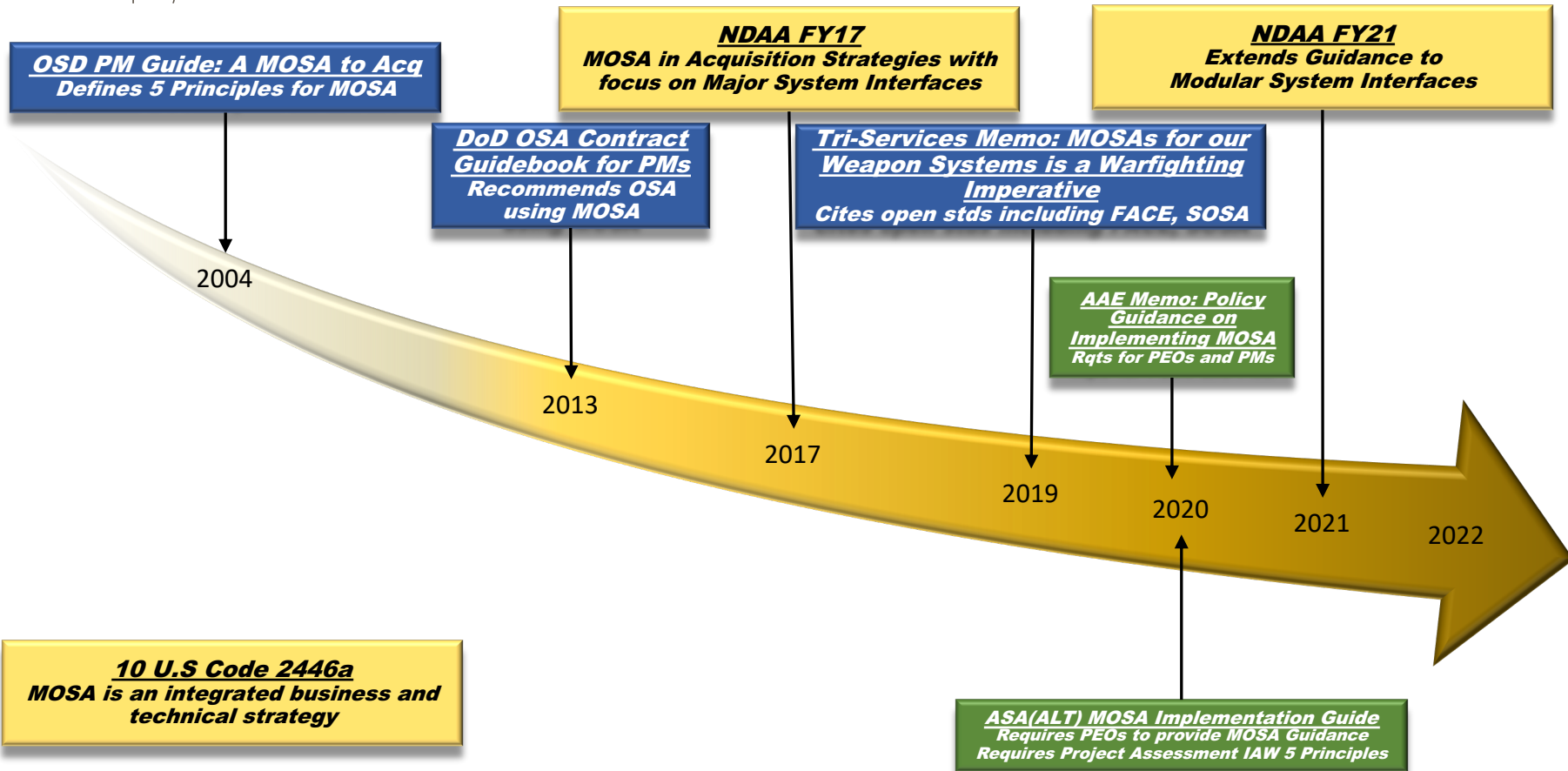


Agenda

- ▶ MOSA Guidance
- ▶ FACE Executive Summary
- ▶ Available Business Resources
- ▶ Value of the FACE Approach



Evolution of MOSA Guidance



Software Reuse is Critical



PMs Dilemma

Platforms

A.



B.



C.



Different Upgrade Reasons

- New warfighter functionality
- Congressional/Higher HQ mandates
- Obsolescence Issues
- Technology insertions

Funding Profiles

Platform A

- Task A
- Task B
- Task C
- Task D
- Task E
- Task F

Reuse

Platform B

- Task A
- Task B
- Task C
- Task D
- Task E
- Task F

Reuse

Platform C

- Task A
- Task B
- Task C
- Task D
- Task E
- Task F

SW reuse via the FACE Approach allows you to *do more with what you have!*



FACE Executive Overview

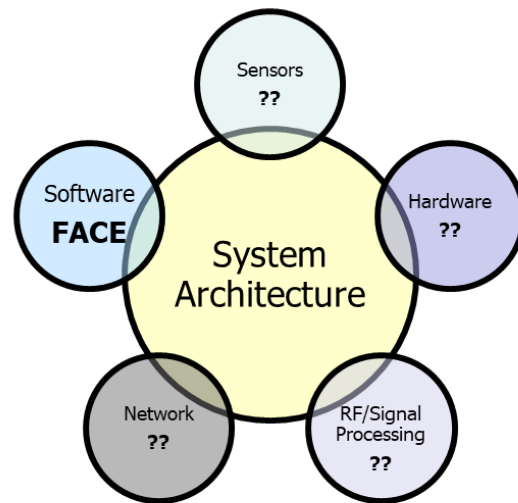
- FACE Technical Standard is an open avionics standard for software developed by Government, Industry, and Academia
- FACE Approach defines a new architectural and business approach to developing / procuring avionics software
- The development of the FACE Technical Standard and business approach is managed by The Open Group
- FACE Consortium documents are published by the Open Group and free to download

Get the best avionics software to the Warfighter faster

FACE Key Goals, Scope & Approach

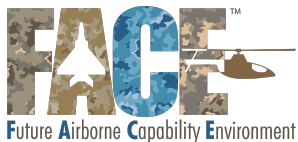
Key Goals

- **Improve the affordability of capabilities**
- **Improve time-to-field, delivering new capabilities to the warfighter faster**



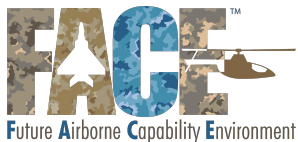
FACE Approach

- Business processes to adjust procurement and incentivize industry
- Technical practices to promote development of reusable software components
- A component-based software standard to promote the development of portable components between differing avionics architectures



FACE Attributes and Assets

- Supporting Attributes
 - Accelerate innovation and new technology insertion
 - Enable cross-platform software modularity, portability, and reuse
 - Create an Off-the-Shelf (OTS) software marketplace
 - Align with other open architecture initiatives and industry standards
- Some available Business Assets
 - FACE Conformance Program
 - FACE Library
 - FACE Contract Guide



FACE Maturity & Adoption

Conformance Process is Operational

Industry utilizing SPLs with FACE requirements

- Multiple Primes and Suppliers
- Saving time and money

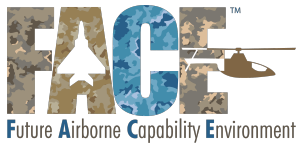
Technical and Business Expertise available

FACE Certified Conformant Products are Available Now

- 25 UoCs in FACE Registry
- 14 Software Suppliers
- More on the way

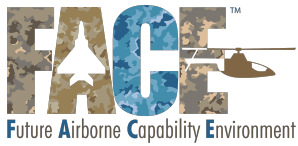


FACE Approach is ready and in use now!



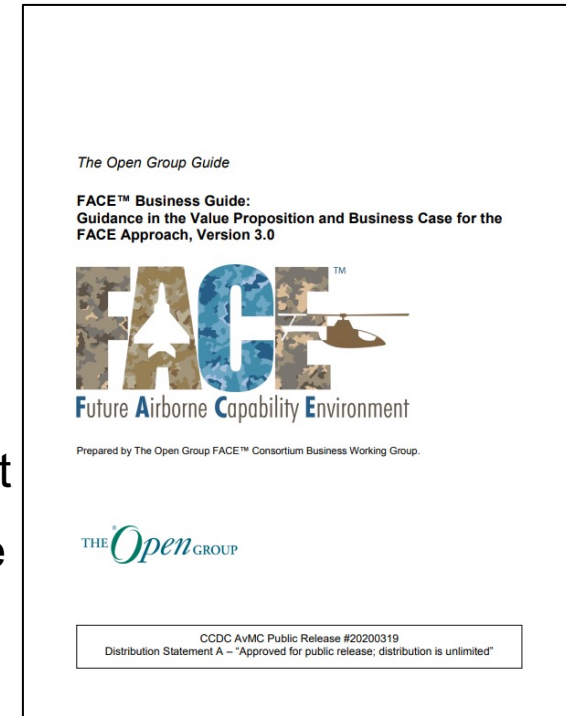
Common Misconceptions

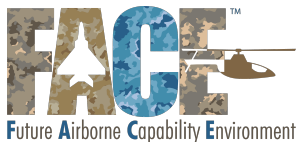
- ❌ ALL platform software must be FACE Conformant
- ❌ Ensures (or inhibits) performance
- ❌ Only applies to future systems
- ❌ Cost and schedule prohibitive
- ❌ Requires unlimited Data Rights
- ❌ Guarantees (or prevents) airworthiness qualification



FACE Business Guide v3.0

- ▶ Provides Guidance in the Value Proposition and Business Case for the FACE Approach
- ▶ The guide covers:
 - ▶ FACE Approach & Common Misconceptions
 - ▶ Value of FACE Approach to Government & Industry
 - ▶ Applicability to Future Platforms & Enduring Fleet
 - ▶ Rights in Technical Data and Computer Software
- ▶ Version 3.0 is publicly available
 - ▶ <https://publications.opengroup.org/g172>
 - ▶ Requires log-in to The Open Group Library





FACE Contract Guide v3.0

A Guide to help creation of solicitations with FACE requirements

- ▶ Provides sample/tailorable language

- ▶ RFPs

- SOW (Statement of Work) (Section C)
 - Proposal Instructions (Section L)
 - Evaluation Criteria (Section M)
 - Special Licensing (Section H)
 - Deliverables

- ▶ RFIs

- ▶ BAA or OTA Topics

- ▶ Leverages the DoD OSA Contract Guidebook for PMs

- ▶ Does not change procurement process or requirements

- ▶ Includes commentary boxes with rationale, additional information and alternate approaches

- ▶ Version 3.0 is publicly available

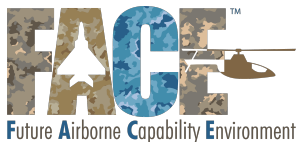
- ▶ <https://publications.opengroup.org/g20a>

- ▶ Requires log-in to The Open Group Library



Commentary

The following section contains recommended SOW language for FACE requirements. PMs can tailor the language...



FACE Conformance

FACE Conformance is ...

An assessment of a Software Item or Domain Specific Data Model, known as a Unit of Conformance (UoC), to the applicable Conformance Requirements contained in the FACE Technical Standard

A level of confidence that certified UoCs fully conforms to the FACE Technical Standard

FACE Conformance is NOT ...

NOT a Measure of Functionality or Performance

- Interfaces are tested
- Other Verification Evidence is inspected (evaluated)
- Does not include Functional Testing

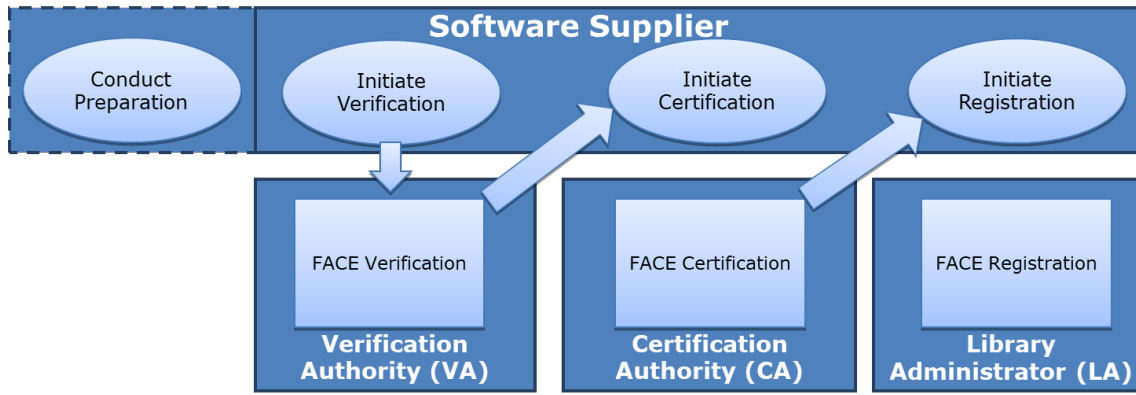
NOT a Guarantee of a Plug-n-Play Solution

- Various levels of integration will likely be required for porting (reuse of software)

There is

- No “compliance”- Software is either “certified conformant” or not
- No FACE certification for entire systems
- No FACE certification for independent libraries, runtimes, frameworks

FACE Conformance Program Steps and Process



Provides the infrastructure to enable the development and discovery of FACE UoCs

Sites and uses include:

- ▶ <https://facesoftware.org>
 - ▶ Browsing and searching the FACE Registry for information on FACE certified UoCs
 - ▶ Submitting UoCs and UoC packages to the FACE Conformance Program
- ▶ <https://opengroup.org/face>
 - ▶ Downloading published FACE documents and tools
 - ▶ Learning about FACE Verification and Certification process
 - ▶ Learning general information about the FACE Consortium
- ▶ <https://ticketing.facesoftware.org>
 - ▶ Submitting Problem Reports and Change Requests on FACE documents and tools

Value to Industry

Customer Requirements



Satisfy The Customer

- Fulfills OSA, MOSA, and FACE requirements on contracts
- Supports the government to achieve MOSA principles
- Facilitates rapid technology insertion
- Aligns with customer products roadmaps

Revenue & Market Share



Grow the Business

- Increases competitive opportunities
- Reduce barriers and cost of entry into new contracts
- Opportunities on previously "closed" platforms
- Drives innovation
- Expand into new markets
- Integration Opportunities

Productivity & Profit



Improve Shareholder Value

- Increase opportunities for SW reuse across platforms
- Improve time to market by accelerating development time
- Create Software Product Line opportunities
- Increases opportunities of dual use commercial - gov't products
- Improved ROI from investment in capability

Value to the Government

Policy & Mandates



Address NDAAs & MOSA

- Open Interfaces
- Modularity
- Open Standards
- Conformance

Affordability



Do more, with less

- Promote competition
- Reuse across platforms
- Address Obsolescence

Time to Field



Get to the Warfighter Faster

- Reduces development and integration timelines, primarily through software reuse
- Facilitates quick and efficient mission payload changes

Capability



New & Enhanced Capabilities

- Maintain technology superiority
- Promote Innovation

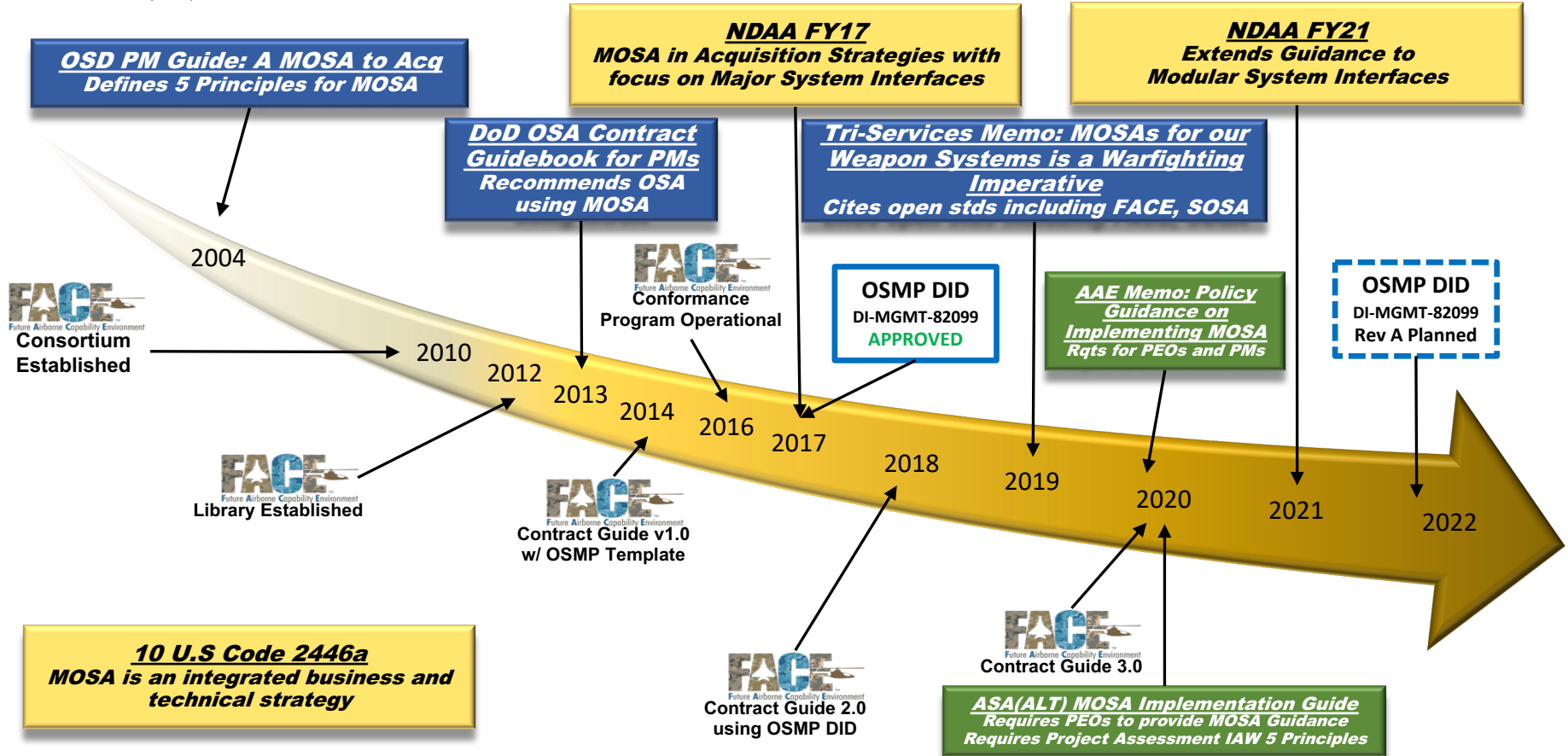
Reuse

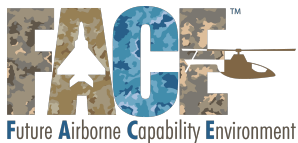


Capability Reuse

- Expand common capability reuse across services and coalition partners
- Enhance interoperability of software components within a computing environment

FACE Business Milestones





MOSA Principles & FACE Approach

5 Principles of MOSA*

FACE Approach & Ecosystem

Establish Enabling Environment

Technical Standard; Data Architecture, Tools (CTS, PR/CR, 3rd Party Tools), RIG, Examples (BALSA), Training, Available Capabilities in Registry, Tailorable Contract Language

Employ Modular Design

FACE Reference Architecture & Data Architecture

Designate Key Interfaces

FACE Interfaces include OSS, IOSS and TSS

Use Open Standards

Leverages existing standards including ARINC 653, ARINC 661, OpenGL, POSIX

Certify Conformance

FACE Conformance Program Operational

*MOSA Principles defined in OSD Open Systems Joint Task Force Program Manager's Guide: A MOSA to Acquisition, v2.0 Sept 2004.

FACE Approach addresses all 5 Principles of MOSA



Thanks!

Any questions?

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