



FACE™ Business Guide v3.0 Overview

Understanding the Value Proposition of the FACE Approach

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Agenda

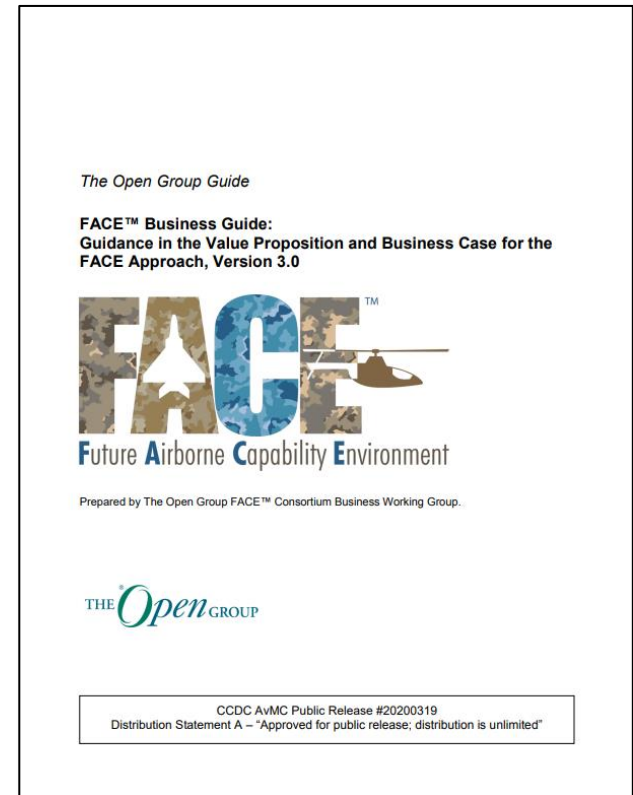


- FACE Business Guide
- FACE Key Goals, Scope, and Approach
- FACE Misconceptions
- MOSA Principles and FACE Approach
- Value of FACE Approach to Government and Industry
- Questions / Discussion

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



Major Enhancements from Previous Version



- More detailed description of the FACE Approach
- Additional detail on Common Misconceptions
- Recent DoD and Service-specific Modular Open Systems Approach (MOSA) policy and guidance
- Information on how the FACE Approach addresses all 5 Principles of MOSA

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

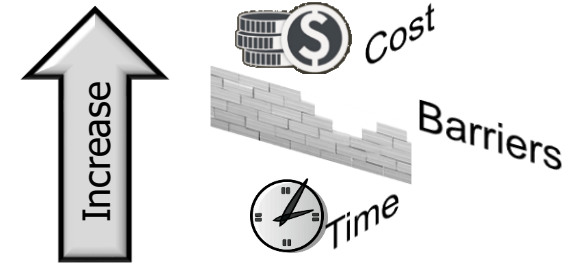
Get the best avionics software to the
Warfighter faster

Current Landscape

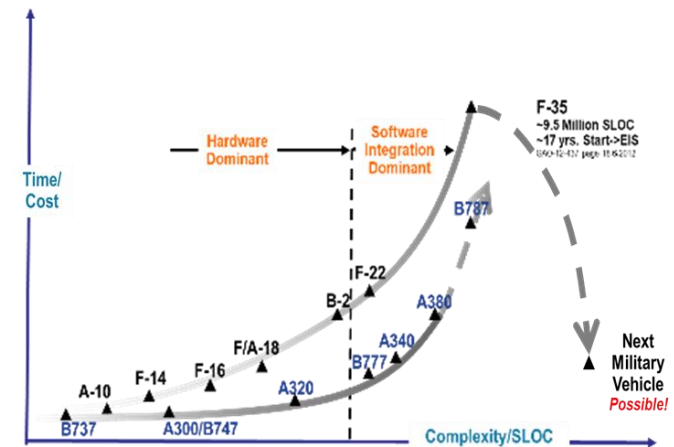
Why a FACE Initiative?



- DoD airborne systems are typically developed for unique requirements by a single vendor
 - Platform-unique designs limit reuse of software & increase cost
 - Creates barriers to competition within and across platforms
 - Long lead times, even for urgent needs



- Current DoD acquisition structure does not sufficiently support software reuse across different programs
 - Community has not adopted a common set of open standards
 - Community has failed to enforce conformance to existing open standards
 - Platform PMAs are not funded or incentivized for multi-platform requirements



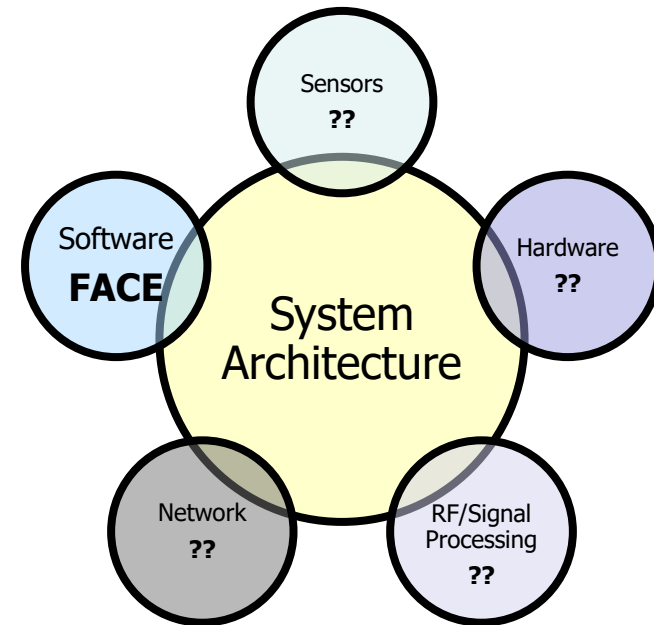
The FACE Approach is a *response* to the DoD aviation community's problems

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 Registry
 - 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

- 24 UoCs in FACE Registry
- 13 Software Suppliers
- More on the way



FACE Approach is ready and in use now!

Common Misconceptions



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

Common Misconception:

All Platform Software must be FACE Conformant



- FACE Approach promotes portability and reuse
- Only software intended for reuse on other platforms/systems should be FACE Conformant
- Capability enabled by software can comprise of
 - FACE Conformant UoCs
 - Non-conformant software

Common Misconception:

Only Applies to Future Systems



- FACE Approach is intended for both Future Platforms and Enduring Fleet
 - Future Platforms have ability to design in FACE Infrastructure or FACE Computing Environment
 - Enduring Fleet have many integration patterns to host FACE Conformant Software using a full or partial FACE Infrastructure
 - Realize benefit of sharing and reusing FACE UoCs across platforms
 - Helps address Obsolescence issues
 - Promotes Cost Avoidance and doing more with less

Common Misconception:

Ensures (or Inhibits) Performance



- FACE Tech STD does not specify or guarantee functionality or performance
 - Robust Systems/Software Engineering processes are still required to ensure functionality and performance

Common Misconception:

Requires unlimited data rights



- FACE Approach does not require a specific data right strategy
 - Recommendation is to focus on open interfaces and employing modular design
- FACE Approach does not require software supplier to relinquish data rights with
 - Software applications or
 - Software computing environments

Common Misconception:

Cost and Schedule-Prohibitive



- FACE Tech STD is an
 - open, non-proprietary technical specification that is
 - publicly available without
 - restrictive contracts,
 - licensing terms,
 - or royalties.
- FACE Approach has many benefits including
 - Integrators develop efficiencies utilizing standard interfaces resulting in
 - Rapid insertion of capabilities
 - Scaling technologies to more platforms/systems

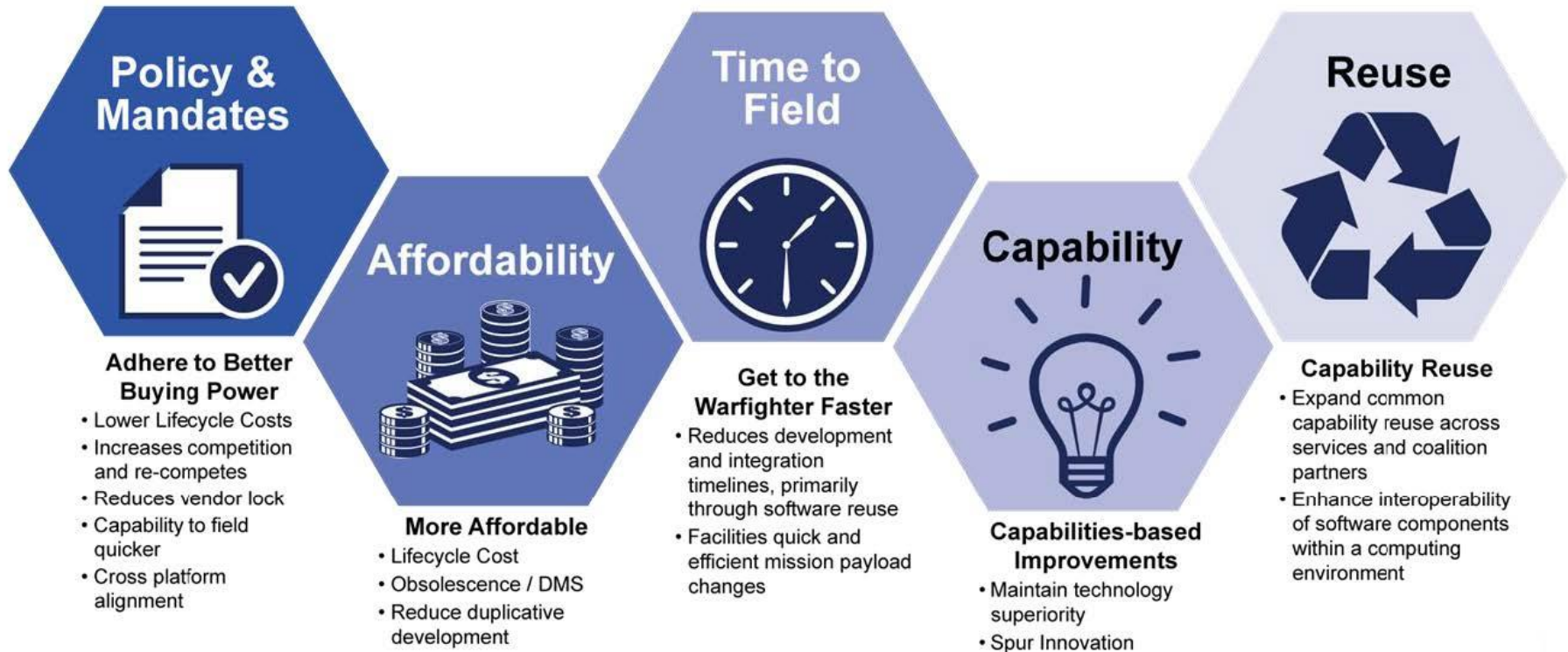
Common Misconception:

Guarantees (or Prevents) Airworthiness Qualification



- FACE Tech STD does not specify or guarantee compliance with safety certification standards
- FACE UoCs and artifacts do not preclude the ability to meet airworthiness requirements
 - DEVCOM AvMC *Developers' Requirements Guide for Airworthy, Reusable FACE UoCs*
 - Address Army-specific airworthiness requirements
 - Available and Approved for Public Release

Value to the Government



Recent DoD and Service-Specific MOSA Guidance



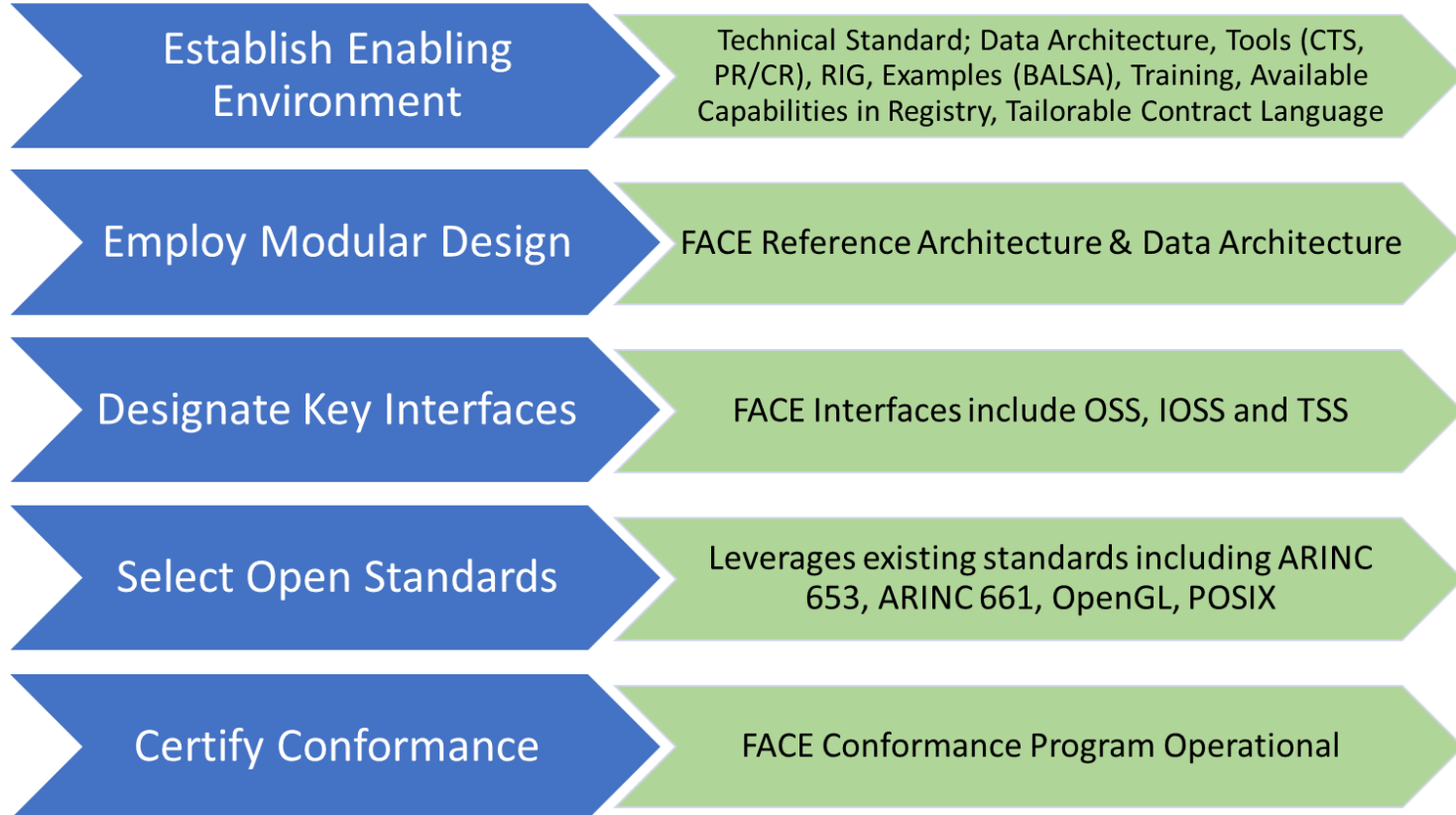
- Tri-Services Memo from 7 Jan 2019: *MOSAs for our Weapon Systems is a Warfighting Imperative*
 - Cites FACE, SOSA, OMS/UCI, VICTORY
 - “Continued implementation of these standards ... is vital to our success.”
 - “Should be included in all requirements, programming and development activities”
- Secretary of Navy issued *Defense Acquisition System & Joint Capabilities Integration and Development Systems Implementation* (SECNAV Instruction 5000.2F) on 26 March 2019
- Army Acquisition Executive Memo from 20 March 2020: *Policy Guidance on Implementing MOSA in Army Acquisition Programs and Middle Tier of Acquisition Efforts*
- Secretary of Air Force ordered *Air Force Instruction 63-101/20-101 Integrated Life Cycle Management* dated 30 June 2020

MOSA Principles & FACE Approach



5 Principles of MOSA

FACE Approach & Ecosystem



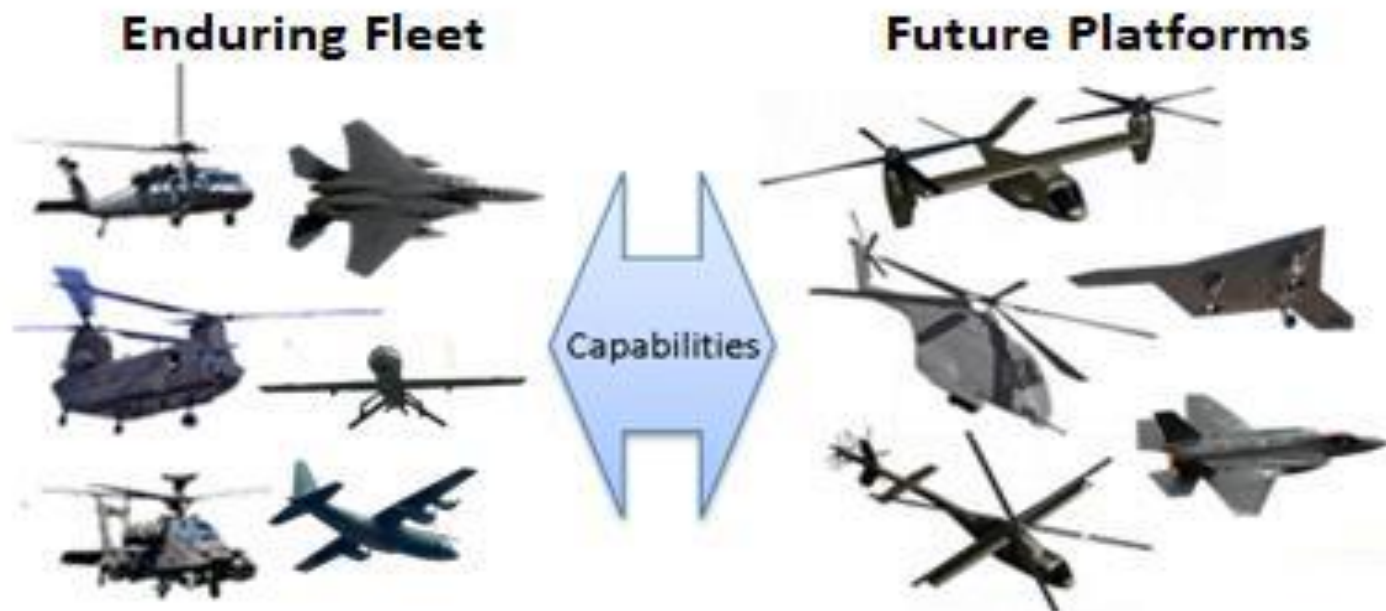
*MOSA Principles defined in OSD Open Systems Joint Task Force Program Manager's Guide: A MOSA to Acquisition, v2.0 Sept 2004. Additional information also available from Defense Standardization Program website at <https://www.dsp.dla.mil/Programs/MOSA/>

FACE Approach addresses all 5 Principles of MOSA



Applicability of FACE Approach

- FACE Approach enables the bidirectional transition of software between
 - Enduring Fleet and
 - Future Platforms



Applicability to Future Platforms



- FACE Approach enables benefits in
 - New Designs
 - System-level Upgrades
 - Component Upgrades
- Increase Delivery Cadence of Capabilities
- Reduces Cost and Complexity
- Helps Keep Pace with Rapid Change of
 - Technology Advancement &
 - Adversarial Threats

- Small investment of establishing full or partial FACE Infrastructures enables benefits of
 - Cost Avoidance for
 - Using FACE UoCs
 - Transitioning legacy software (do once instead of repeatedly)
 - Migrating existing FACE UoCs to future systems
 - Speed of integrating new FACE UoCs
- FACE Approach supports incremental deployment to meet
 - Short-term/quick reaction needs
 - Long-term goals

Rights in Technical Data and Computer Software (Data Rights)



- Enable flexibility and balance of Government and Industry Data Rights interest
 - Acquiring PM develops Data Rights Strategy
 - Guide recommends considerations including
 - Identify key and most frequently changed pieces
 - Understand the DFARS
 - Ask for appropriate level of rights with respect to
 - » Usefulness near-term and long-term
 - » Affordability now and for full lifecycle
 - Industry invests capital to
 - Enhance innovation
 - Establish a competitive advantage
- Establishing a balanced, symbiotic market enables Government and Industry to both win

FACE Point-of-Contacts (POCs)



- **General Questions / AMA**

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