TSIS

TRAINING & SIMULATION INDUSTRY SYMPOSIUM

6-7 JUNE 2018

DOUBLETREE BY HILTON AT UNIVERSAL

Orlando, FL

AFMC

ACC-ORLANDO

ARL
ARL-ORLANDO

NAWCTSD

PEO STRI

PM TRASYS

Col Phil Carpenter

SML, Simulators Program Office

- Program Office Overview, challenges, and org structure

- What's on the plate

- Boston

- Vision

- OTI

- End state

- Approximately 480 members strong

- Manage 50+ programs and provide direct support to 8 MAJCOMs across the air & SOF domains

- Portfolio includes 2,300+ Training devices and configurations worldwide

- In FY17, executed >650 contract actions and managed $2.7B across 9 different appropriations
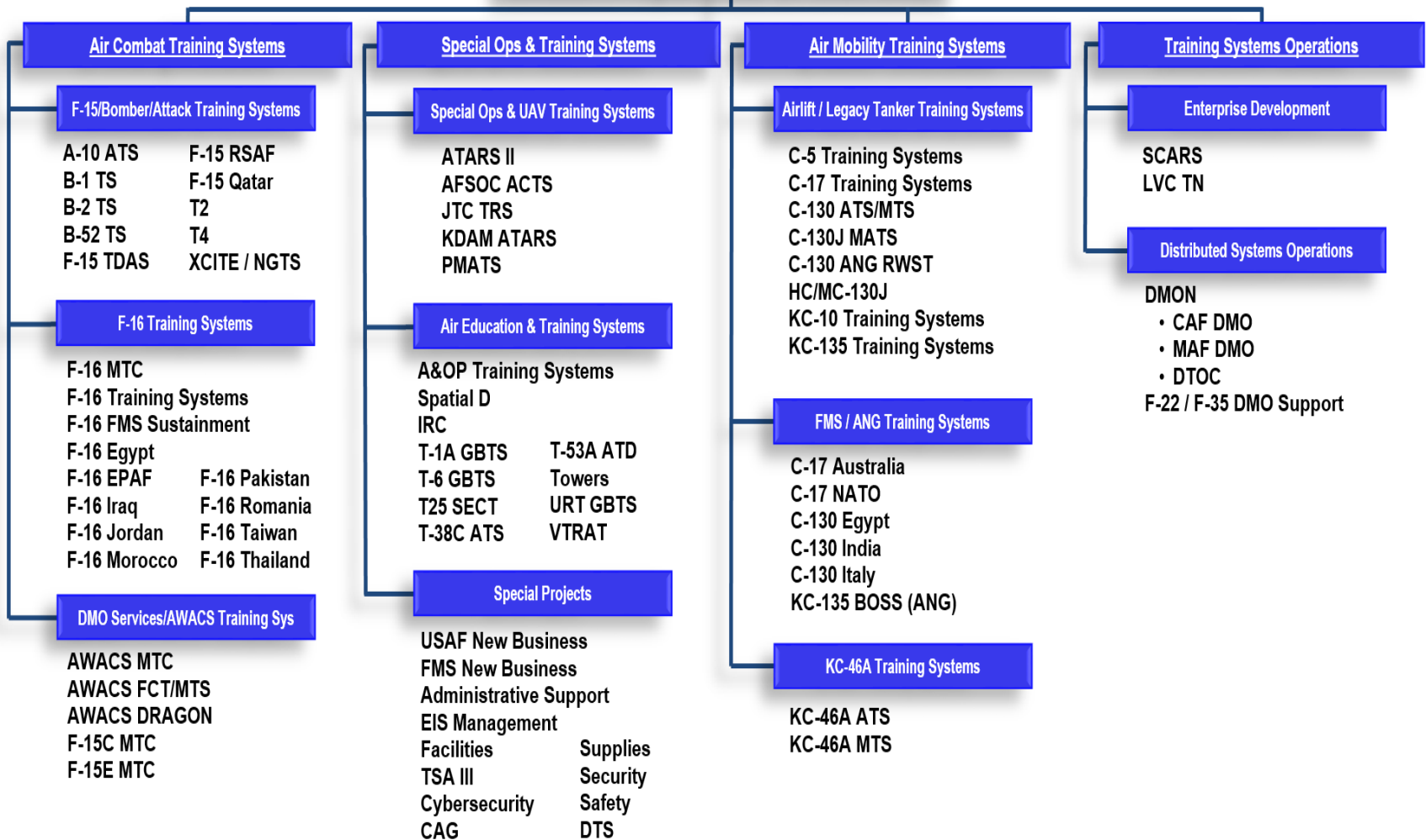
Simulators Program Office Challenges

- Managing diverse and dissimilar portfolio of simulator programs

- Balancing ops tempo, source selections, and training continuum

- Resource constraints

- Hardware and software obsolescence

- Cyber compliance difficult with 2,300+ training devices (most in sustainment) with a wide variation of configurations
  - Exacerbated by procurement approach
    - Not bought in lots (i.e., aircraft production)
    - Incrementally procured over decades to meet platform's operational training requirements

Simulators Program Office

Simulators Program Office (AFLCMC/WNS)

Air Combat Training Systems

F-15/Bomber/Attack Training Systems

A-10 ATS   F-15 RSAF
B-1 TS   F-15 Qatar
B-2 TS   T2
B-52 TS   T4
F-15 TDAS   XCITE / NGTS

F-16 Training Systems

F-16 MTC
F-16 Training Systems
F-16 FMS Sustainment
F-16 Egypt
F-16 EPAF   F-16 Pakistan
F-16 Iraq   F-16 Romania
F-16 Jordan   F-16 Taiwan
F-16 Morocco   F-16 Thailand

DMO Services/AWACS Training Sys

AWACS MTC
AWACS FCT/MTS
AWACS DRAGON
F-15C MTC
F-15E MTC

Special Ops & Training Systems

Special Ops & UAV Training Systems

ATARS II
AFSOC ACTS
JTC TRS
KDAM ATARS
PMATS

Air Education & Training Systems

A&OP Training Systems
Spatial D
IRC
T-1A GBTS   T-53A ATD
T-6 GBTS   Towers
T25 SECT   URT GBTS
T-38C ATS   VTRAT

Special Projects

USAF New Business
FMS New Business
Administrative Support
EIS Management
Facilities   Supplies
TSA III   Security
Cybersecurity   Safety
CAG   DTS

Air Mobility Training Systems

Airlift / Legacy Tanker Training Systems

C-5 Training Systems
C-17 Training Systems
C-130 ATS/MTS
C-130J MATS
C-130 ANG RWST
HC/MC-130J
KC-10 Training Systems
KC-135 Training Systems

FMS / ANG Training Systems

C-17 Australia
C-17 NATO
C-130 Egypt
C-130 India
C-130 Italy
KC-135 BOSS (ANG)

KC-46A Training Systems

KC-46A ATS
KC-46A MTS

Training Systems Operations

Enterprise Development

SCARS
LVC TN

Distributed Systems Operations

DMON
• CAF DMO
• MAF DMO
• DTOC
F-22 / F-35 DMO Support

- Many source selections on the horizon or underway
    - B-52 Training System
    - F-16 Simulator Training Program
    - KC-135 Training System
    - C-130 Training System
    - B-1 Training System
    - KC-10 Training System
    - PMATS
    - SCARS
    - C-130J MATS
    - MAF DMO
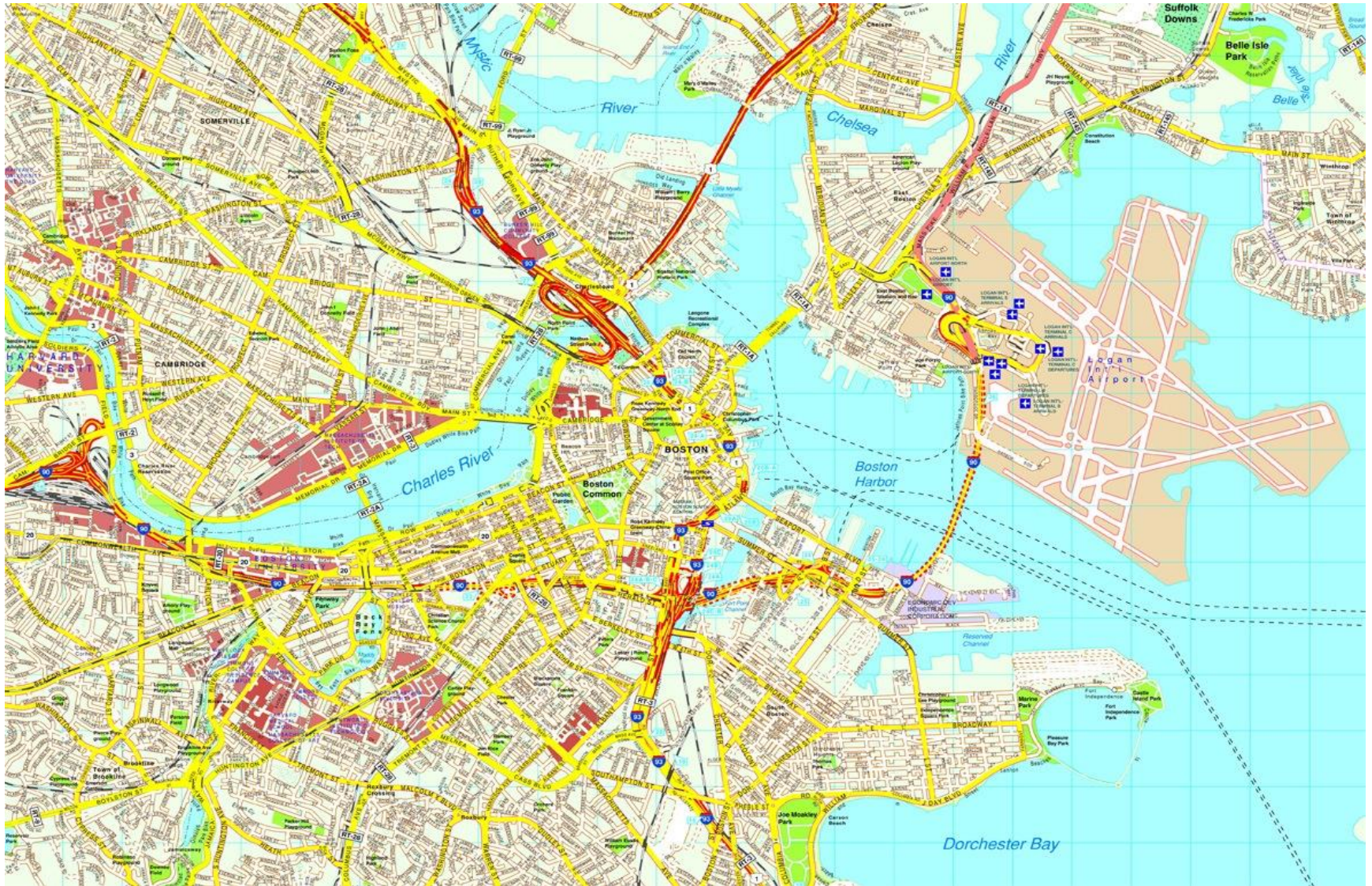
Boston

- Star Trek, Mirror, Mirror, Season 2, Episode 4

- Gen Goldfein, CSAF, during AFA Air Warfare Symposium

"In every revolution, there is one man with a vision"

"Does it connect? Good. Does it share? Better. Does it learn? Perfect."

Vision – "…a realistic, integrated training environment that allows our forces to train in an operationally and tactically relevant employment scheme to achieve and sustain full-spectrum readiness."

UNCLASSIFIED

Air Force Operational Training Infrastructure 2035 Flight Plan

U.S. AIR FORCE

Air Force has identified 13 OTI LOEs required to achieve the OTI vision.

1. Funding Strategy

2. Human Capital Plan

3. Synthetic-to-live capability

4. Data and Technical Standards

5. Acquisition Policy

6. Acquisition Oversight

7. Institutionalize OTI

8. Relevant Threat Environment

9. Quality Metrics

10. Joint Interoperability

11. Multinational Interoperability

12. Common Architecture

13. Exercise Oversight

- **Some challenges/areas to consider:**
  - **Differing underlying hardware/software configurations**
  - **Baselines managed individually by platform**
  - **Obsolescence**
  - **Current fleet of simulators were never designed to work together**

- **"In short, the current operational training infrastructure does not provide many of our operators with realistic and relevant operational training environments."**

  AF OTI Flight Plan

F-22 & F35

Simulators

KC-46

Space

TRANSFORMATION

2035
Multi-Domain

MDOC

AIR

SPACE

Cyber

Synthetic

Stove-piped/Vulnerable

Simulators should look a lot more like smart phones…

- **Smart phones have largely standardized into one of two dominant designs: Apple iPhone and Android**
    - **Customer reqmts satisfied via "Apps" that ride on architecture**
    - **Architectures governed by <u>standards and defined interfaces</u>**
- **Training devices must adopt a <u>similar paradigm</u>**
    - **Common underlying architectures--economies of scale**
        - **<u>Hardware, software, application, firmware all considered</u>**
    - **Modularity supports rapid update pace driven by cyber threat**
        - **Reduced regression testing**
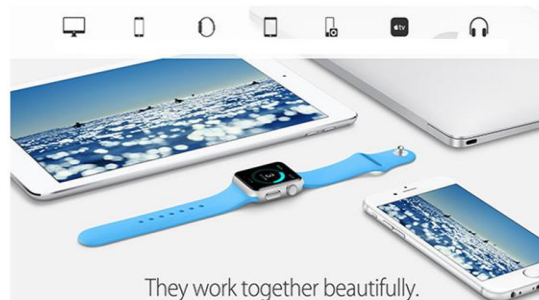
New ecosystem provides a common training environment for all operational training and allow us to restore readiness and conduct mission rehearsals.
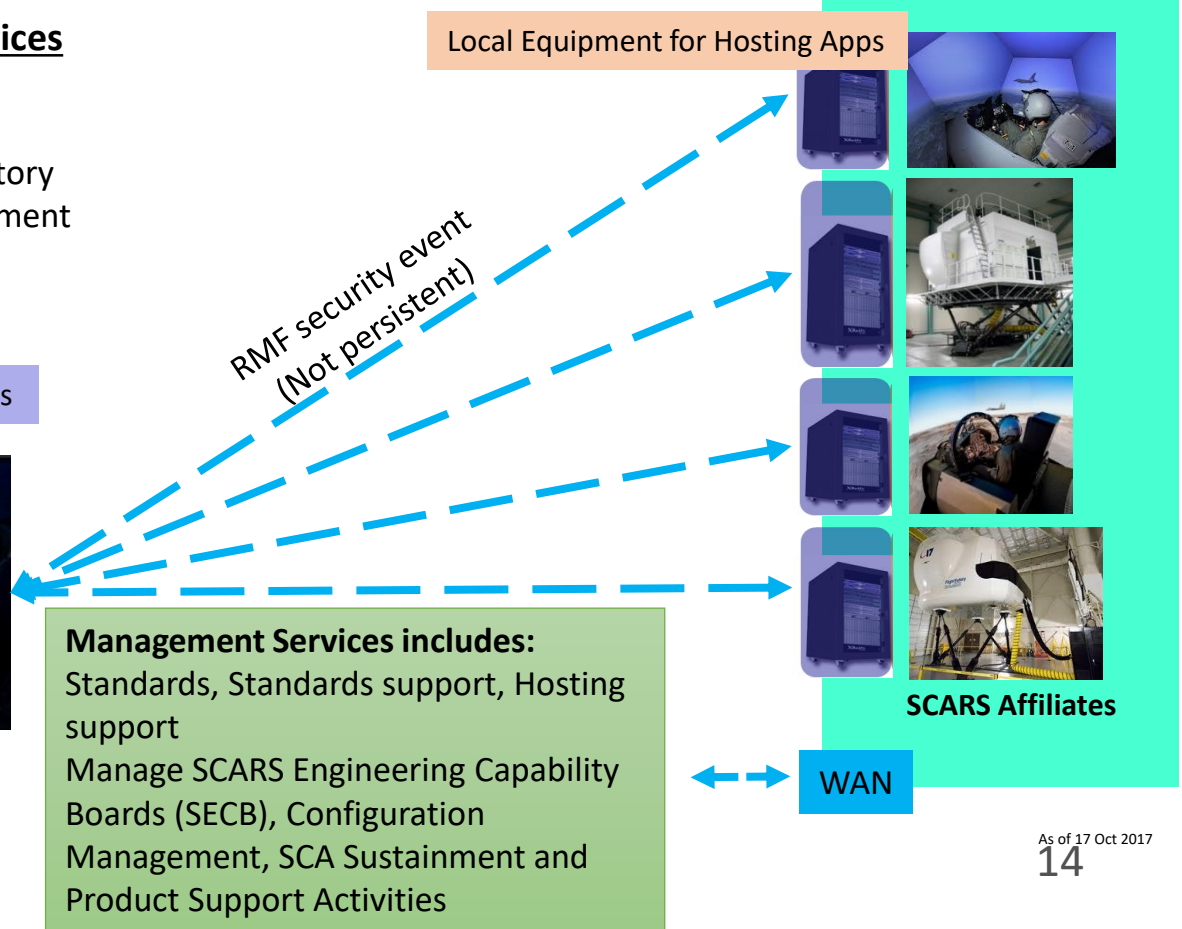

Brachiate

Terrain Data

Weather Data

Red Data

Blue Data

Space & Cyber Data

Training Environment

Sim 12

Sim 13

Sim 14

Sim 15

Sim 16

Sim

Sim

Possibly Connect to other Services

Initial SCARS Increment

Centralized Equipment and Services

Testbed   Library

- Patch Repository
- App Management

Centralized Security Operations and Services

Library   SCA   SCARS Affiliates

Local Equipment for Hosting Apps

RMF security event
(Not persistent)

Management Services includes:
Standards, Standards support, Hosting support
Manage SCARS Engineering Capability Boards (SECB), Configuration Management, SCA Sustainment and Product Support Activities

SCARS Affiliates

WAN

14
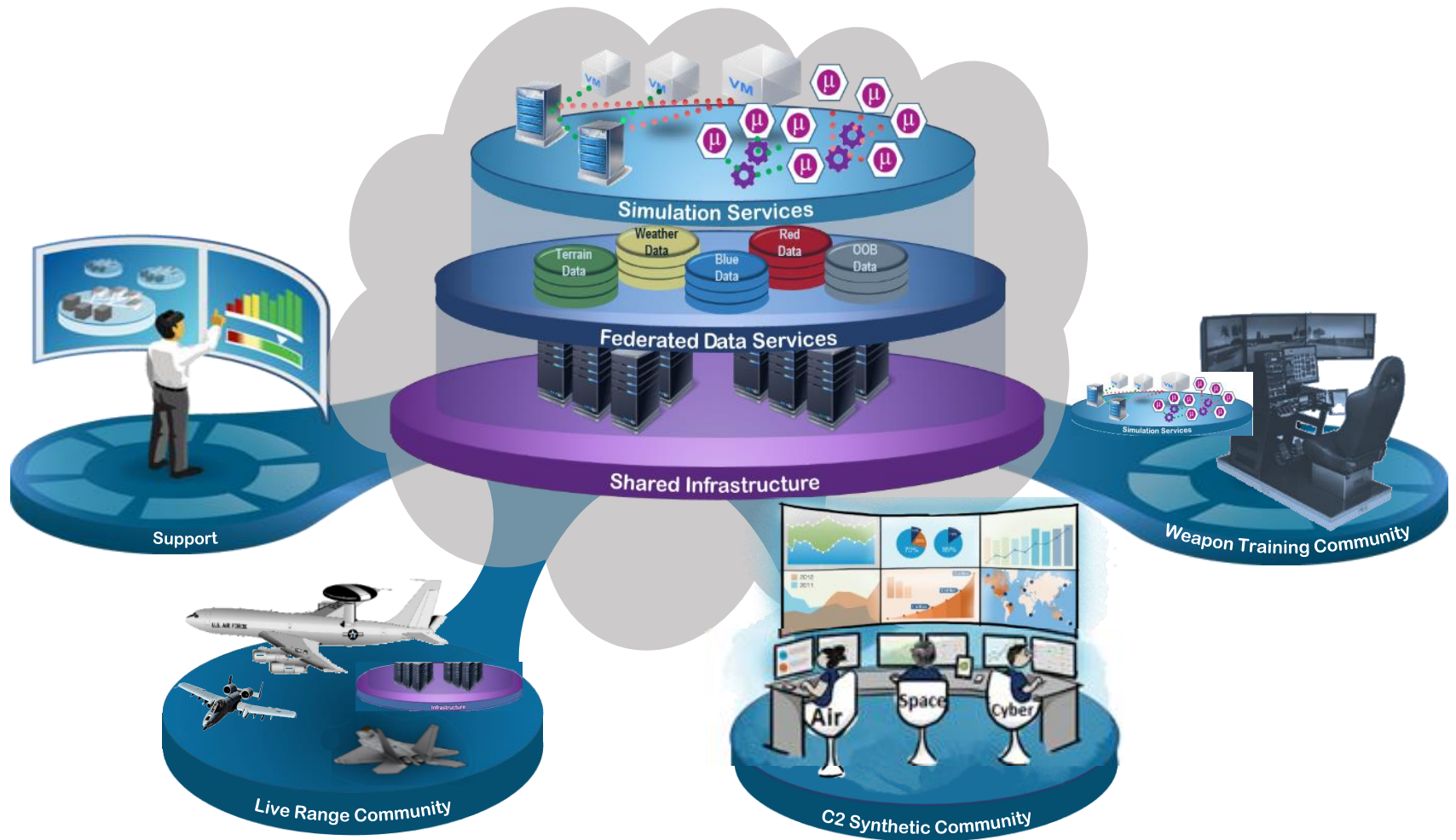
- Build a foundation that is cyber hardened and secure
  - Responsive to cyber updates without excessive regression testing burden

- Achieve agility via modularity → Deliver capabilities to Warfighter faster
  - Increases ability to remain concurrent with aircraft updates

- Reduce training system development and sustainment life cycle costs
  - Realize economy of scale → One change upgrades many systems

- Establish open architecture requirements and standards
  - Leverage industry's best practices/products while reserving government purpose rights
  - Minimize proprietary "vendor lock"

Gain efficiency by establishing a common foundation which eliminates duplication
Focusing on developing commons and standards that support training requirements