Headquarters Air Combat Command

CAF LVC Requirements

Col Rich Linehan
HQ ACC/A5T

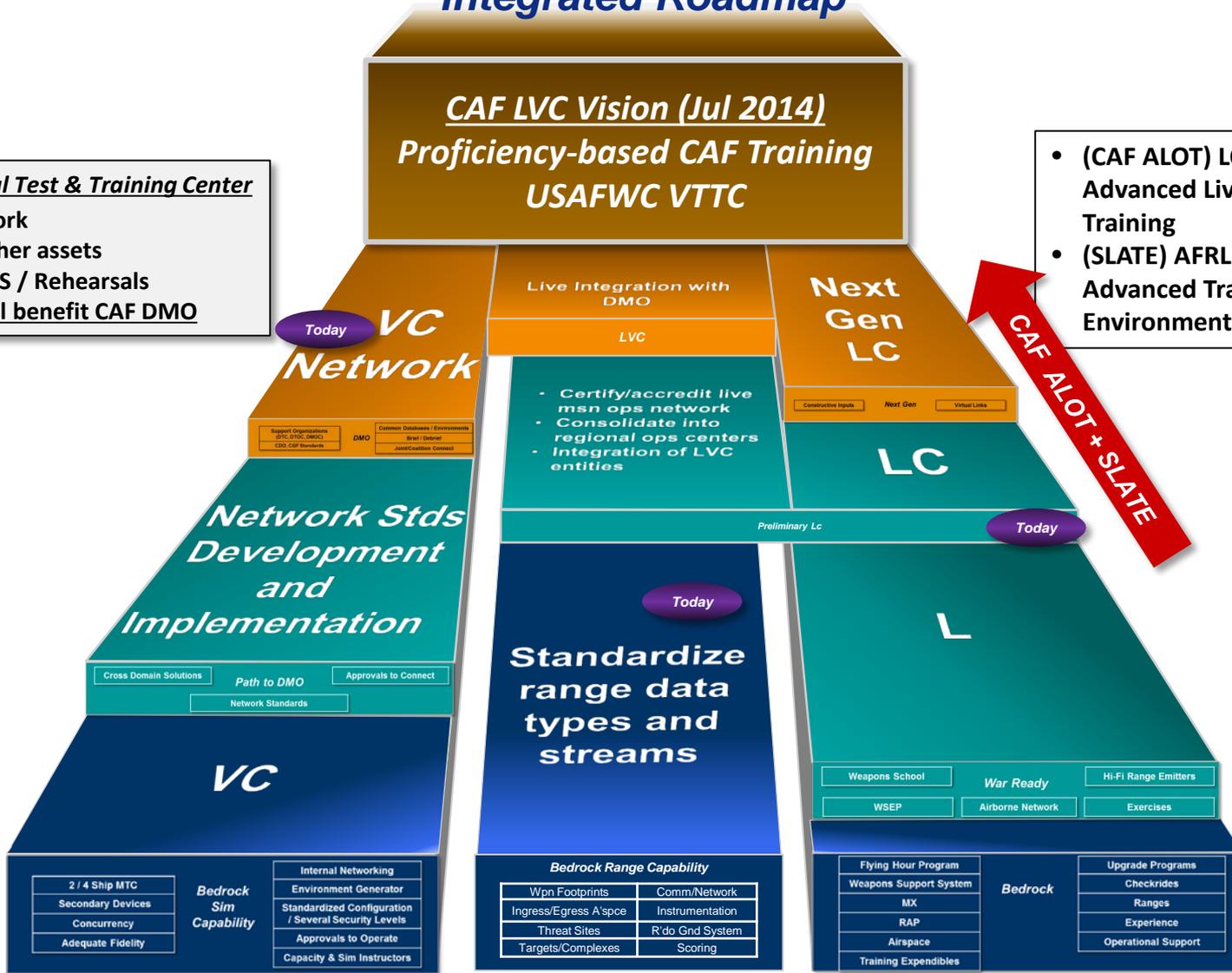**This Briefing is:**
UNCLASSIFIED

CAF Training LVC Components
Integrated Roadmap

CAF LVC Vision (Jul 2014)
Proficiency-based CAF Training
USAFWC VTTC

USAFWC Virtual Test & Training Center
- **Closed network**
- **Leverages other assets**
- **WS / CONOPS / Rehearsals**
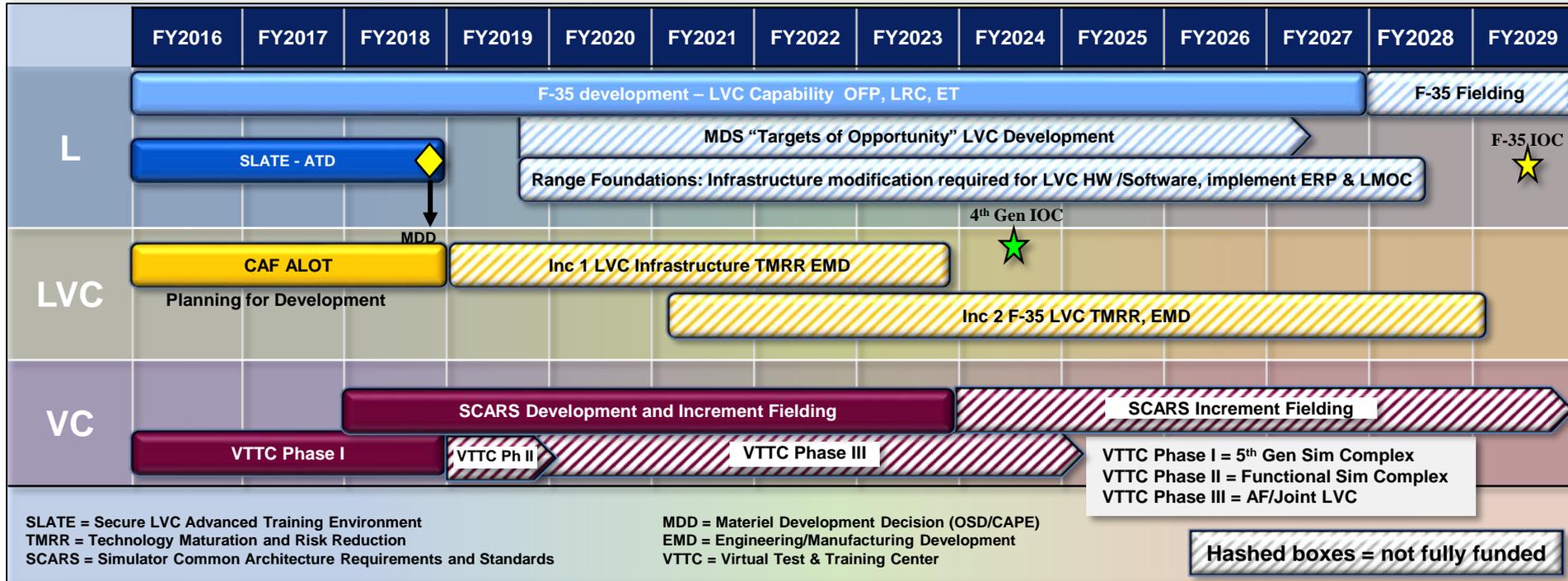- **Upgrades will benefit CAF DMO**

- **(CAF ALOT) LCMC/XZA – CAF Advanced Live Operational Training**
- **(SLATE) AFRL - Secure LVC Advanced Training Environment**

CAF ALOT + SLATE

Today

VC Network

Support Organizations (DTC, DTOC, DMOC) | Common Databases / Environments
DMO | Brief / Debrief
CDO, CGF Standards | Joint/Coalition Connect

Live Integration with DMO

LVC

- Certify/accredit live msn ops network
- Consolidate into regional ops centers
- Integration of LVC entities

Next Gen LC

Constructive Inputs | Next Gen | Virtual Links

LC

Network Stds Development and Implementation

Cross Domain Solutions | Path to DMO | Approvals to Connect
Network Standards

Preliminary Lc

Today

Standardize range data types and streams

Today

L

Weapons School | War Ready | Hi-Fi Range Emitters
WSEP | Airborne Network | Exercises

VC

	Bedrock Sim Capability	
2 / 4 Ship MTC		Internal Networking
Secondary Devices		Environment Generator
Concurrency		Standardized Configuration / Several Security Levels
Adequate Fidelity		Approvals to Operate
		Capacity & Sim Instructors

Bedrock Range Capability

Wpn Footprints	Comm/Network
Ingress/Egress A'spce	Instrumentation
Threat Sites	R'do Gnd System
Targets/Complexes	Scoring

	Bedrock	
Flying Hour Program		Upgrade Programs
Weapons Support System		Checkrides
MX		Ranges
RAP		Experience
Airspace		Operational Support
Training Expendibles		

Future of "Full" LVC training TBD from COMACC meeting – Feb 2019

Proposed LVC Schedule

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029
L	F-35 development – LVC Capability OFP, LRC, ET													F-35 Fielding
		SLATE - ATD	◆	MDS "Targets of Opportunity" LVC Development										F-35 IOC ★
				Range Foundations: Infrastructure modification required for LVC HW /Software, implement ERP & LMOC									
LVC	CAF ALOT			Inc 1 LVC Infrastructure TMRR EMD					4th Gen IOC ★				
	Planning for Development		MDD		Inc 2 F-35 LVC TMRR, EMD									
VC			SCARS Development and Increment Fielding							SCARS Increment Fielding			
	VTTC Phase I			VTTC Ph II	VTTC Phase III					VTTC Phase I = 5th Gen Sim Complex VTTC Phase II = Functional Sim Complex VTTC Phase III = AF/Joint LVC		

SLATE = Secure LVC Advanced Training Environment
TMRR = Technology Maturation and Risk Reduction
SCARS = Simulator Common Architecture Requirements and Standards

MDD = Materiel Development Decision (OSD/CAPE)
EMD = Engineering/Manufacturing Development
VTTC = Virtual Test & Training Center

Hashed boxes = not fully funded

- **Range Infrastructure modifications (LMOC, ARTS v1-4) based on ERP**

- **SLATE ATD & CAF ALOT results will drive "blended" LVC decision**

- **Need for advanced, concurrent simulators & DMO connectivity**

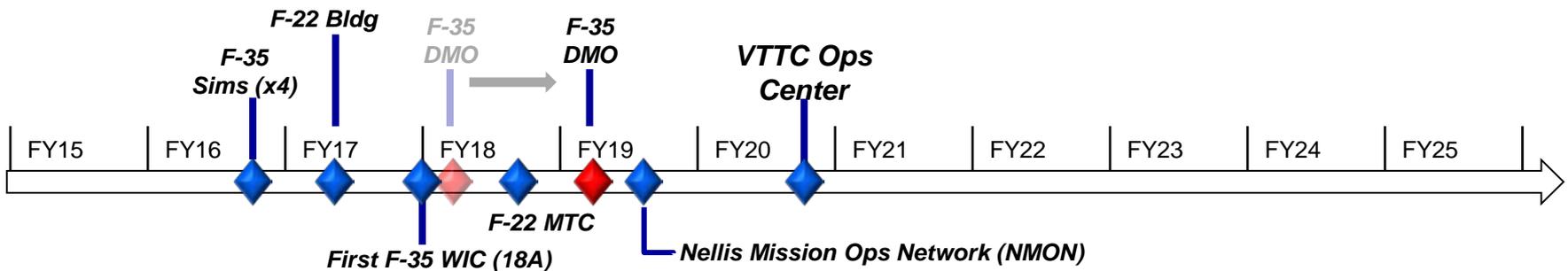- **VTTC – multi-phase for virtual hi-end advanced TTP development**

Advanced training capability requirements based on Readiness and COMACC's Future Faster initiative

Virtual Test and Training Center
Phased Approach

- **Phase I – 5th Gen Sim Complex (present – 2018)**
  - **F-16 MTC, F-35 FMS, F-22 MTC, JTAC SIM**
- **Phase II – Functional Sim Complex**
  - **Ops Center, AWACS 40/45 MCTS, F-15C MTC, F-15E MTC**
  - **F-35 DMO connection delayed (FY19)**
- **Phase III – AF/Joint LVC (2020-2025)**
  - **Integration across warfighting domains (air, space, cyber, land, sea)**
  - **VTTC-Fallon Integration via Joint Simulation Environment (JSE)**

F-35 Sims (x4) — **F-22 Bldg** — **F-35 DMO** — **F-35 DMO** — **VTTC Ops Center**

FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25

F-22 MTC

First F-35 WIC (18A)

Nellis Mission Ops Network (NMON)

CAF DMO benefits from advancements made for the VTTC

Blended LVC Training Concept

- **Complex scenarios in the aircraft**
  - **Secure, encrypted LVC training datalink**
  - **Minimize physical footprint – fewer live adversaries / tgts / emitters**
- **Virtual training – develop the major muscle movements**
- **Increase training capacity in the jet by adding DMO quality complexity to live training**
- **LVC & learning mgmt tech provide data from the jet equal to that from the sim**
- **Efficient mission planning and post msn review**

Adaptive, targeted training – increase learning curves & manage skill decay