Benefits & Features

- **Advanced Guising for all participants**

- **NSA Type 1, 4+ channel MILS Encryption**

- **OFP Hooks for OEM A/C Integration**

- **DoD 5GATW LVC training waveform with full cohabitation in signal and space with Combat waveform**

- **Advanced models for sensors / platforms / weapons / effects**

- **Advanced weapon fly-outs and Real Time Kill Notification / Adjudication**

- **CGF Integration for Big Tac, NGTS, MACE, others**

- **MBSE Design to future proof system and avoid vendor lock**

- **Untethered and tethered range compatibility, pod and internal mount configurations**

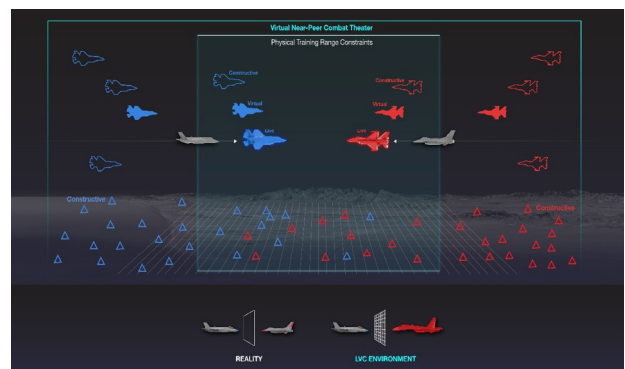# Synthetic Inject to Live (SITL) LVC Training: *In Fighter Cockpits Today. SLATE Validated, Flight Tested.*

Advanced Guising. Replicating the Near Peer threat in capability and density. At LFE scale.

SITL LVC brings the realism of the near-peer fight to the cockpits of 4th- and 5th-generation platforms in the only approach that closes proficiency gaps in executing advanced tactics required to win decisively in the future. This is accomplished using an NSA Type I encrypted MILS open architecture, Industry standard protocols and the fifth-generation advanced training waveform (5GATW) U.S. Government-owned dedicated training waveform.

Cubic's SITL-LVC system is the ONLY solution available today that has successfully integrated Simulators and Constructive injects with Live Fleet aircraft Operational Flight Programs (OFP) to render advanced threat environments in cockpit displays on current DoD operational training ranges.

Advanced guising capability presents aircrew with threat data across all sensor displays (RADAR, RWR, EO/IR, Others) in lieu of actual target characteristics from other LVC participants.

Delivering the Near Peer Threat environment for Advanced Fighter Integration Training

SLATE ATD Validated

CUBIC

Constructive Red Air
12 x Su-27

Live Red Air
4 x F-16 (guised Su-30)
2 x F/A-18 (guised Su-30)

* Red Vipers and Hornets electronically "guised" as Su-30; including sensors and weapons
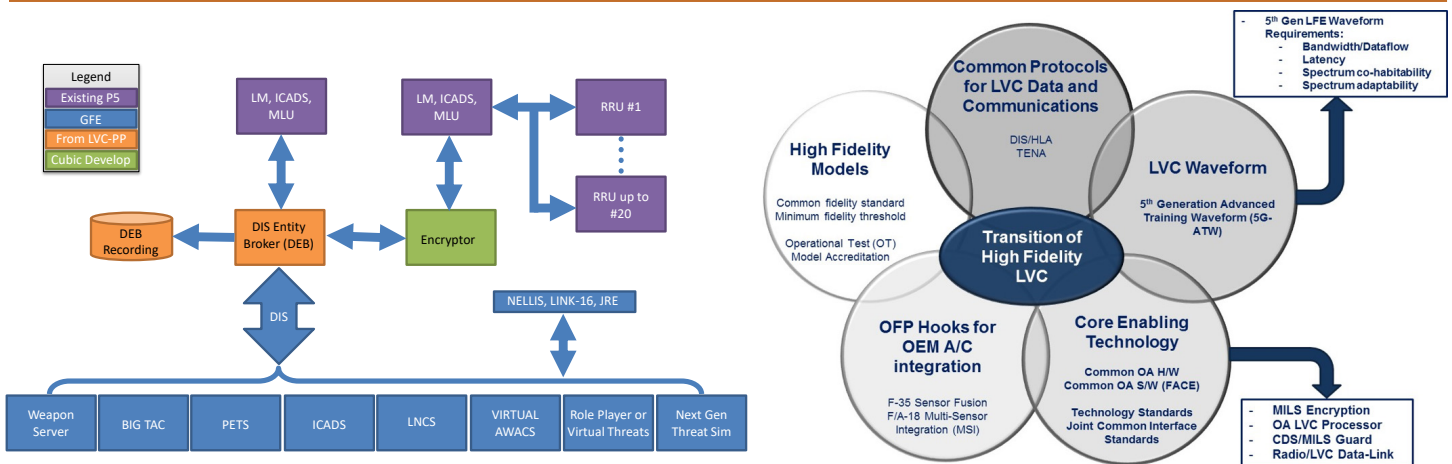
Virtual Blue Air
2 x F-16 sims
2 x F/A-18 sims

Live Blue Air
6 x F-15E
2 x F/A-18
2 x EA-18

* Synthetic injects indistinguishable from live threats on blue Strike Eagle and Hornet sensors: Radar, IFF, RWR, and FLIR

Constructive SAMS
1 x SA-6
5 x SA-8
3 x SA-10
3 x SA-20
3 x SA-22

* Constructive air and surface threats mitigate limits of airspace boundary

Constructive Blue Air
2 x F-35
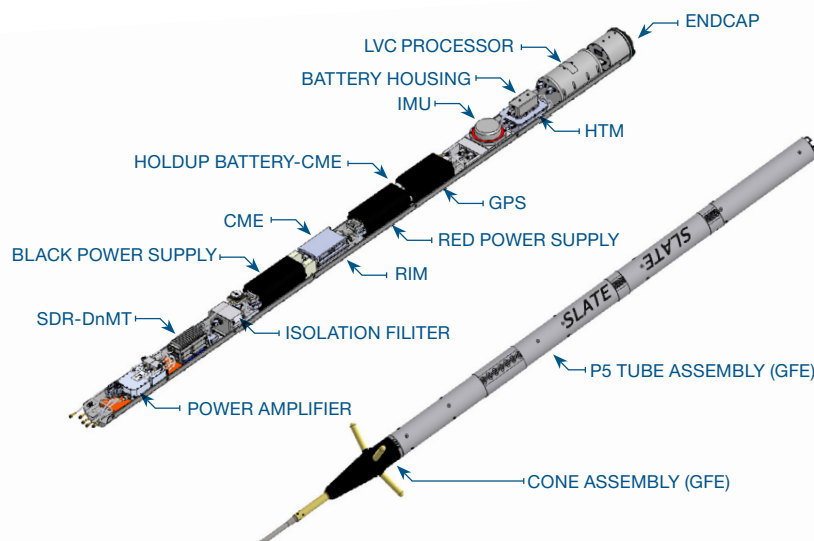
✓ Red-air density tripled
✓ NTTR enhanced with peer threats
✓ NTTR geography constructively extended
✓ Advanced threat guising with no OFP mod
✓ Govt-owned 5GATW waveform
✓ MILS with NSA Type-1 Encryption
✓ Validated CDS Rule Set
✓ RTKN for live blue
✓ 4:1 constructive to live sortie ratio (400 / 97)
✓ 642 weapons events

SLATE Ground System

Legend
- Existing P5
- GFE
- From LVC-PP
- Cubic Develop

LM, ICADS, MLU

LM, ICADS, MLU

RRU #1

RRU up to #20

DEB Recording

DIS Entity Broker (DEB)

Encryptor

NELLIS, LINK-16, JRE

DIS

| Weapon Server | BIG TAC | PETS | ICADS | LNCS | VIRTUAL AWACS | Role Player or Virtual Threats | Next Gen Threat Sim |

Common Protocols for LVC Data and Communications
DIS/HLA TENA

High Fidelity Models
Common fidelity standard
Minimum fidelity threshold
Operational Test (OT) Model Accreditation

LVC Waveform
5th Generation Advanced Training Waveform (5G-ATW)

Transition of High Fidelity LVC

OFP Hooks for OEM A/C integration
F-35 Sensor Fusion
F/A-18 Multi-Sensor Integration (MSI)

Core Enabling Technology
Common OA H/W
Common OA S/W (FACE)
Technology Standards
Joint Common Interface Standards

- 5th Gen LFE Waveform Requirements:
  - Bandwidth/Dataflow
  - Latency
  - Spectrum co-habitability
  - Spectrum adaptability

- MILS Encryption
- OA LVC Processor
- CDS/MILS Guard
- Radio/LVC Data-Link

SITL LVC requires all five capability pillars in order to deliver the advanced guising and near-peer threat environment at large force exercise (LFE) scale.

SLATE Airborne System

ENDCAP
LVC PROCESSOR
BATTERY HOUSING
IMU
HTM
HOLDUP BATTERY-CME
GPS
CME
RED POWER SUPPLY
BLACK POWER SUPPLY
RIM
SDR-DnMT
ISOLATION FILITER
POWER AMPLIFIER
P5 TUBE ASSEMBLY (GFE)
CONE ASSEMBLY (GFE)
SLATE

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