



# Joint Simulation Environment



# Why JSE?



## PLATFORM MISSION EFFECTIVENESS

- Full Fifth Gen+ assessments not possible on open air ranges. Requires realistic, high density threat environment and high fidelity platform representation

## INTEGRATED WARFIGHTING CAPABILITY

- Impossible to scale few vs few live tests to accurately assess theater-wide, multi-platform capabilities

## AFFORDABILITY

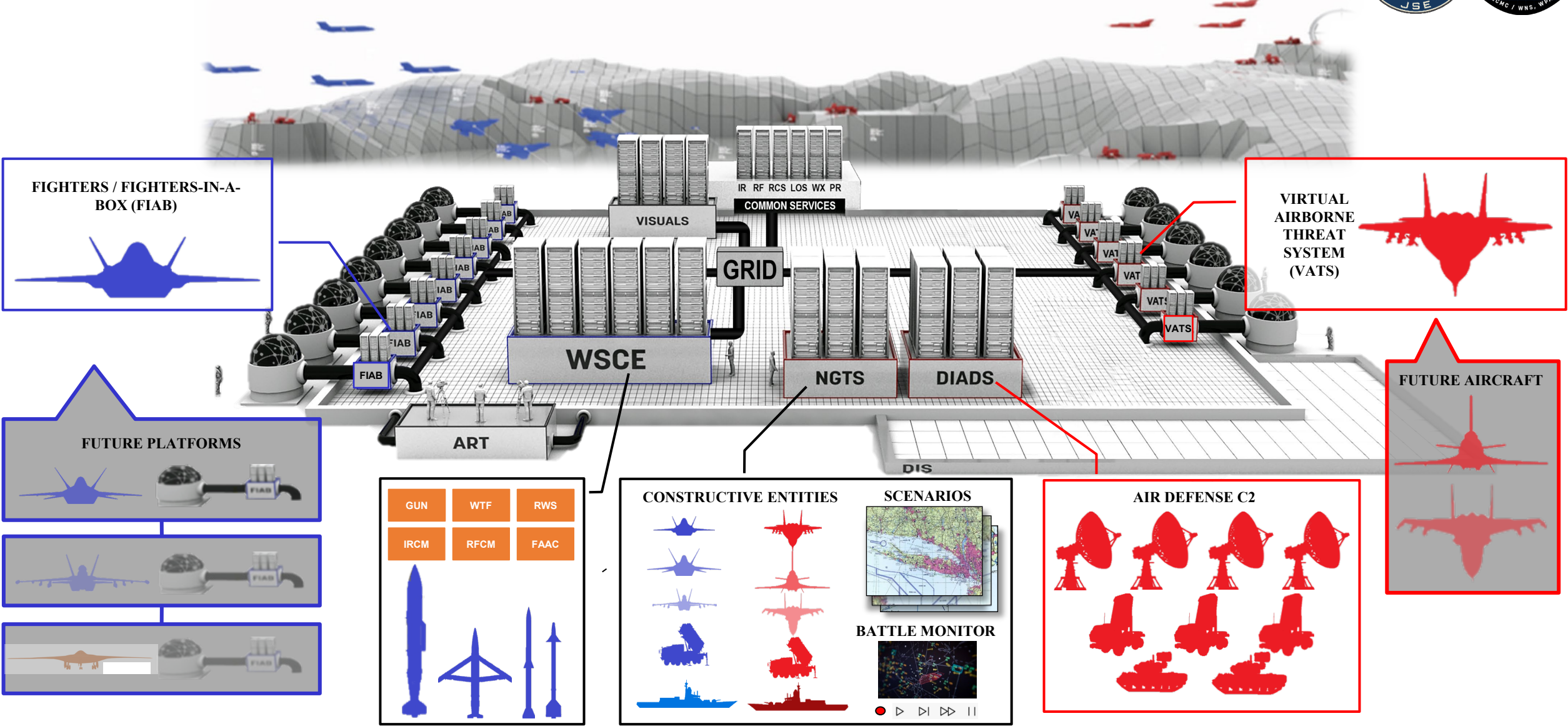
- Modern system-of-systems capability complexity makes open air testing prohibitively expensive

## READINESS

- Realistic environments for high end, multi-platform tactics training are severely limited

**JSE ENABLES FIFTH GEN+ OPERATIONAL TEST AND HIGH END TACTICS TRAINING IN THE WORLD'S HIGHEST FIDELITY, HIGHEST DENSITY THREAT ENVIRONMENT**

# The "Digital Range"



**FIGHTERS / FIGHTERS-IN-A-BOX (FIAB)**

**VIRTUAL AIRBORNE THREAT SYSTEM (VATS)**

**FUTURE PLATFORMS**

**FUTURE AIRCRAFT**

**CONSTRUCTIVE ENTITIES**

GUN	WTF	RWS
IRCM	RFCM	FAAC

**SCENARIOS**

**BATTLE MONITOR**

**AIR DEFENSE C2**



# Joint Simulation Environment

## Delivering High-End Warfighting Proficiency



“More Instructor Under Training sorties completed in one week than in typical 12-18 months”

“Best threat rep we’ve ever seen”

“First time I’ve had a sense of fear in the cockpit”

“By far the best training we can get”

- Past two years: TOPGUN (x11), USAF Weapon School (x6), Operational Units (x27)
- 50,000+ weapons engagements / 1200+ missions executed / 9,000+ F-35 sorties / 900+ pilots



# JSE Vision

To provide the DoD's premier simulation environment for Fifth Generation+ test and training.



**PLATFORM OPERATIONAL TEST AND MISSION EFFECTIVENESS ASSESSMENTS**



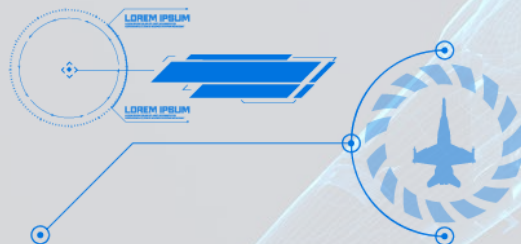
**TACTICS DEVELOPMENT IN HIGH DENSITY THREAT ENVIRONMENT**



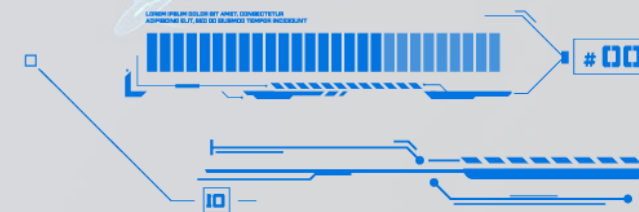
**LARGE FORCE TRAINING**



**HIGH-FIDELITY, MULTI-PLATFORM WARFIGHTING CAPABILITY ASSESSMENTS**



**NEW CAPABILITY RESEARCH & DESIGN**





# Navy Key Lines of Effort



## HD Model Development

- Must fund development of “High Definition” platform, sensor, weapons models
- Must pressurize industry partners to develop and deliver current models with urgency
- Human-machine interfaces are critically important!



## JSE Pax Integration

- Models are delivered and integrated at JSE Pax
- Performance verification, regression testing, and incorporation of new capabilities into the “production baseline”



## Fallon ITF Integration

- Hardware/software must be acquired for insertion at Fallon Integrated Training Facility
- ITF enables full CVW training and helps drive development priorities

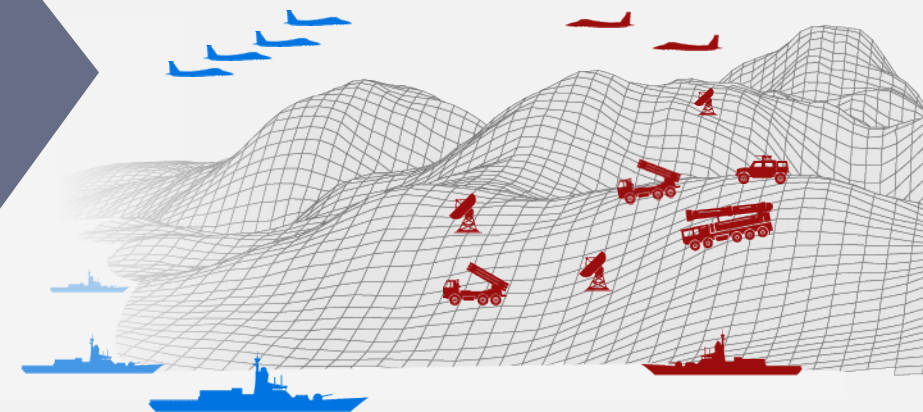
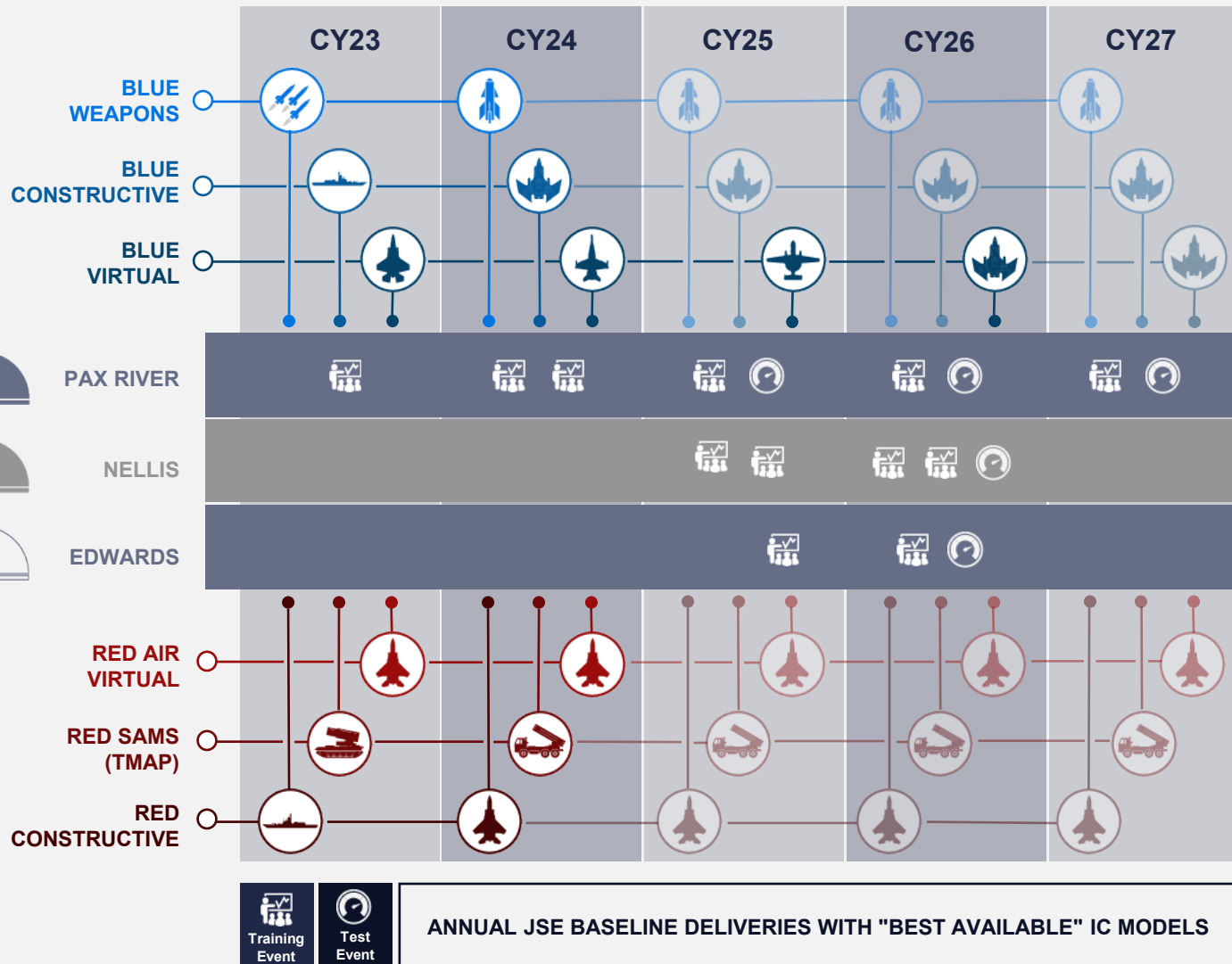
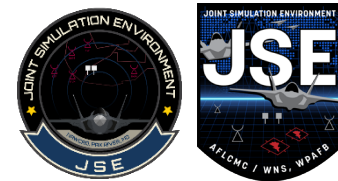


## Deployed

- Solutions must be “packaged” for CVN deployment
- Facilities must be identified to bring robust training capabilities closer to the warfighter
- How do we preserve performance fidelity, to include the human-machine interface?



# JSE Conceptual Roadmap





# JSE Multi-Site / Multi-Solution Concept



## SUPER SITE

- Highest fidelity platform representation with Man In The Loop (MITL)
- Highest fidelity environment and threats
- Highest fidelity threat representation
- Supports high end training, tactics dev, and OT



## INDUSTRY SITE

- Industry partners developing new capabilities and OFP in high fidelity, common environment



## FLEET / CAF SITE

- Fidelity dialed back a notch
- Smaller footprint, less hardware, and fewer support staff required
- Reinforces learning achieved at "super sites" to maintain proficiency



## DEPLOYABLE SITE

- Training solution on a small scale
- Lower fidelity, all entities "constructive" except own ship
- Reinforces learning at other levels to maintain proficiency while deployed

*Continuum of capabilities fueled by super site high fidelity learning, operational data collection, and common products*





# Keys to Success



- Common, Government-owned digital environment → build it once and make available to all
- Platform / weapon system investments in high fidelity models
- Industry partnership to enable rapid integration of platform / weapon system models into common digital environment
- Industry partnership to enable rapid deployment and sustainment of current platform models / systems / capabilities



# Questions?