



**PEO
STRI**

Joint Urban Test Capability

Industry Forum Brief

Mike Landers
Project Director
michael.landiers@us.army.mil
407-384-3530

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Bottom Line Up Front (BLUF)

- Begin “the conversation”
- Provide Increment 1 definition
- Provide Acquisition Strategy
 - Caveats implied for contract type
- Answer questions, or take note of questions



Ground Rules

- Please make sure you register on the Sign In Sheet
- Questions welcome anytime
 - Periodic pickup of cards for those in attendance will be read aloud and answered
 - Answers given during Industry Forum will be provided following event
- We are recording Industry Forum for playback later
- Restrooms
- Cell Phones
- Briefing material will be provided on FedBizOpps or STRIBOP



Agenda

- Requirements
- Increment 1 Description
- Acquisition Strategy
- Government Furnished Equipment
- Sustainment
- Schedule
- Laboratory Revitalization
- Technical Feasibility Test
- Risk Reduction Test Bed
- Conclusion



Joint Urban Test Capability (JUTC)

Joint

Urban?

Test?

Capability?

Central Test and Evaluation Investment Program (CTEIP) project – out of Test Resource Management Center (TRMC)



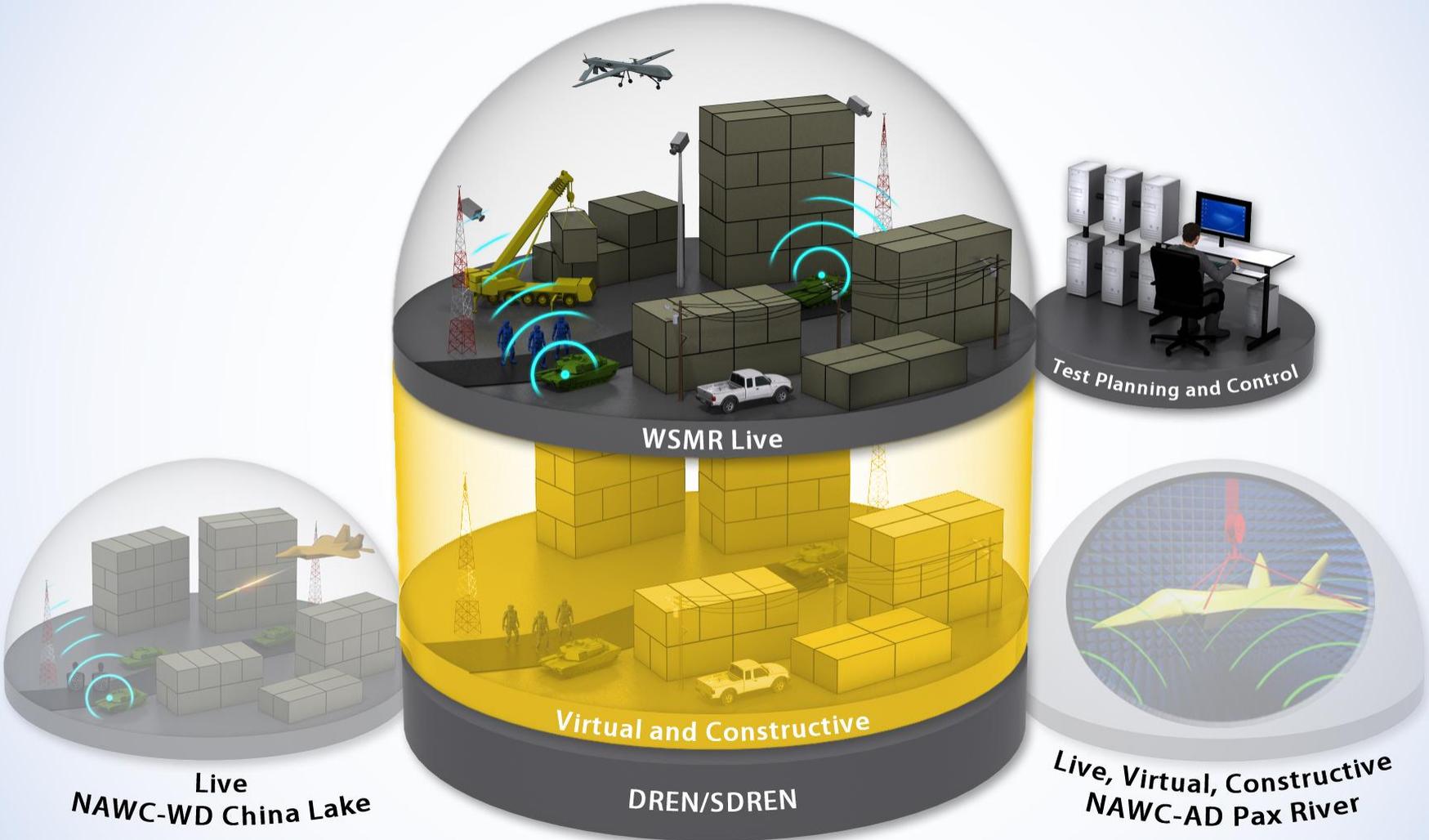
JUTC TCRD Requirements

Prime Mission Products

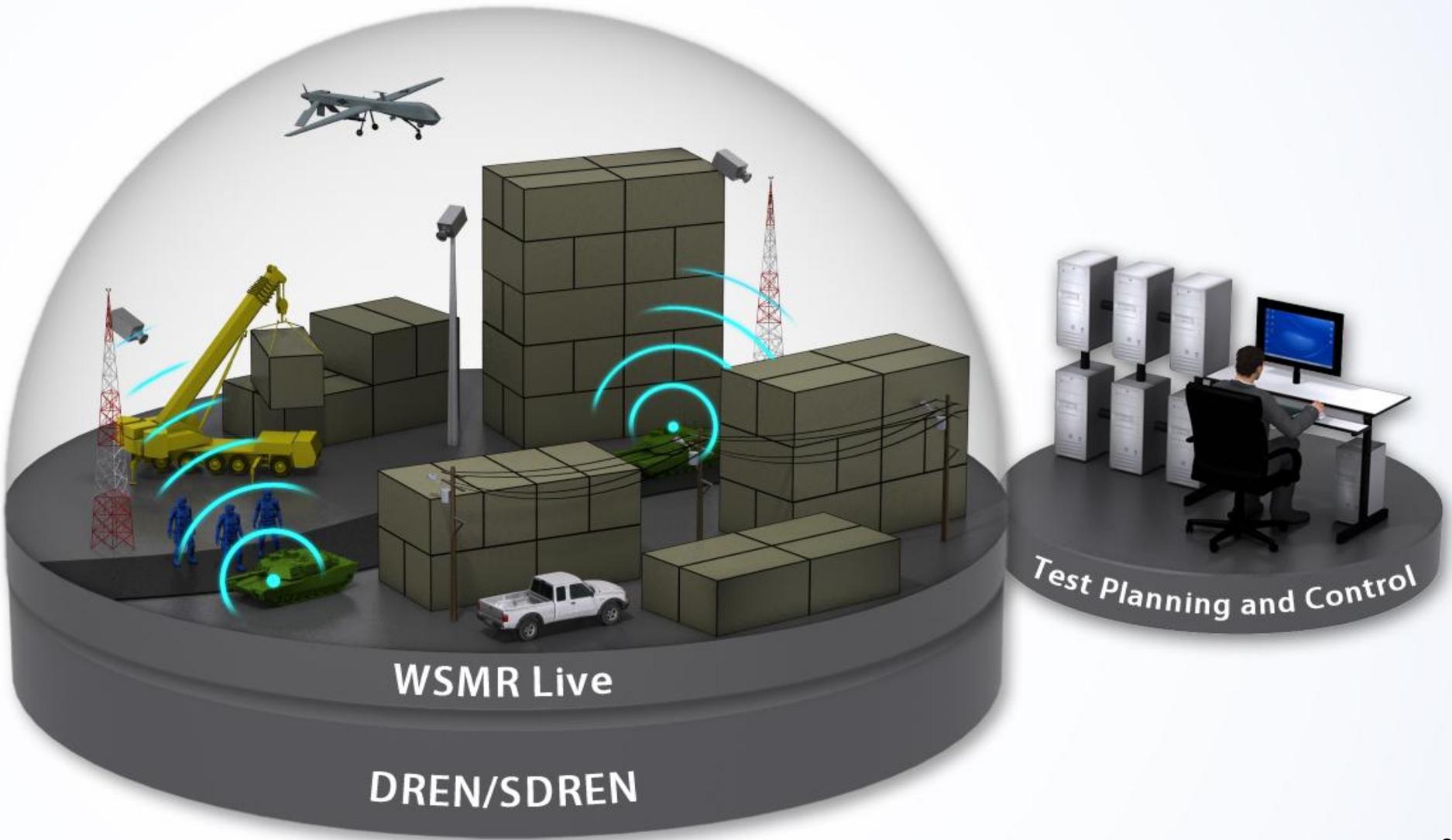
- Live Urban Area (200m x 240m) with Maneuver Area, Buffer Area and Building Replicas
- Augmented Urban Environment Effects – EM emissions, lighting, power, vehicles, noise, heat, clutter, etc.
- Virtual and Constructive Urban Environment – multi-spectral model of live environment, support HWIL simulators
- Data Collection, Reduction and Analysis – optics, acoustic, EM spectrum
- Test Planning and Control – display systems, test control systems
- Test Architecture and Net-Centric Connectivity – Fiber, DREN/SDREN connectivity, IRCC Connection, Range Gateway
- Weapons System Urban Test Capability (China Lake)
- Communications Jamming Urban Test Capability
- Infra-Red Countermeasures System Urban Test Capability (Navy HWIL facilities)

Not part of Increment 1

Operational View 1 (OV-1)

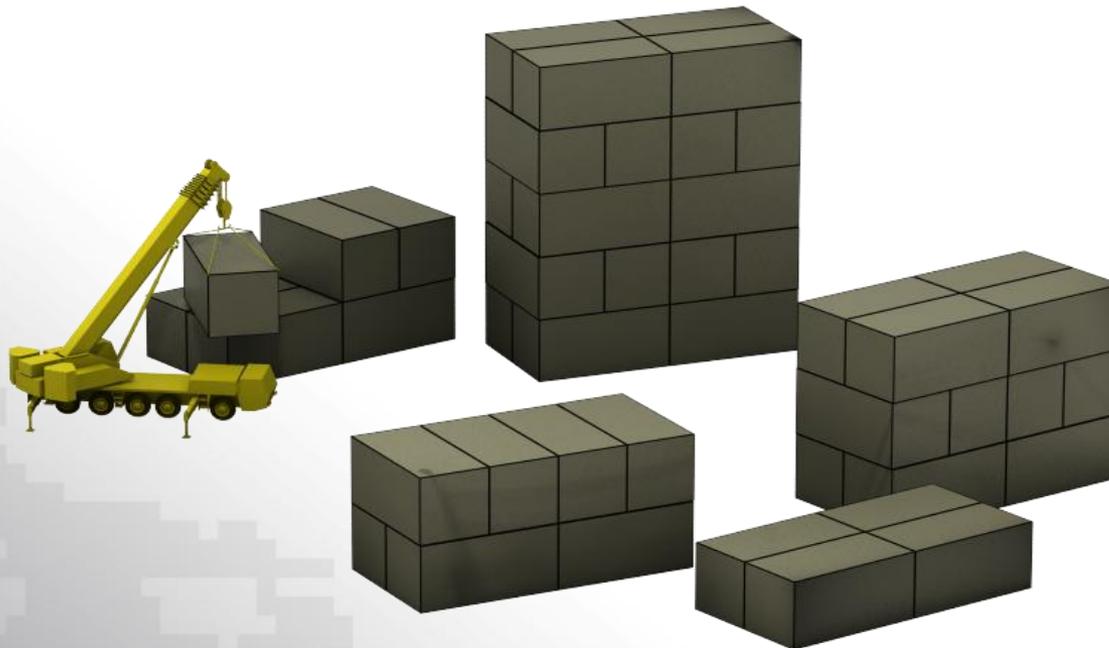


Operational View 1 (OV-1) Increment 1



Live Urban Area – Building Replicas (KPP)

- Dc3 – Detached, Closely Spaced, Residential Houses
- Dc4 – Detached, Closely Spaced, Industrial/Storage Buildings
- Dc5 – Detached, Closely Spaced, Commercial Buildings
- Do2 – Detached, Widely Spaced, Apartment Buildings



Augmented Urban Environment Effects

- Population Effects:
 - Vehicles
 - Overhead Wiring
 - Clutter

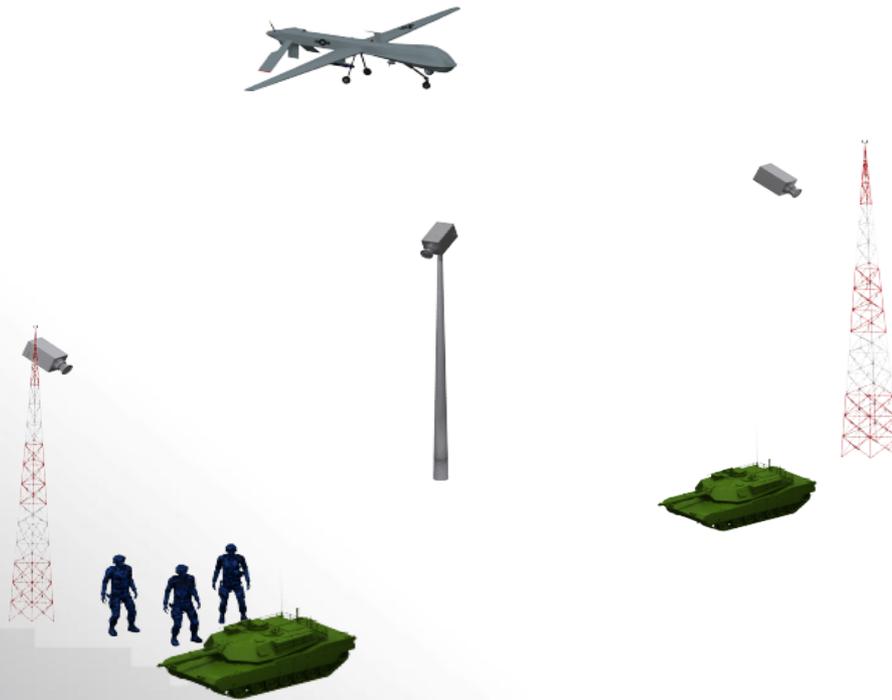
- Electromagnetic Effects:
 - Radio
 - HVAC
 - Cell Phone

- Infrared Effects:
 - Vehicles
 - Lamps and Signs



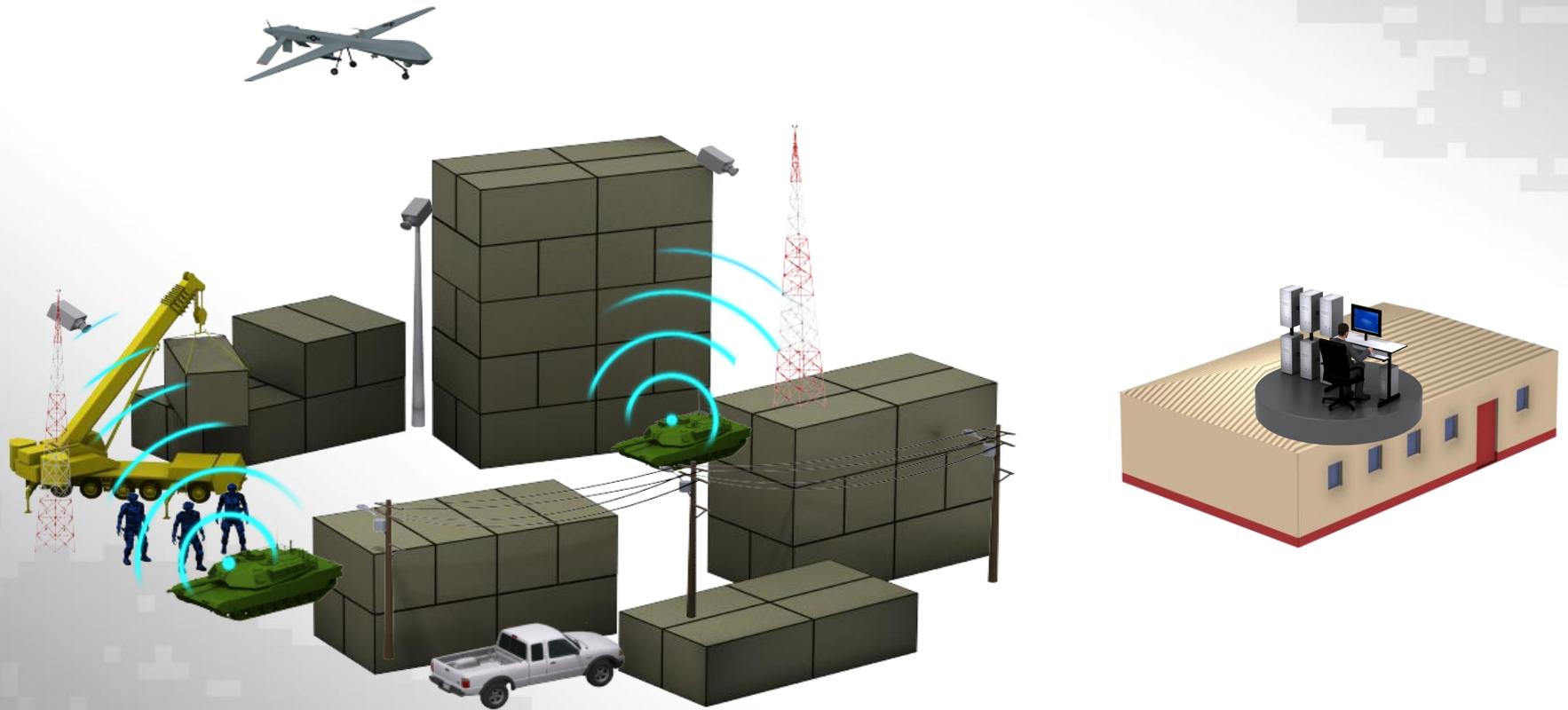
Data Collection, Reduction and Analysis

- Video Camera
- Mobile Tower
- Acoustic
- EM Spectrum

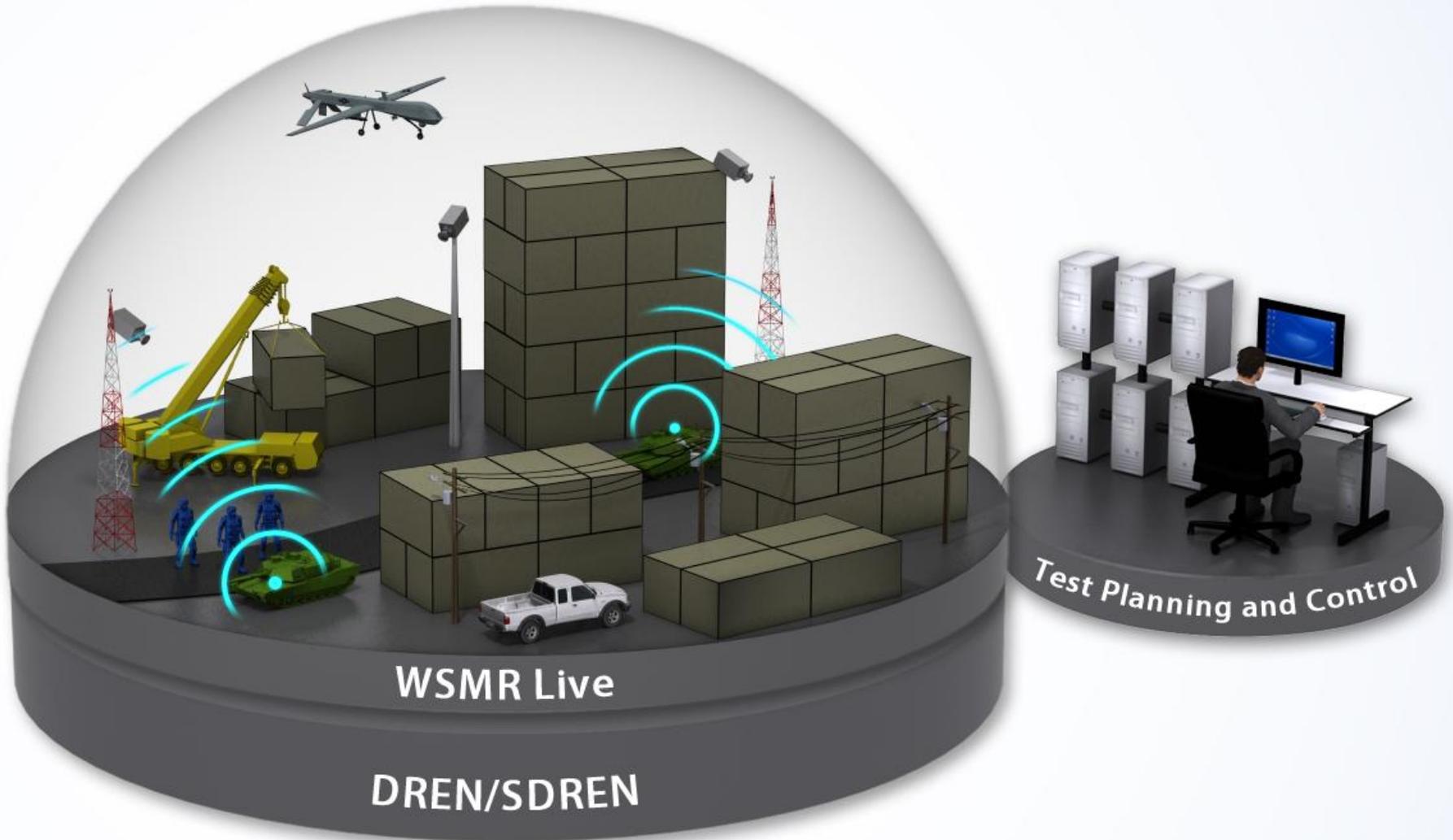


Test Planning and Control





OV-1 Increment 1





Increment 1 Key Capabilities – Live Urban Area

- **Urban Area** – 200m x 240m
- **Maneuver Area** – 16 km²
- **Buffer Area** – 100 km²



Increment 1 Key Capabilities – Live Urban Area

- TCRD Sec. 3.3.2 Urban Building Replicas Key Performance Parameters (KPP)
 - Threshold four Urban Terrain Zones (UTZ):
Industrial (1 bldg.), Commercial (15 bldg.), Residential (16 bldg.), Apartments (4 bldg.)
 - Building representations
 - Reconfigurable and transportable
 - Provide representative EM spectral response of each UTZ

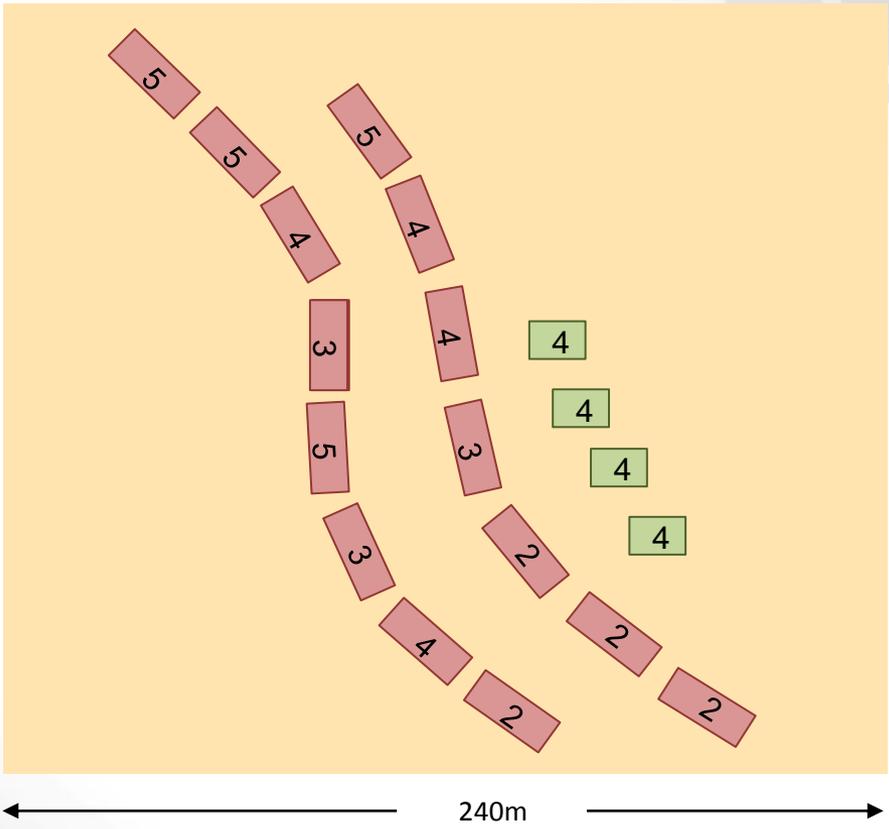
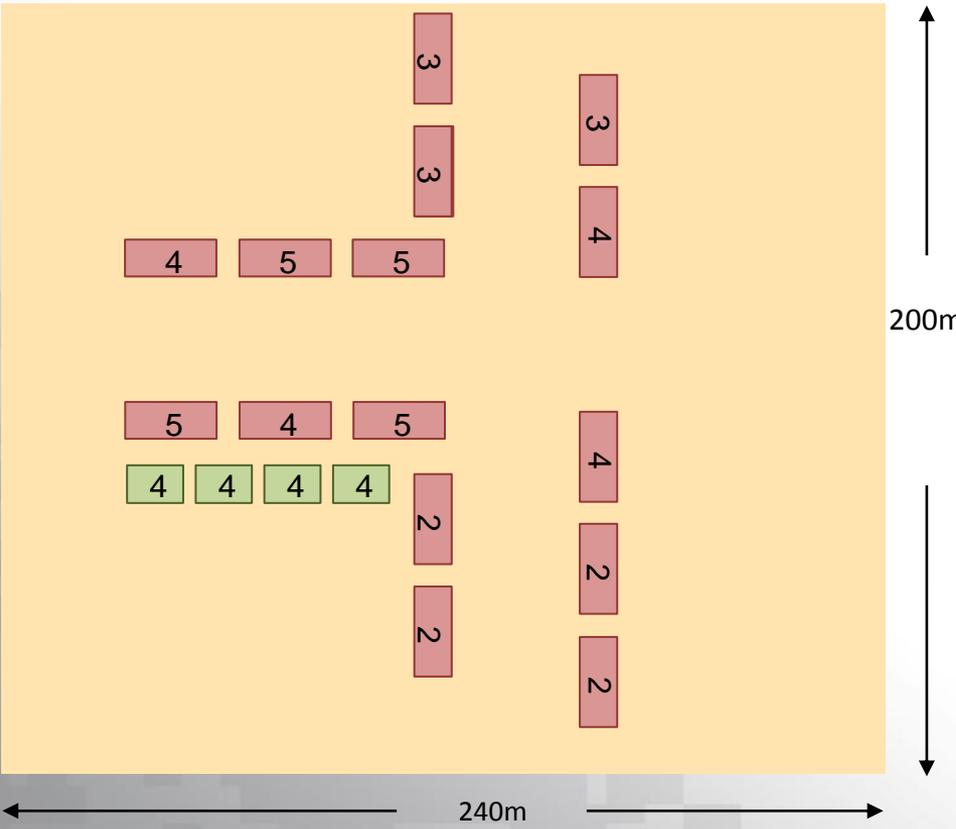
- **Increment 1 Approach**
 - Provide Commercial (15) and Apartment (4) building representations
 - Components will allow configuration and array changes
 - Building representation solutions considered:
 - Self-contained units
 - Frame and Panel
 - Modular Panels



Increment 1 Key Capabilities – Live Urban Area

Initial Increment 1 configuration (one of many possible configurations, depending on test requirement)

- Residential Apartments (Do2)
- Commercial (DC5)



Increment 1 Key Capabilities – Augmented Urban Environment Effects



- TCRD Sec. 3.4 Threshold Requirements include:
 - EME: Urban noise in 1MHz to 8GHz range (KPP)
 - Infrared Effects: Masking or signal clutter interference caused by items that cause temperature changes
 - Population Effects: Interior and exterior clutter potentially impeding mobility of systems operating within urban environment

- **Increment 1 Approach:**
 - Provide a proportionate amount of all TCRD Threshold requirements to match Live Urban Area quantity
 - EME design not finalized – current plan is point emitter (RF Vans) or other existing Army solutions with limited modifications
 - Other augmented effects will use actual systems for effects generation (e.g., HVAC, autos, electrical generators, signage, etc)

Increment 1 Key Capabilities – Virtual and Constructive Urban Environment



- TCRD Sec. 3.5 Threshold Requirements include:
 - Three-dimensional virtual and constructive engineering model of live JUTC environment
 - Multi-spectral reconfigurable constructive model of live JUTC environment to support HWIL simulators and other virtual simulations
 - 1km x 1km multi-spectral constructive model containing live JUTC environment surrounded by a representative model urban template

- **Increment 1 Approach:**
 - Provide three-dimensional virtual and constructive engineering model of live JUTC environment for use in Test Planning and Control software

Increment 1 Key Capabilities – Data Collection, Reduction and Analysis



- TCRD Sec. 3.6 Threshold Requirements include:
 - Video cameras
 - Mobile Tower Platforms (supporting data collection assets)
 - Acoustic Data Collection
 - EM Spectrum Data Collection
 - Multi-Spectral Data Collection
 - Video/Audio Data Analysis System

- **Increment 1 Approach:**
 - Provide a proportionate amount of video, acoustic and EM spectrum recording capability sufficient to support the Increment 1 Live Urban Area
 - Video recording capability based on existing WSMR systems
 - Audio recording capability based on existing commercial systems
 - Both mobile tower platforms

Increment 1 Key Capabilities – Test Planning and Control



- TCRD Sec. 3.7 Threshold Requirements:
 - Test Planning Composer
 - Test Control Cell
 - After Action Review Cell
 - 3D Interactive Situational Awareness System

- **Increment 1 Approach:**
 - Provide all Threshold Test Planning and Control requirements, with the exception of the full After Action Review (AAR) facility
 - Candidate system for Test Planning Composer: Real-Time Advanced Graphics Engine (RAGE), WSMR GOTS software suite
 - Candidate facility for Test Control Cell and initial AAR: Joint Direct Energy Test Site (JDETS) Control Center 30 miles North of JUTC

Increment 1 Key Capabilities – Test Architecture and Net-Centric Interoperability

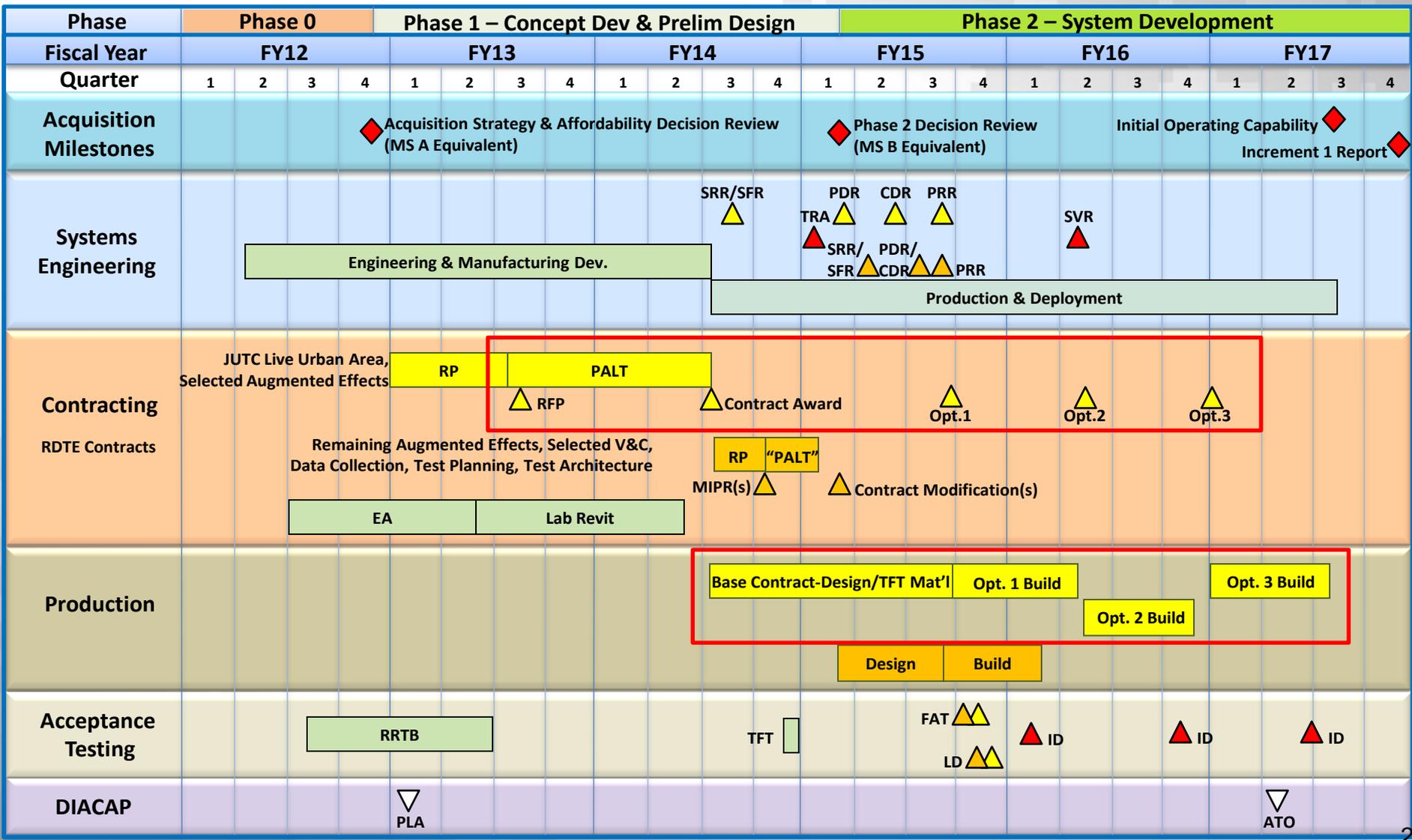


- TCRD Sec. 3.8 Threshold Requirements:
 - Distributed Connectivity via DREN and SDREN
 - Test and Training Enabling Architecture (TENA) Compliance
 - Range Gateway Interface

- **Increment 1 Approach:**
 - All Threshold Test Architecture and Net-Centric Interoperability requirements
 - Leverage existing WSMR Resources
 - Test Support Network (TSN)
 - Joint Mission Environment Test Capability (JMETC) node
 - Existing DREN and SDREN connectivity to support distributed test events



Schedule – Increment 1





Acquisition Strategy – Overall

- Evolutionary acquisition using incremental approach
- Divides requirements into 6 Prime Mission Products aligned with TCRD
 - Live Urban Area
 - Augmented Urban Environment Effects
 - Virtual and Constructive Urban Environment
 - Data Collection, Reduction and Analysis
 - Test Planning and Control
 - Test Architecture and Net-Centric Interoperability
- Acquire each Prime Mission Product separately via competitive procurement or use existing government contracts
- Government responsible for systems integration and acceptance testing
- Three sub-phases:
 - 1) Develop, test and procure Live Urban Area and part of Augmented Urban Environment Effects – ends with Technical Feasibility Test (TFT)
 - 2) Develop, test and procure the remaining Prime Mission Products following TFT – ends with on-site integration, test and logistics demo
 - 3) Procure and field remaining quantity via contract options – ends with IOC in FY17

3 other Prime Mission Products and full amount of Threshold requirements deferred to later Increments

Acquisition Strategy – Business and Technical Management



- Request for Information (RFI) June 2011 was limited to Live Urban Area building representations via “stackable box” concept and received 6 responses – potential competitive environment
- Multiple potential offerors who declined to respond to RFI expressed interest directly to project office over the next year
- Decision September 2011 to limit project to a first block/increment with subsequent increments to be determined later based on test capability need
- WSMR identified as Increment 1 location
- Discussions with WSMR identified existing contracts to fulfill other Prime Mission Product areas
- Modular approach around Prime Mission Products provides flexibility to funding, requirements, schedule or contract changes
- Laboratory Revitalization authority permits up to \$2M in construction using RDT&E funding – thus providing means to prepare Urban Area

Acquisition Strategy – Business and Technical Management (Cont'd)



- Risk Reduction Test Bed provides feeder information to Live Urban Area competitive procurement Request for Proposal and Technical Feasibility Test (TFT) plan
- TFT provides “off-ramp” to confirm viable concept with limited investment
- Design reviews following TFT provide flexibility to alter if necessary

Prior use of the term “stackable box” is not an indication of a preferred approach. This term has been used as a placeholder in lieu of traditional construction or alternative modular, panel, frame and panel and myriad other options. Potential offerors are encouraged to provide a design to meet requirements.



Acquisition Strategy – Contracting

- Use existing vehicles for other Prime Mission Products (Augmented Urban Environment Effects, Virtual and Constructive Urban Environment, Data Collection, Reduction and Analysis, Test Planning and Control, Test Architecture and Net-centric Connectivity)
- No determination yet as to in or out of STOC II or Small Business Set-aside
Depends upon response to Sources Sought
- Contract ceiling is approximately \$34M (as relayed in TSIS 2012)



TCRD and Spreadsheet posted to FedBizOps and STRIBOP

JUTC INCREMENT 1

TCRD Paragraph	General Capabilities	Increment 1	Contract Vehicle
		Yes/No/Partial	
	Joint Urban Test Capability (JUTC)		
	Prime Mission Product (PMP)		
3.3	JUTC Live Urban Area		
3.3.1	JUTC Air/Land Dimensions and Army Site Location (KPP)	Yes	Other
	Urban Area (200 meters x 240 meters)		
	Maneuver Area of 16km ² (4km x 4 km preferred)		
	Buffer Area of 100km ² (10 km x 10km preferred)		
	Airspace Clearance (Surface to 40,000 MSL)		
	Location Identified (White Sands Missile Range Preferred)		

JUTC INCREMENT 1

Capabilities	Increment 1	Contract Vehicle
	Yes/No/Partial	
	Yes	Other
	Yes	Competitive Award
	Yes	Competitive Award
Thermal/IR Effect	Yes	Other
	Yes	Other

3.3.2	Urban Building Representations (KPP)	Partial	
	Industrial (Dc4) building replicas (UTZ IV): One (1)	No	
	Commercial (Dc5) building replicas (UTZ II): Fifteen (15)	Yes	Competitive Award
	Residential (Dc3) building replicas (UTZ III): Sixteen (16)	No	
	Apartments (Do2) building replicas (UTZ V): Four (4)	Yes	Competitive Award
3.3.3	JUTC Urban Area Roads	Yes	Other
3.3.4	JUTC Urban Area Roundabout	No	
3.3.5	JUTC Urban Area Intersection	No	
3.3.6	JUTC Urban Area Sidewalks	Yes	Competitive Award
3.3.7	JUTC Urban Area Vertical Obstacles	Yes	Competitive Award
3.3.8	JUTC Urban Area Railroad Track	No	
3.3.9	JUTC Urban Area Bridge	No	



Government Furnished Equipment (GFE)

- Incorporate GFE where possible
- Preliminary GFE:
 - DREN/SDREN Connectivity
 - Test Support Network (TSN) Interface
 - Firm Power Interface
 - WSMR Land/Air
 - JDETS Control Center (JCC) Facility
 - JCC will house Test Planning and Control and initial After Action Review capability
 - Real Time Advance Graphics Engine (RAGE)
 - Government owned test planning and control software
 - JUTC specific modifications required

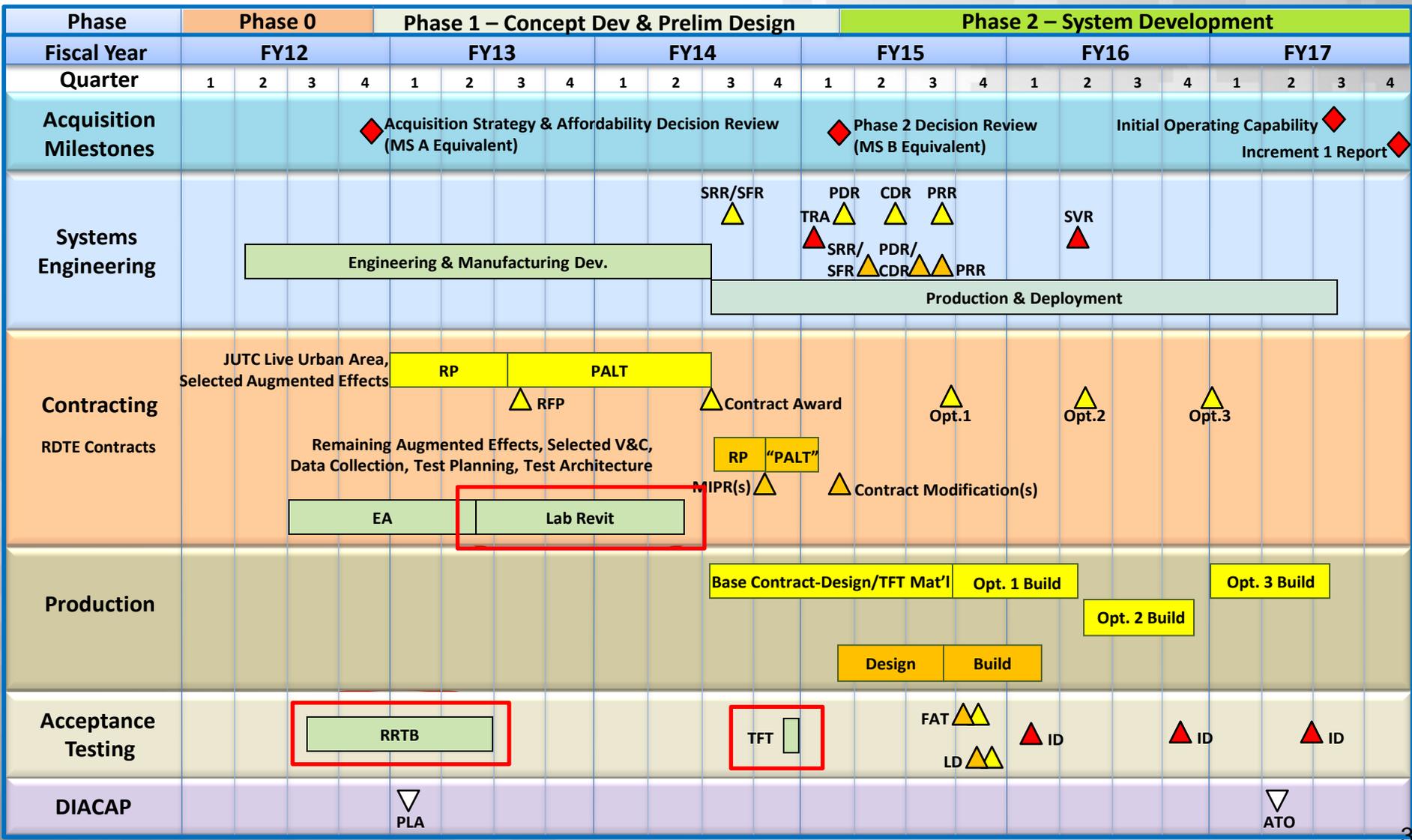


Sustainment

- Army will resource sustainment
- DRAFT Life Cycle Support Plan in staffing with WSMR – expect completion within 90 days of entry into Phase I
- Emphasis will be placed in specifications and source selection criteria to minimize life cycle costs
- Sustainment responsibility for all functions will be transferred to WSMR upon acceptance of each Option and Prime Mission Product en route to Initial Operational Capability (IOC)
- No new job categories or Military Occupational Specialties (MOS) are anticipated



Schedule – Increment 1





Laboratory Revitalization

- Authority to conduct “construction” up to \$2M
- Authority received in FY12, no FY13 submittal is required
 - “the development of the studies, design and bidding documents count as a NEPA process start in FY12”
- Begins following Finding of No Significant Impact for Environmental Assessment
- Funds needed 2Q FY13 to start in 3Q FY13



Risk Reduction Test Bed (RRTB)

- Objective – Provide early evaluation of potential technology to determine what measurements are suitable and necessary to validate an Urban Environment and how to perform these measurements
- Define required variables and performance criteria “stackable box” solutions must meet to achieve a representative Urban Environment with respect to physical properties of interest (RF, infrared, laser, electro/optic and acoustic effects)
- Investigate physical properties of different materials
- Obtain baseline measurements of an Urban Environment
- Feed results to Increment 1 requirements package
- Improve and accelerate implementation of Increment 1 and Technical Feasibility Test
- Kickoff meeting with RF SME’s held 11 Jun 12

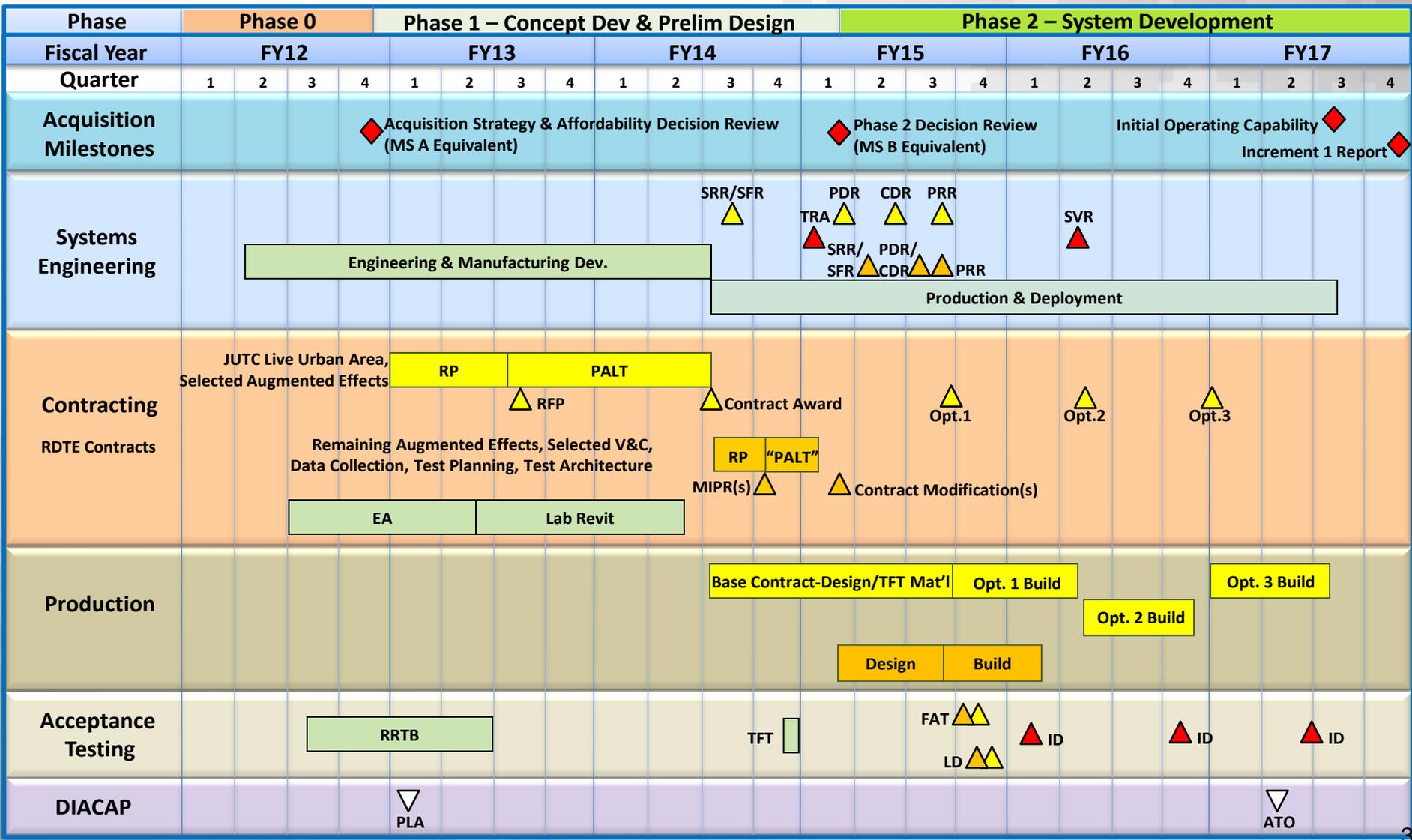


Technical Feasibility Test

- Objective – Determine whether contractor can provide adequate representation of a real Urban Environment via three elements:
 - 1) Material Realism: Determine whether replicas adequately represent physical properties associated with an urban area with regards to radio frequency, infrared, laser, electro/optic and acoustic properties
 - 2) Mechanical Reconfigurability: Determine whether “stackable boxes” can be operated (assembled, reconfigured, and transported) in its’ intended environment (at WSMR on a foundation of compacted earth)
 - 3) Safety: Ensure assembly and disassembly can be performed safely and test personnel and equipment can safely operate in interior and adjacent spaces
- Feed information for Virtual/Constructive Urban Environment input



Schedule – Increment 1





Points of Contact

- Michael Landers – Project Director
Michael.landiers@us.army.mil
407-384-3530
- Kelvin Pinero – Lead Engineer
Kelvin.pinero@us.army.mil
(407) 384-3927
- Judi Willis – Contracting Officer
Judi.willis@us.army.mil
(407) 380-4068
- Sherry Alexander – Contracts Specialist
Sherry.alexander@us.army.mil
(407) 384-3586



Questions?