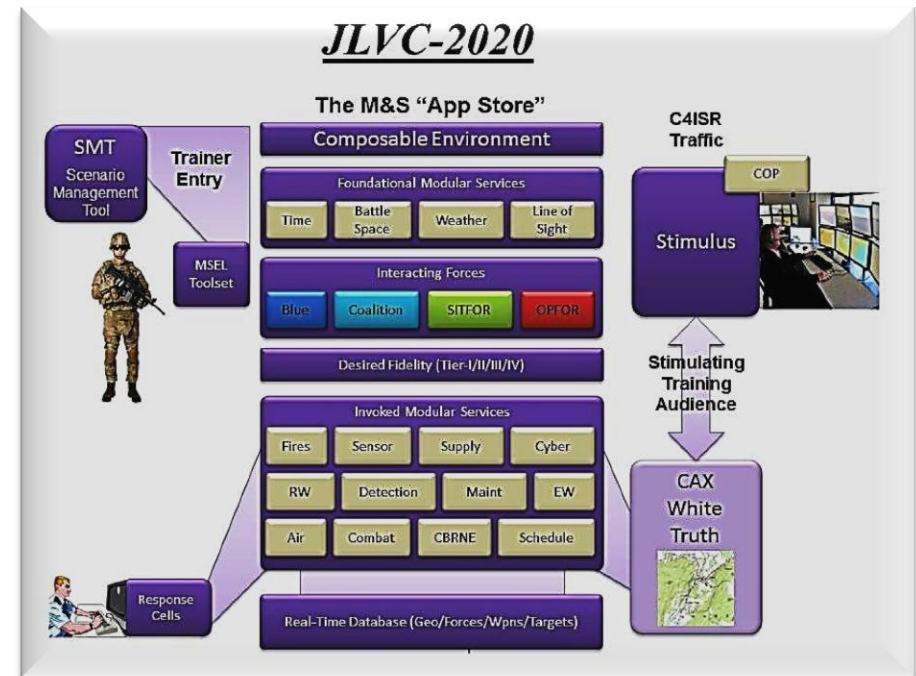




Joint Staff J7 Modeling & Simulation Program Update



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- **JTLS**
- **JLVC-2020**

FY13/14 JTLS Development

- **Following the release of JTLS 5.0 in April 2013, there are no more planned major version releases of JTLS**
- **Strategy for JTLS in FY13 and beyond is to maintain the latest version release (April 2013) and direct Rolands and Associates in the development of JLVC-2020 – support of Cloud Enabled Modular Services (CEMS)**
 - Capitalize on DoD’s investment in JTLS and R&A’s expertise and experience
 - Reuse as much of JTLS algorithms and parametric data as possible
 - Build “Scheduling module” that can be used with other simulations
 - Example: U.S. Theater Battle Management Core System (TBMCS) and North Atlantic Treaty Organization (NATO) ATO Integrated Command and Control (ICC) Air Operations schedules
- **Continue grid-based terrain development and the capability to interface with JS J7’s Joint Training Data Services (JTDS) as it transitions to Common Database (CDB) format**
- **Expand the analytical capabilities of JTLS**

FY13/14 JTLS Operation and Sustainment



- **Operational enhancements, functional improvements, code fixes and ongoing maintenance to maintain reliable, stable, secure and efficient JTLS operations**
- **Work Software Change Proposals (SCP) and Software Trouble Reports (STR)**
- **Maintain/update JTLS interfaces with C4I systems and/or devices**
- **Maintain/update JTLS standard database and repository, networks and terrain**
- **Maintain/update current, federation and integration capabilities with other simulations, devices, programs and processes**
- **Insure DoD Information Assurance Certification and Accreditation Process**
- **Joint Staff J7 Exercise/Event Support**



Joint Staff J7 M&S Program Update

Joint Live, Virtual and Constructive (JLVC) 2020 Overview

Joint M&S and the Mandate for Change

• Unsustainability of Current M&S

- JLVC is a federation of Service/Joint developed models (29 total)
- Manpower (cost) intensive
- Constant burden on integration (version control)

• DoD Mandates to Move M&S to DoD Information

Technology (IT) Enterprise

- Training enclave joining “mainstream” without being consumed
- Joint M&S available wherever connectivity exist

• Discoverability & Accessibility

- Driving jointness deeper = joint training context for Service use
- Current Joint M&S is too monolithic (i.e., not composable)
- Trainers have to compete for simulation center support

• Technology Changes

- Cloud enables linkages now to facilitate trainer involvement
- Hardware speed = more efficient modular software approaches
- More can be automated to reduce manpower costs

• Efficiency

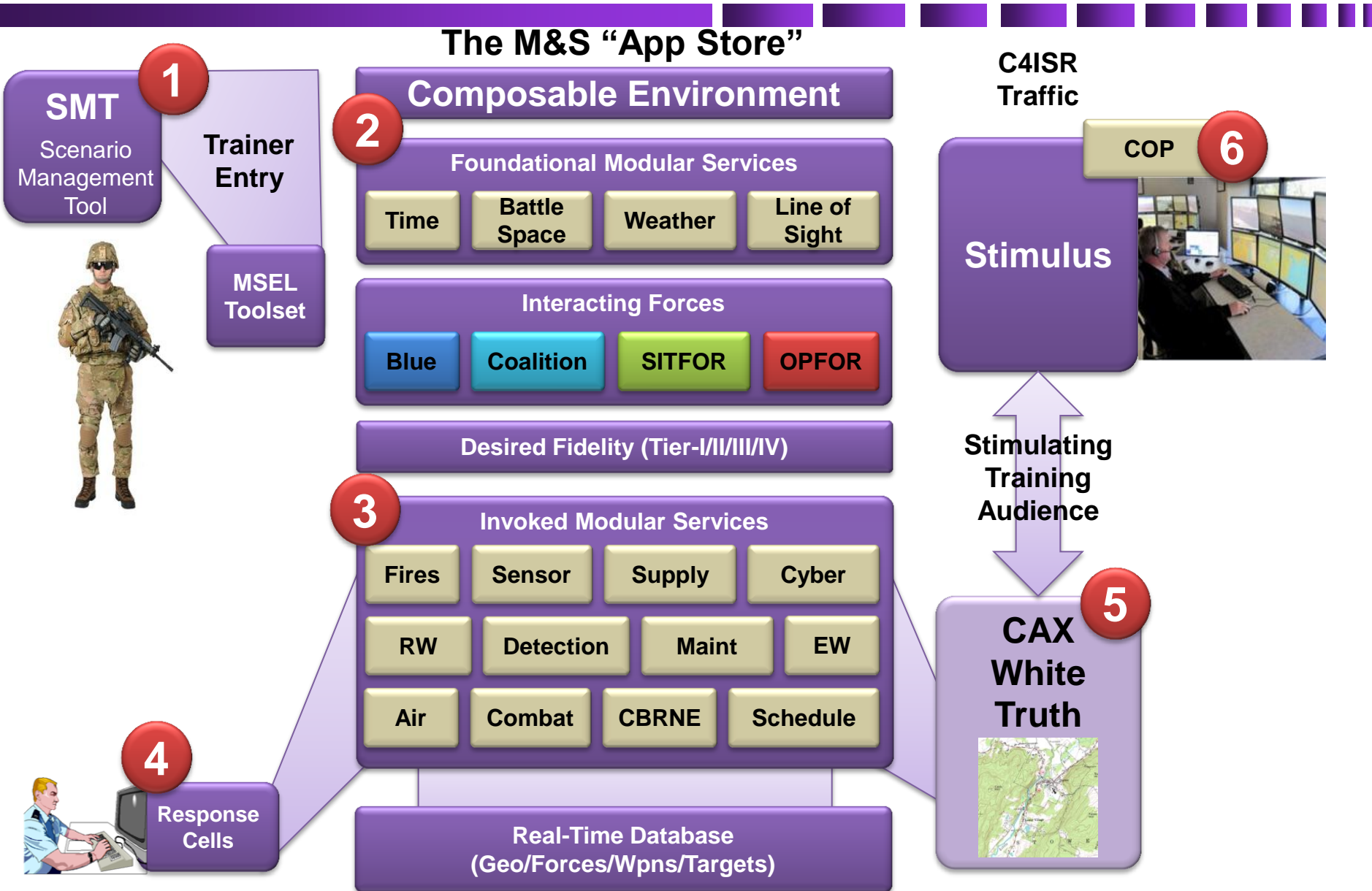
- Trainers are unique with specific training objectives – thus need unique training environments
- Providing a bigger, more complex training environment than trainers require is wasteful

• Fidelity

- Trainers have varying need for fidelity (usually related to C4ISR devices stimulated by M&S)
- One-size-fits-all approach (either JLVC or JTLS) is too restrictive

We Want Joint M&S to be:

- Relevant to Warfighter Needs
- Less Expensive to Sustain
- Within DoD IT Enterprise Framework
- Discoverable & Accessible to Home-Station
- Optimized for Cloud & Faster/Better Hardware
- A Composable Training Environment (Right-Sized)
- Interoperable with Coalition Partners



Joint M&S Way-Ahead

- Within Joint Training Enterprise Architecture (JTEA) – broader Joint, Service, Agency context = **alignment of Joint M&S with DoD Information Technology (IT) way-ahead.**
- Cloud-Enabled Modular Services (CEMS) is a new approach to enhance efficiency, flatten trainer to training enabler linkage, save \$.
 - Modular services vice large, monolithic simulations = **composable environment.**
 - Optimized for cloud (Classified & Unclassified) = **accessible to trainers.**
 - Scalable M&S support = **reduced O&S costs (30% reduction).**
- JLVC-2020 is the new M&S training enabler – replacing JLVC & other Joint M&S
 - 6-year development effort with interim capability in FY16 and FY18.
- Continue collaboration with U.S. Military Services (Army, Air Force, Navy & Marines) = **intellectual proponency of modular services and Service credibility.**
 - Compelling logic for U.S. Services' adoption of modularity and investment once successful.
 - Opportunity for enhancing collaboration with NATO, ACGU (Australia, Canada, Great Britain & U.S) and Pacific Rim. **Emerging partnership with NATO in Exploratory Team-034 (Simulation-as-a-Service [SaaS]).**
- Enhance collaboration with U.S. Combatant Commanders (CCMD) = **better in meeting training requirements.**

- **JLVC-2020 V 0.6 (Sep 2014):**
 - Data Structure
 - Framework for HLA Federates (JLVC 6.0)
- **JLVC-2020 V 1.0 (Oct 2016):**
 - Common Environmental Services (First Truly Modular Services)
 - Optimized for Wireless Consumption
 - Data Markup & Discovery (Rapid Data Generation - RDG)
 - Dynamic Joint Exercise Life Cycle (JELC)
 - Exercise Planning Culture Enabled with IT Solutions
- **JLVC-2020 V 2.0 (Aug 2018):**
 - Common Platform Services – Characteristics, Logistics, etc. (More Modular Services)
 - Reduced O&S Costs (Cultural Change & Tech Change)
 - Mission/Task Framework
 - Cloud Delivery
- **JLVC-2020 V 3.0 (Oct 2019)**
 - Common Effects Services (More Modular Services)
 - Scenario Management Tool = Composability

JLVC-2020 Collaborative Efforts With NATO

- **NATO Modeling & Simulation Group (NMSG) coordinates NATO M&S efforts for NATO organizations (i.e., Joint Warfighting Centre, etc.) and is clearing house for multinational M&S initiatives.**
 - Specific projects are titled: Modeling & Simulation Group (MSG's).
 - DoD representative to NMSG is U.S. Department of Defense Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) Modeling & Simulation Coordination Office (M&SCO)—representing all M&S domains (i.e., R&D, training, analysis, etc.).
 - J7 involved in 2 MSG's (MSG-106: M&S Interoperability & MSG-85: Coalition Battle Management Language).
 - J7 coordinating with NATO Allied Command Transformation (ACT) and several other nations to advance an Exploratory Team (ET-034) on Simulation-as-a-Service (SaaS).
- **ET-034 (SaaS) is closely aligned with JLVC-2020 Cloud-Enabled Modular Services (CEMS) framework.**
 - J7 will leverage Allied Command Transformation, Great Britain, Sweden (and hopefully others) interests to collaborate on a CEMS approach toward SaaS with an end-state of purpose-designed coalition interoperability in joint M&S architectures associated with JLVC-2020.
 - Intent is to transition ET into an MSG in a year or two.
- **M&S relationship with Australia also very strong—particularly with existing joint M&S products—and growing. Interest down the road in Australia partnering with JLVC-2020 CEMS framework as well.**



QUESTIONS ?

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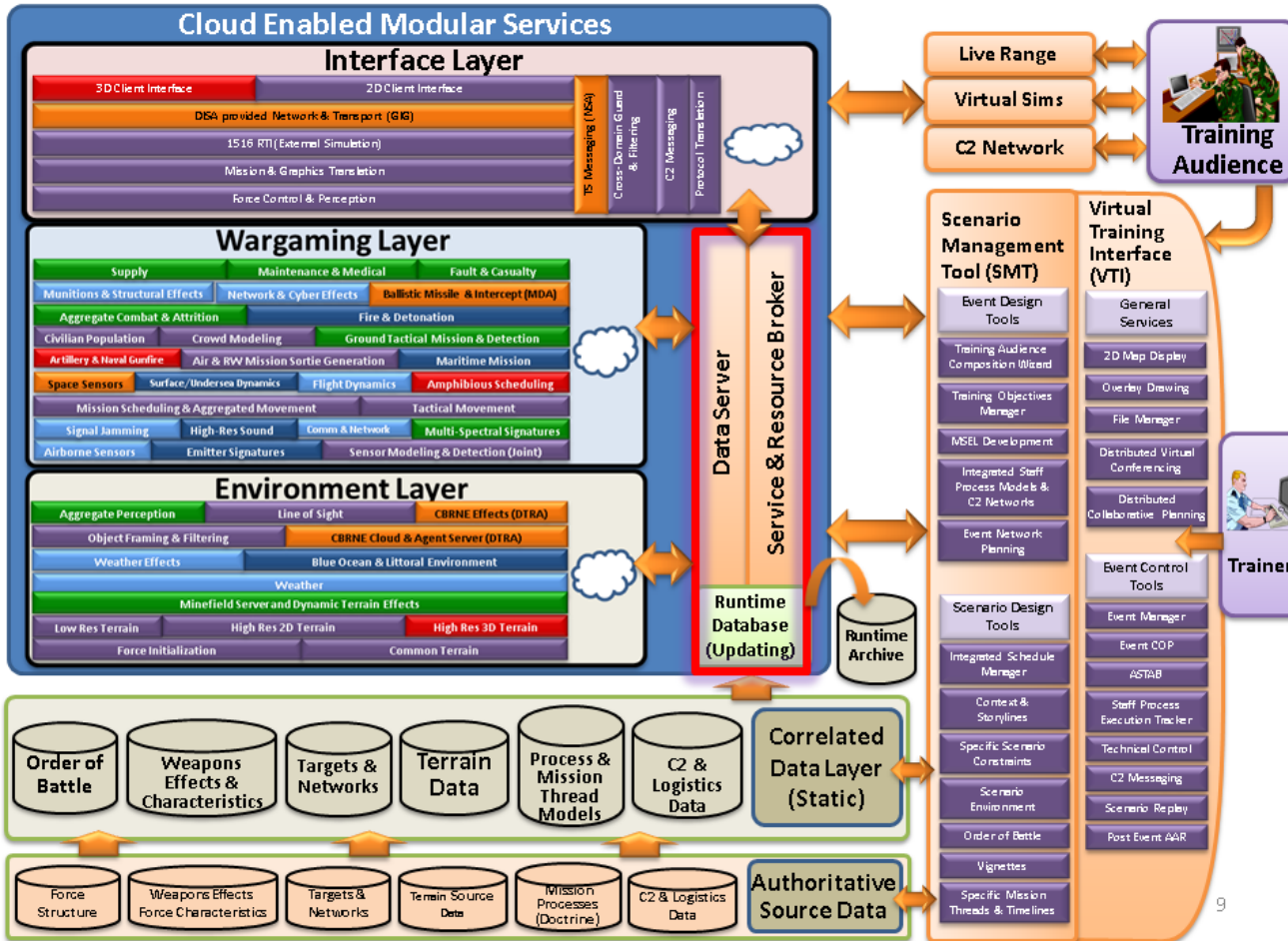
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Backup Slides

JLVC2020 Cloud-Enabled Modular Services (CEMS)

JLVC Next-Generation Objective Capability



Major Components

- Virtual Training Interface (VTI)
- Scenario Management Tool (SMT)
- Cloud-Enabled Modular Services (CEMS)
- Data Service Broker (DSB)
- Correlated Data Layer

Collaboration Opportunities:

- Service/Agency/JDir Intellectual partnership
- Coalition partnership (MSG)
- Funding partnership (\$ investment leads to greater fidelity)
- OSD Partnership via MSCO
 - Rapid Data Generation Project
 - Geospatial Data Correlation
 - Force Development Mission Process Modeling in Virtual Environments

3 Priority Projects

- Modular service specification
- Data service broker prototype
- Data management schema

Agile Accessible Composable Efficient Tailorable

"The Joint Force...will have cutting edge capabilities, exploiting our technological, joint, and networked advantage..."

Cover Memo, DoD Strategic Guidance, January 2012