Simulation – C4I Interoperability (SIMCI) Overarching Integrated Product Team (OIPT)

Presented by :

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SIMCI Architect
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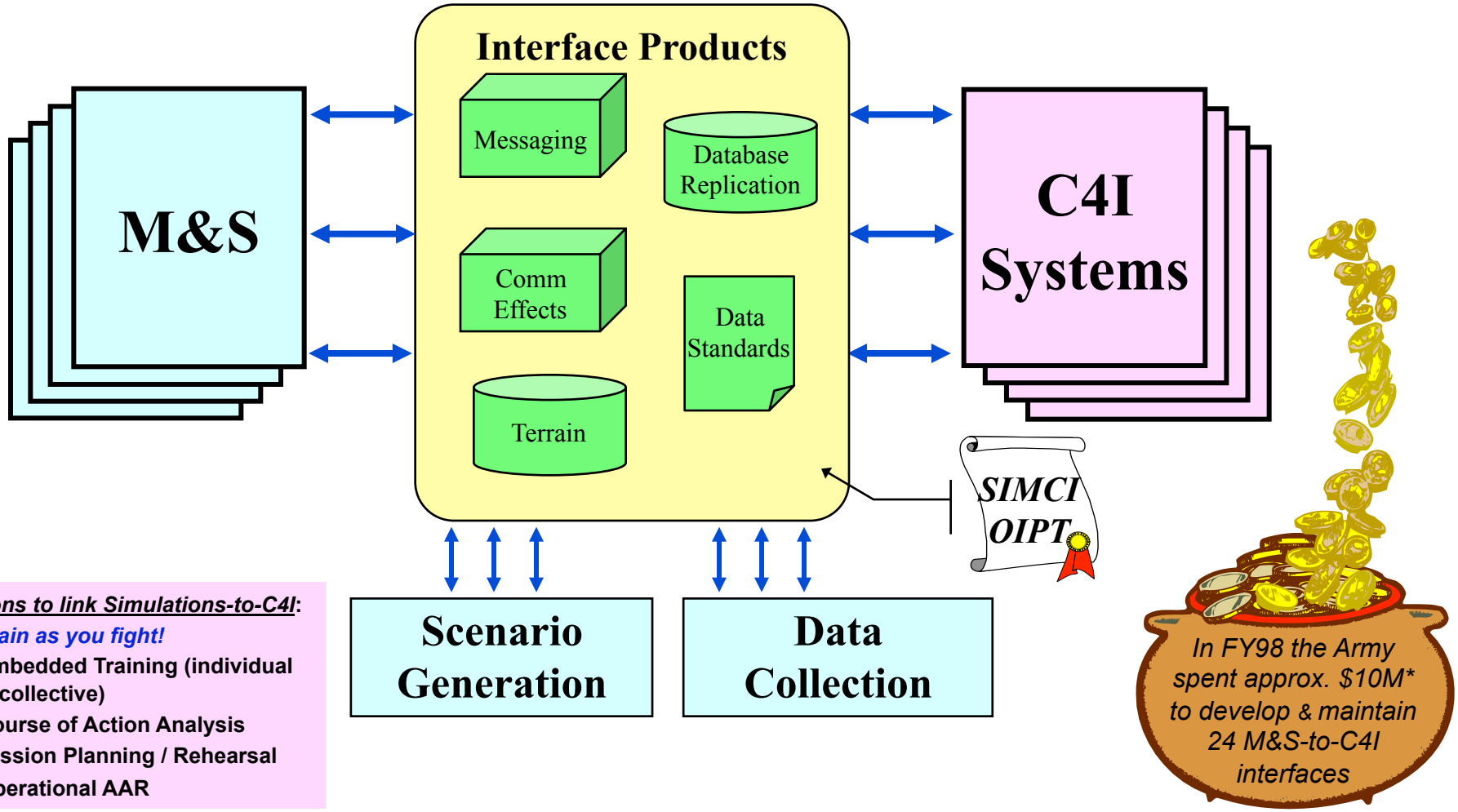
Agenda

- SIMCI Description
- Geospatial Initiative
- SIMCI Technical Vision/Strategic Plan
- Summary

The Problem

Full Interoperability is unattainable without common solutions for...



Reasons to link Simulations-to-C4I:

- ***Train as you fight!***
- **Embedded Training (individual & collective)**
- **Course of Action Analysis**
- **Mission Planning / Rehearsal**
- **Operational AAR**

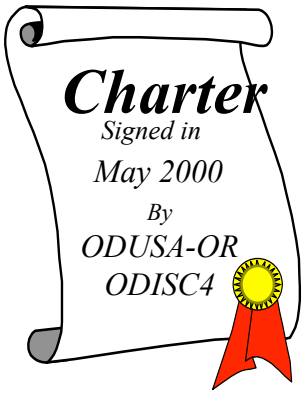
Simulation-to-C4I Interoperability (SIMCI)
OIPT *Charter (est. May 2000)*

MISSION

Provide recommendations on Army level policy to the AMSEC for improving interoperability between the Models and Simulations (M&S) and Command, Control, Communications, Computers, and Intelligence (C4I) Domains.

OBJECTIVES

- **Seamless interoperability between M&S and C4I systems.**
- **Alignment of M&S and C4I standards, architectures, and common C4I components.**
- **Identification of requirements for simulations and C4I to support interoperability**

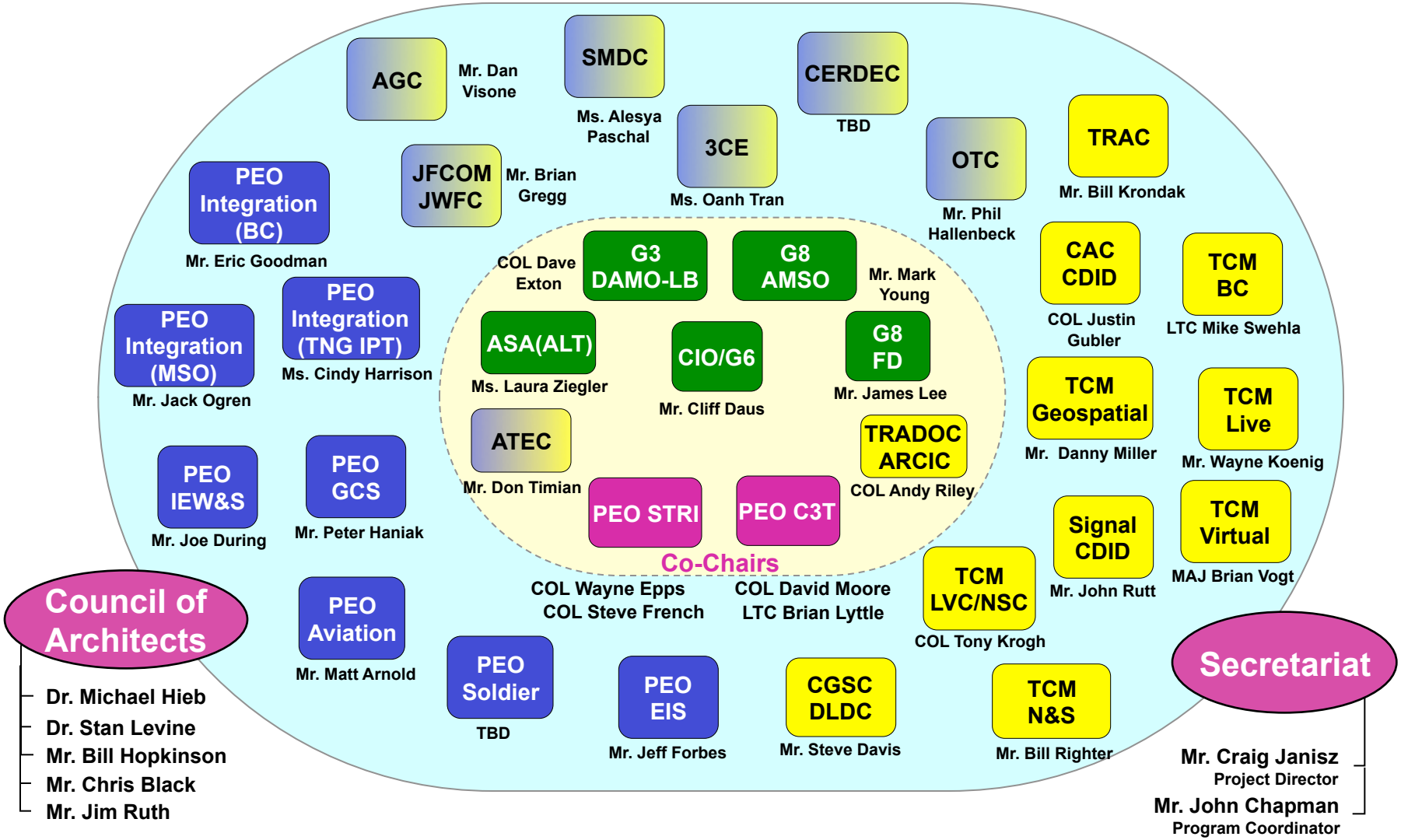


IPT MEMBERS

Co-Chairs: ***STRICOM, PM Digitized Training & PEO-C3T, Chief of Readiness & Engineering***

PEOs	*TRADOC*	*Army Staff*	*MACOM/MSC*
PEO C3S	TPIO-ABCS	AMSO	CECOM RDEC
PEO IEWS	TPIO-STE (TEMO)	Army M&S C4I Integration SCC	SMDC
PEO STAMIS	TPIO-TD	ATEC	
STRICOM	TRAC	G8-DOI	
	DCSCD	DISC4	

SIMCI OIPT Membership
(as of Jun 2011)



SIMCI Leadership

The SIMCI OIPT is co-chaired by PEO C3T and PEO STRI

POSITION	PEO STRI	PEO C3T
Co-Chair	COL Wayne Epps	COL David Moore
Exec Agent	COL Steve French	LTC Brian Lyttle
Proj Dir	Mr. Craig Janisz	

Program Coord - Mr. John Chapman

SIMCI Architects

Mr. Chris Black – STRI LNO to CTSF

Dr. Stan Levine – CIO/G-6

Dr. Mike Hieb – GMU C4I Center (AMSO)

Mr. Jim Ruth – CAC CDID MCBL

Mr. Bill Hopkinson – SAIC (PEO STRI)

SIMCI Functional Areas

- Conduct Outreach to share solutions
- Lead efforts
- Sponsor and resource projects

Outreach Role

- Increase Awareness of SIMCI Developed Solutions to Army Community thru participation in HQDA, DoD, & Coalition activities, meetings, symposiums, telecons, etc.
- Create Shared Awareness of Interoperability issues and build consensus in DoD Community on how to approach them
- Inform Army Leadership of SIMCI Efforts
  - Meetings
  - Briefings & Info Papers
  - Sponsor Conferences
  - Technical Papers
- Past efforts include:
  - C3 Driver Workshop
  - Army Initialization
  - Data Management and Interoperability Group

Lead Efforts

- Recommend and influence C4I and M&S interoperability programs, policies, resourcing, procedures and solutions
  - HQDA Recommendations
- Serve as a catalyst for change to achieve interoperable C4I and M&S systems of systems
  - Consortium/ Technical Working Groups of BC and M&S Programs Targeting one specific technical issue
  - Value Methodology Workshop
  - Leader through System Engineer Education
- Examples include:
  - JC3IEDM
  - Army Certification of Sim tools.
  - Geospatial Toolsets

Sponsor and Resource Projects

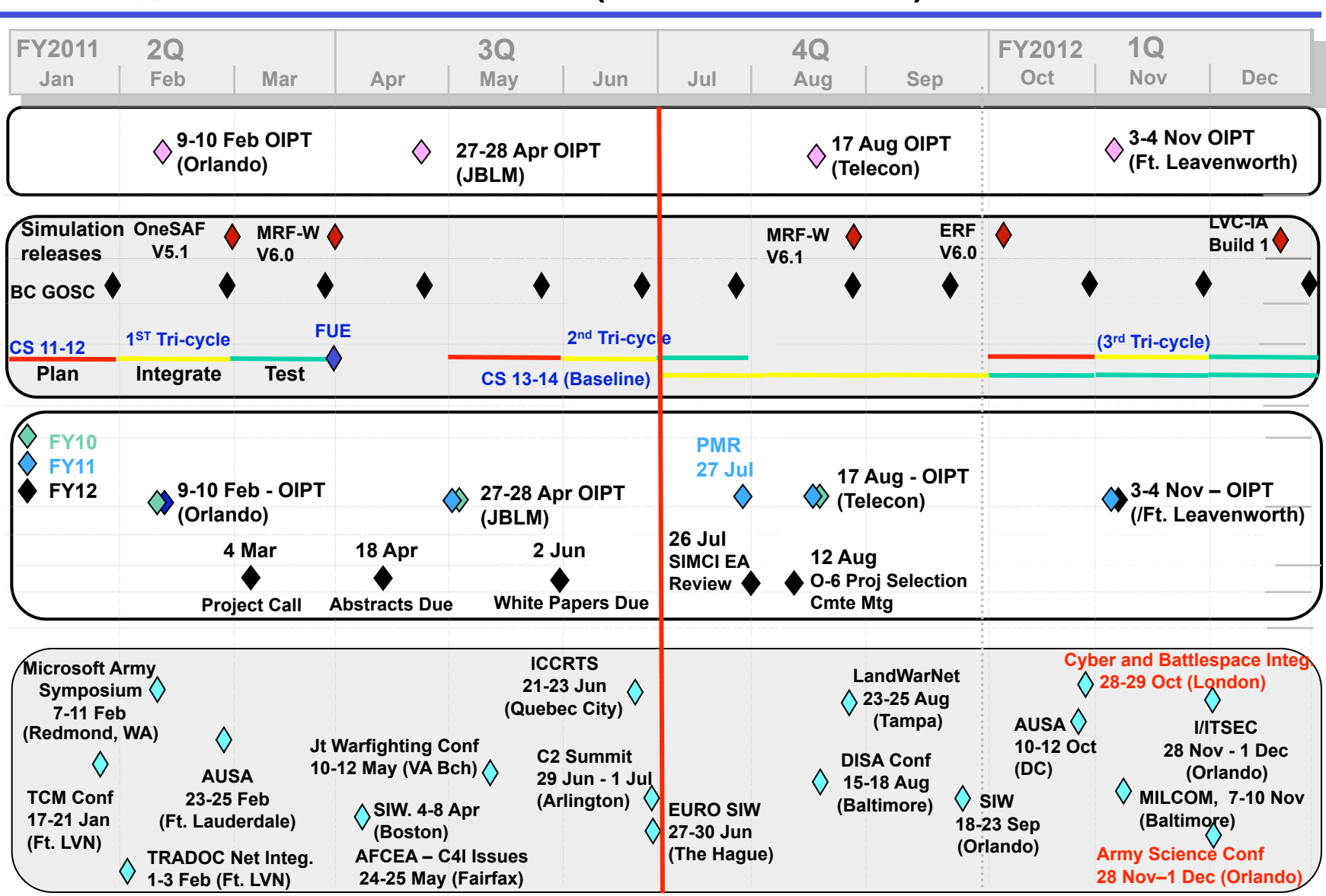
- Provide Direction for SIMCI Technical activities that efficiently and effectively support Army and DoD priorities by sponsoring focused, annual projects
  - MC to M&S interoperability related
  - Operational benefit to the Army
  - Transitions to a program of record
  - Improves warfighter readiness and capability
- Examples include:
  - Data Partitioning
  - ONESAF Modeling

Key SIMCI Accomplishments

- Sponsored development Low Overhead T&E Tools currently in use.
- Identified and corrected M&S and BC systems' interoperability problems thru a Certification Policy/Process.
- Developed a more effective/efficient BC & Simulation Initialization Capability used by OIF systems.
- Transitioned common BC products (such as the Common Message Processor) to specific M&S programs.
- Transitioned the C2IEDM (now called JC3IEDM) into an Army approved policy .
- Focused and integrated diverse Army Initialization efforts to address deploying forces' high priority needs.
- Provided Persistent Collaborative Forum to share and discuss Cross Cutting issues (reducing the friction between BC and Simulation Programs of Record).

SIMCI FY11 Battle Rhythm

(As of 27 JUN 11)



*APIMS-Army Project Information Management System

(Unconfirmed events/dates in red)

FY11 Focus Areas

- **Capability Sets (CAP):**

  Intent: Provide interoperability products/services and processes to integrate critical capabilities (e.g. Reuse of data between BC & mission rehearsal/ training applications) across current and planned Modeling and Simulation (M&S) and Battle Command (BC) systems for Capability Sets (CS).

- **Processes (PRO):**

  Intent: Identify, modify and/or develop common components and services for use by BC and M&S. Develop processes that drive or facilitate interoperability between M&S and Battle Command to ensure timely support of warfighter training and operational needs.

- **Warfighter Mission Area BC/M&S Products/Services (WMA):**

  Intent: Develop and prototype Architecture Standards, Data Standards, and Implementation Specifications for BC and M&S interoperability.

- **Initialization Integration (INI):**

  Intent: Use M&S to support today's BC operational needs.

- **Leveraging Joint/Coalition Capabilities for Army Use (JNT):**

  Intent: Provide interoperability products/services to more effectively integrate Joint and Coalition Solutions into Army Systems.

FY11 Projects

- Enhanced OneSAF Order Interoperability Framework (Follow-On)
- Army Organization Server (AOS) MTOE and TOE Data Enhancements (Follow-On)
- BML Standardized Army Coalition BC to M&S Orders Interoperability (Follow-On)
- V&V JC3IEDM Reference Implementation in Battle Command Environment (Follow-On)
- Propose Expansion of Collapse Repository/PASS to Support Simulation
- C2 Adapter Visualization Tool (VT)
- Entity Type Composition Transition to Operational Capability
- Unit and Electronic Order of Battle Alignment Processes and Tools
- Extend Tactical Architecture & Thread Products into LVC Domain

FY12 Project Call Timeline

- ☑ OIPT approved FY12 Focus areas (10 Feb 11)
- ☑ Project call announcement sent out (4 Mar 11)
- ☑ Abstracts received (18 Apr 11)
- ☑ Abstract decision (27 Apr 11)
- ☑ White paper invitations sent out (2 May 11)
- ☑ White papers received (2 Jun 11)
- ❑ Evaluators score WPs in APIMS (NLT 5 July 11)
- ❑ Architects analyze evaluations (6-22 Jul 11)
- ❑ SIMCI Executive Agent meeting (26 Jul 11)
- ❑ Brief selection committee for approval (12 Aug 11)
- ❑ Present results to SIMCI OIPT (17 Aug 11)
- ❑ Project Management Plans due (15 Oct 11)
- ❑ Contracting actions (Oct 11 -Jan 12)

FY12 Focus Areas

In FY12, the SIMCI OIPT has made Mission Rehearsal the unified theme for the focus areas. While Mission Rehearsal is primarily a TEMO area, projects in the ACR and RDA Domains are also being considered. Many capabilities developed for Experimentation or Test could be very useful for Mission Rehearsal. The FY12 topics are:

- *Simulation Control by Battle Command*
- *Distribution of Simulation Services for BC*
- *Time Services for BC*
- *Leveraging Joint Capabilities and Products for Army Use*
- *Gaming Interoperability with Battle Command*
- *Mobile App Interoperability*

FY12 SIMCI Project Call
22 Evaluation Team Members

Mission Command (9)

- ✓ MAJ Sean Ontiveros, CAC-T/CTD
- ✓ Mr. Craig Dickson, G3/5/7 LB
- ✓ Mr. Kevin Backe, AGC
- ✓ Mr. Rick Ramsey, TCM-Geo
- ✓ Mr. Danny Miller, MANSCEN
- ✓ Mr. Tim Galvin, TCM MC
- ✓ Mr. Mike Wasikowski, TRAC/FLVN
- ✓ Mr. Art Santo-Donato, PM BC
- ✓ Ms. Dorothy Boehnlein G3/5/7 MC

Models & Simulations (8)

- ✓ Mr. Greg Trnka, MSCO
- ✓ Mr. Jeff Gavlinski, G8/CAA-MS
- ✓ Mr. Phil Hallenbeck, ATEC
- ✓ Mr. Jeff Buker, NSC
- ✓ Mr. Wes Brown, TRADOC/JAMSD
- ✓ Ms. Cindy Harrison, BC TM/FF
- ✓ LTC Jon Ellis, PEO-I, M&S
- ✓ Mr. Amit Kapadia, PM ConSim

SIMCI Architects (5)

- ✓ Dr. Mike Hieb, SIMCI/GMU
- ✓ Mr. Bill Hopkinson, SIMCI/STRI
- ✓ Mr. Jim Ruth, SIMCI/CAC-CDID
- ✓ Dr. Stan Levine, SIMCI/CIO G6
- ✓ Mr. Chris Black, SIMCI/CTSF

FY 12 Project Selection Committee

- COL David Exton, G3-LWB (MC)
- Mr. Mark Young, DA G8 (M&S)
- COL Justin Gubler, TCM BC (MC)
- COL Tony Krogh, TCM LVC-TE / Dir, NSC (M&S)
- COL Sam Ligo, TCM Geospatial (MC)
- COL Andy Riley, TRADOC JAMSD (M&S)
- COL Jonas Vogelhut, PM MC, PEO C3T, (MC)
- COL Wayne Epps, PM ConSim, PEO STRI (M&S)

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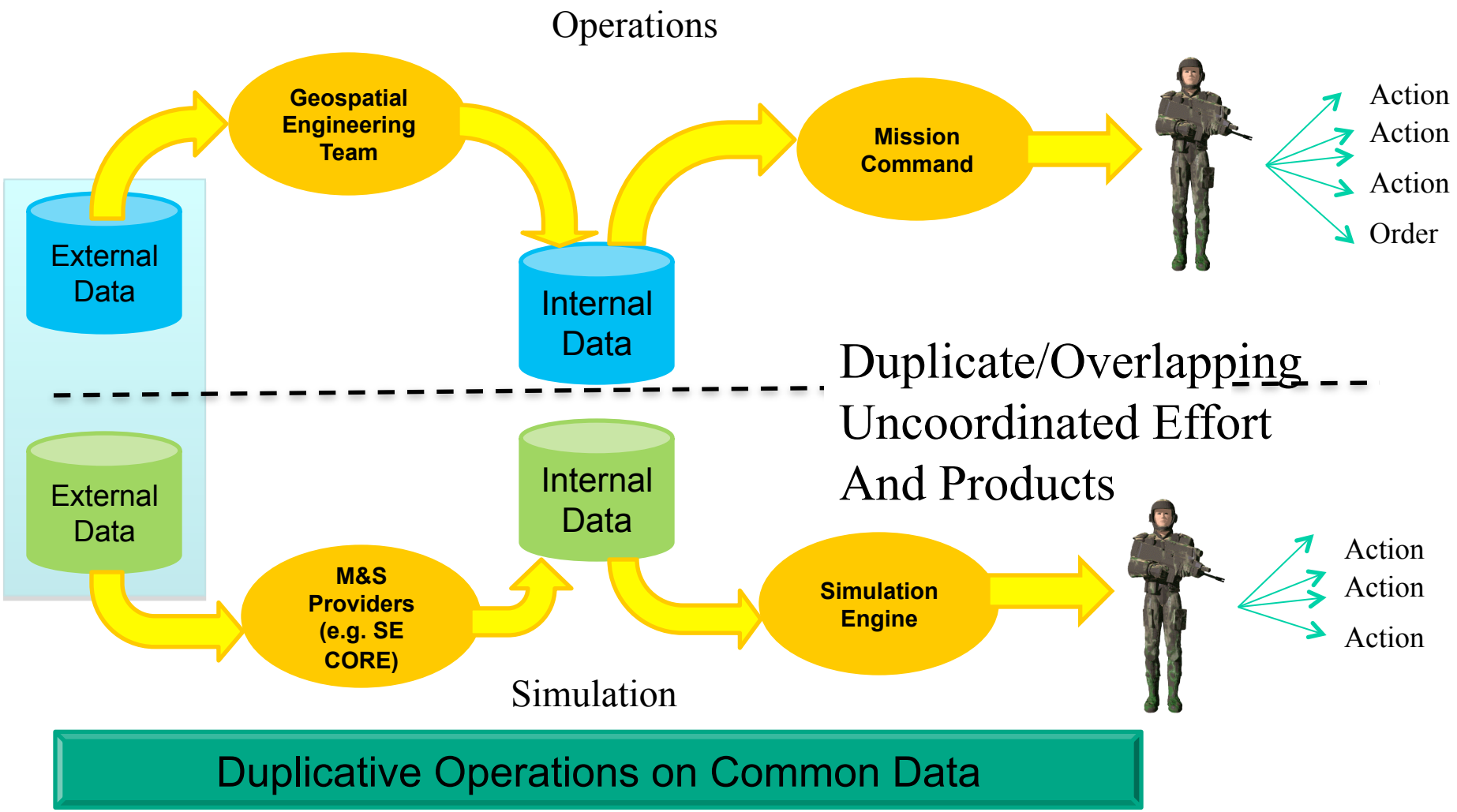
SIMCI Mission

The Simulation to C4I Interoperability Overarching Integrated Process Team (SIMCI OIPT) is chartered to make Army wide interoperability policy recommendations to the Army Senior Leadership.

In 2011-2012 SIMCI is developing Recommendations for Geospatial Alignment between MC and M&S

Current Operational and Simulation Environment



SIMCI Geospatial Alignment Initiative

The Goal of this Initiative will be a prioritized list of Issues with Actionable Solutions to Align Geospatial Processes, Standards and Tools between Mission Command and Modeling and Simulation within the Army. Expected solutions include Organizational Agreements on Roles and Responsibilities. Other solutions may include one or more Recommendations to Army Leadership if necessary. The objective will be to conclude the Initiative within one year.

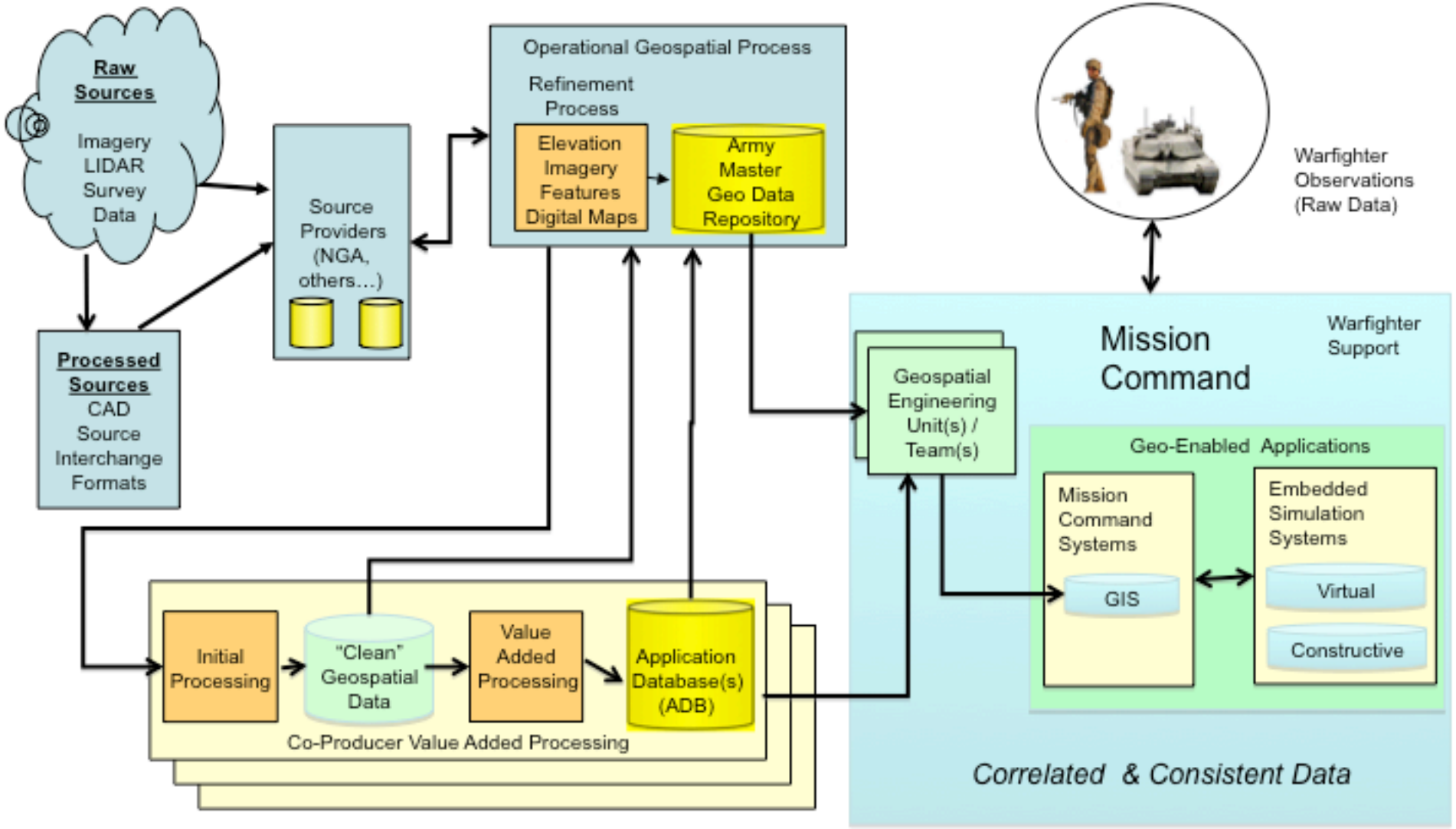
For the SIMCI Community this will result in the faster and less expensive generation of correlated data sets for BC and M&S.

SIMCI Geo Initiative Products

Geospatial architecture products for SIMCI Geo Initiative

- OV-1 for Integrated Army Geospatial Data Production Process (To Be)
- Generic Business Model – Mission Command (MC) (Organizational ownership of Data Production Process elements)
- Generic Business Model – Simulation (Organizational ownership of Data Production Process elements)
- CONOPS for Integrated Army Geospatial Data Production Process (including Simulation processes and feedback to Geo DB).
- End-to-End Use Case for Training - Includes Training Audience, application developer, military scenario developer, and data integrator.
- End-to-End Use Case for BC - Includes Warfighter, application developer, data integrator and source data collector(s) as users.
- Integrated Army Geospatial System View and Data Distribution/ Communications Architecture (SV-5a, SV-5b)

"To-Be" OV-1
Providing Geospatial Data for Mission Command



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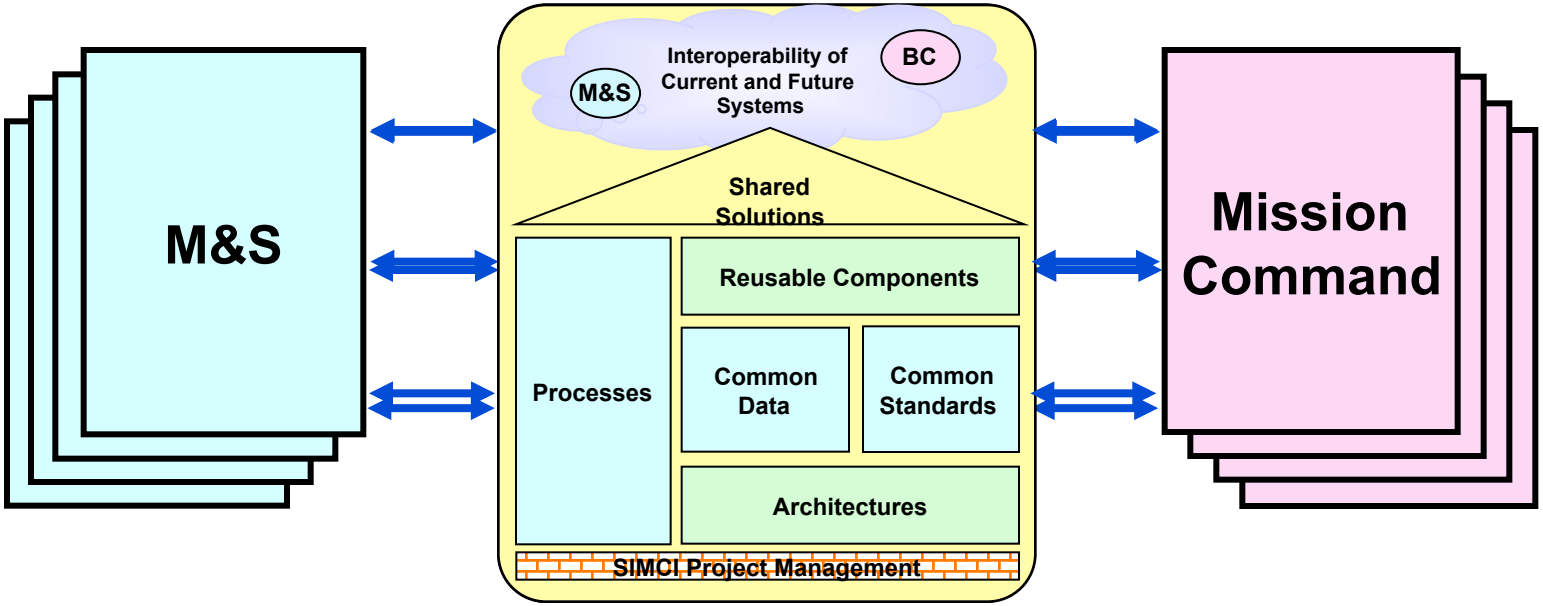
Simulation-to-C4I Interoperability Overarching IPT (SIMCI OIPT)

Vision: Achieve full interoperability between Modeling and Simulation (M&S) systems and Battle Command (BC) systems as an integral part of the acquisition process, from capabilities determination through fielding and sustainment.

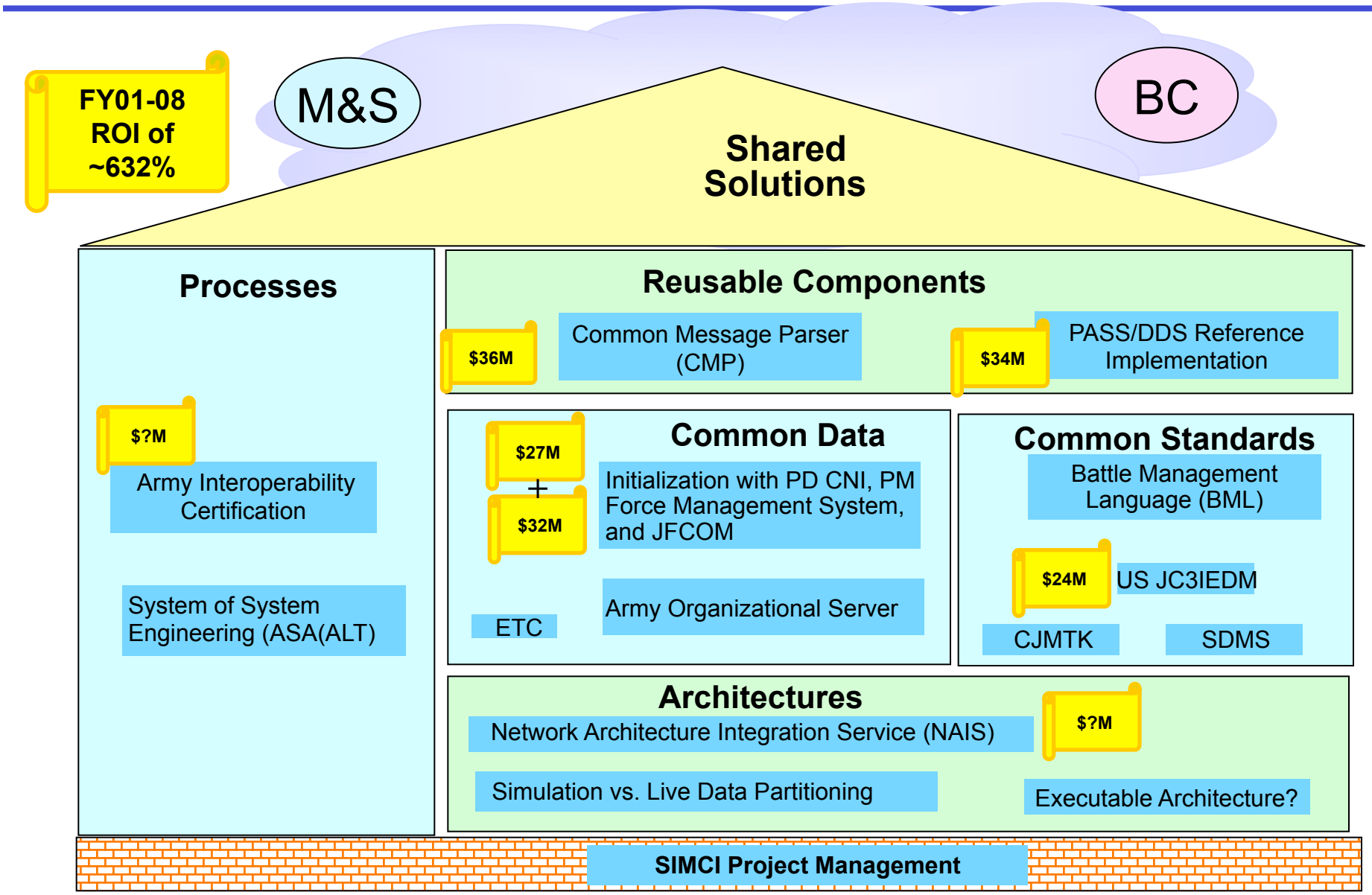
Mission: Provide policy, process, organizational, and technical recommendations to Army Leadership that will improve M&S and BC systems interoperability.



Solving Specific Issues/Gaps

- Initialization with common data
- Geospatial representation for COA
- Data partitioning in support of mission rehearsal

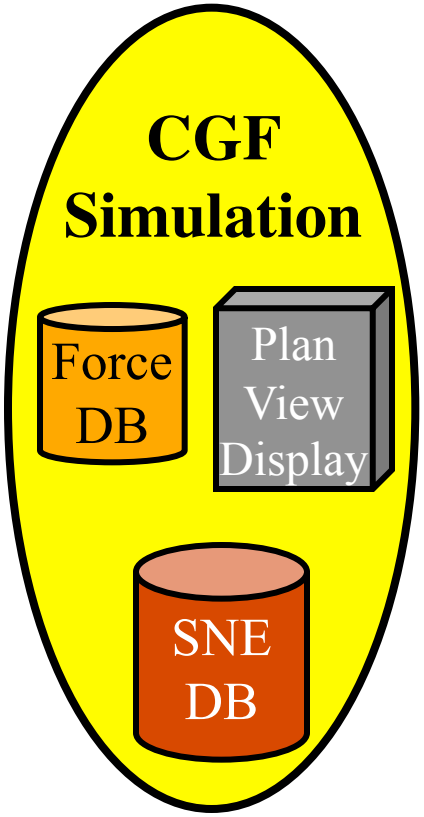
Key Activities/Accomplishments



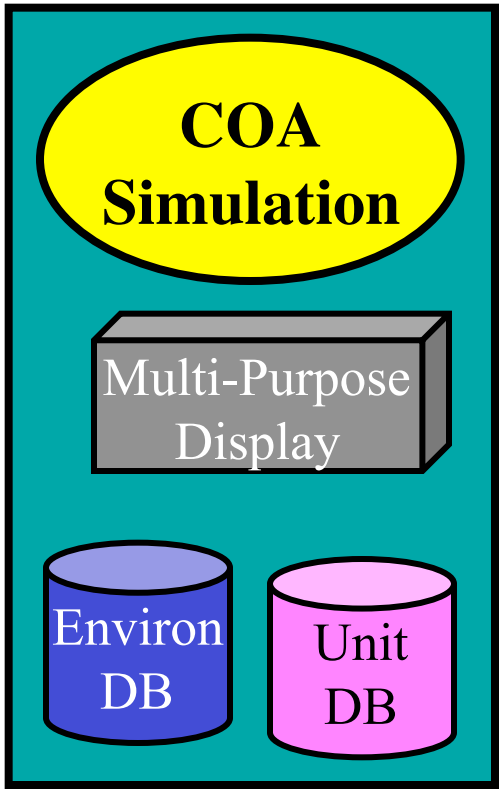
Mission Command Essential Capabilities

- A Robust Network Capability (voice – data – video) enables communications whether line of sight or beyond line of sight
- Execute Tactical Network Operations – to expand and extend transport network based on operational needs
- Display / Share Relevant Information
  - Access / query / store / retrieve data from multiple databases/sources
  - Display using a single common mapping toolkit
  - Enemy, Friendly, Neutral Locations, Graphic Control Measures, Cdr's SITREP, etc.
  - Political, military, economic, social, infrastructure, and physical environment information
- A Standard & Sharable Geospatial Foundation
- Enable Collaboration (voice –text – data – video)
- Create and Disseminate Orders
- Battle Command on the Move – integrated voice/data network with applications to the commander, while mobile
- Execute a Running Estimate - link staff estimates to mission execution
- Joint, Interagency, Intergovernmental, Multinational (JIIM) interoperability
- Rehearsal and Training Support

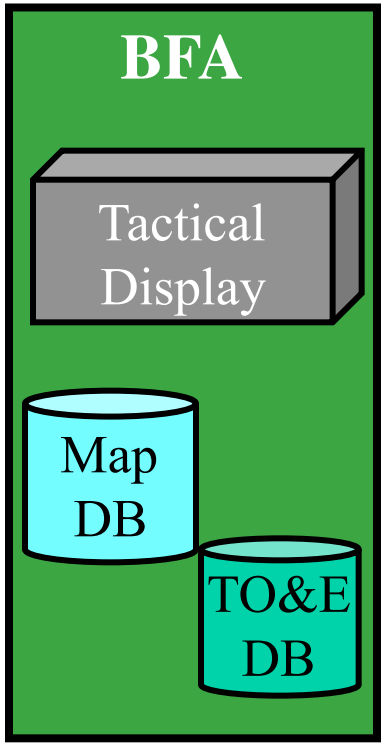
The Vision (2007): Simulation-Enhanced C2 Systems



Current Force Sim System



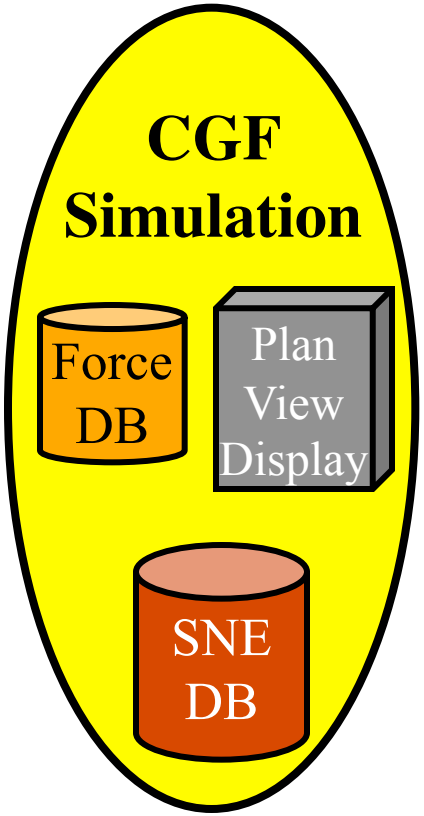
Future Force C² System



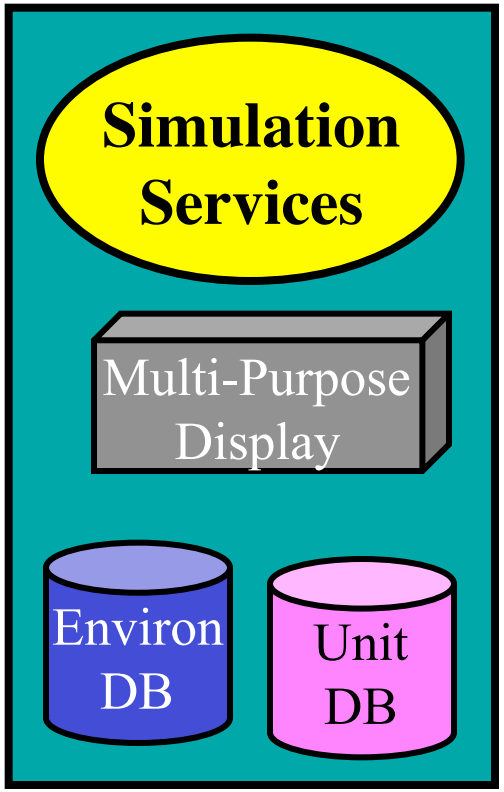
Current Force C2 System

Common Functions between Current Systems evolve into common components of Future Systems

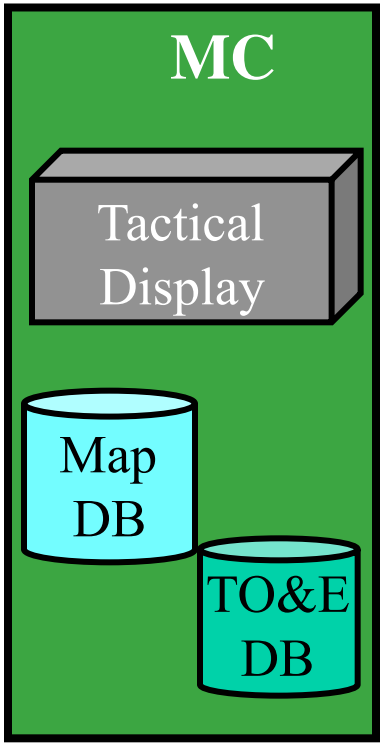
The Vision (2011): Simulation Services for MC



Current Force
Sim System



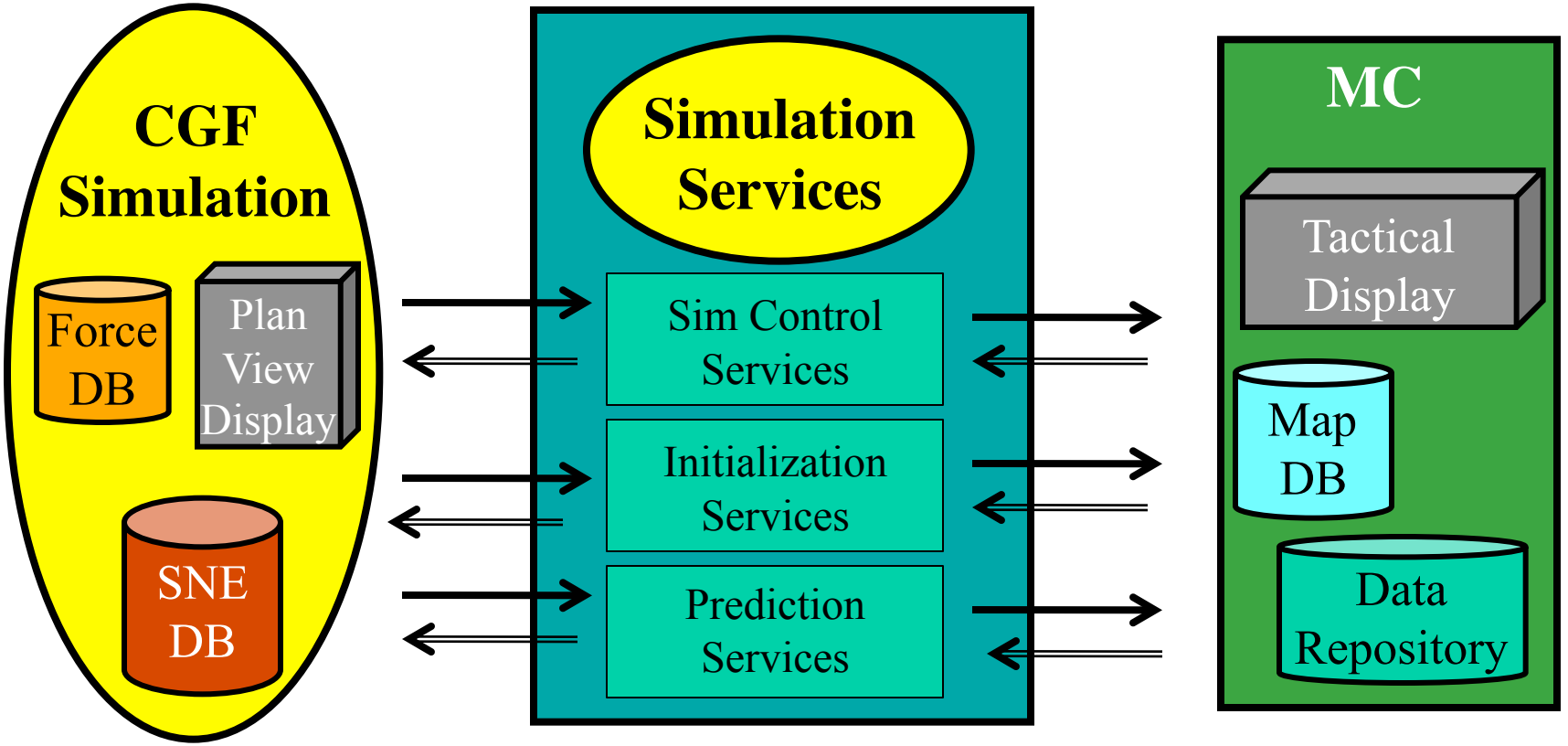
Simulations Services as
Part of Mission Command



Current Force
Battle Command System

Common Functions between Current Systems evolve into Common Services of Future Systems

Simulation Services for MC

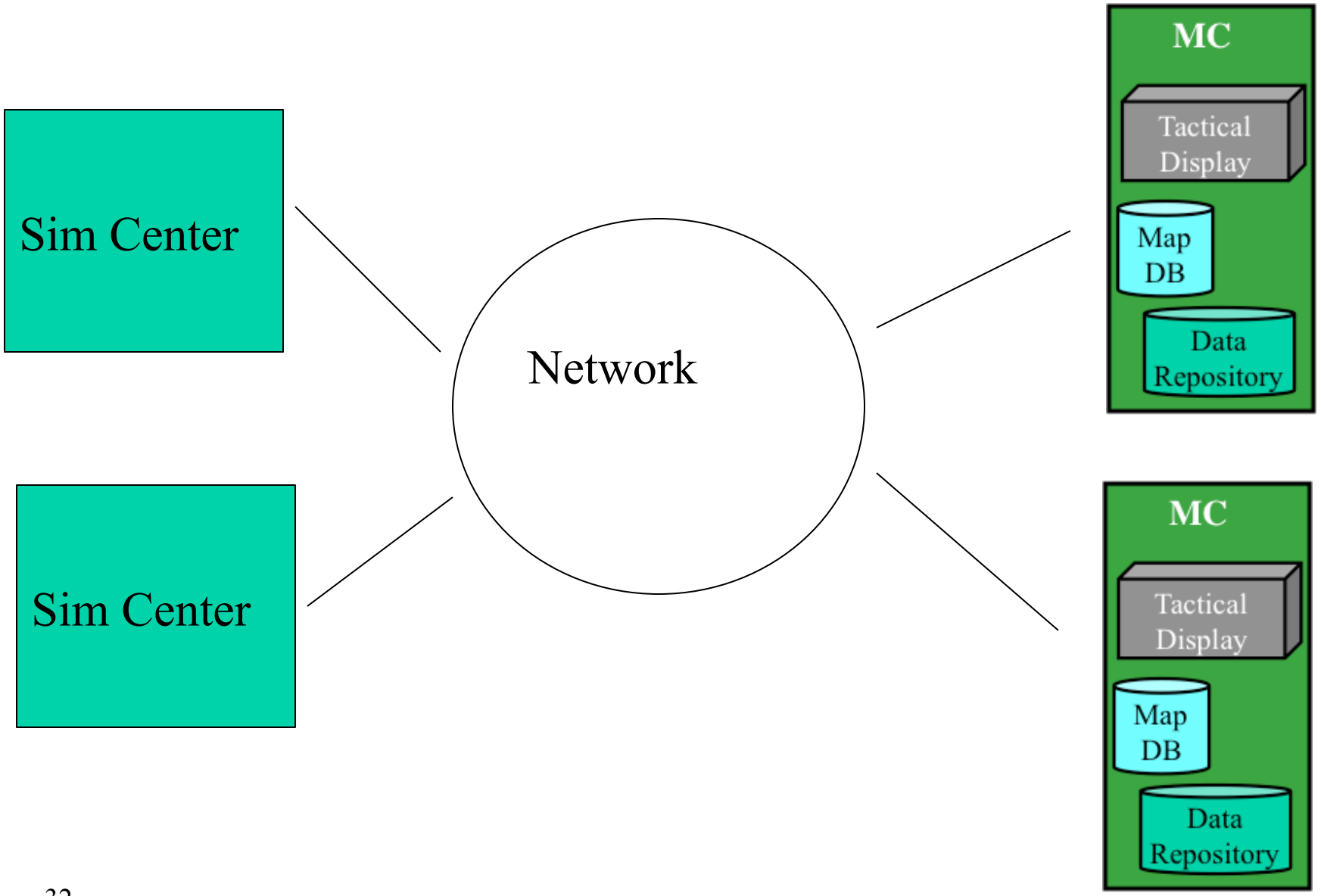


Current Force Sim System

Simulations Services as Part of Mission Command

Current Force Mission Command System

Simulation Services for BC



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Reasons for SIMCI Successes

- Includes reps from both Requirements and Acquisition Communities.
- Fully collaborative environment with BC community and M&S community.
- Focused on solutions to Near-Term and Mid-Term high priority problems.
- Addresses requirements/capabilities thru fielding issues.
- Direct input to HQDA General Officers.

Summary

- SIMCI has been successful in solving high priority interoperability problems in BC/M&S programs –
  Total benefit estimated at > $153M > 632%
- SIMCI targets solutions to critical BC/M&S Operational, Training, and Testing issues –
  Significantly Improves Fielded Capabilities
- SIMCI has been tasked to expedite synchronized initialization solutions for BC and M&S systems –
  In support of Deployed and Deploying Forces

Additional Sources of Information

- SIMCI Web site
  - *https://www.us.army.mil/suite/page/241531*
- Quarterly News Letter
- White Papers
- Information Papers

Points of Contact

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SIMCI OIPT

QUESTIONS?

Back Ups

Estimated Program ROI

- SIMCI Program Budget (FY01–FY08):

  $24,203K

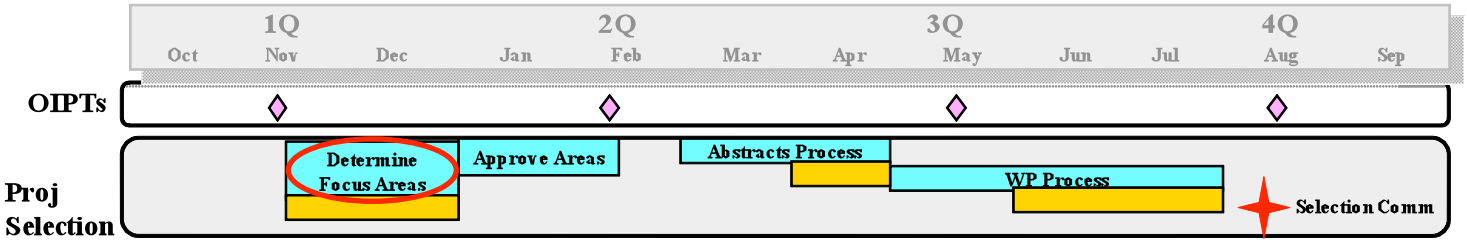
- Estimated cost avoidance/savings:

  $153,000K

- Estimated SIMCI Program ROI:

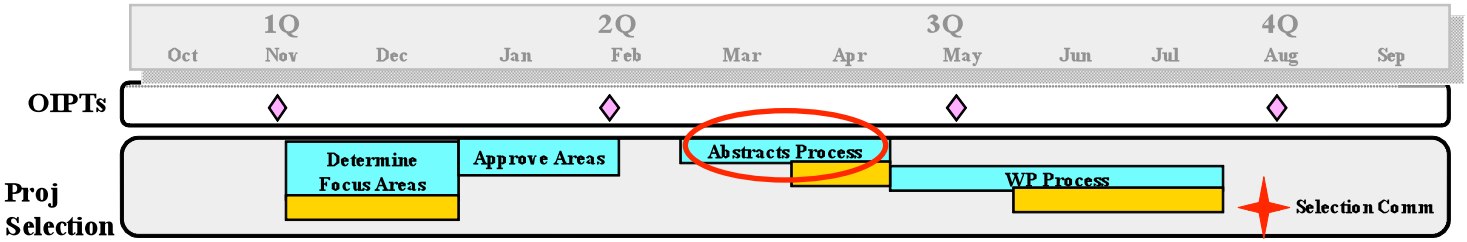
$$\frac{\$153{,}000K}{\$24{,}203K} = 6.32 = \mathbf{632\%}$$

Project Focus Areas



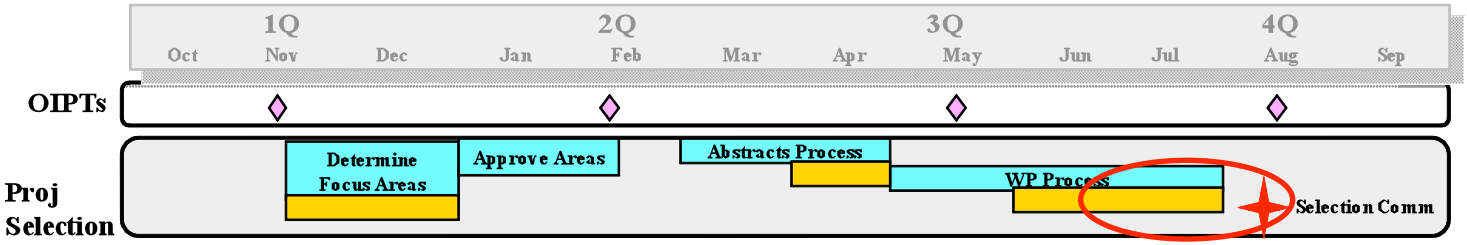
- Updated Annually by SIMCI Architects
  - Vetted with OIPT
- Support Army Priorities/Identified Gaps
  - Mission Command Essential Capabilities
  - G3/5/7 M&S Strategy
  - BC Training Strategy
  - Others as applicable
- Aligned with SIMCI Technical Vision

Project Abstract



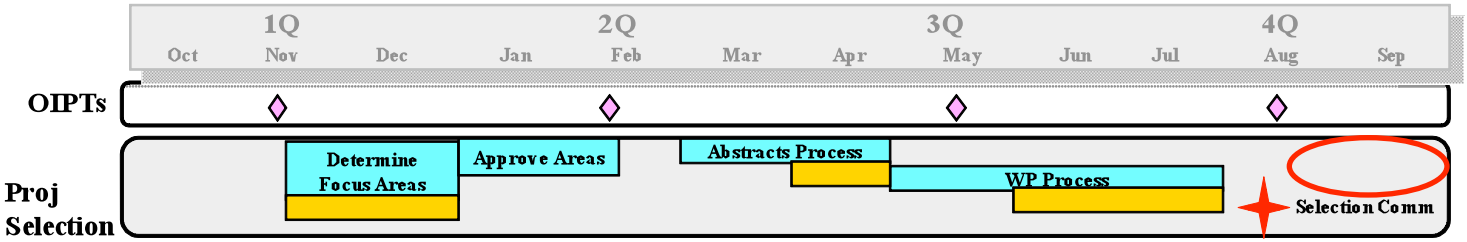
- Begins the formal evaluation process
- Contents
  - Sponsoring Agency
  - Objective
  - Technical Approach
  - MS & Deliverables
  - Exit Criteria and Costs
- Go/No Go Criteria
  - Does it fall within one of the focus areas?
  - Does it address C4I to Simulation interoperability?

Project White Paper



- By invitation only based on an approved abstract
  - Contents Similar to Abstract with more detail plus:
  - Technical Approach, Risk, Transition Plan
- Independently evaluated by 21 SMEs
  - Representative of SIMCI membership
  - On line process (APIMS)
- Final evaluations and comments are analyzed by the architects for presentation to an O-6 level Selection committee
- Number of projects selected is based on annual funding available

Project Management Plan (PMP)



- Each project must submit a PMP
- Contents similar to WP but greater detail with emphasis on:
  - Technical approach
  - Stakeholder buy-in
  - Risk reduction plan
  - Transition plan
- PMPs are approved by the Exec Agents
- No funds are released w/o approved PMP

Mission Rehearsal (FM 5.0)

Rehearsing key actions before execution allows Soldiers to become familiar with the operation and translate the abstract ideas of the written plan into concrete actions.

(Appendix I of FM 5.0 Describes Mission Rehearsal in Detail)