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91st MORS Symposium

"Analytics as a Force Multiplier"

Wargaming the Future Army

Mr. Curt Hudson

Dr. Suzanne DeLong

Ms. Adwoa Gyekye

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Agenda

- Background and Sponsor
- Scenario Planning and Development
- Introduction to Operational Wargame System
- Future Work

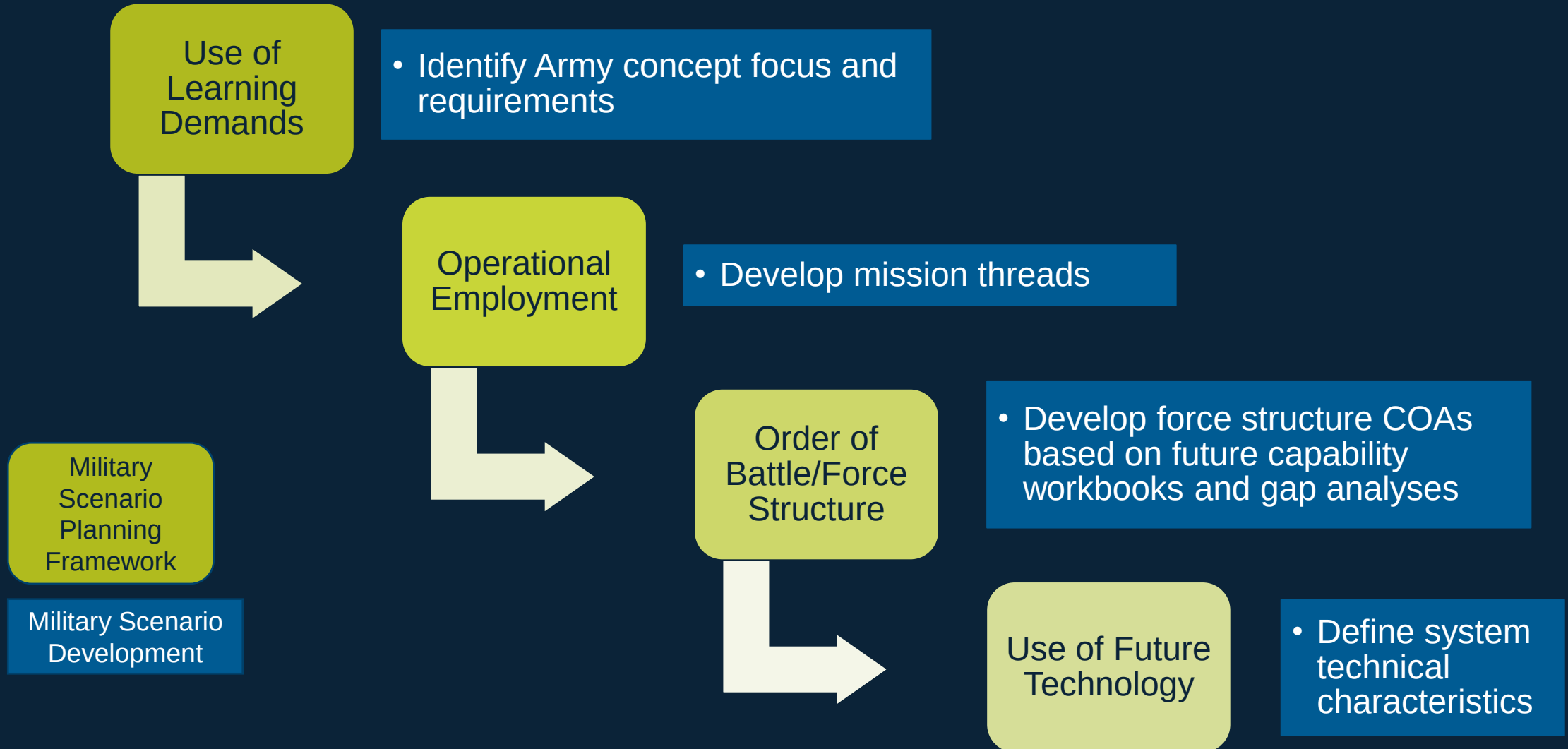
Background and Sponsor

- Army Futures Command (AFC), Futures and Concept Center (FCC) Sponsor
- Support to wargaming the Future Study Program (FSP) and the writing of the next Army Operating Concept

This work is being done directly for a future Army concept and a direct sponsor

- Operational Wargaming System (OWS) with VASSAL game engine

Military Scenario Planning Framework and Development Process

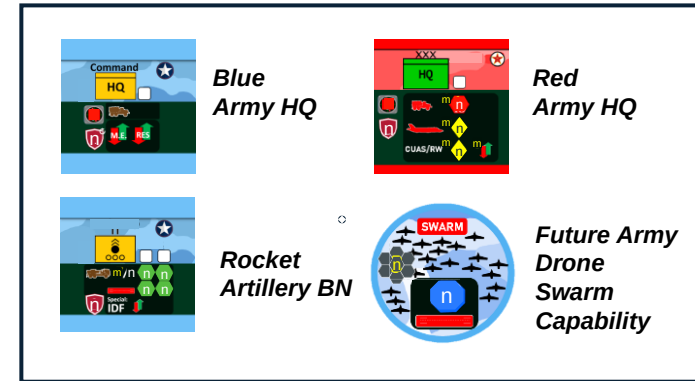


Introduction to Operational Wargame System (OWS)

OWS Core Idea

- A board game series covering contemporary and future conflict centering on plans and decisions at the high tactical to operational level of war across all domains
- The FCC version of OWS is more complex to promote the required level of realism for futures experimentation
- The OWS rule set governs outcomes but facilitators are expected to ensure player actions are faithfully represented in the game, are realistic, and are not game-isms
- Players can directly observe the cause and effect of their actions in real time based on known and understood rules

(U) Representing Units in OWS



(U) Example OWS Map



Design Fundamentals

- **Units:** FWD uses a relative combat power analysis to build capabilities into units, formations, and forces within specific experiments
- **Geography:** The game map depicts the physical terrain where combat operations take place and impacts how players execute operations. The system includes multiple map scales to account for game play at various levels.
- **Adjudication:** OWS uses a dice system to enable a universal adjudication method to resolve all outcomes.
 - The representation of attack capabilities via **dice** is an abstraction of multiple systems, technologies, and weaponry and intends to provide a gross assessment of combat power relative to the adversary.

Wargame Turn Sequence Rules

Each game executes a series of turns that represent a set time period during the game (ie 1x turn = 1x day). Each turn includes planning, all domains of combat operations, and assessment.

STEP 1: PLANNING

STEP 2: CYBER / EMSO / SPACE / AI

STEP 3: NAVAL MOVEMENT

STEP 4: AIR MOVEMENT

STEP 5: ISR and SOF

STEP 6: AIR COMBAT

STEP 7: MULTI-DOMAIN STRIKES and NAVAL COMBAT

STEP 8: GROUND MOVEMENT AND COMBAT

STEP 9: SUSTAINMENT AND REGENERATION:

STEP 10: ASSESSMENT

OWS Modules

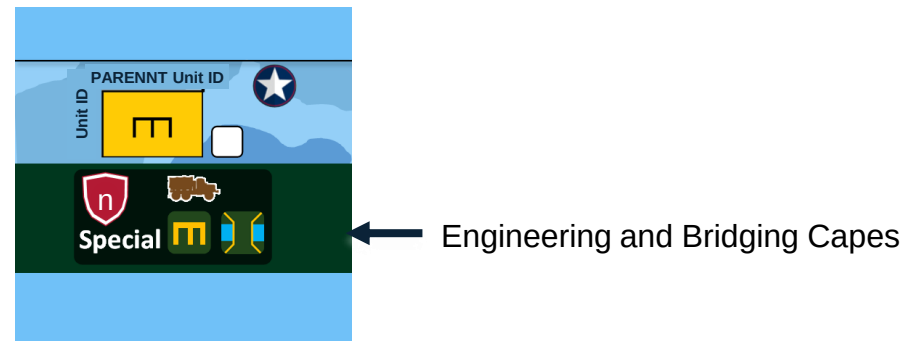
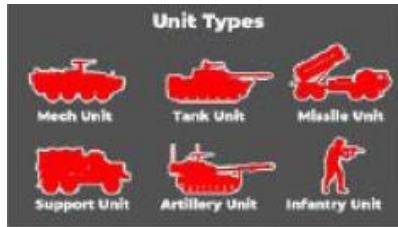
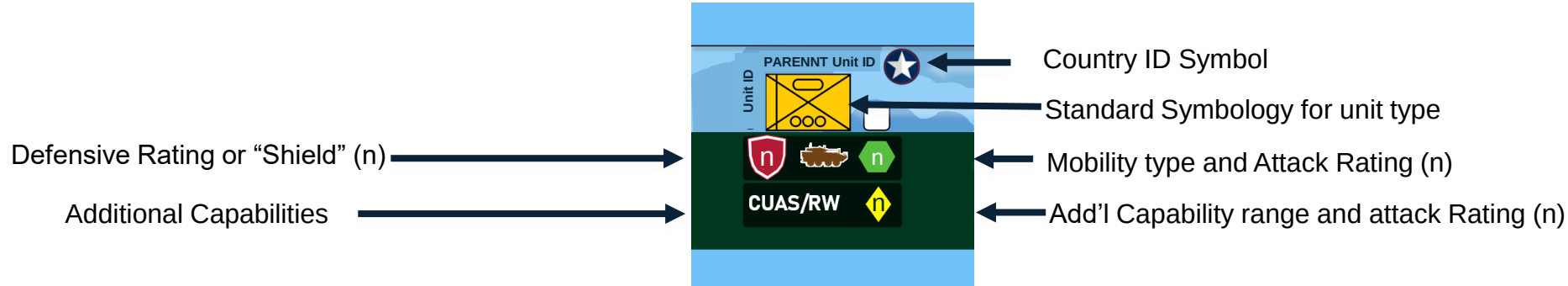
Domains

- Cyber
- Space
- Ground
- Maritime
- Air

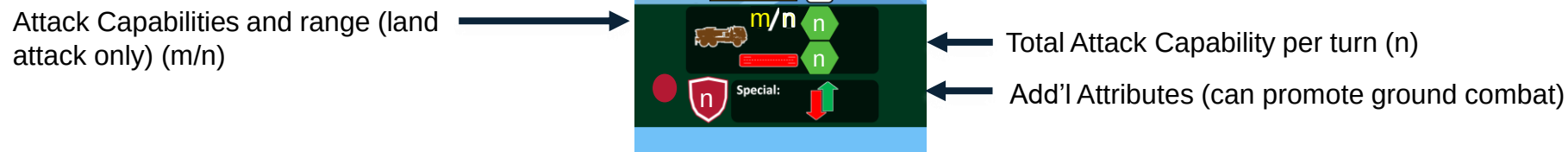
Warfighting Functions

- Mission Command
- Movement and Maneuver
- Fires
- Protection
- Intel
- Sustainment

ID Wargame Units: OWS Unit Representation



- 1 turn = 24 hours
- Operational Map = 200nm/hex
- Tactical Map = 10 nm/hex
- Global map. Theater maps
- Unit scale Bn to Theater Army
- All domains/WfF



Future Work

- Automated Adjudication with MITRE OWS modules and Vassal v 3.5.7
- Bridge Wargame to Simulation
 - Instantiation of the interface protocol for any wargame and any simulation
 - This effort will focus on researching methods for migrating the output of a wargame into an appropriate level (entity-based or aggregate) simulation for conducting Monte Carlo-style experiments.

Wargame Alternatives
OWS, COTS, Design your own
Others?

Simulation Alternatives
AFSIM, NGTS, OneSAF, VRForces, WARSIM
Others?

- Integrate other warfighting functional models into OWS

Contacts

Mr. Curt B. Hudson, Jr.

Mission and Wargaming Systems Engineer Principal
MITRE National Security N151
MITRE Hampton Roads
Email: chudsonjr@mitre.org

Dr. Suzanne DeLong

Applied Operations Research Lead
MITRE National Security N213
MITRE Hampton Roads
Email: sdelong@mitre.org

Ms. Adwoa Gyekye

Group Leader and Operations Research
MITRE National Security N214
MITRE McLean
Email: agyekye@mitre.org