

US Marine Corps
Precision Artillery Systems

Precision Strike Association
Annual Programs Review
25 Apr 07

Marine Corps Operating Concepts for a Changing Security Environment

- Forward Presence, Security Cooperation, and Counterterrorism
- Crises Response
- Forcible Entry
- Prolonged Operations
- Counterinsurgency

- Enabled by Seabasing and Distributed Operations.

Triad of Ground Fires

HIMARS



LW155



“Fix Artillery”

“Fix Fires”



EFSS



High Mobility Artillery Rocket System

HIMARS

- Wheeled, indirect fire, rocket system capable of firing current and future MLRS Family of Munitions.
- Bridges the gap between air and surface delivered fires.
- The precision capability of the GMLRS, both unitary and DPICM, validates its employment at both ends of the Warfighting Spectrum.
- Preponderance of GMLRS munitions fired in Iraq have been in support of MNF-W.
- Involved in alternate warhead development, while still maintaining precision requirement.
- 2 Battalions - 1 in Active Component, 1 in Reserve Component
 - Fielding has commenced. FOC expected NLT FY10

Lightweight 155mm Howitzer

M777A2

- The M777 Lightweight 155mm towed howitzer replaces the aging M198 155mm towed howitzer which has passed its expected service life.
- Incorporates innovative designs to achieve light weight without sacrificing range, stability, accuracy or durability.
- Retrofitting the M777(A2) with the Digital Fire Control System improves accuracy, responsiveness and enables the employment of precision munitions (Excalibur).
- The ability to fire conventional and precision munitions validates its employment at both ends of the Warfighting Spectrum.
- Fielding commenced '05. Fielding complete NLT FY10.

M777A2 Configured DFCS

Asst Gunner's Display (AGD)



Chief of Section Display (CSD)



Vehicle Motion Sensor (VMS)

Radio Antenna (ANT)

Inertial Navigation Unit – (INU) Or (PNS)



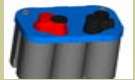
Gunner's Display (GND)



Top Cradle Electronics Assembly (TCEA)
 Communication-Location Assembly (CLA):
 Radio (RTA), Radio Power Supply (RPS), RF Power Amp (AMP), Defense Advance GPS Receiver (DAGR) and Antenna (PLA) in Communications/Location Enclosure (CLE)

Under Cradle Electronics Assembly (UCEA)
 Mission Computer (MSC), Battery (BAT) & Power Conditioning and Control Module (PCCM or PSP)

Batteries



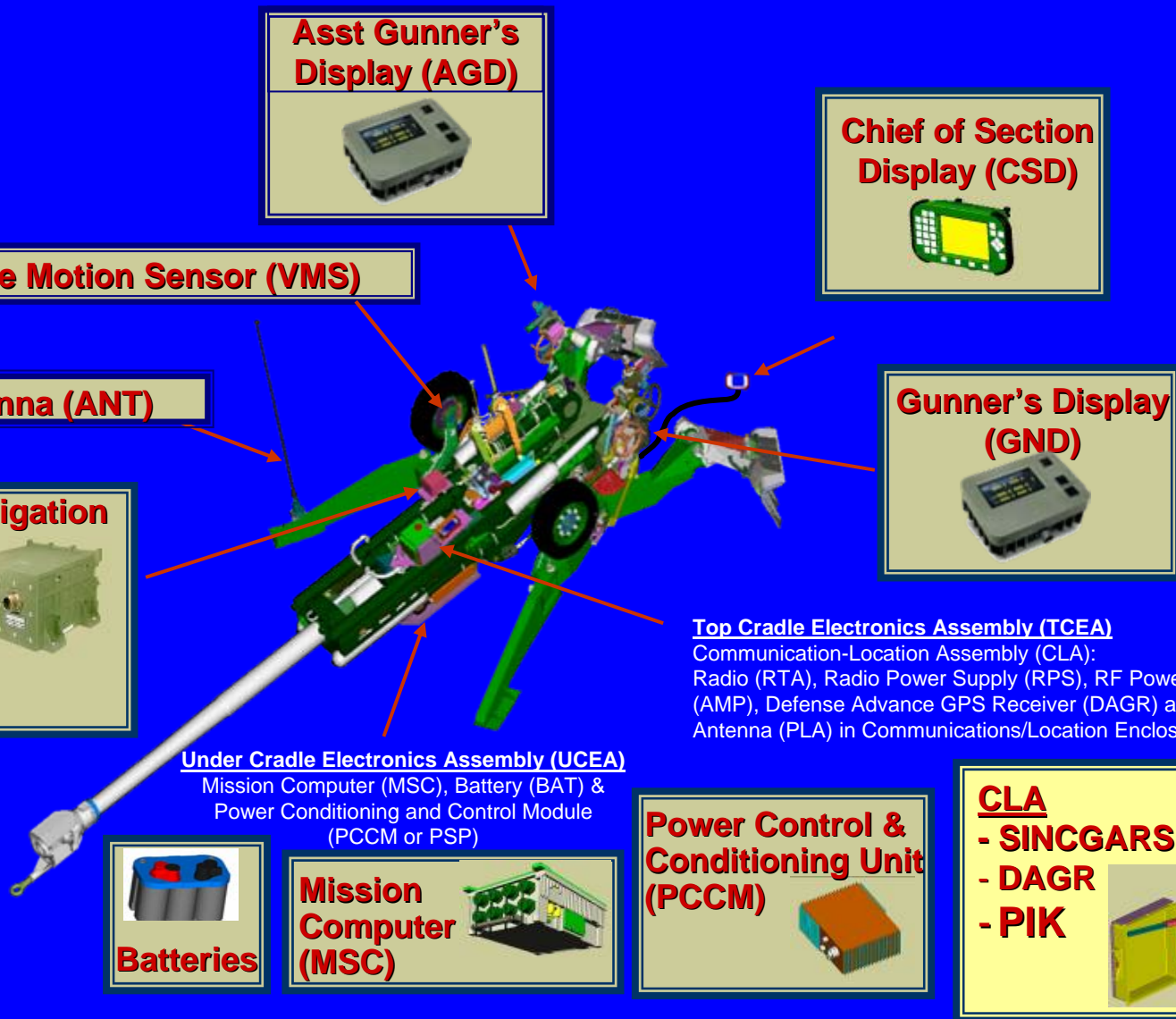
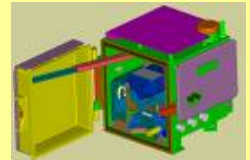
Mission Computer (MSC)



Power Control & Conditioning Unit (PCCM)



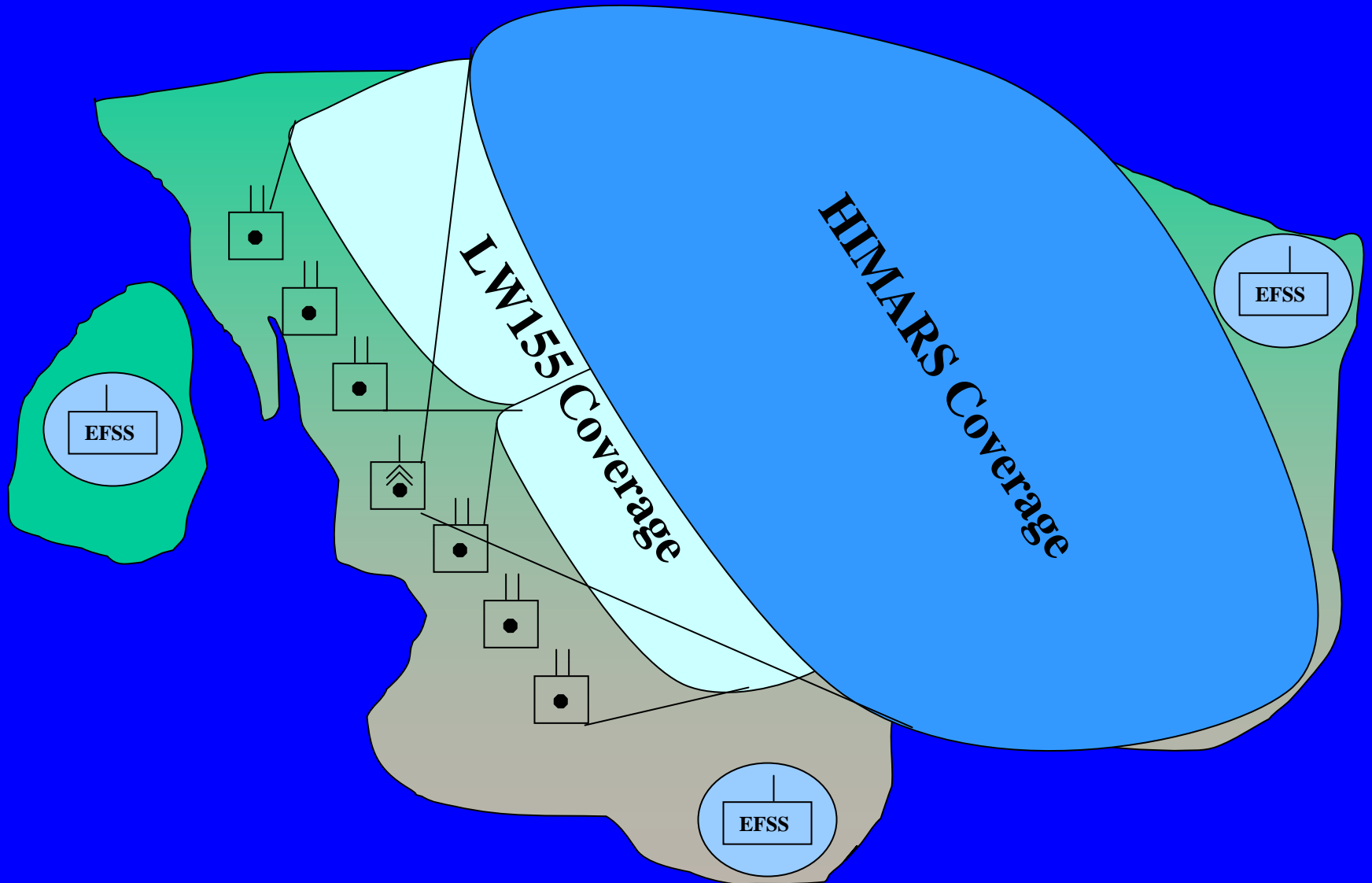
CLA
 - SINGGARS
 - DAGR
 - PIK



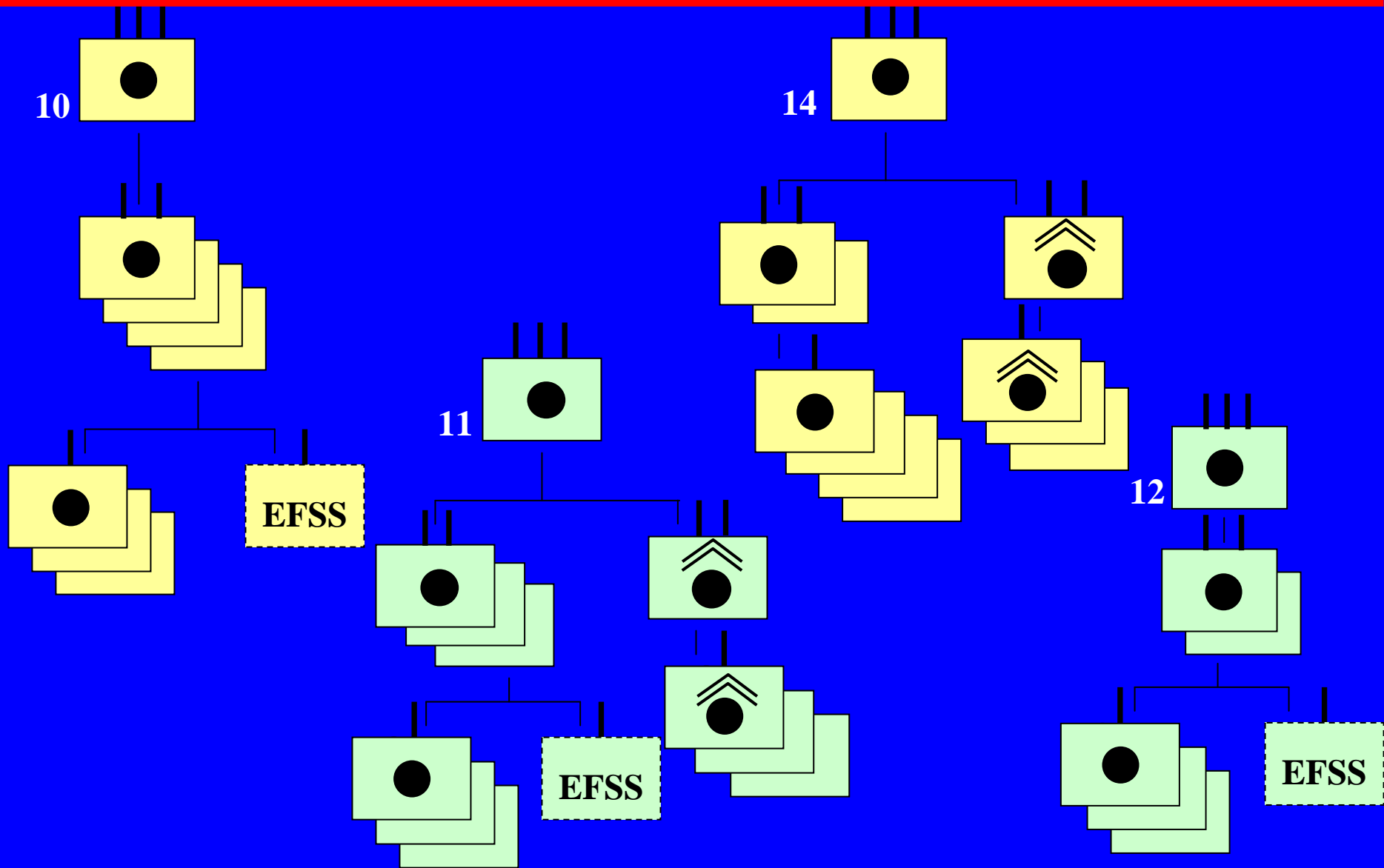
Expeditionary Fire Support System EFSS

- The direct support weapon system of the vertical assault element of the Ship to Objective Maneuver Force. MV-22 internally transportable.
- 120mm rifled, towed mortar.
- Will fire conventional HE, Smoke and Illum at 7km.
- Additive capability for the artillery battalion.
- Operational testing scheduled for June 07, fielding shortly thereafter. Fielding complete NLT FY11.
- Precision, Extended Range Munition (PERM)
 - In development
 - 8-14KM Range
 - 20M CEP

Triad Coverage Concept



Organic Ground Indirect Fires (2010)



The rest of the story.....



Target Location Error

- Current gap is the sensor for the dismounted Marine. 10mil inherent error in the magnetic compass. TLE of 50m.
- Mitigated through
 - Video down link from UAS/airborne targeting pods.
 - Digital mapping enhancements.
- Future Mitigation
 - JETS / Tier II UAS / GATOR
- Goal
 - < 10m TLE
 - < 15 lbs (total system)

Questions

The term “Precision”

LtCol Albert Lagore
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