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PM Mortar Systems

Advanced Precision Mortar Initiative

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Precision Effects Branch**

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Accelerated Precision Mortar Initiative (120mm APMI)

- Origin/Definition:
 - Operational Need Statement (ONS #09-7722) from CJTF 101 (validated 8 Jan 2009) for 120mm GPS guided 120mm mortar cartridge
 - Directed Requirement from G-3/5/7 (16 Oct 2009) for 120mm GPS guided 120mm mortar cartridge
- ONS Requirements:
 - Accuracy: 10m CEP (T); 5m (O)
 - Lethality: Similar kinetic effects of current munitions
 - Maximum Range: 6.5km or greater
 - Guidance: GPS Selective Availability Anti-Spoofing Module (SAASM, OSD policy on GPS)
 - Compatibility: US 120mm Mortar System
 - Capacity: Initial quantity of 15,000; capability to be produced at up to 2,500/month
- Program Phases:
 - Phase 1 development: Oct 09 – Feb 10
 - Design Maturation and Demonstration / TC-LP
 - Phase 2 development: Mar 10 – Jul 10
 - Prototype Evaluation; Complete Qualification to Urgent Material Release (UMR): Aug 10
 - FAR Limited Procurement award: Apr 10
 - Phase 3: TBD (if it becomes a program of Record)
 - Final Prototype Evaluation to Full Material Release (FMR)

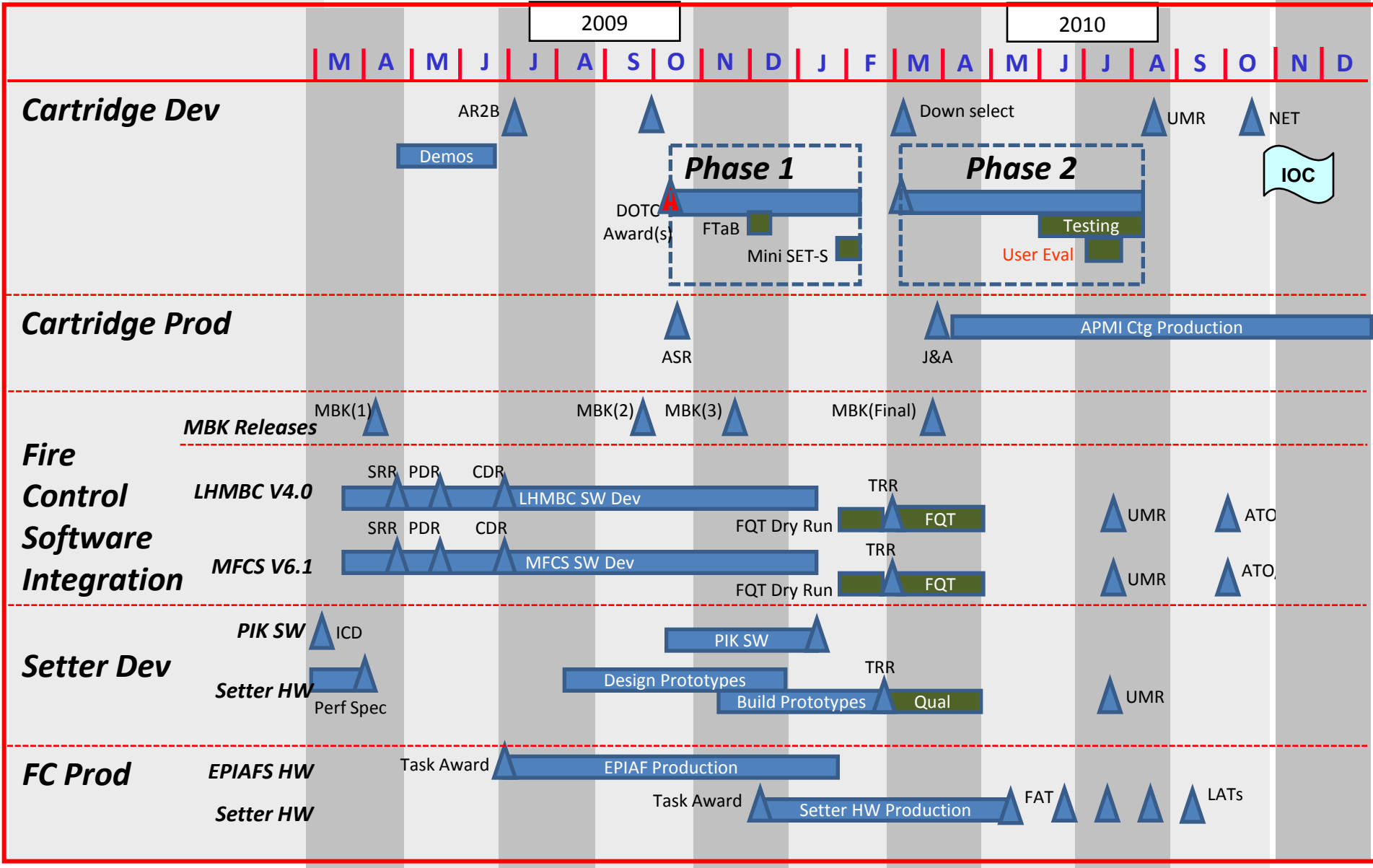
Memorandum of Understanding

- Agreement between Project Manager Combat Ammunition Systems and Soldier Requirements Division (MCoE) to clarify user expectations (signed 12 Feb 2009)
 - Minimum range (T) 1000m; (O) 500m
 - Must include Software upgrades for Mortar Fire Control Systems (Mortar Fire Control System and Light-weight Hand-held Mortar Ballistic Computer)
 - 3 fuzing modes (proximity, point detonation, delay); will function Point Detonation if not set and fired
 - Reliability
 - At Urgent Material Release (UMR): 0.9
 - At Full Material Release (FMR): (T) 92% (O) 97%
 - Guide to intended target within 30m
 - Set time:
 - (T=O) 10 seconds
 - Mission Retention: (T) 5 minutes (O) 10 minutes; be able to be reset anytime in the next seven days (T)

APMI Timeline to Date

- ✓ 19 December 2008: ONS #09-7722 received from OEF
- ✓ 8 January 2009: G3/5/7 validates ONS #09-7722; approves \$2M for demonstrations (covers government test costs)
- ✓ May 2009: Demos completed at Yuma Proving Ground
- ✓ 17 June 2009: AR2B (O6 level) reviews demo results, plan to complete qualification & fielding, recommends approval
- ✓ 18 Jun 2009: General Officer Steering Committee (GOSC) Approval of program, Army requests Congressional approval of \$57.2M RDTE; \$15M PAA; and \$2.3M OPA in omnibus reprogramming package
- ✓ October 2009: OPM Mortars received \$39.8M RDTE, \$2.3M for fuze setters, and 15M for production
- ✓ October 2009: Phase 1 demonstration contracts awarded to Raytheon Missile Systems (RMS), Alliant TechSystems (ATK), and General Dynamics Ordnance & Tactical Systems (GD-OTS)
- ✓ February 2010: Phase 1 Live Cartridge Demos completed
- ✓ March 2010: Test & Evaluation Plan approved by all stakeholders including Development Test Command (DTC) and Army Evaluation Center (AEC)
- ✓ March 2010: Source Selection completed, winner announced
- ✓ 25 March 2010: General Officer Steering Committee (GOSC) Approval of program to enter Phase 2

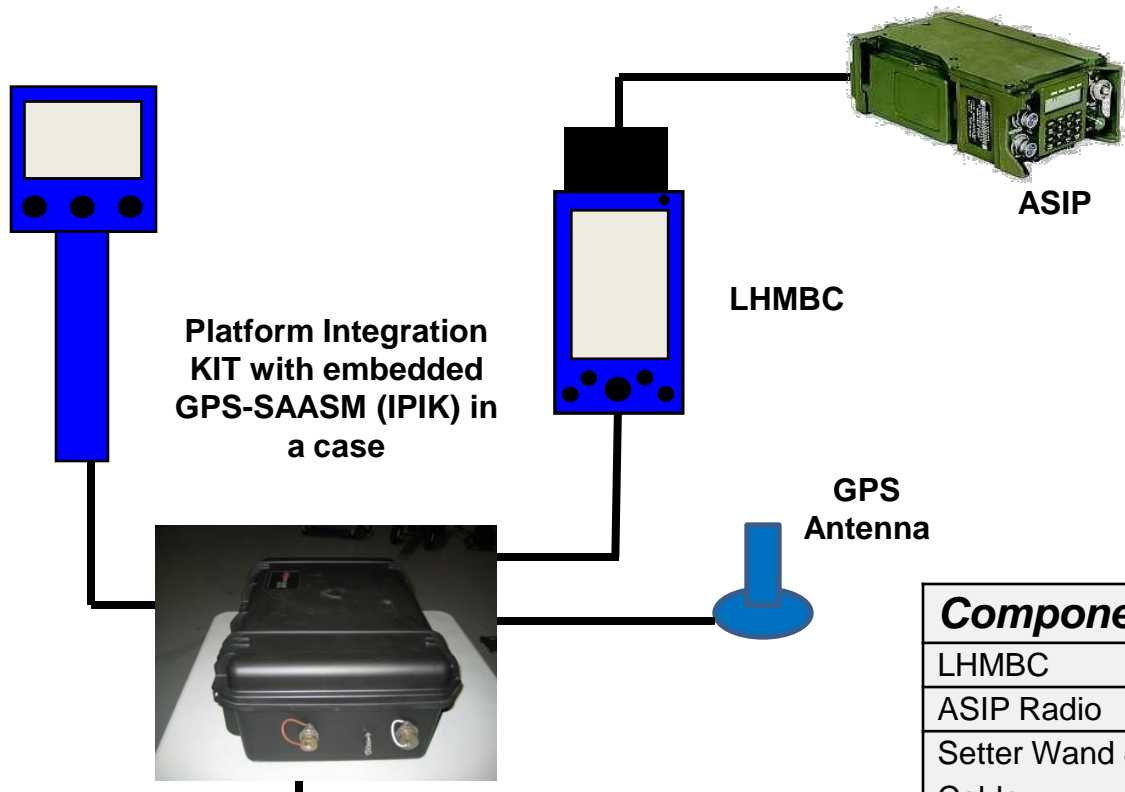
APMI Baseline Schedule



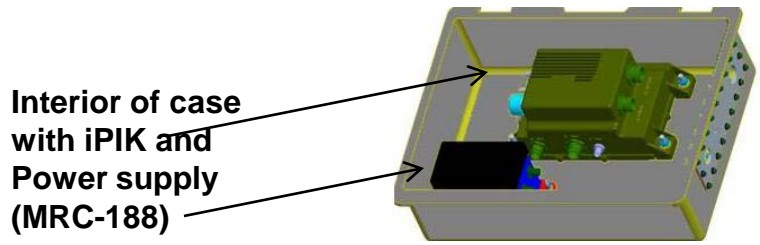
Key APMI Tasks and Testing

- Phase 1:
 - Ballistic rounds fired at Hot, Cold, Ambient and all charges to generate data required for developing firing tables
 - All-up Round tests after environmental conditioning to evaluate performance
 - Updated Cost Model
 - Production Readiness Review (Manufacturing Readiness Assessment)
 - Source Selection to be completed 5 Mar
 - PM scheduled to update AR2B following announcement of winner
- Phase 2: Completes Requirements for Urgent Material Release
 - Verify the APMI is Safe, Reliable, and meets Performance Requirements for Urgent Material Release
 - Sequential Environmental Testing – Safety (SET-S)
 - User Evaluation/Limited User Test

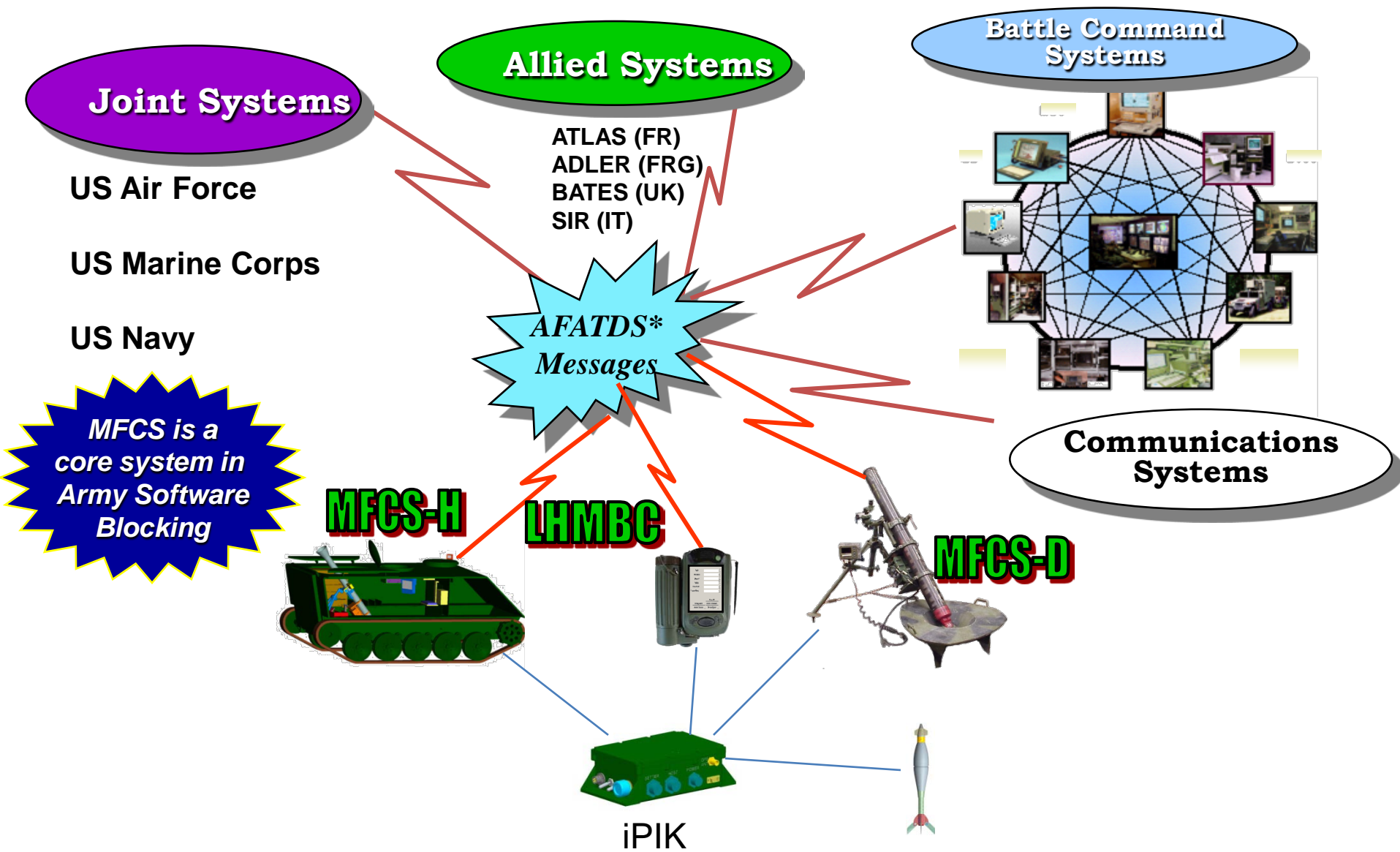
APMI Fuze Setter SYSTEM



Component	
LHMBC	Present in Mortar Unit
ASIP Radio	Present in Mortar Unit
Setter Wand & Cable	EPIAFS Inductive Wand & Cable or Unique from APMI Cartridge producer
IPIK	New configuration of the EPIAFS Platform Integration KIT. (GPS-SAASM and new connectors added in a case)
MRC-188	Standard Army Component
GPS Antenna	Standard Army Component
Antenna Cable	Standard Army Component
LHMBC I/O Cable	Standard Army Component



Mortar Interoperability



* Advanced Field Artillery Tactical Data System

Summary

- APMI will provide the Infantry a GPS Guided 120mm cartridge with 10M CEP
- Fielding will begin 1Q FY11 in Theater
- APMI will be integrated with current mortar fire control systems