

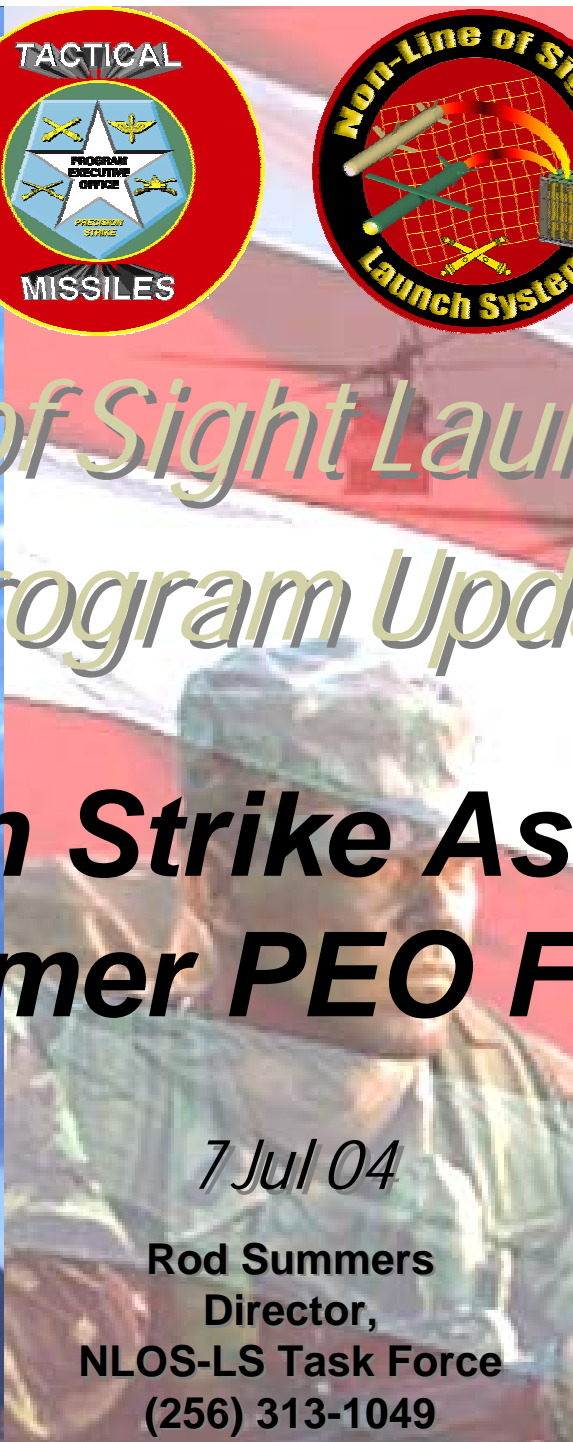


*Non-Line of Sight Launch System
Program Update*

**Precision Strike Association
Summer PEO Forum**

7 Jul 04

**Rod Summers
Director,
NLOS-LS Task Force
(256) 313-1049**



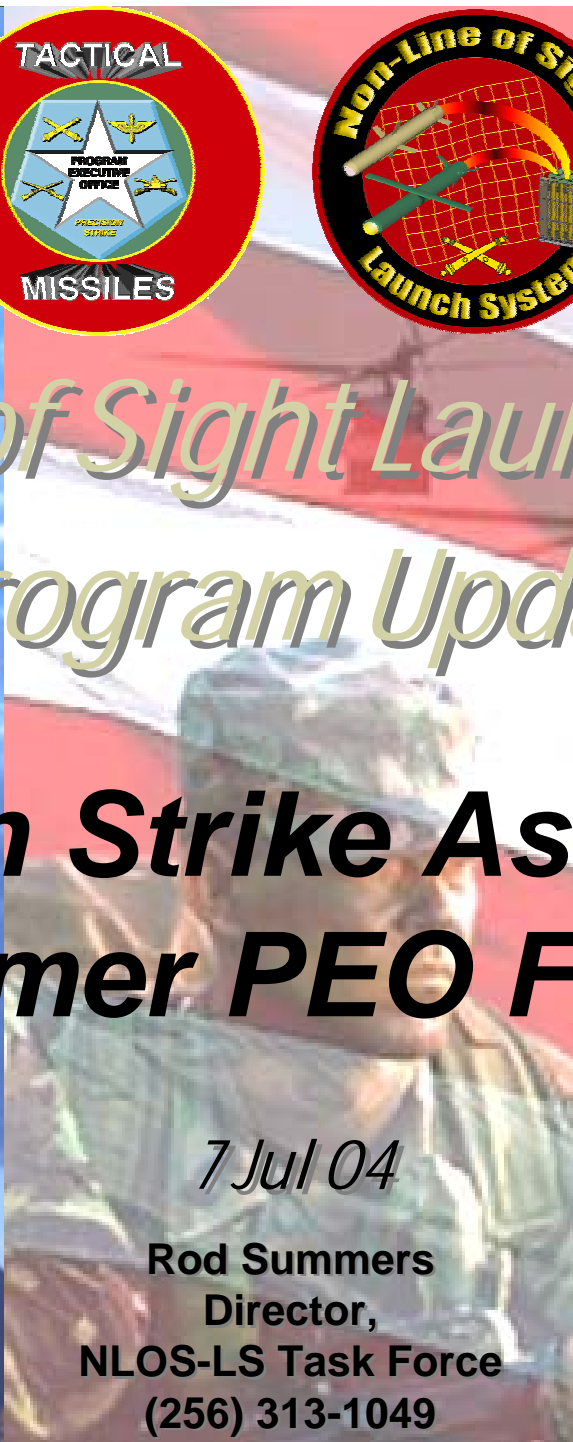


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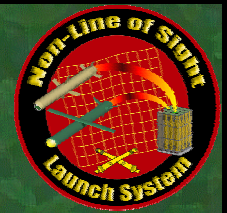
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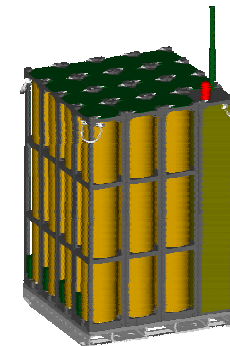
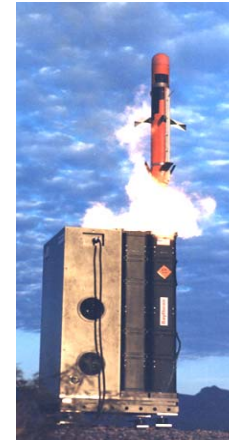




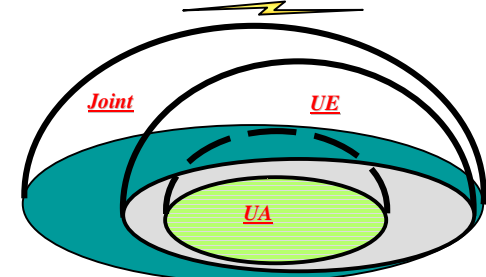
Terminology



- **“NetFires” = Past DARPA Technology Demonstration Program**
- **Non Line of Sight Launch Systems = Current Army Programs**
 - **Annex in Future Combat System (FCS) Operational Requirements Document (ORD)**
- **“Networked Fires” = Term Used to Refer to Combination of FCS Weapons and Supporting C4ISR**



Networked Fires

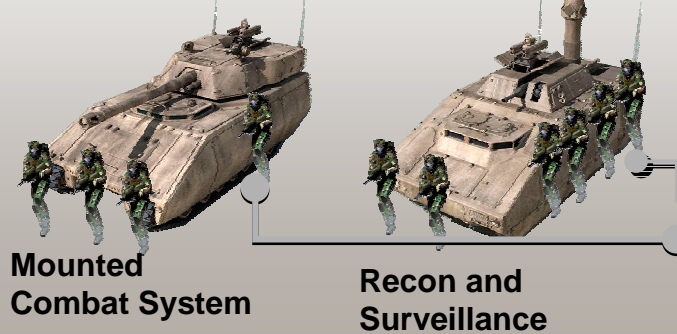
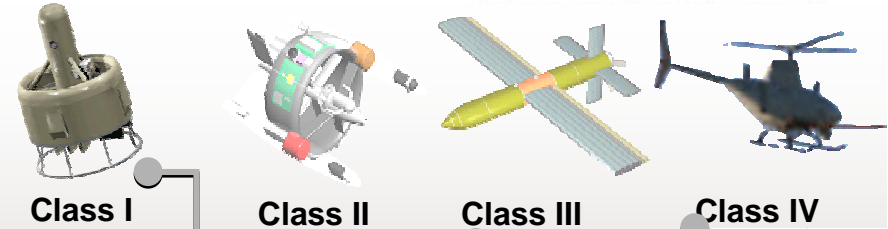
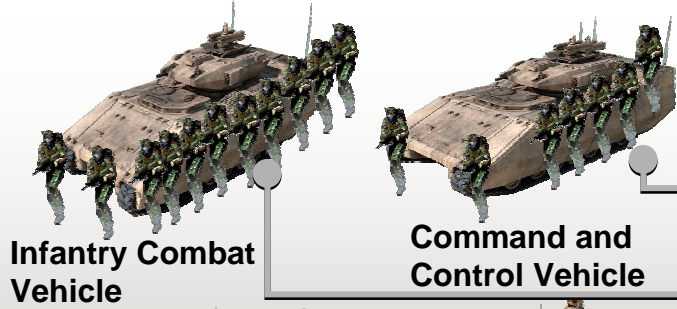


FCS Increment 1

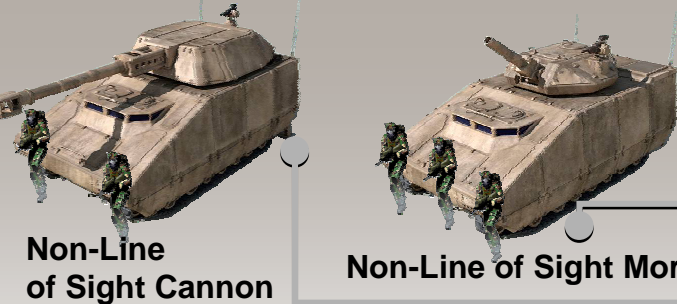


Manned Systems

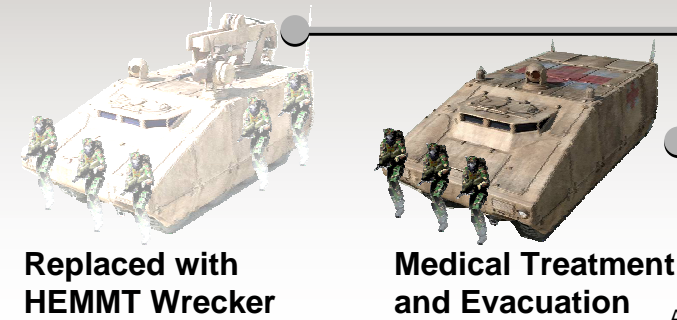
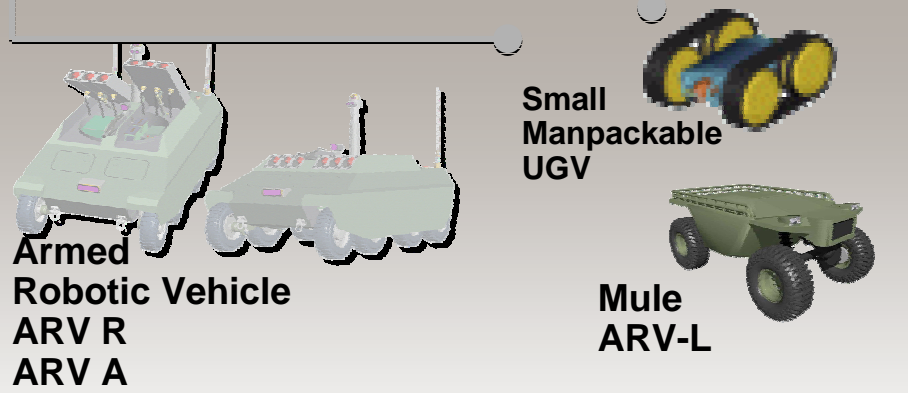
Unmanned Air Platforms



- Unmanned Payloads
- NLOS LS
- Intelligent Munitions



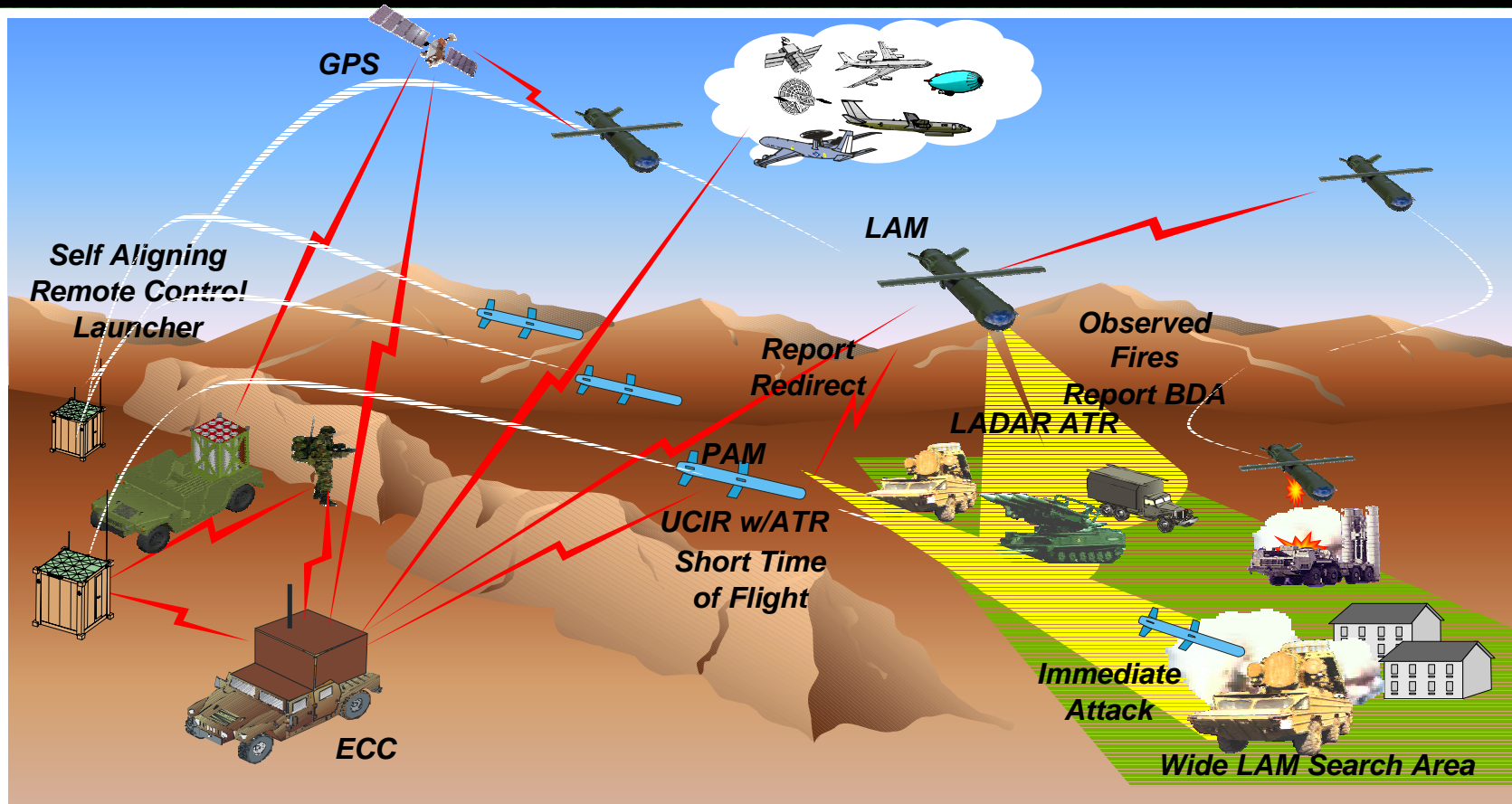
Unmanned Ground Vehicles





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NLOS-LS Concept of Operation



- Provide responsive, networked, extended-range targeting and precision attack of armored, lightly armored and other stationary and moving targets during day/night and near all weather conditions
- Be highly deployable and platform independent



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Loiter Attack Missile (LAM) Technical Requirements



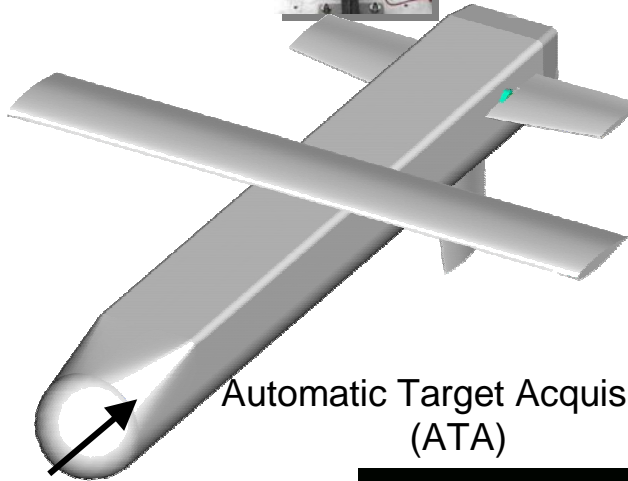
Data Link

- JTRS Cluster V
- 2-Way – Op in loop
- Software Programmable



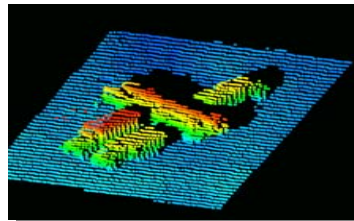
Jet Engine

- Low Cost Turbojet



LADAR Seeker

Automatic Target Acquisition (ATA)



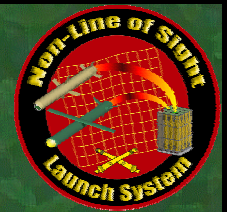
Requirement	ORD Threshold
Maximum Range (INF Treaty)	< 480 km
Minimum Range	500m
Typical Range with Loiter (km)	70km w/ 30 min loiter
Target Set	High Value Targets (TEL/MRL)
Updates in Flight	Two-Way Comms w/ FCS Network

LAM Provides a Dedicated, Loitering Long Range Recon and Discriminating Point Kill Capability



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Precision Attack Missile (PAM) Technical Requirements

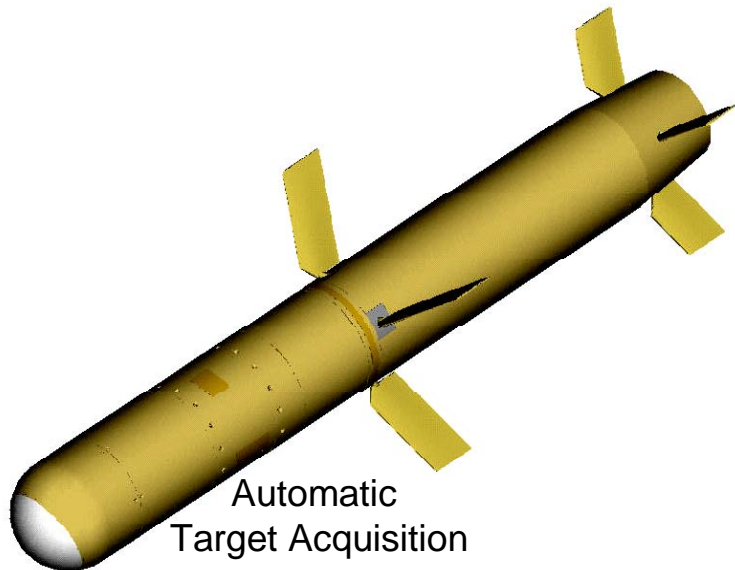


GPS/INS Navigation System



De

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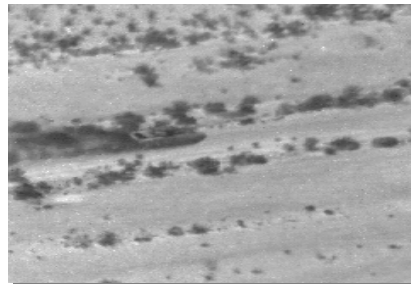
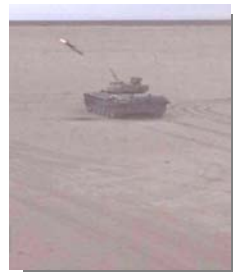


Automatic Target Acquisition

Requirement	ORD Threshold
Maximum Range	40 km
Minimum Range	500m
Target Set	High Value Targets (Armor)
Updates in Flight	Two-Way Comms w/ FCS Network

Multi-Mode Seeker

- Semi-Active Laser (SAL)
- Un-Cooled Imaging Infra Red (UCIIR)

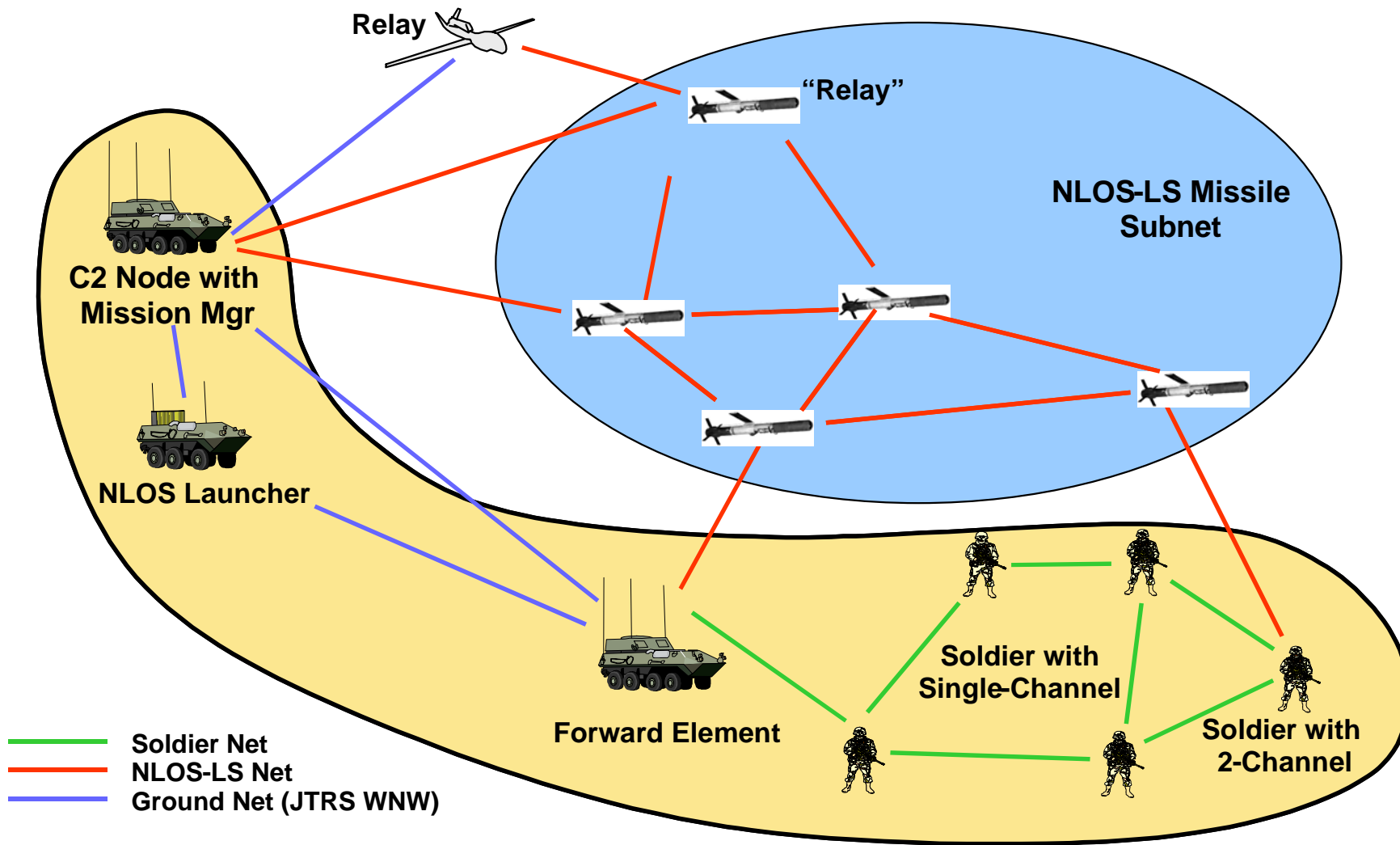


PAM Provides A 40km Precision Kill Capability Against Moving Armored Targets Using Laser Guidance or Automatic Target Recognition



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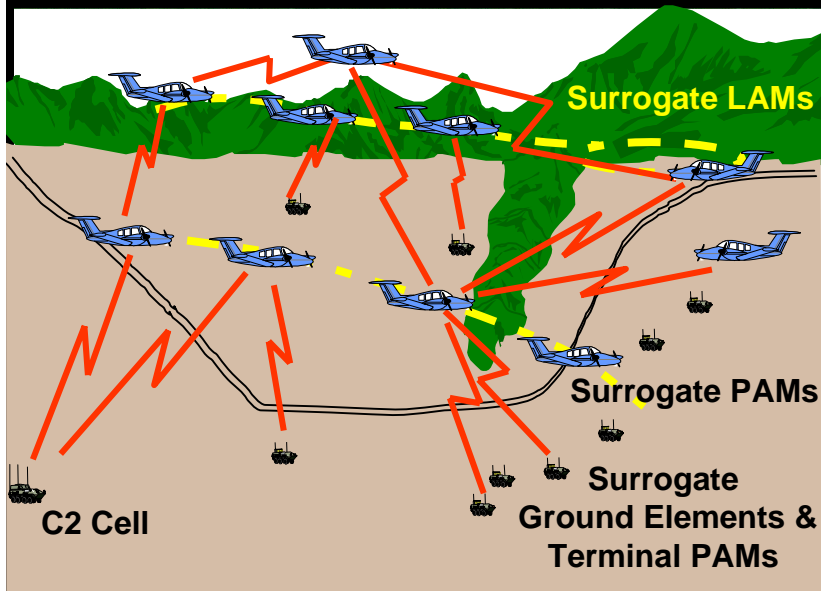
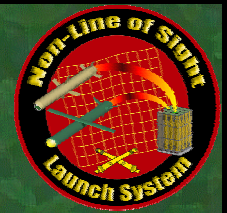
NLOS-LS Comms Architecture Interfaces





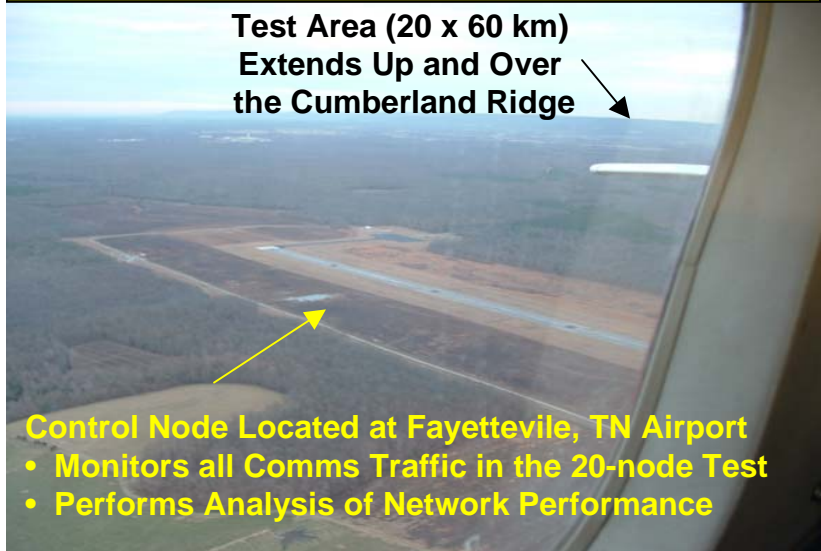
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Networked Communications For NLOS-LS STO



Captive Flight, Beyond Line-of-Sight Comms Test

Test Area (20 x 60 km)
Extends Up and Over
the Cumberland Ridge



Control Node Located at Fayetteville, TN Airport

- Monitors all Comms Traffic in the 20-node Test
- Performs Analysis of Network Performance

Purpose:

Develop & test communications networking for NLOS-LS missiles.

AMRDEC Products:

- Soldier Radio Waveform prototype (Mode 3)
- Missile Network Waveform prototype (risk mitigation)
- Two form-factored, prototype JTRS missile radios
- Test results on both waveforms and both radios
- NLOS-LS Networking Requirements

Status:

- Test Operations being conducted in TN
- Runs for record begin next month