



Presented To:

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International Armaments
Technology Symposium
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Presented By:

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Excilibur Basics

- 155 mm Precision-Guided Extended Range Munition for Cannon Artillery
- Cooperative development
 - ✓ USA and Sweden
- Family of Munitions



UNITARY
Block I

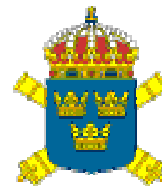


SMART
Block II



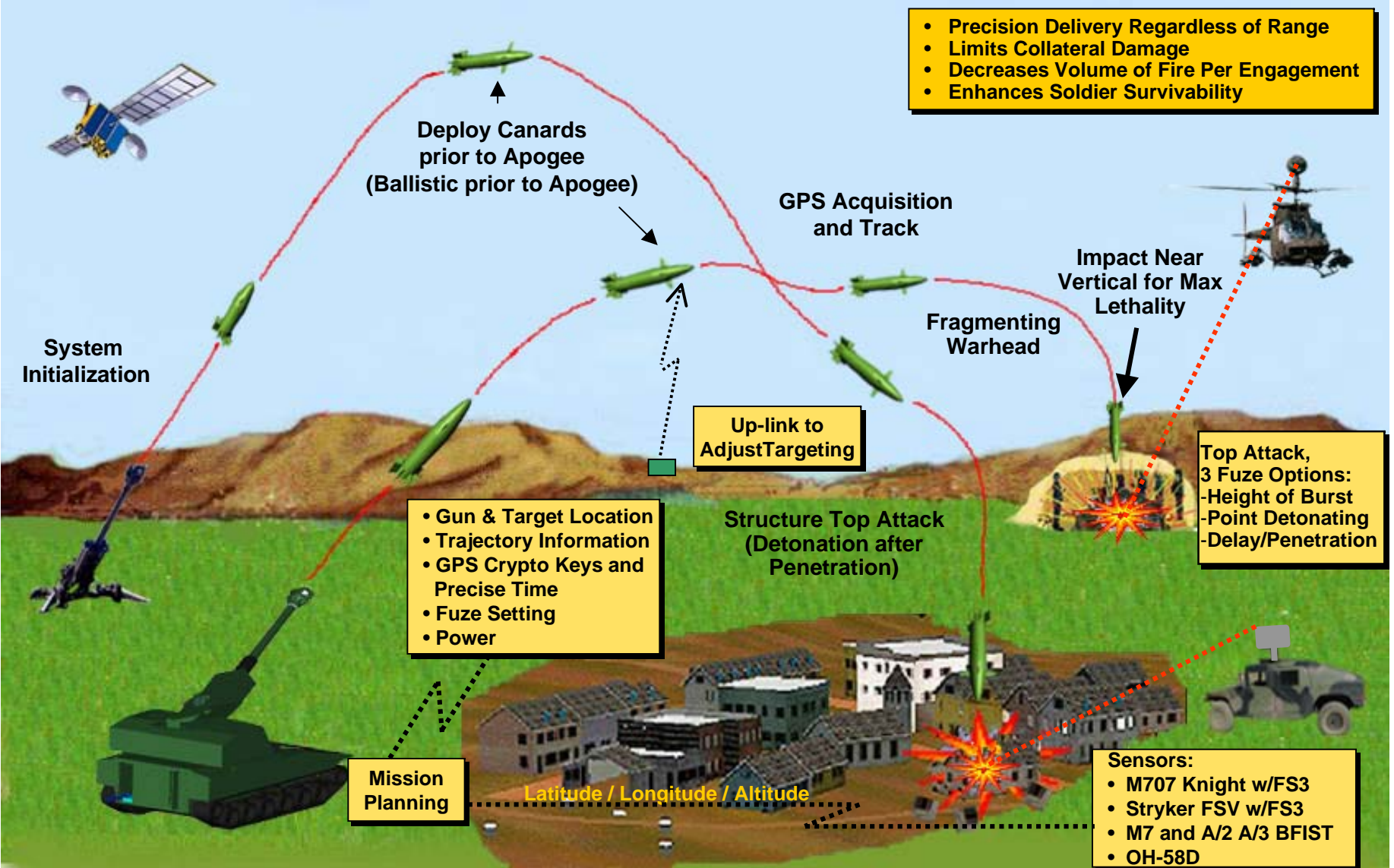
DISCRIMINATING
Block III

Raytheon



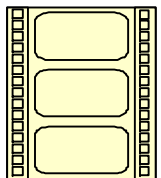


Concept of Operations





Excalibur Operational Scenario





Excalibur Unitary Targets



Infantry Platoon

Excalibur: 3 rounds
M549: 25 rounds
M107: 43 rounds

- ~10m CEP
- Same lethality as an 155 mm HE

Excalibur is used in a complex target environment!



Command Post

Excalibur: 6 rounds
M549: 54 rounds
M107: 78 rounds



Radar

Excalibur: 1 round
M549: 10 rounds
M107: 11 rounds

Excalibur at any range

M549 at 20Km

M107 at 15Km



Structures

Excalibur: 3 rounds
M549: 147 rounds
M107: 110 rounds



Range and Gun Compatibility

➤ 155 mm, 39 caliber
Range 30 – 40 km

➤ US Army
155 JLW
M109A6 Paladin
FCS NLOS-C



➤ 155 mm, 52 caliber
Range 50 – 60 km

➤ Swedish Army
FH77BD





Spiral Development Approach

SPIRAL Ia-1

Safe for Use @ MACS 4
 ORD (O) Accuracy Benign
 ORD (T) Lethality
 ORD (<T) Reliability
 JLW155
 IC in FY06

SPIRAL Ia-2

Adds:
 Anti-Jam Capability
 ORD (T) Accuracy Jammed
 ORD (T) Reliability
 Use w/ FCS Cannon
 Swedish FH77BD Howitzer
 MACS (5) Equivalent
 IOC in FY08

Future Potential Capabilities:

- Projectile Common Guidance
 - M-code GPS
 - Trajectory Shaping
- Warheads & Payloads: (smoke, thermobaric, illum, non-lethal)
 - Nav Grade IMU
 - Time-on-Target
 - SAL

SPIRAL Ib

Adds:
 Technology Refresh
 Safe for Use @ MACS 3-5
 ORD (T) Range
 Cost Reduction Initiatives
 Common Guidance/Comm
 Sense (CGCS) IMU

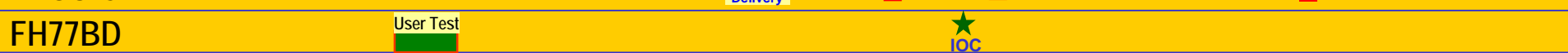
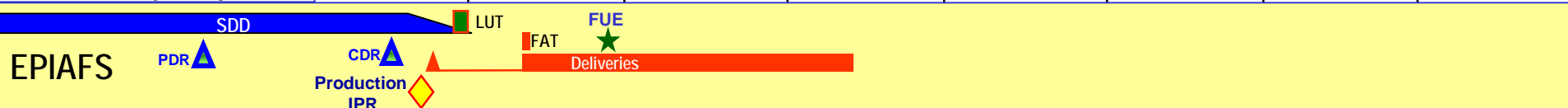
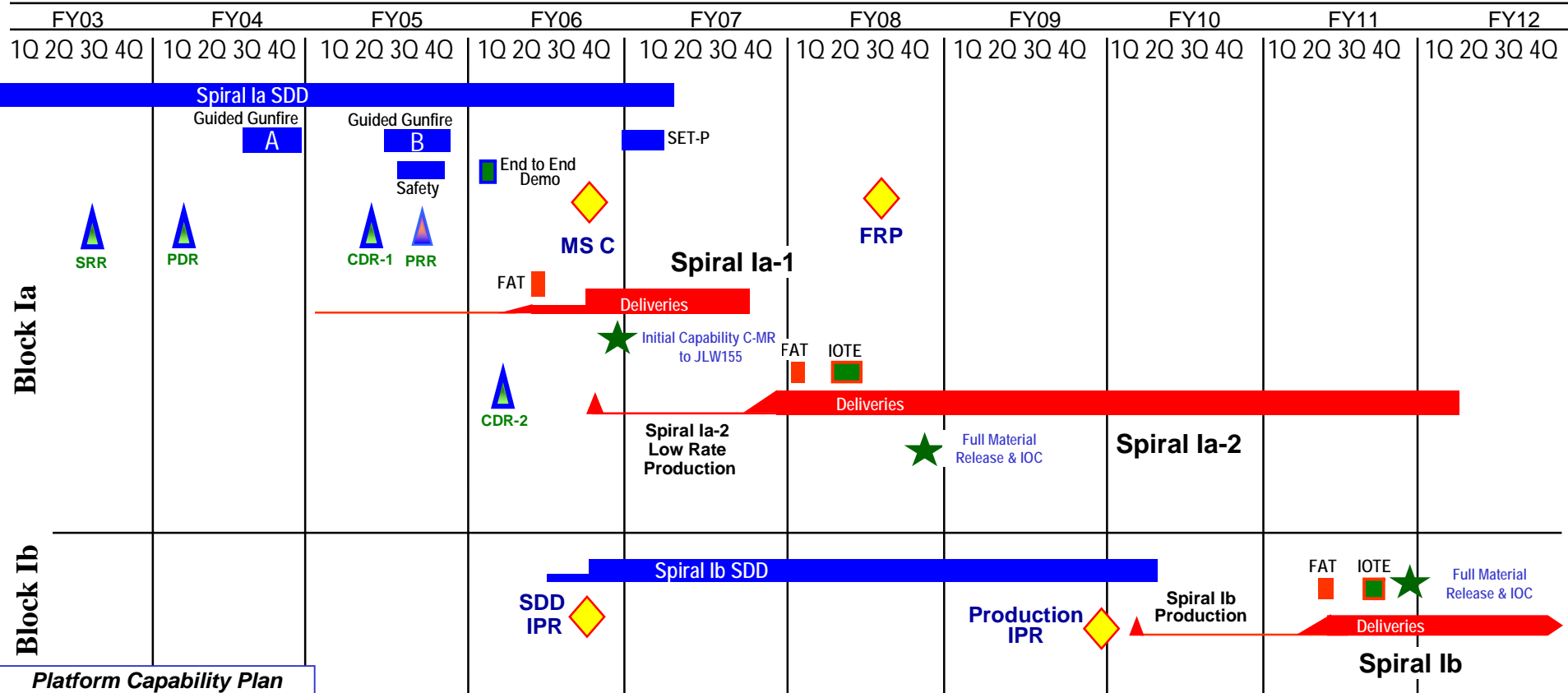
2 Spirals Leading to
 ORD Block Ia
 and PTTEM Unitary
 Capability

Increasing Capabilities

Future requirements based on User priorities and funding availability

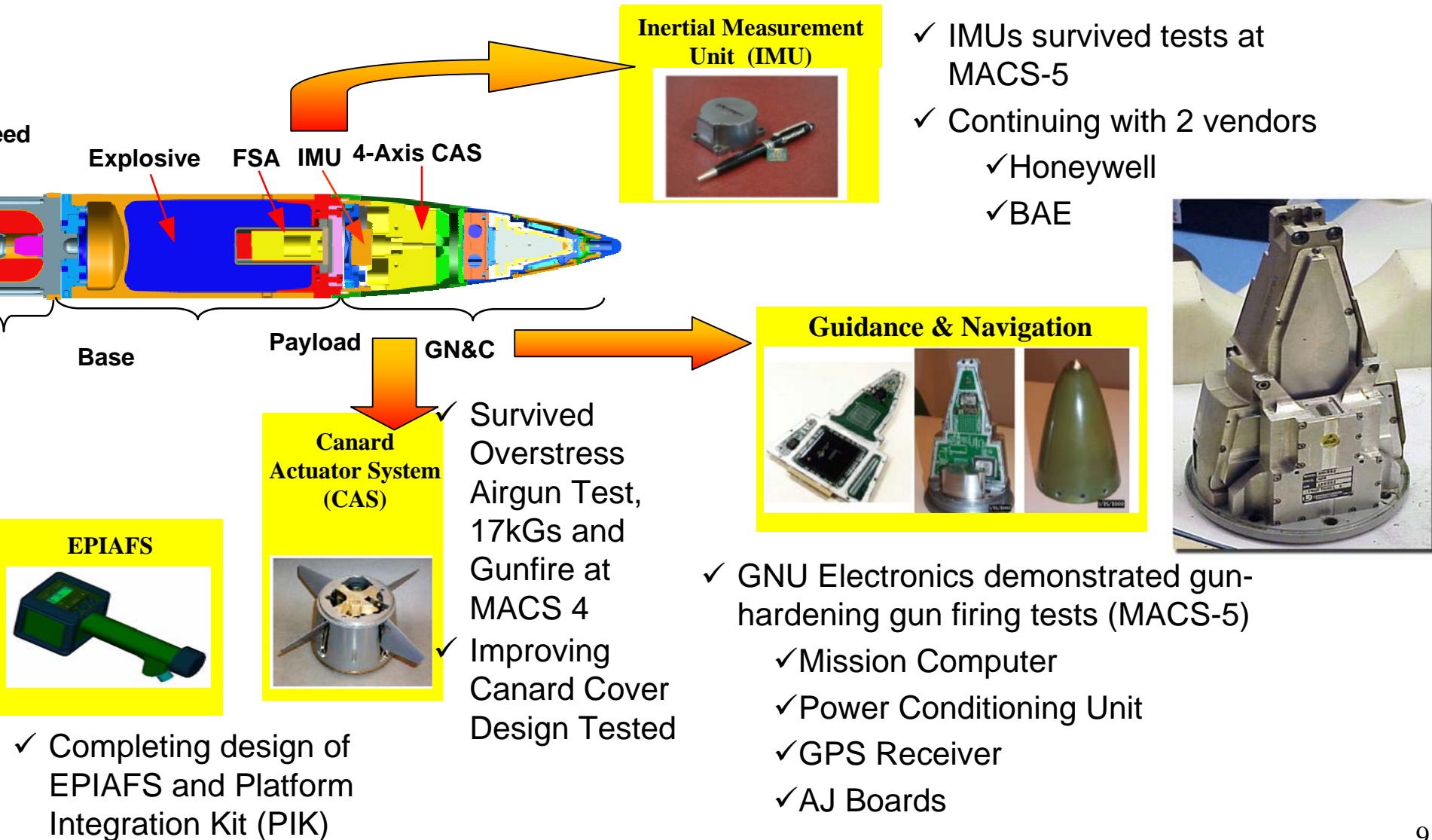
Excalibur Unitary Master Schedule

March 15, 2004



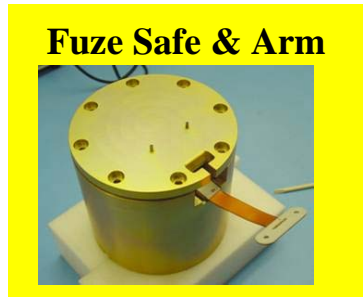


Technical Progress Summary 1

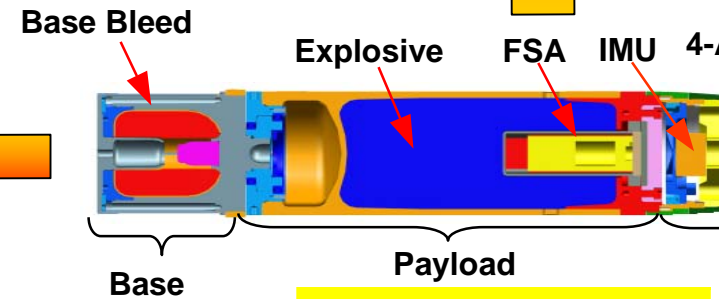
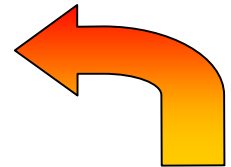




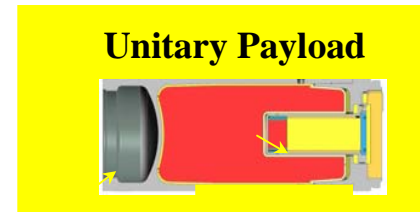
Technical Progress Summary 2



- ✓ Tactical design established
- ✓ Second Arming defined
- ✓ Accepted by US & Swedish Fuze boards



- ✓ 1st design iteration arena, penetration and IM tests completed



Container



- ✓ Emphasis on Insensitive Munitions
- ✓ Prototypes fabricated & delivered for IM tests

- ✓ MKI.5 Base with Roll Control tested – will support upcoming tests
- ✓ Base Bleed tested



Summary Recent Test (GS3A)

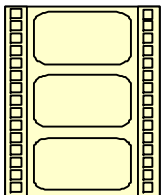
- Yuma Test Successfully Conducted
14 May 04 – JLW 155 Gun Test
- Early Fielding Configuration (MACS 4) less warhead – validating:
 - ✓ Stable Airframe Flight
 - ✓ Fin Deployment
 - ✓ Guidance Electronics Operation
 - Mission Computer
 - GPS
 - AJ
 - IMU
 - SW
 - ✓ Battery/Power System
 - ✓ Canard Actuation Retention System
 - ✓ Structural Integrity
 - ✓ Soft Recovery Vehicle Operation





Recent Test Events

EXCALIBUR TEST
ACTIVITIES



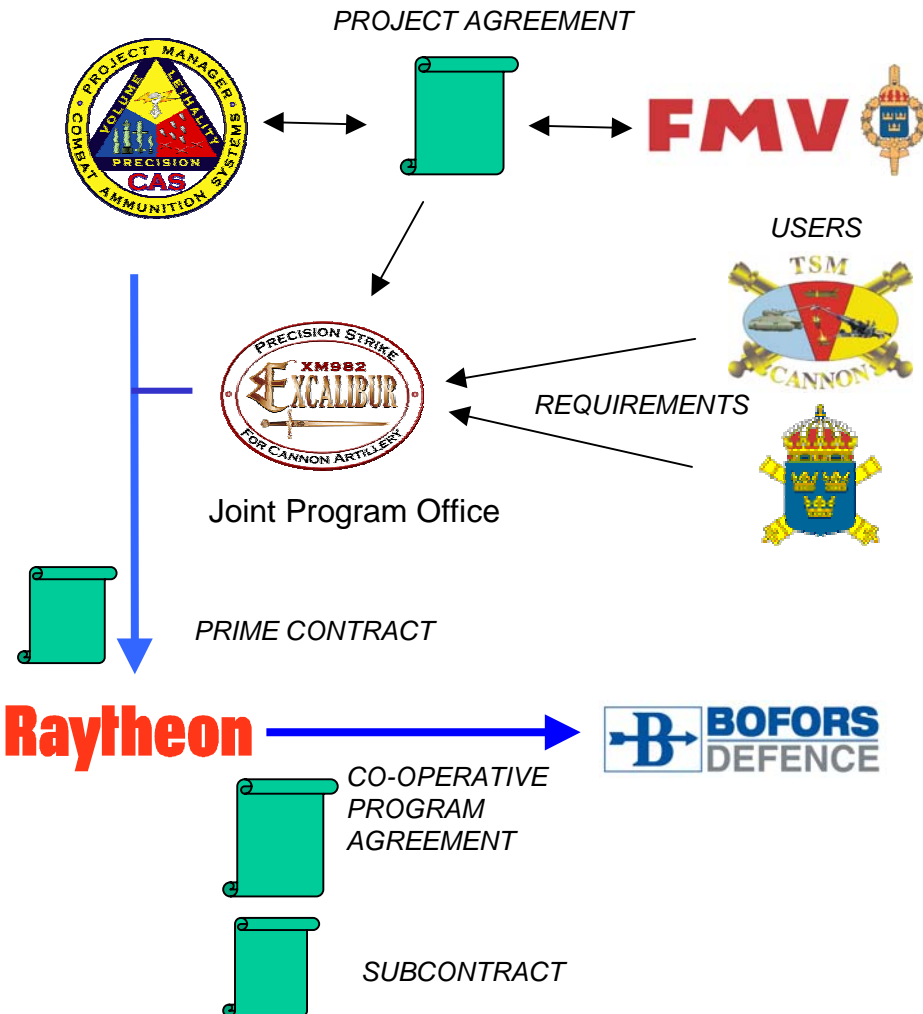


Major Upcoming Test Event: GG-A

- Guided Gunfire - A is the first end-to-end guided projectile flight
- Demonstrates capability to acquire GPS and navigate to a point on the ground



Program Cooperation



- Seek early Agreement on . . .
 - Requirements
 - Responsibilities
 - Funding
- Understanding cultural differences
- Effective communication
- Responsiveness and Flexibility
- Win – Win solutions



Questions



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