



***PSA***  
***Precision Strike***  
***Technology Symposium***

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Programs and Resources



# ***A Balanced Strategy***

## ***Reprogramming the Pentagon for a New Age***

“The defining principle of the Pentagon’s new National Defense Strategy is balance. The United States cannot expect to eliminate national security risks through higher defense budgets, to do everything and buy everything. The Department of Defense must set priorities and consider inescapable tradeoffs and opportunity costs.”

Robert M. Gates, SecDef

Foreign Affairs, Jan/Feb 09



# CMC Priorities

- ◆ Achieve victory in the “Long War”
- ◆ Right-size the Marine Corps
- ◆ Resetting for today while modernizing for tomorrow
- ◆ Improve quality of life for Marines and families





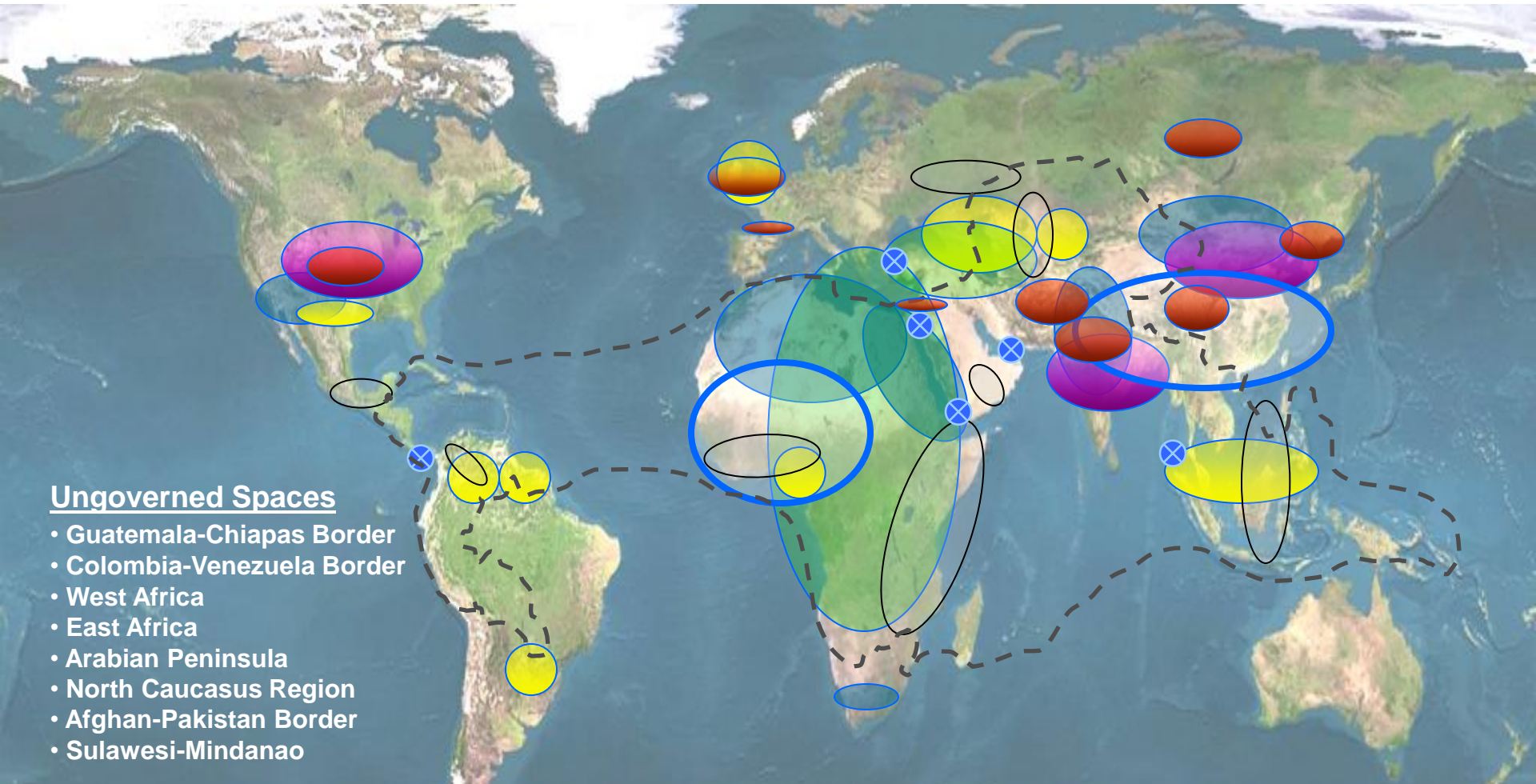
# ***Strategy Objectives for 2025***

- ◆ Focus on the Individual Marine
  - ◆ Improve Training and Education for Fog, Friction, and Uncertainty
  - ◆ Expand Persistent Forward Presence and Engagement
  - ◆ Posture for Hybrid Threats in Complex Environments
  - ◆ Reinforce Naval Relationships
- Ensure Amphibious Force Levels Meet Strategic Requirements
  - Create Joint Seabasing Capabilities
  - Lead Joint/ Multinational Operations & Enable Interagency Activities
  - Maintain a Ready & Sustainable Reserve
  - Build/Deploy Multicapable MAGTFs

***A national imperative - Strengthening the MAGTF for employment across the ROMO***



# Sources of Stress, Instability, & Conflict





# Adapting to Current and Future Battlefields

Wars Amongst the People



Hybrid Threat Capabilities



- Networked Terrorists, Criminals, & Insurgents
- Emerging Global Powers
- Increasing Interdependence
- “Haves” vs “Have Nots”
- Anti-West attitudes
- Identity/ Faith-based movements

- Terrorism/Crime
- Significant Drug Regions
- Ungoverned Spaces
- Nuclear Armed States
- Anti-access Weapons

**Access challenges...  
Largely in the Littorals**



Complex Terrain

- Urbanization
- Famine and Disease
- Increased Resource Competition
- Climate Change
- High Earthquake Risk Areas



Information Environment

## **HYBRID THREATS**

*“militias, insurgent groups, other nonstate actors, and developing world militaries are increasingly acquiring more technology, lethality, and sophistication... Sec Gates*



# *Precision Strike:* Improving the Kill Chain

FIND    FIX    TRACK    TARGET    ENGAGE    ASSESS

## Key enablers:

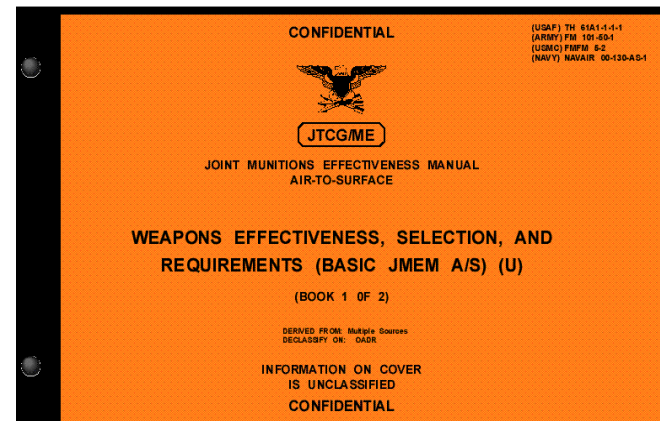
- ◆ **Command, Control, & Communication**
- ◆ **Situational Awareness**
- ◆ **Precision Targeting**
- ◆ **Standoff**
- ◆ **Response Time**
- ◆ **Precision Lethality**



**Precision: A Warhead on a Forehead**



# *JMEMs*



## ◆ Introduced 1967

- Slide rule and stubby pencil
- Many voluminous books of data
- Manual methodologies
  - Single guided weapon: 20 minutes
  - Stick of unguided weapons: 1.5 hours
  - Stick of cluster weapons: 3.0 – 5.0 hours
- No ability to perform weaponeering against complex targets





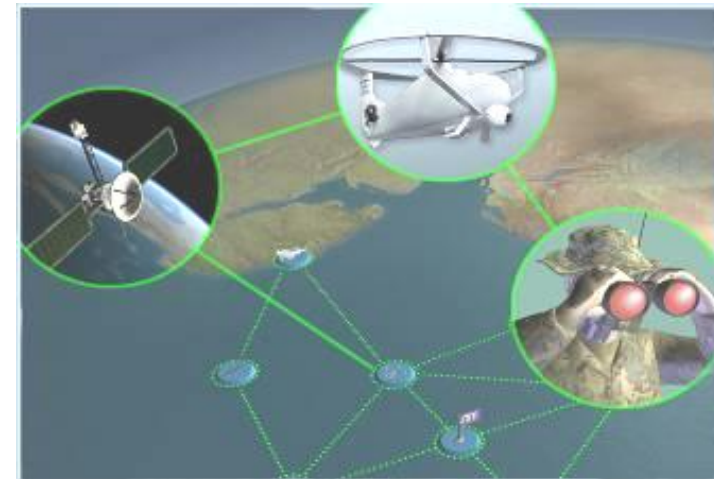
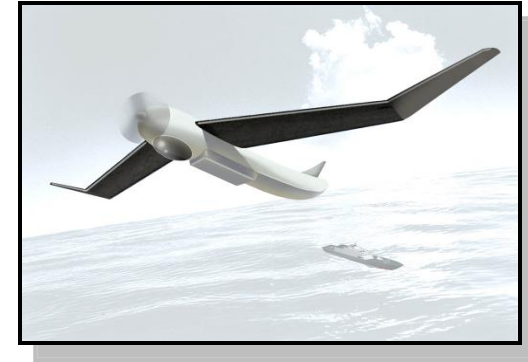
# *Today's model for precision strike*





# *Improving the kill chain:* Finding the target

- ◆ We can't hit what we can't find
  - 24/7 ISR is a must
- ◆ Many tools available for ISR
  - UAS
  - Fixed sensors
  - Satellite
- ◆ Communication is vital
  - Rapid/accurate dissemination
  - Common network





# *Improving the kill chain:* Fix/Track the target

## Requirement:

- ◆ Coordinate locking
  - GPS location within 1m
- ◆ Auto Target Hand-off System
- ◆ Prolific ISR assets
  - Satellite / fixed sensors
  - TF ODIN / C-12
  - UAS
  - Observer on the ground

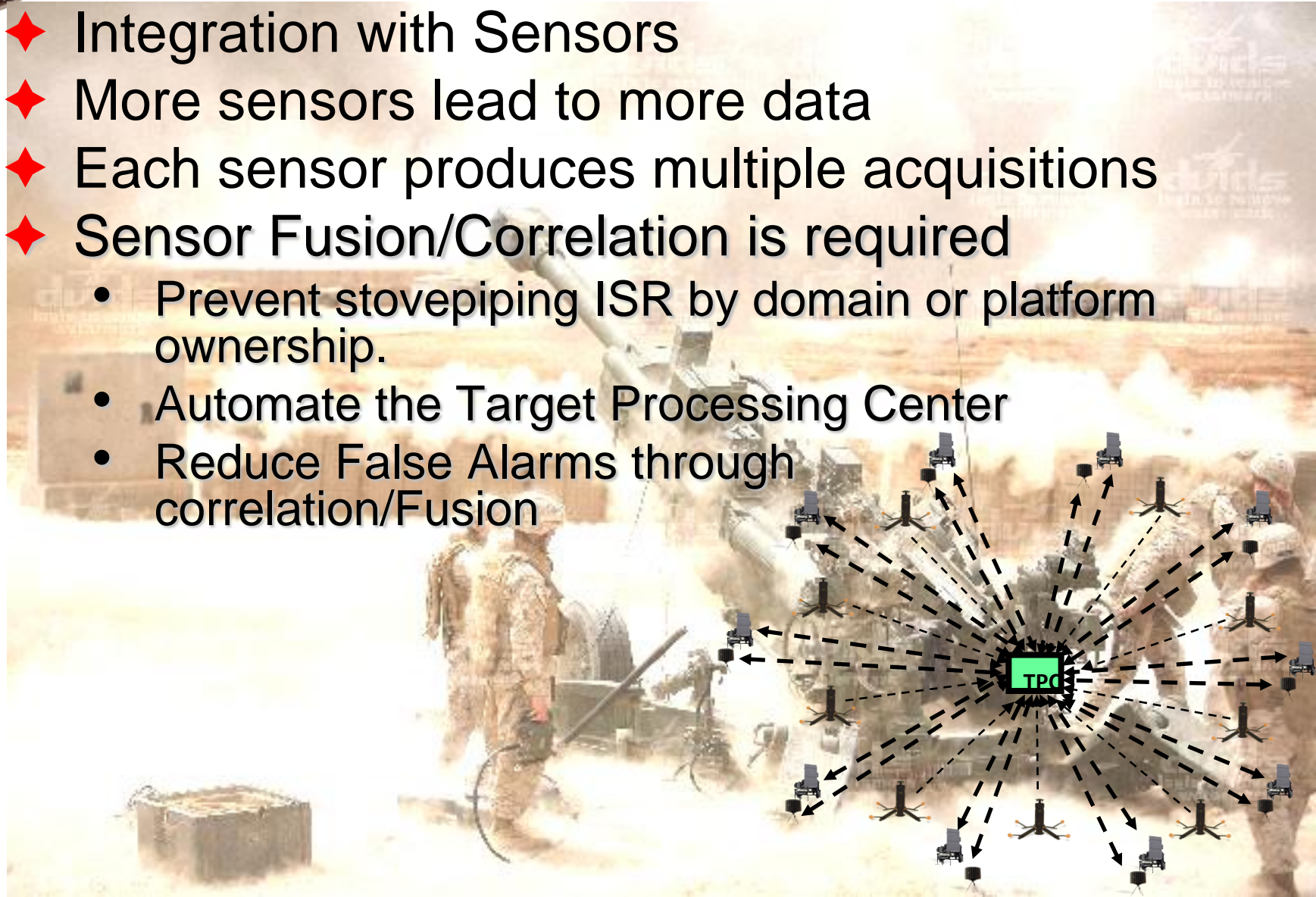




# *Improving the kill chain:*

## Targeting

- ◆ Integration with Sensors
- ◆ More sensors lead to more data
- ◆ Each sensor produces multiple acquisitions
- ◆ Sensor Fusion/Correlation is required
  - Prevent stovepiping ISR by domain or platform ownership.
  - Automate the Target Processing Center
  - Reduce False Alarms through correlation/Fusion





# *Improving the kill chain:* Engage the target

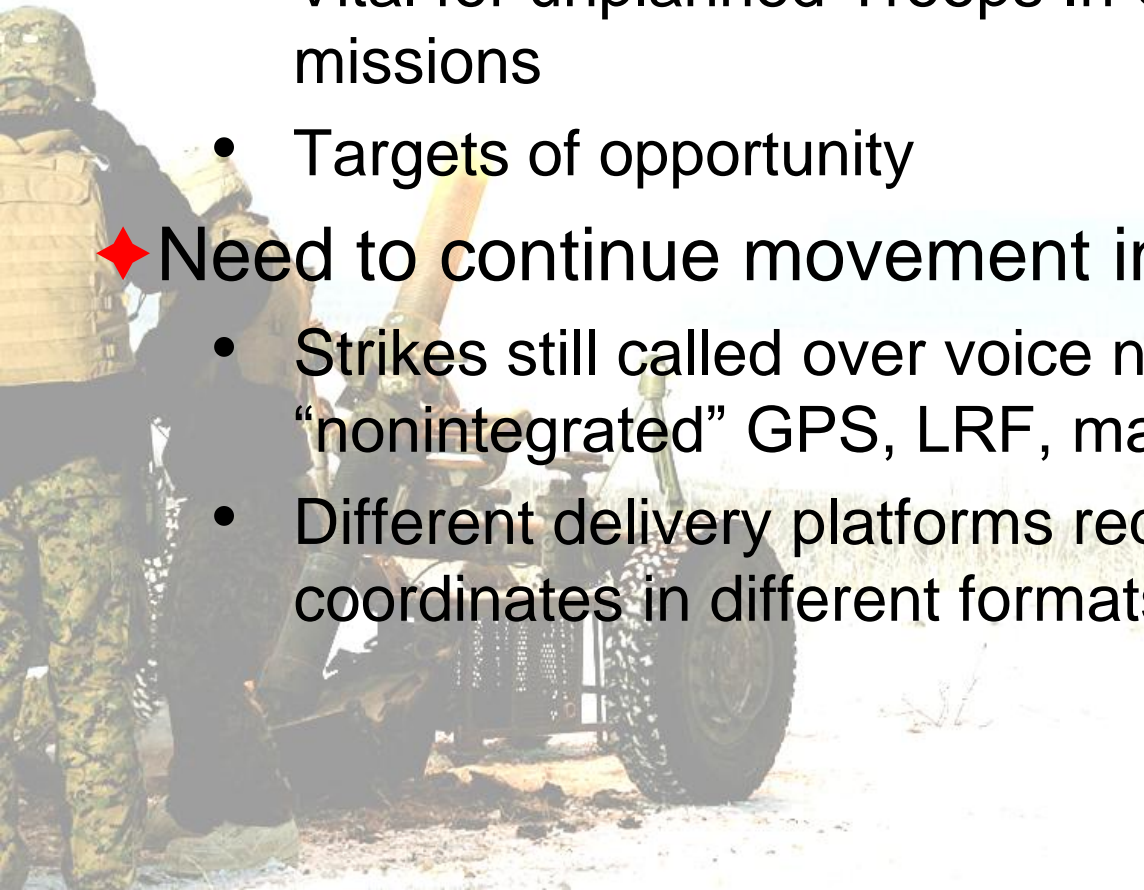
## ◆ Response time reduction

- Accomplish within minutes
- Vital for unplanned Troops In Contact missions
- Targets of opportunity



## ◆ Need to continue movement into digital age

- Strikes still called over voice nets using “nonintegrated” GPS, LRF, map and compass
- Different delivery platforms require coordinates in different formats





# Improving the kill chain: Engage the target

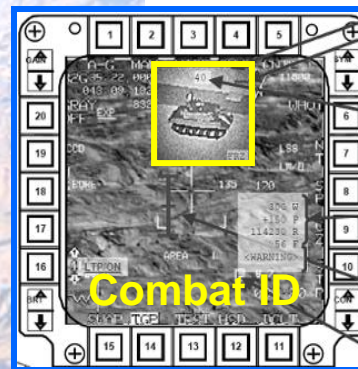
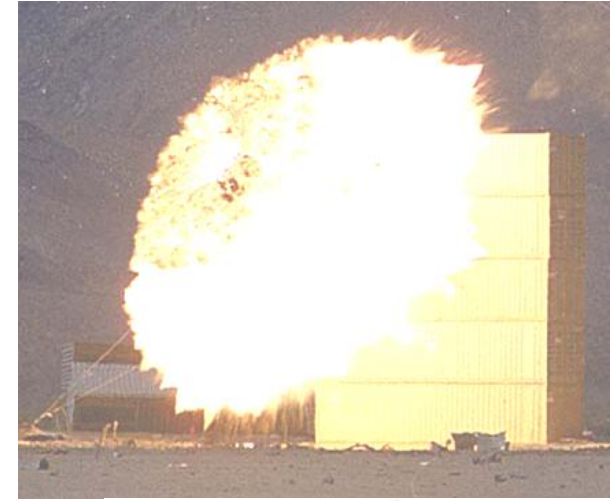
## ◆ Close-medium range

- Hellfire / Rockets / Mortars / Sniper
- Artillery

## ◆ Longer range

- JSOW / JDAM / AARGM / JASSM

## ◆ Scalable effects





# Engagement Considerations

Less expensive

More expensive

Less accurate

More accurate

Most accurate

260m CEP (max range)

50m CEP

10m CEP

Match round to task

- Area coverage required
- Precision not required
- Larger TLE tolerance
- CD not an issue
- Ammunition resupply is not an issue

- Efficient area fires required
- Near precision creates efficiency
- TLE between 30m and 120m
- CD is a consideration
- Reduced resupply burden

- Point target attack
- Precision required (<10m CEP)
- TLE  $\leq$  25m
- Minimize CD
- Lowest resupply burden

**Scaleable precision provides more effective and efficient fires**



# *What Level of Precision is Needed?*







# *Improving the kill chain:* Assess the damage

- ◆ Information and communication are vital
  - Eyes/sensors on target for BDA
  - Data relayed instantly to analyst for assessment
  - Re-attack or start cycle over
  - Common data-base for timely/accurate assessments





# *Near future for the long term*

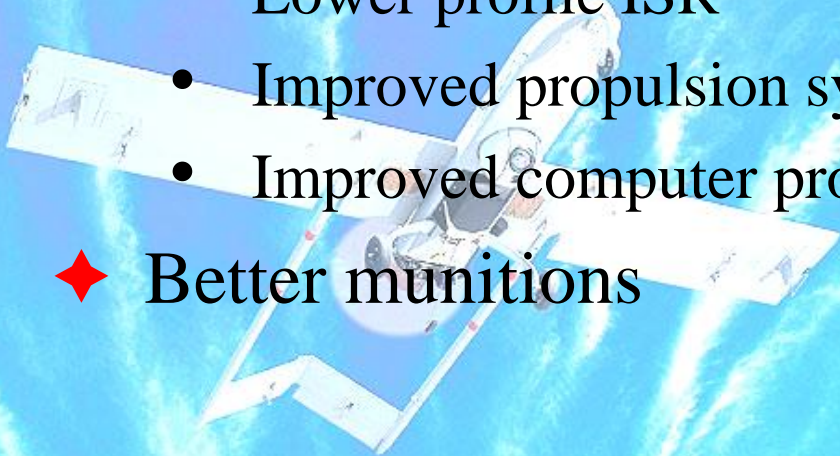
## ◆ Information Systems improvements

- Networks
- Digital communications
- Web-based data



## ◆ Improvements to UAS

- Lower profile ISR
- Improved propulsion systems
- Improved computer processing

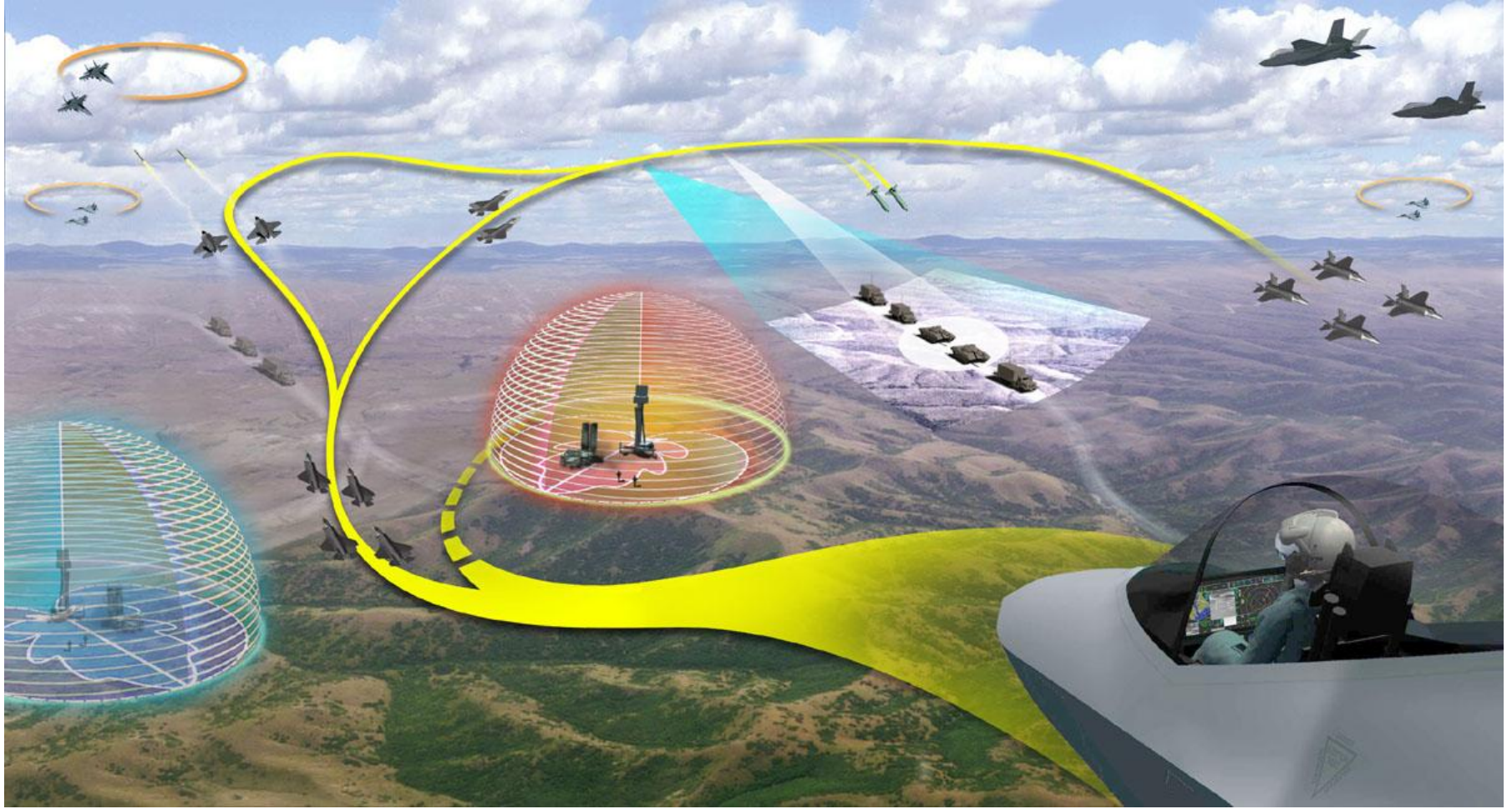


## ◆ Better munitions





# ***JSF - Single multi-mission adaptable platform***



**Multi-capable for the MAGTF**





***Questions?***

