



NATO
+
OTAN

ALTBMD

Dave Kiefer

ALTBMD Deputy Programme Manager

Dave.kiefer@tmd.nato.int



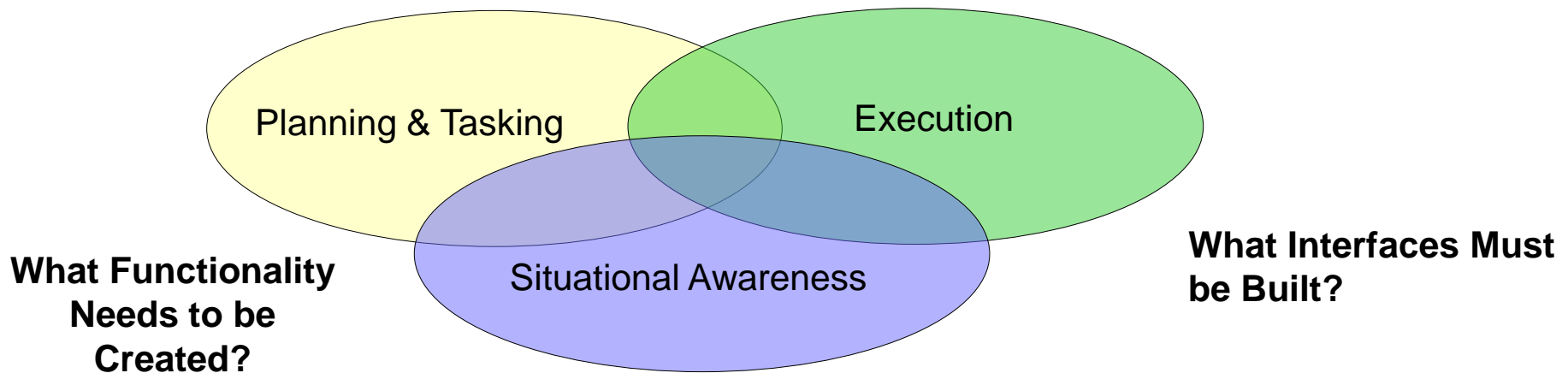
NATO UNCLASSIFIED

- **Who we are**
- **Where we are today**
- **Where we're headed**

- A verified architecture providing the NATO Commander with the capability to “defend NATO forces, deployed either within or beyond NATO’s Area of Responsibility, against the threat posed by Tactical Ballistic Missiles (TBMs) with ranges up to 3,000 km.”

ALTBMD's Job

- **Modify NATO C2 systems to enable the NATO Commander to perform Missile Defence Missions**
 - **Modifications must fit into an overall NATO Command and Control System**
 - **Must Integrate national weapon systems assigned to NATO missions**
 - **Must Help the Commander perform his three primary functions**





Sensors

Spacebased



SBIRS & PTSS

Landbased



M3R



AN/TPY-2



FADR/DADR



TPS 77

Seabased



Aegis BMD



Horizon



ADCF



F-105



F-124

Airborne



ABIRS

Shooters

Boost

Landbased



THAAD

Seabased



Aegis BMD

Upper Layer

Landbased



PATRIOT, MEADS



SAMP/T



PATRIOT



SAMP/T, MEADS



PATRIOT



PATRIOT



PATRIOT, MEADS

Seabased



Horizon/PAAMS



F-100

Command, Control & Communications

Strategic



BI-SC AIS



NGCS

Operational



BI-SC AIS



NGCS

Tactical



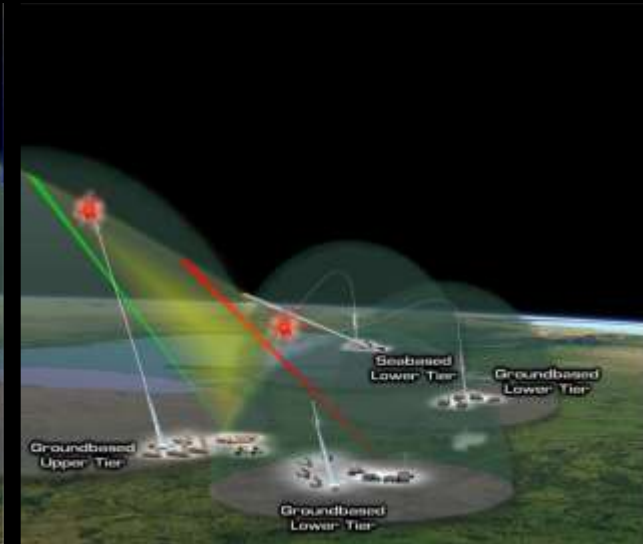
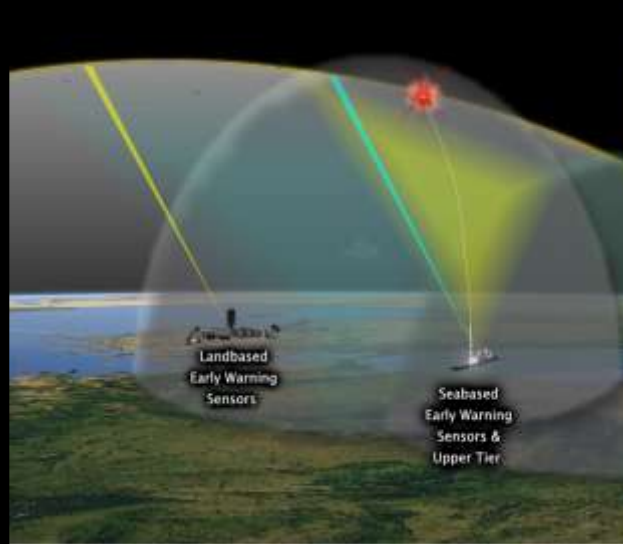
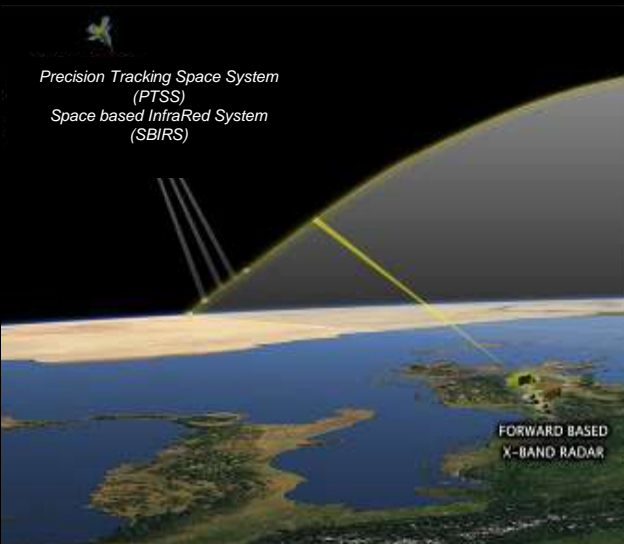
ACCS

Legend:
 BI-SC AIS - Bi-Strategic Command Automated Information System

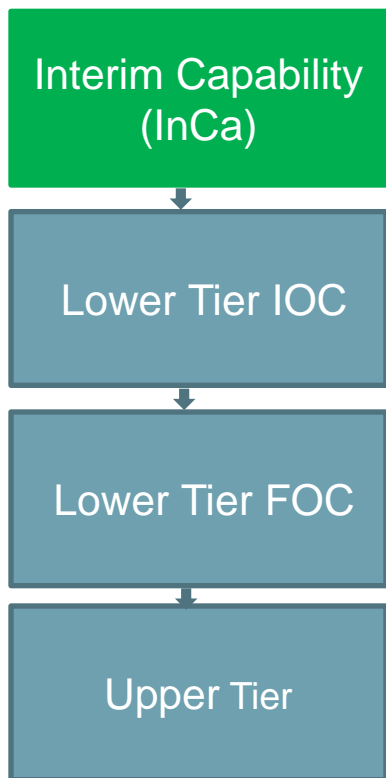
NGCS - NATO General Communications System

ACCS - Air Command & Control System

ALTBMD Reference Capability



ALTBMD Program Phases



Phase	Capability	Date
InCa 1	Basic TMD Planning and Tasking	Training Completed Operational Spring 2010
InCa 2	Integrated coherent planning with interface to national assets Based on ALTBMd ACCS Real Time Prototype	December 2010.
Lower Layer IOC	Planned: Initial lower layer systems Current: Two steps to IOC 2013 and 2014	2014
Lower Layer FOC	Additional lower layer systems, implement in the static NATO Command Structure	2016
Upper Layer	Incorporation of upper layer systems	2018

- **Who we are**
- **Where we are today**
- **Where we're headed**

- **After the announcement of a delay of a component of the ALTBMd programme in fall 2008, the NATO Military Authorities defined the Minimum Military Requirements for an Interim Capability for the NATO TBMD mission in 2010 to:**
 - Provide planning and tasking capability
 - Provide situational awareness
- **The Interim Capability has been developed and is fielded**

**Three NATO Prototypes make the Interim Capability Possible:
ACCS Prototype 1C, PlaTo and DEPT**

Fielding Capability (December 2010)

Interim Capability 1:

Interim Capability 2:

TBMD planning tools:

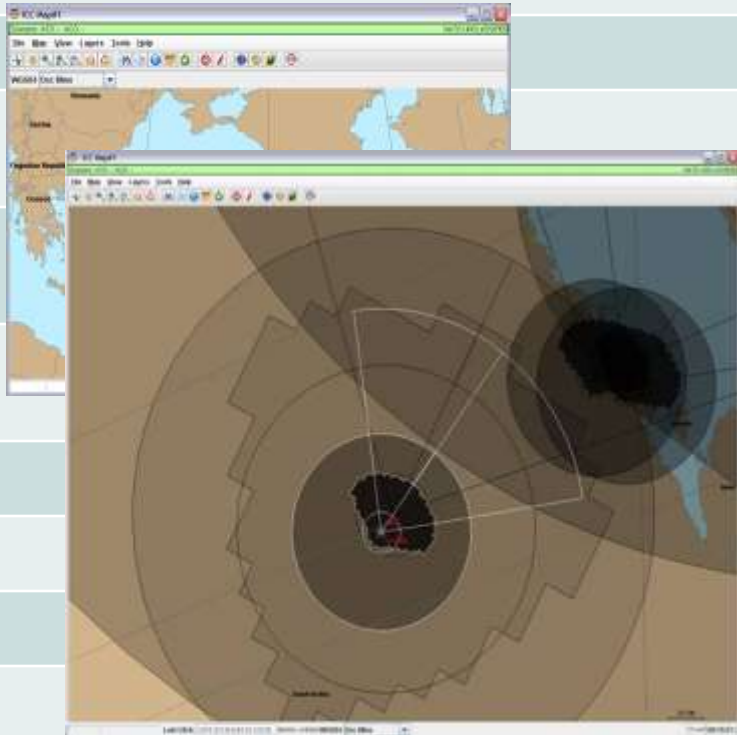
- Delivered: 2009
- Validated and accepted: May 2010

TBMD planning tools:

- Enhanced planning capability

TBMD situational awareness:

- Deploying truck mounted situational awareness tool
- Elements yested in JPOW 2010
- Tested with multiple national systems in early December'10
- Delivery December 2010 // operational validation expected later in 2011



InCa 2 Real Time ALTBMD InCa Van



Delivered to operational users

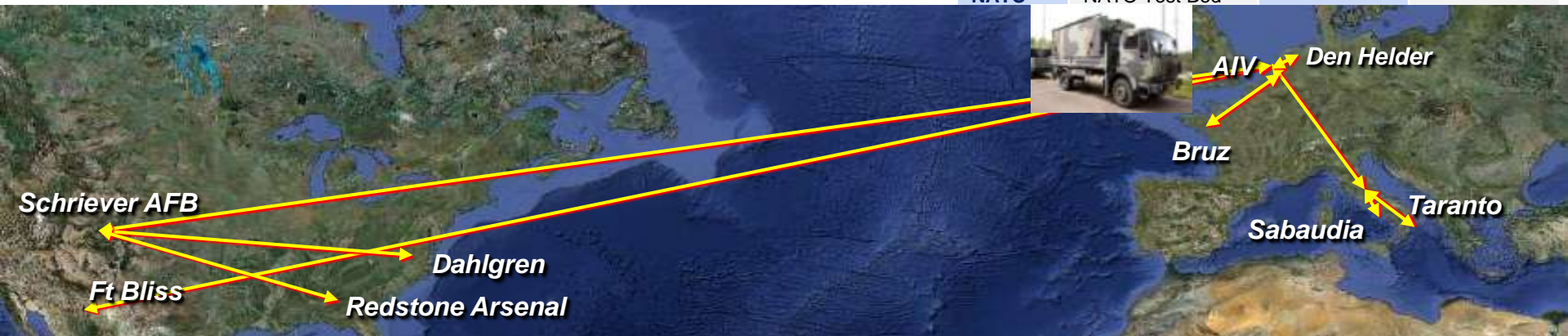
Objectives:

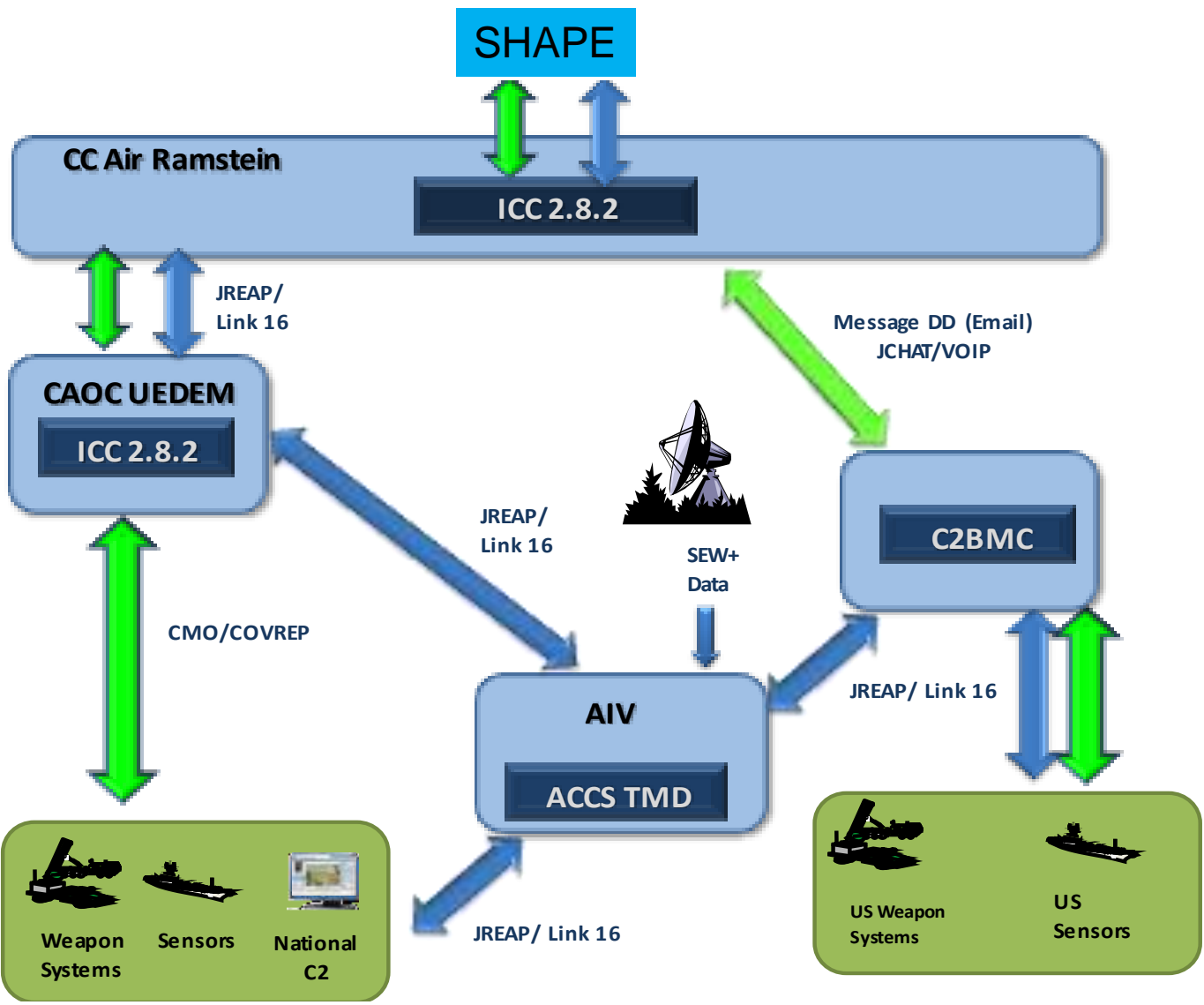
Technical verification of the InCa 2 RT components with National systems
 Operationally assess InCa

Outcome

- Technical Verification Successful
- SHAPE: Operationally viable. Approved for deployment to Uedem

Participants			
DEU PATRIOT	El Paso, Texas (FMSD/PACTOS)	NLD ADCF/EW	Den Helder, Netherlands
DEU SAMOC	El Paso (Also a viewer in the ITB)	NLD PATRIOT	AFB De Peel, Netherlands
FRA SAMP/T	Bruz, France	USA Aegis BMD	Dahlgren, Maryland
ITA Horizon/PAAMS	Taranto, Italy	USA C2BMC - TPY2	Colorado Springs (Also a viewer in the ITB)
ITA SAMP/T	Sabaudia, Italy	USA PATRIOT	Huntsville, Alabama
NATO AIV	NATO The Hague	USA Shared Early Warning	Colorado Springs (Including Peterson AFB)
NATO	NATO Test Bed -		





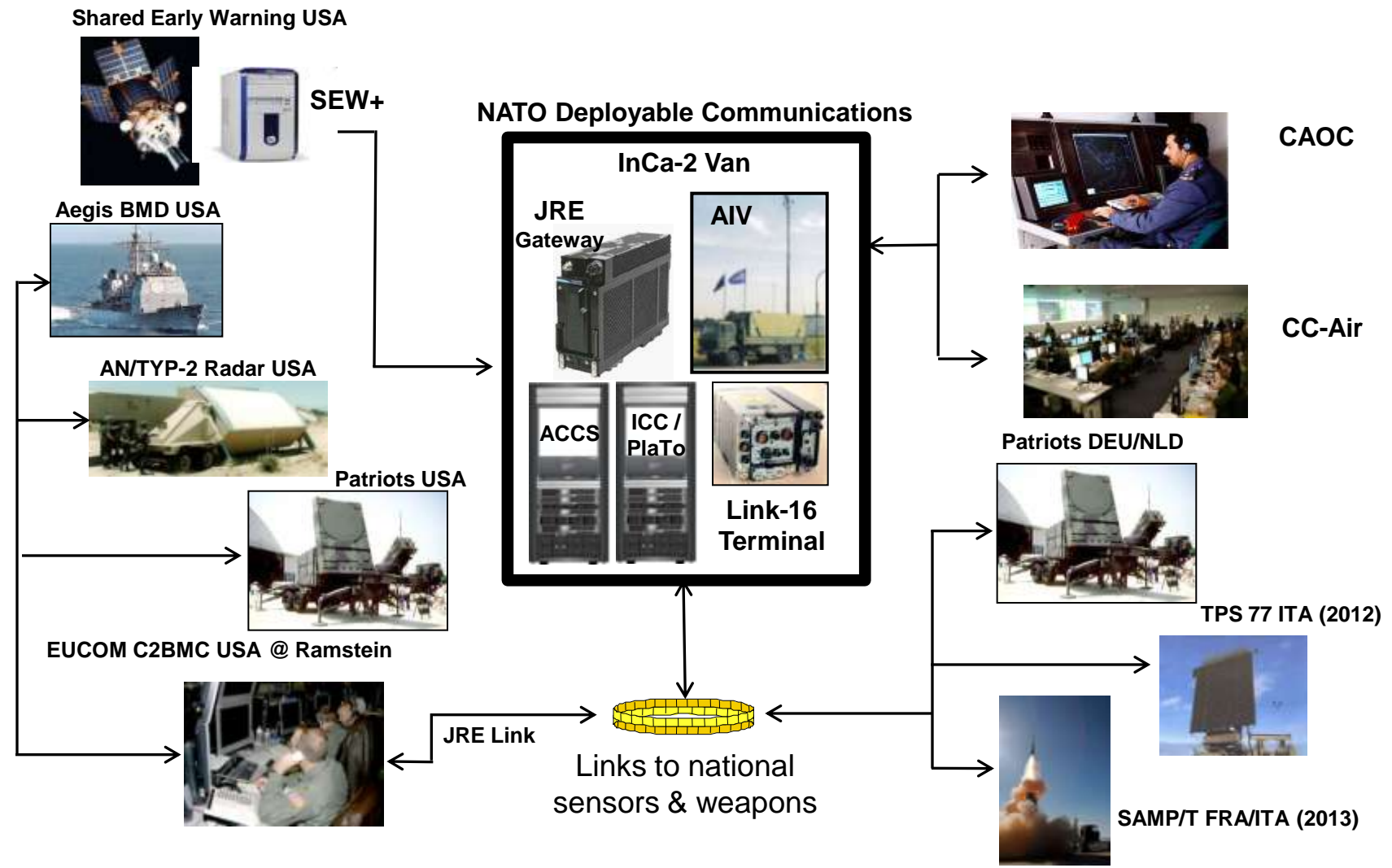
BMD Interim Capability Spring 2012 to IOC (2014)

U
S
A

E
P
A
A

P
H
A
S
E

1



- Planning

**Operational Validation during
Exercise Steadfast Juncture 2011
05 – 12 NOV 2011**

- Situational Awareness



**Operational Assessment during
Ensemble Test 1
09 DEC – 10 DEC 2010**



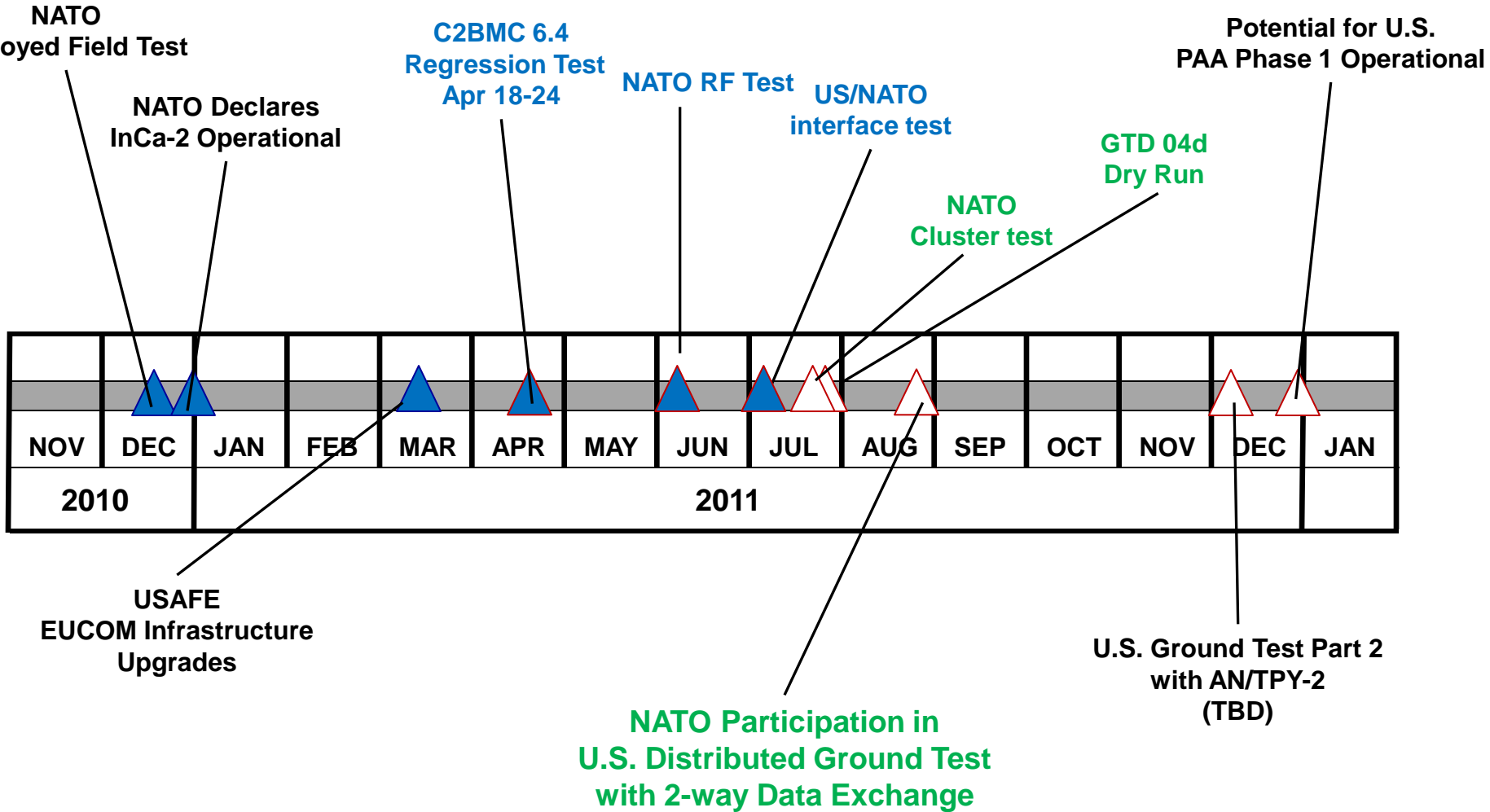
Upcoming

**Operational Validation during
USA European Phased Adaptive Approach Ground Test
GTD-04d**

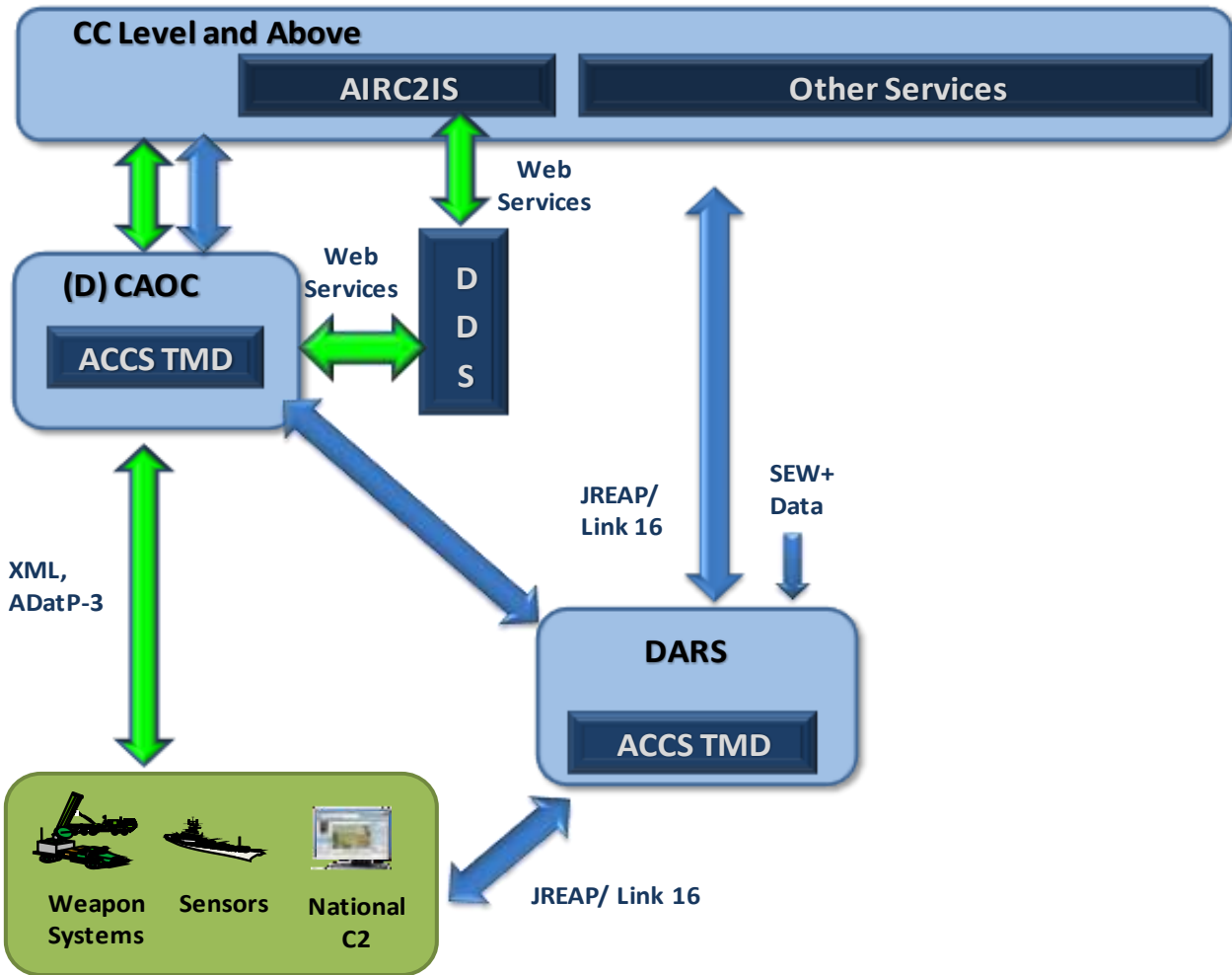
**Operational Validation during
DEU Tactical Firing on CRETE/GRC**



Test Of this Capability – GTD-04d



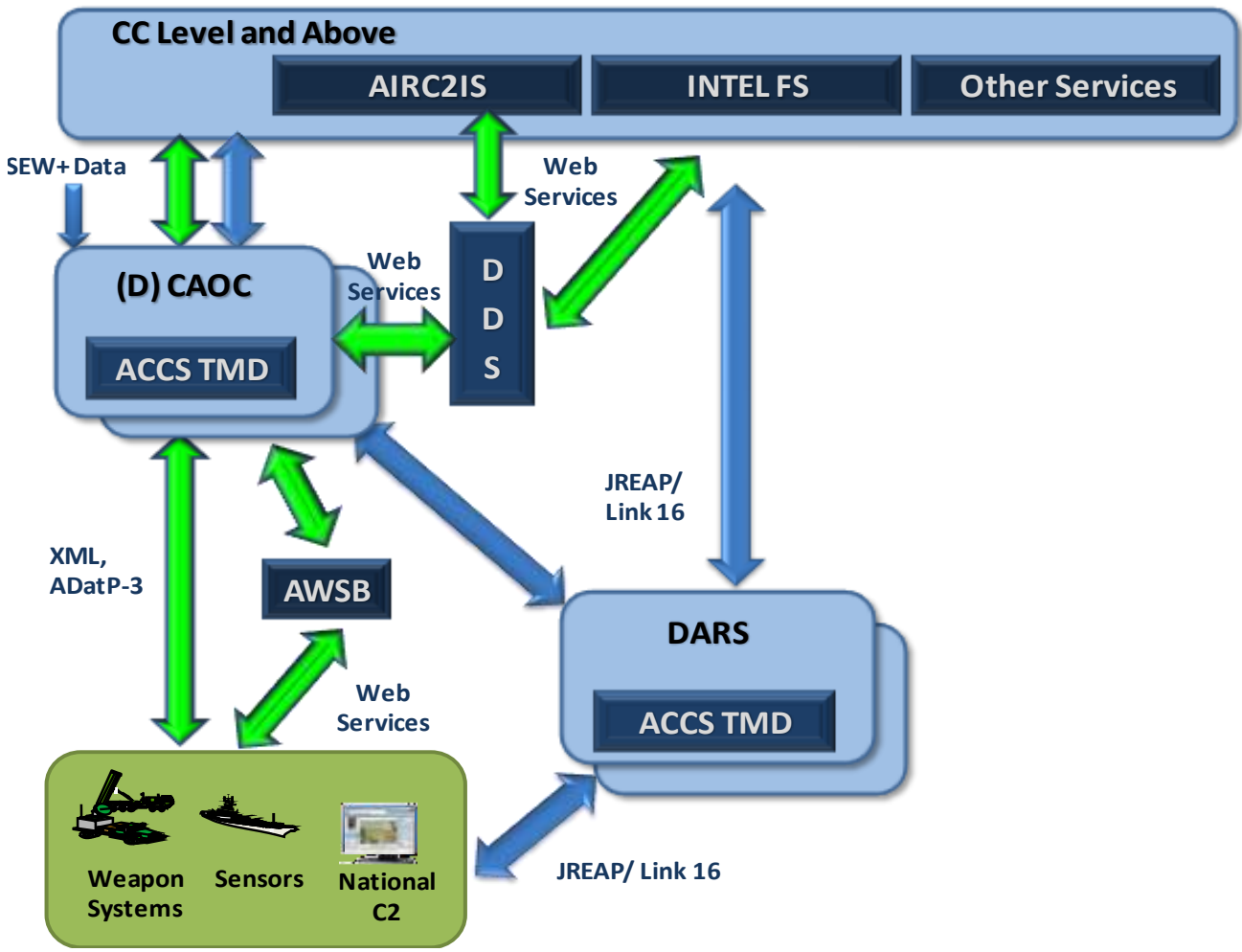
Initial Operational Capability (IOC)



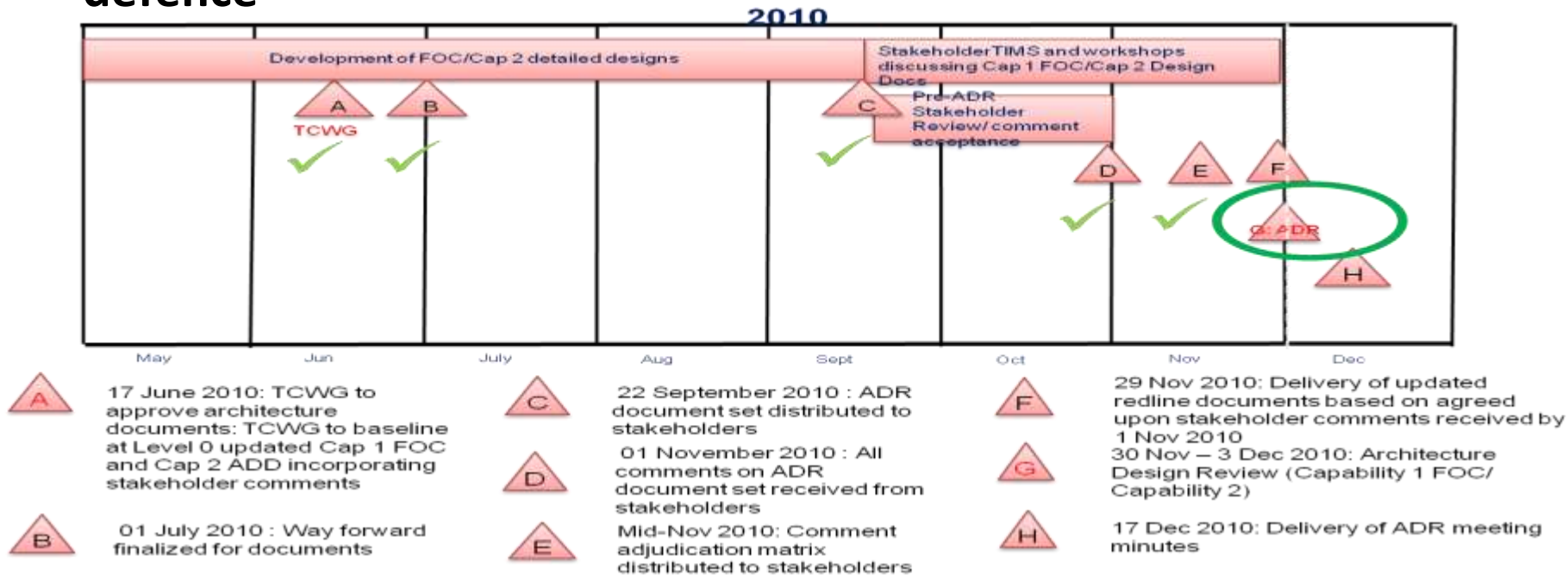
- **ACCS TMD1 – To be procured in 3 steps**
 - Preliminary System Definition (PSD) – Contract Signed 31 Jan 2011
 - TMD1 Increment 1 verified Q3 2013
 - TMD1 Increment 2 verified Q4 2014 – Completes full IOC functionality
- **Bi-SC AIS TMD1**
 - Air C2IS Increment 1 – Contracted
 - Supporting Projects for Capability 1: TOPFAS, NCOP
- **NGCS TMD1** : Project to be implemented through 10 independent Work Packages
 - Two Work Packages partially implemented with InCa 2 (Static Information Exchange Gateway - IEG, InfoSec)

IOC Implementation phase has started

Final Architecture



- Initial architecture defined in 2010
- Documentation updates to be completed in 2011
- Cap 1-FOC and Cap2 architecture will be the basis for the expansion of ALTBMD to a capability for territorial missile defence



- **Who we are**
- **Where we are today**
- **Where we're headed**

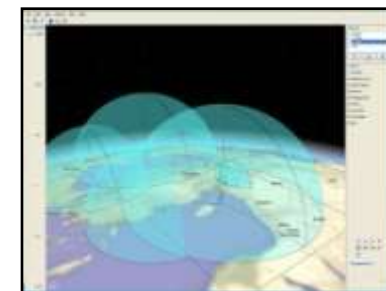
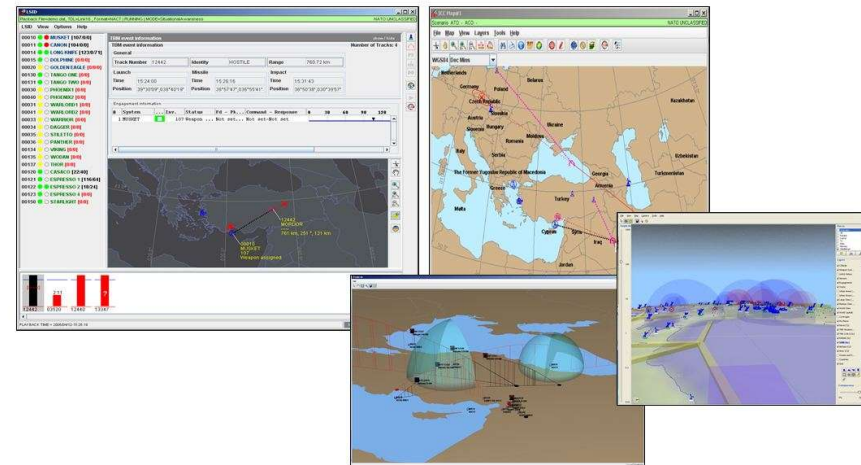
•Lisbon Summit, November 2010 Communiqué:

The threat to NATO European populations, territory and forces posed by the proliferation of ballistic missiles is increasing. As missile defence forms part of a broader response to counter this threat, we have decided that the Alliance will develop a missile defence capability to pursue its core task of collective defence....

To this end, we have decided that the scope of NATO's current Active Layered Theatre Ballistic Missile Defence (ALTBMD) programme's command, control and communications capabilities will be expanded beyond the protection of NATO deployed forces to also protect NATO European populations, territory and forces.

**Conference of National Armaments Directors:
“Expansion of ALTBMDD Programme for
NATO territorial missile defence is feasible
and has been recognized as the most
effective way to achieve this capability.”**

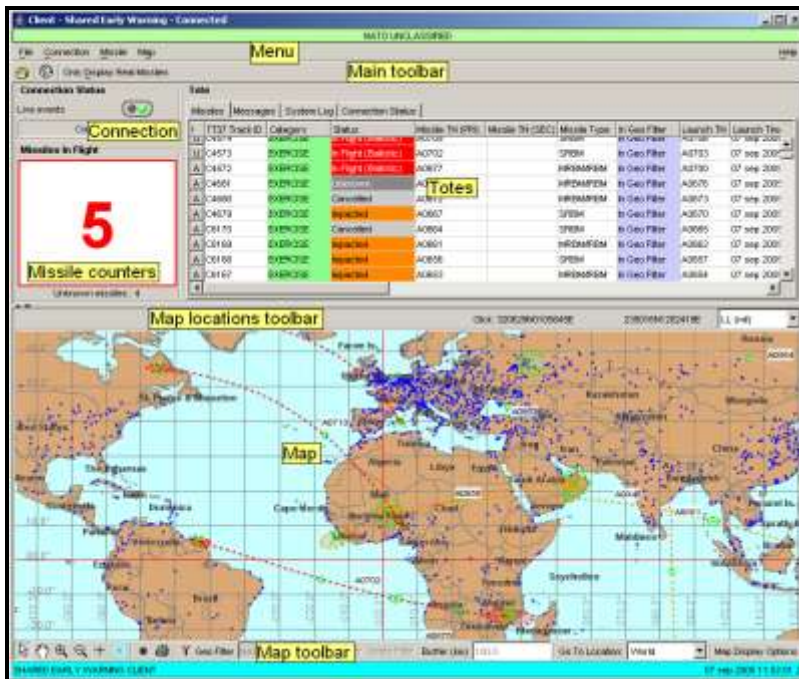
- In response to Approved Summit Task,
 - Identify NATO territorial BMD requirements including new functions for:
 - Enhanced situational awareness
 - Consultation
 - Enhanced Coordination / collaborative planning
 - Engagement coordination
 - Consequence mitigation
 - Review the ALTBMND NATO Staff Requirement
 - Document additional requirements or modifications to ALTBMND NSR



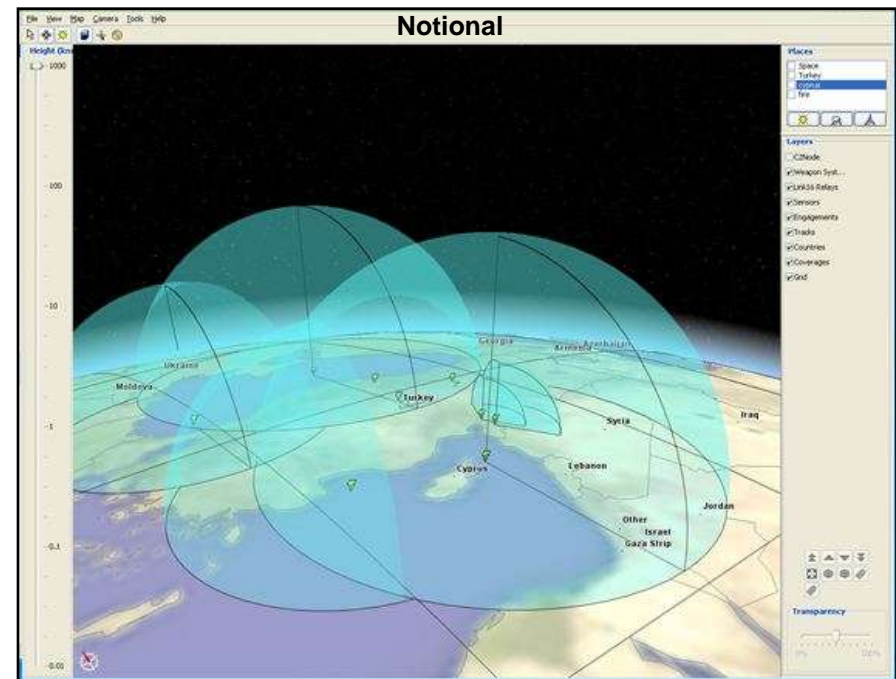
- Support to political/diplomatic/legal efforts
- Consensus building
- Options for military responses – risk analysis
- Pre-authorisation and conditions of BM engagements to meet stressing timelines
- Communicating NATO intentions
 - To potential opponents, third parties
- Potential impact of debris in other NATO or neutral nations
- Guidance for planning operations
 - Authorisation of plans
- High Level Situation Awareness



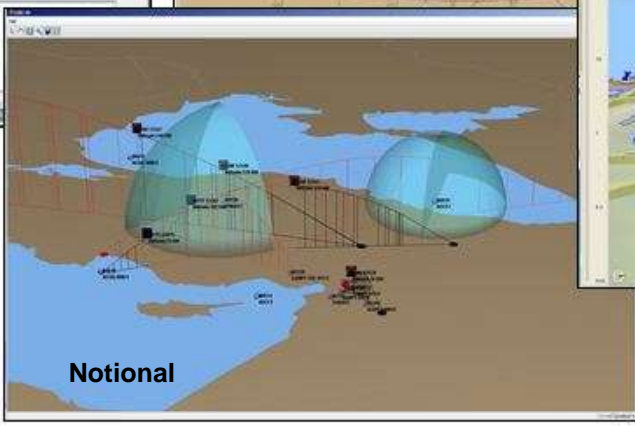
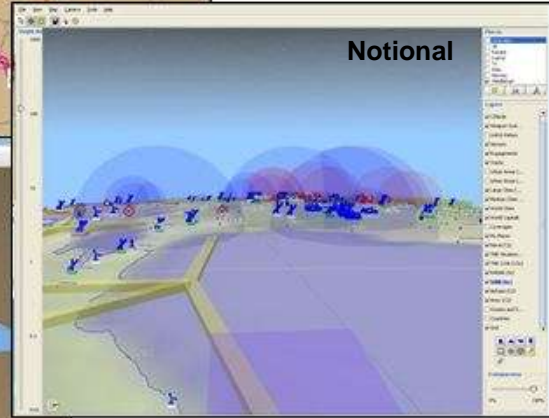
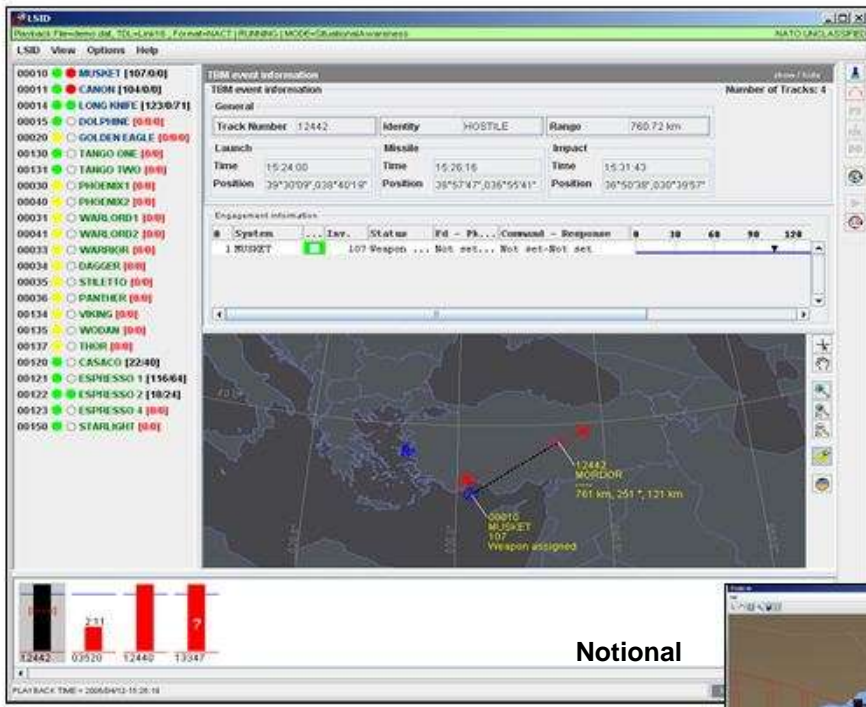
- **Display events to pol-mil decision-makers**
 - Displays of recent and current missile events
 - Support to strategic planning, prioritisation, option/risk assessments
 - Provide Information to NATO Capitols



(NATO Shared Early Warning Client)



Engagement Coordination and Monitoring

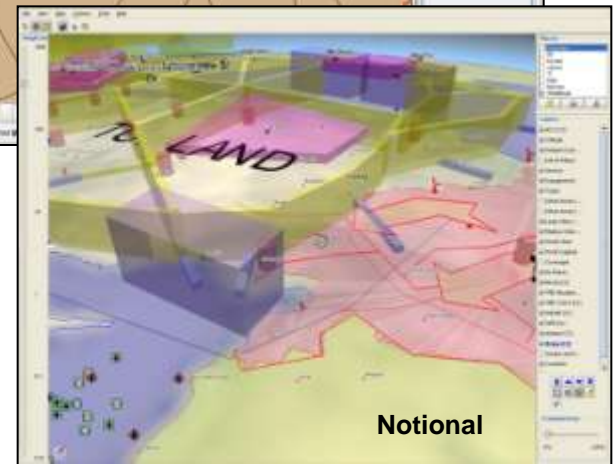
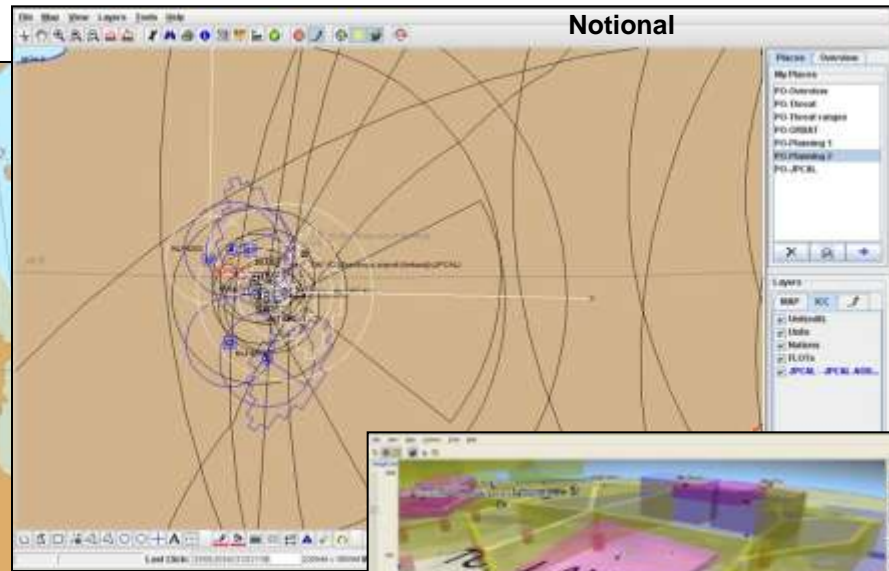
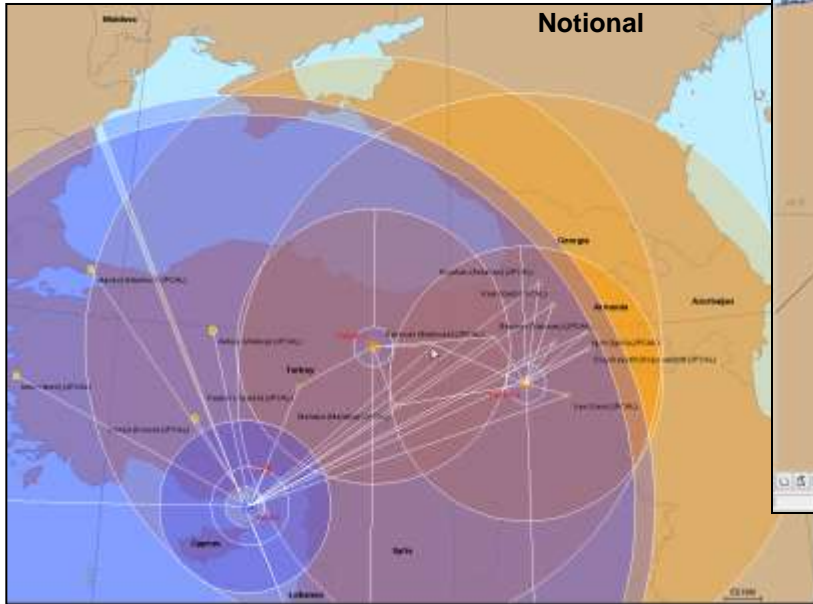


Notional

Notional

Notional

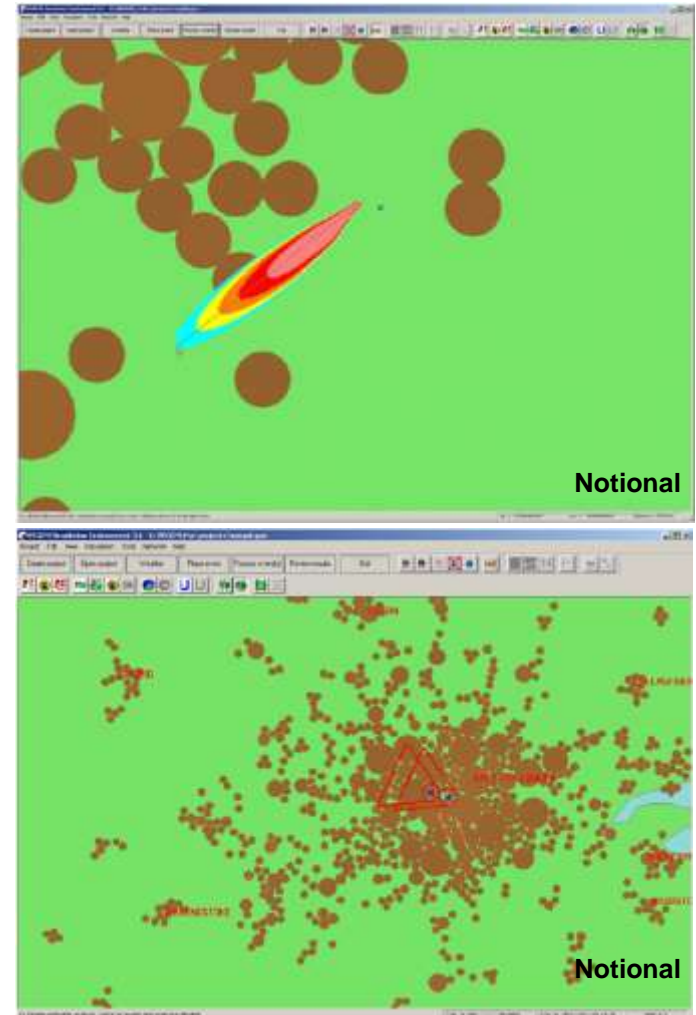
- Integrated Air and Missile Defence Real-time Picture throughout NATO C2
- Provide Battle Management Tools



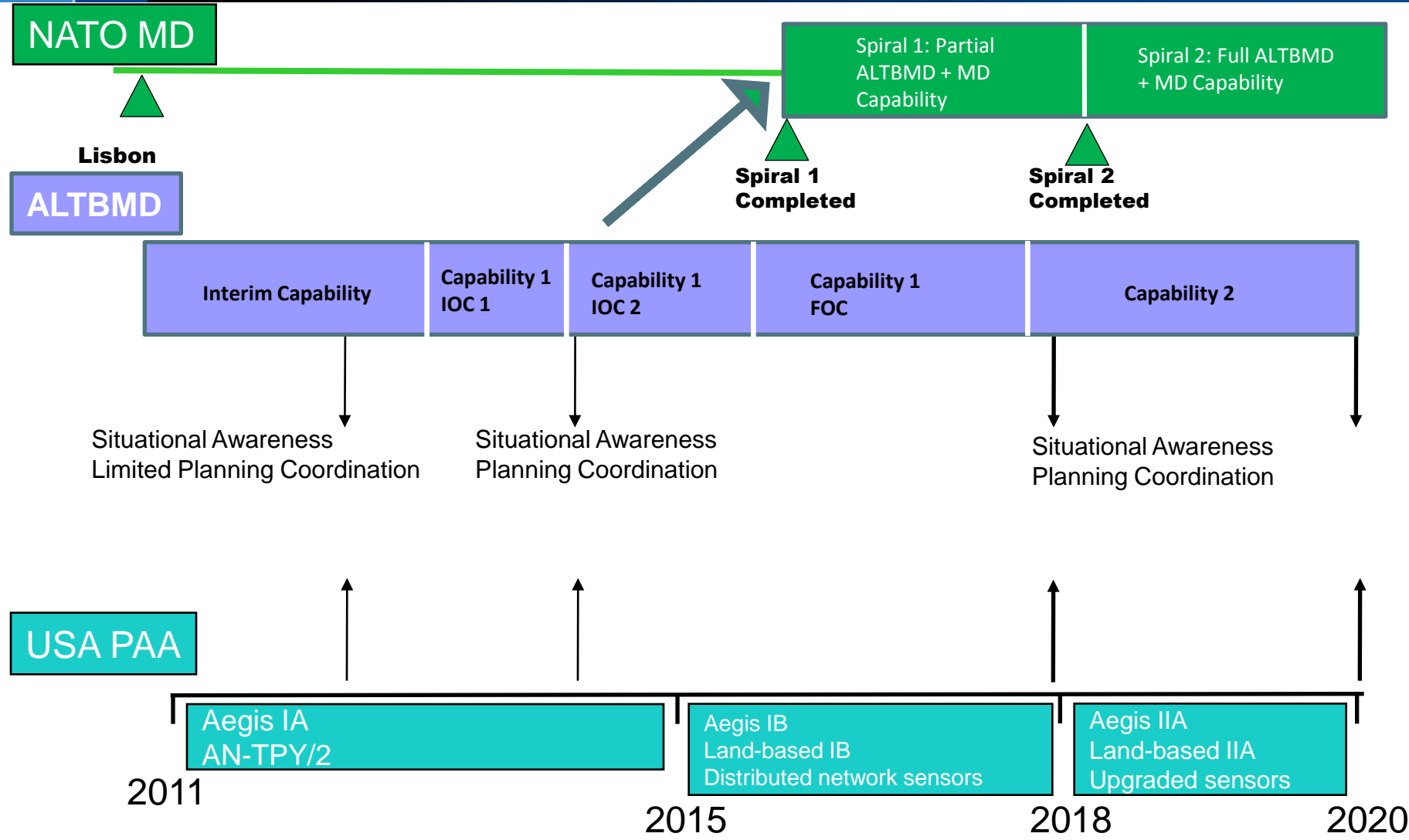
- Optimise the use of offensive and defensive assets to provide effective Missile Defence
- Integrated Air and Missile Defence Planning

Predictive COI Analysis
Post-Engagement COI Analysis
COI Warning Dissemination

- Support Passive Defence operations
- Provide INTEL with Enemy WMD & COA Updates
- Civil Emergency Planning and Response
- Provides Ground Hazard Predictions and Actual Information



Alignment of NATO MD with USA PAA



InCa = Interim Capability LL IOC = Lower Layer Initial Operational Capability
 FOC = Full Operational Capability UL = Upper Layer

ALTBMDD Programme has now delivered an Interim Capability to support NATO Air Command and Control Operations

- **Lower Layer IOC has entered implementation stage**
- **Extensive testing of the combined US/NATO interim operational capability is underway and, if successful, will validate a first operational capability that could be used for territorial defence based on USA EPAA and NATO InCa**
- **Expansion of ALTBMDD Programme for NATO territorial missile defence is feasible, has been recognized as the most effective way to achieve this capability and will begin this year with a re-evaluation of the architecture level requirements.**

