

**RUSI 2010**

# **Sustaining the UK Industrial Base: An Industry Perspective on the Potential of Type 45**

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May 2010

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# Overview

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This presentation represents an **MBDA UK Limited** view of a potential future evolution of the Type45 Destroyer that adds BMD capability.

- Approach to a UK theatre missile defence based on adoption of the Type45 Destroyer
- Related UK Programmes & International Collaboration
- Summary

# View of a UK Role of Theatre Missile Defence



**Protection of  
Deployed Forces**



**Joint Task Force Protection**

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# Type 45 Views



**Daring manoeuvring on Stage1 Sea Trials**  
– Firth of Clyde Aug 2007



**HMS Daring & HMS Dauntless in Transit**  
– off Portsmouth Aug 2009

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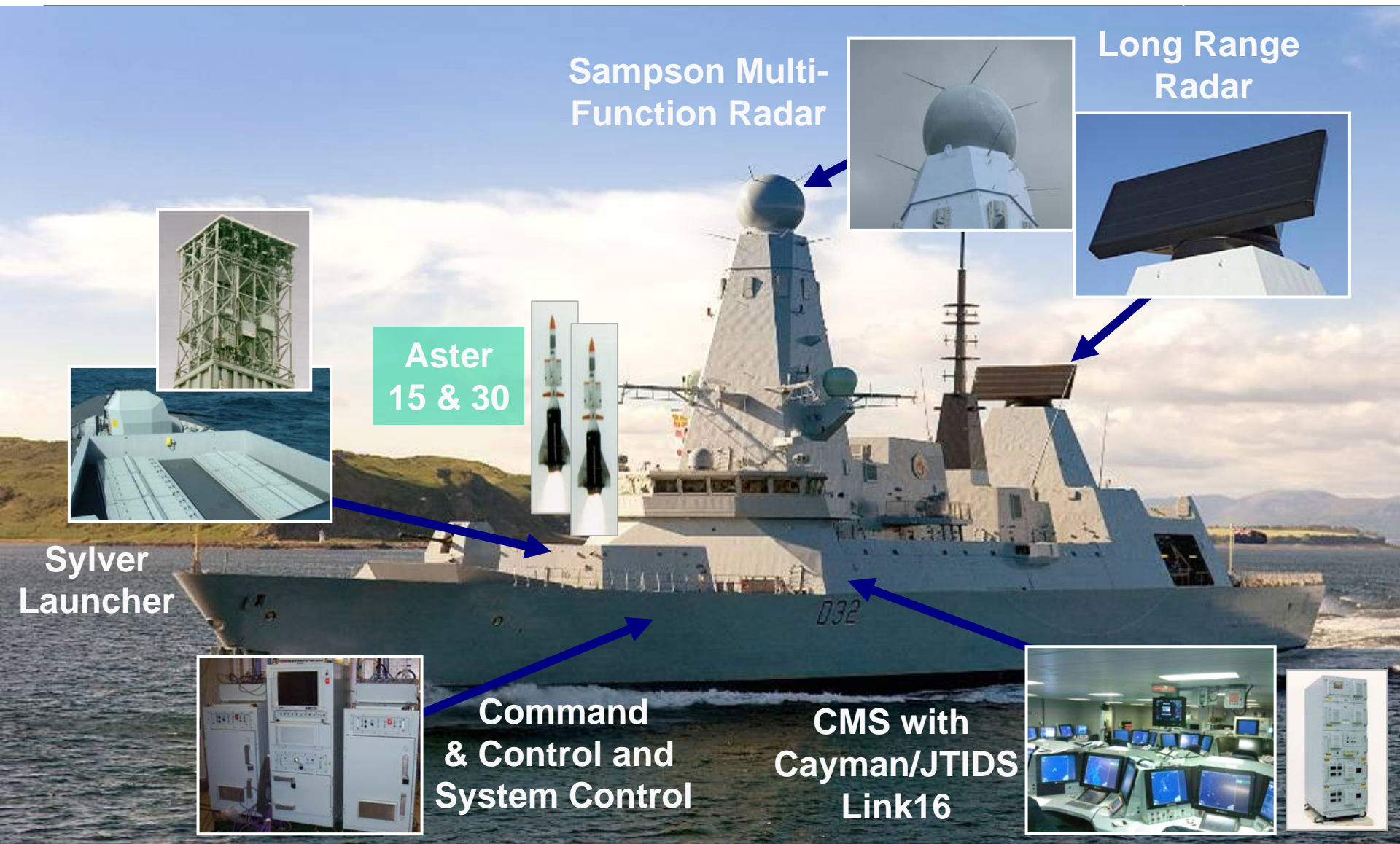
Typhoon Flypast

**AAW Role and Mission**  
– an evolution incorporating BMD

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# T45 AAW Destroyer – Sea Viper (PAAMS)



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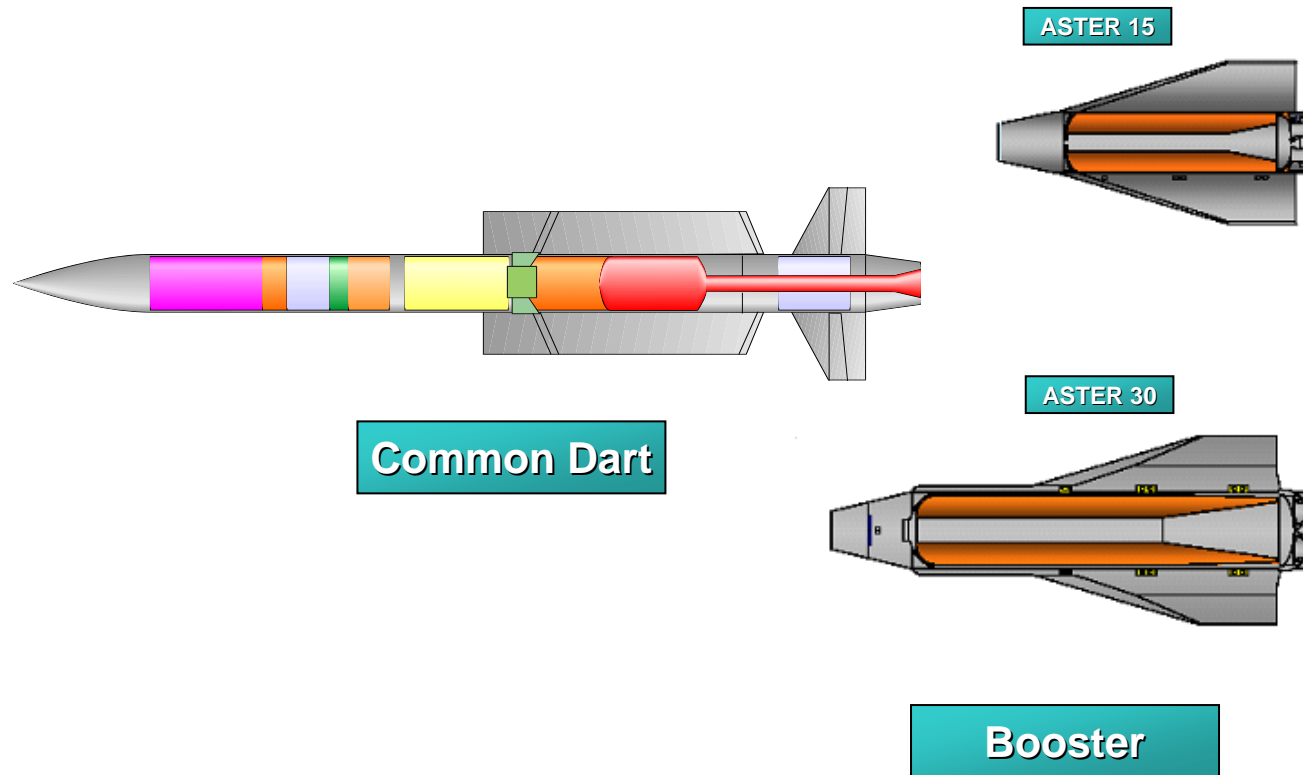
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# Current ASTER Outfit within T45

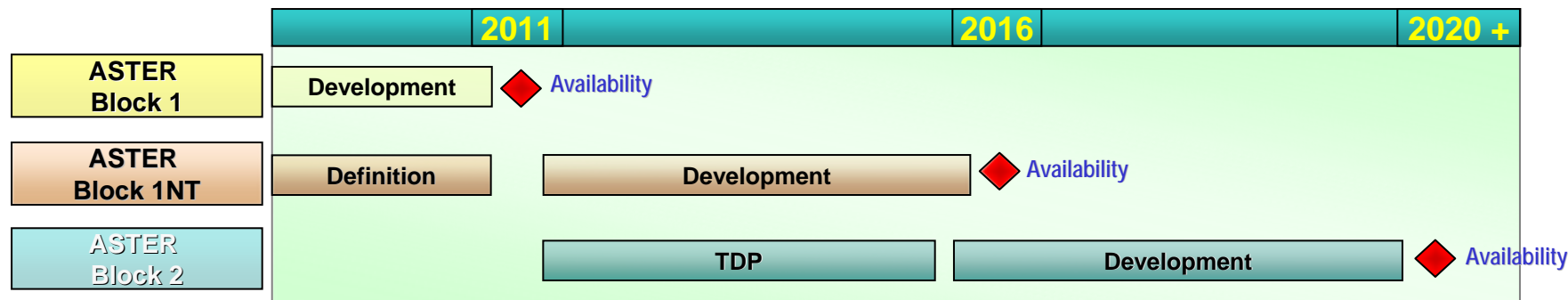


MBDA **ASTER evolution** programmes currently underway in Europe:

- **Block 1** - entering service in 2010 with SAMP/T
- **Block 1NT** - entering development for availability 2016

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# MBDA ASTER Evolution – A Route Map

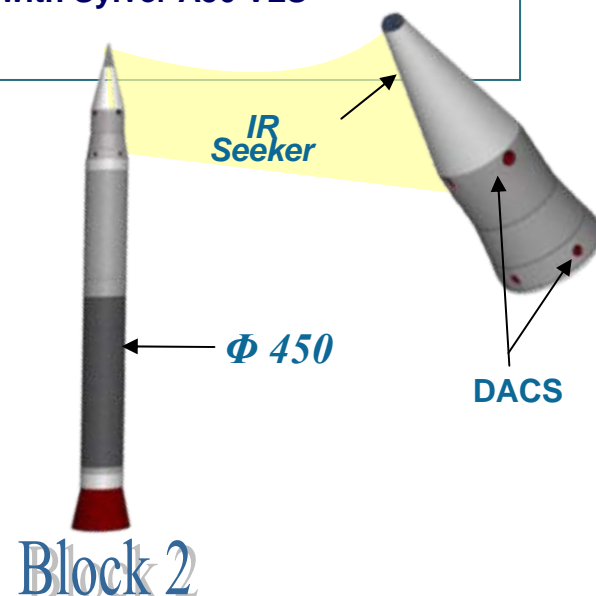
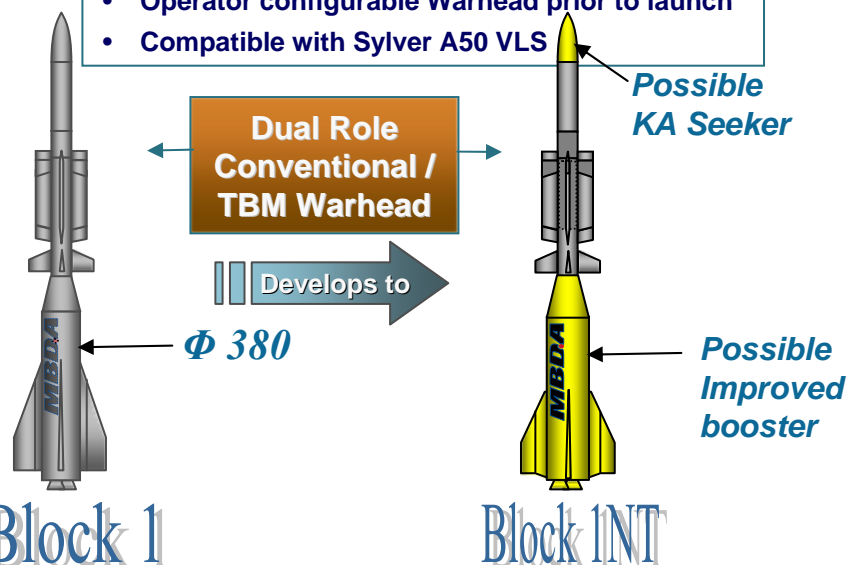


## ASTER Block 1 NT (New Technology) (Conventional & TBM)

- ASTER obsolescence production 2014+
- Improved conventional target capability (Range / Low level)
- Improved TBM capability
- Operator configurable Warhead prior to launch
- Compatible with Sylver A50 VLS

## ASTER Block 2 Capability

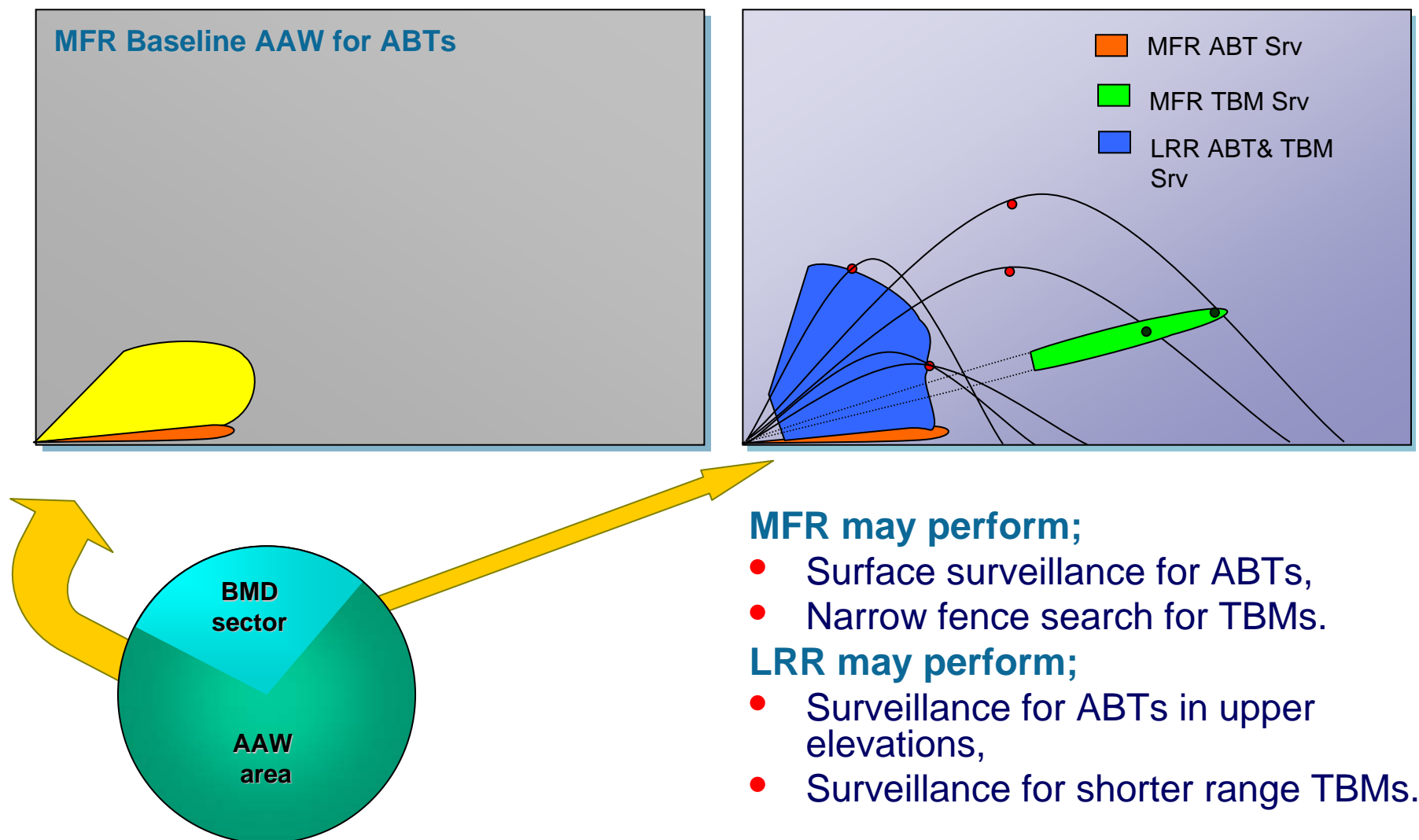
- Additional interceptor dedicated against separating and manoeuvring TBMs
- Two stage motor and final DACS KV
- Compatible with Sylver A50 VLS



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# Possible Sea Viper (PAAMS(S)) Sensor Configuration

## – One Option Example



### MFR may perform;

- Surface surveillance for ABTs,
- Narrow fence search for TBMs.

### LRR may perform;

- Surveillance for ABTs in upper elevations,
- Surveillance for shorter range TBMs.

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# Possible UK T45 Theatre Ballistic Missile Defence

## Capability Increase may provide

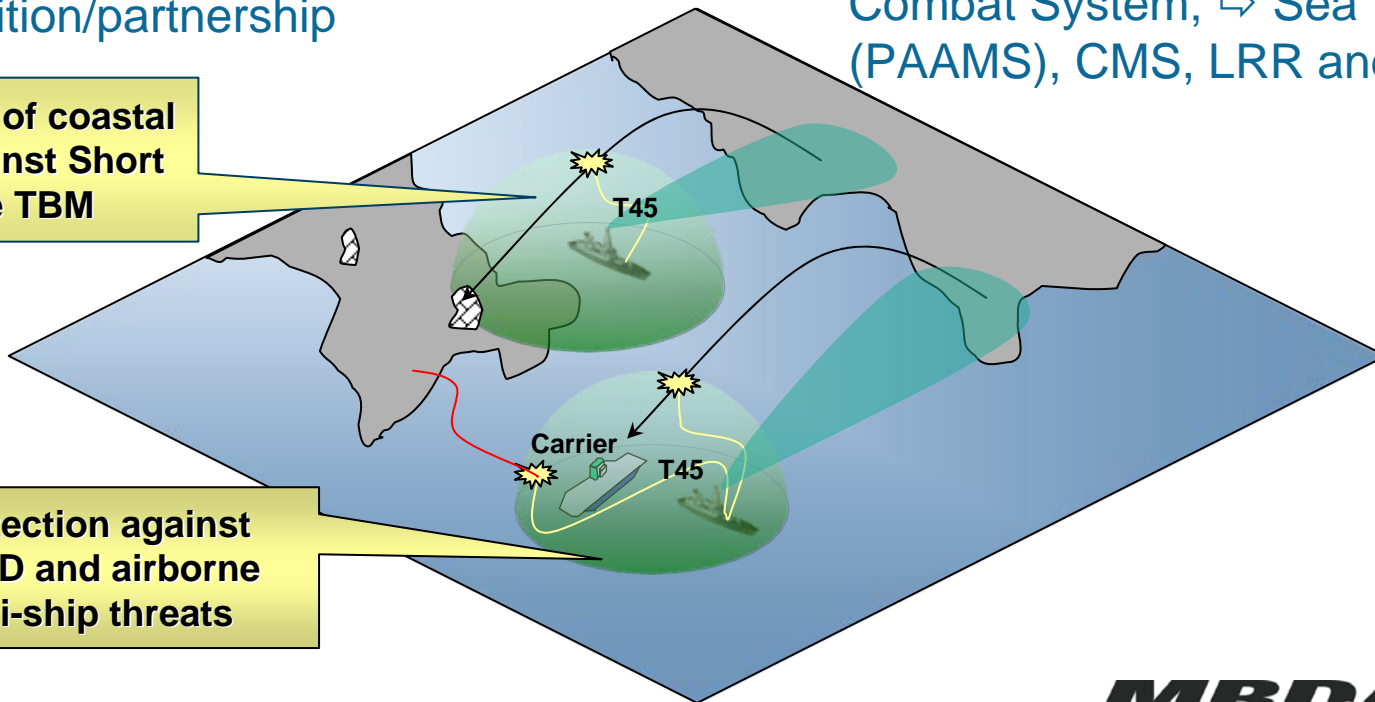
- Defence against short-range TBM coastal/land attack
- TBM surveillance
- Retention of conventional AAW capability of Sea Viper (PAAMS)
- Act as a Force multiplier in a coalition/partnership

## In-Service Technology Insertion

- No foreseen change to existing Sea Viper (PAAMS) or Combat System architecture
- Aster Block 1NT possible UK entry point for TBMD
- Only software changes to the T45 Combat System; ⇨ Sea Viper (PAAMS), CMS, LRR and Link 16

**Protection of coastal areas against Short Range TBM**

**Protection against TBMD and airborne anti-ship threats**



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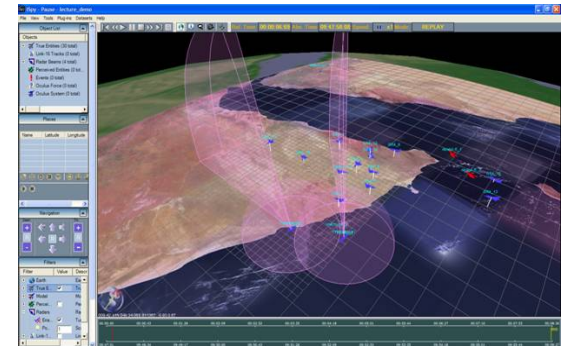
# PAAMS – Evolution

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- MBDA are evolving PAAMS to provide a number of possible enhancements.
- Current Weapon System enhancements being considered during 2010-2011+ are:
  - Sea Viper (PAAMS) BMD for T45 and Horizon – understanding system impacts at the sensor and CS levels
  - Based on Aster Block 1 & 1NT – understanding weapon system analysis
  - Extended Intercept Range against aircraft – developing C2 subsystem enhancement - not missile/sensors (RADAR)
- Future Weapon System enhancement possibilities are being developed as part of studies and testbed/demonstrations within MBDA, under PV for 2010-2013+ timeframes

# MBDA – Missile Defence Testbed

- Evolution of a BMD Testbed that builds on national and international experiences
  - Missile Defence Centre – SIRAN and Schiltron
  - NATO interoperability demonstrations in CWID
- Modelling and simulation capabilities that incorporate the ability to interface and interoperate with real equipment are evolving
- Creation and utilisation of a wide library of sensors, effectors and platforms based in the Maritime domain. This allows for the MBDA testbed to investigate:
  - air and land asset utilisation
  - littoral problem space definition and boundary conditions
  - wider command and control impact
  - Interoperability issues
- Ability to develop capability understanding and considerations of interfacing with third party, national and international testbeds.



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# MDC Maritime Theatre BMD Studies (1)

- MBDA are involved with the Applied BMD research being undertaken by the MDC with its Tier 1 Industry Partners
- This applied research is an MDC lead, JOINT Industry team activity.
- For 2010/11 the team are engaged in four key study themes:
  - System Definition Studies to Incorporate BMD
  - Series of MoD and Industry Stakeholder Workshops
  - Development of a UK route map
  - International collaboration with US and Europe

## UK Missile Defence Centre



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## Challenges within the 2010/11 studies include

- Manage the AAW capability of T45 whilst introducing BMD
  - Evaluation of T45 Combat System elements
- Define RN missions & doctrine for BMD
- Develop UK Route Map to underpin in conjunction with key stakeholders
- Plan and evolve BMD tests, experiments and demonstrations to provide evaluation points that inform the key stakeholders
  - Assess and undertake MISC & PIF modifications to support BMD test and evaluation
  - Plan for NATO ITB integration and involvement in JPOW

# Summary from an MBDA UK Perspective

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- A potential future UK Maritime BMD capability builds upon the substantial investment made in the Type 45 AAW destroyer
  - Any potential BMD mission being achieved through software changes only to the Combat System
  - May be undertaken as part of in service upgrade for Type 45
- Potential T45 based BMD mission may support
  - Protection of deployed forces
  - Joint Task Force protection, including Carrier Group
  - Closer working with friends and allies
- Potentially allows development of multinational MBDA Aster Route map to be fully exploited
  - Aster Block 1 ⇒ Block 1 NT (likely entry point) ⇒ Block 2