Evolutionary Acquisition Promotes Rapid Technology Transfer

21 AUG 07

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Integrated Ballistic Missile Defense System

Sensors

Defense Support Program

Space Tracking And Surveillance System

Sea-Based Radars

Forward-Based Radar With Adjunct Sensor

Midcourse X-Band Radar

Early Warning Radar

Boost Defense Segment

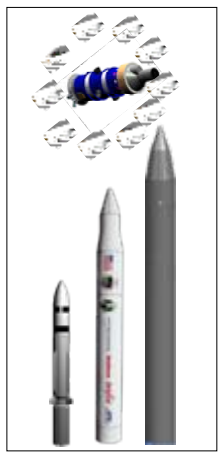
Midcourse Defense Segment

Terminal Defense Segment

Airborne Laser

Kinetic Energy Booster

Aegis Ballistic Missile Defense / Standard Missile-3



Multiple Kill Vehicle

Ground-Based Midcourse Defense

Terminal High Altitude Area Defense

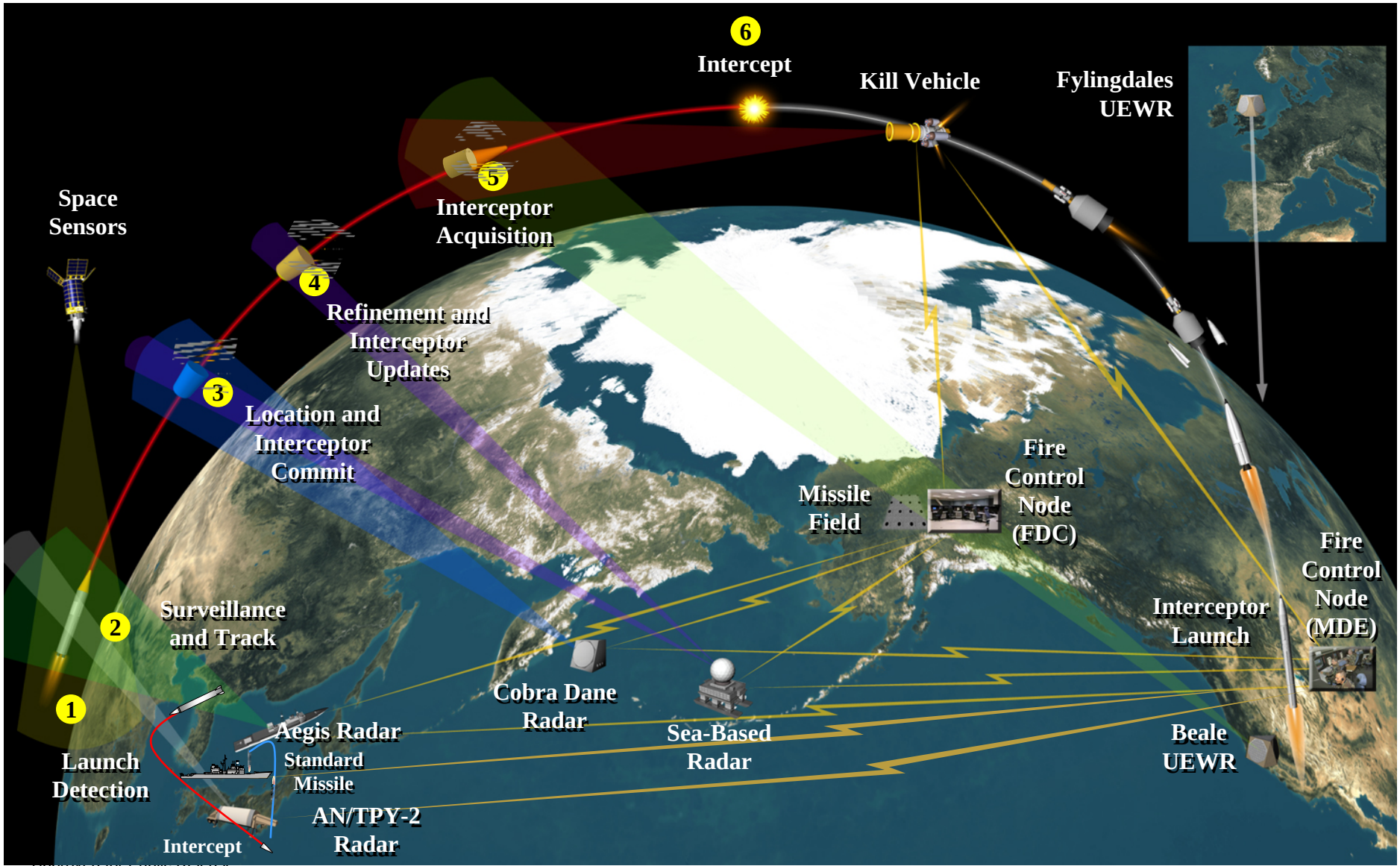
Sea-Based Terminal

Patriot Advanced Capability-3

Command, Control, Battle Management & Communications

NMCC USSTRATCOM USNORTHCOM USPACOM EUCOM CENTCOM

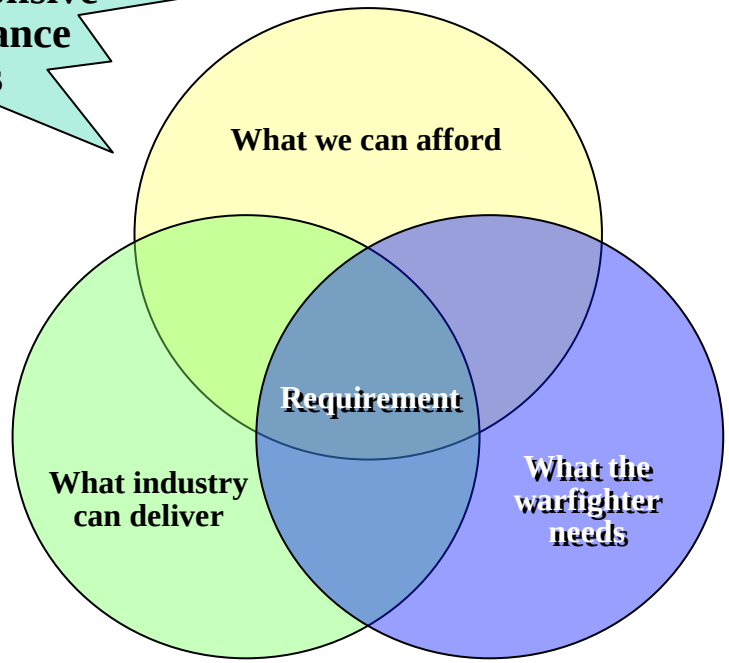
An Integrated Approach To Ballistic Missile Defense



MDA Capability-Based Acquisition

Capability-Based
• Up-front acknowledgement that specifics of future threat are unknown, but general characteristics are
• Emphasizes useful existing technology over hoped-for developments
• Willingness to accept militarily useful early capabilities while continuing to improve through continuous Spiral Developments
• Fixed budget drives affordability trades

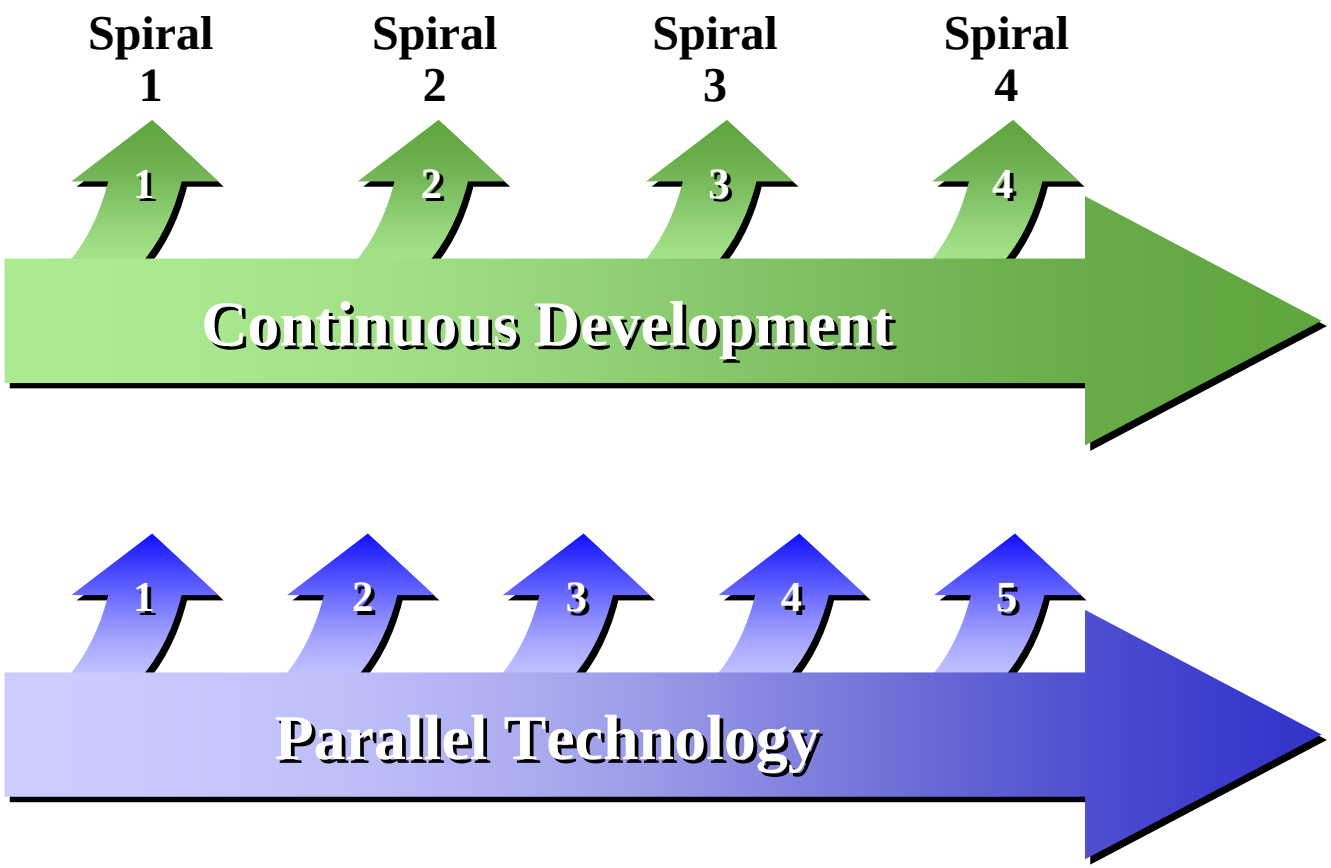
Flexible and Responsive
No Key Performance Parameters



Management by Knowledge Points

- **Knowledge Points: Events which demonstrate critical technologies or capabilities at component and system levels**
- **Data from Knowledge Points drive key decisions**

Continuous Spiral Development



Some Implications Of Capability-Based Approach

- **Robust technology investment**
  - **Aimed at filling gaps**
  - **Carried to higher maturity level (TRL 6 or 7) before entering development**
  - **Solid strategy for transition to development**
- **Spiral development**
  - **Event-based improvements**
  - **Open architectures, modular designs**
  - **Low risk and short developments**
- **Demands stronger Government skills**
  - **Assessing technical maturity and risk**
  - **Proposal cost and schedule realism**
  - **Life cycle cost estimating**

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Leveraging Innovative Technology

- **Leveraging technology breakthroughs increasing system capability**
  - **Seeking best technical and operation concept solutions from Defense, industry and academic sources**
    - **Solutions to improve integrated capability and availability**
    - **Solutions to reduce cost and improve return on investment**
    - **Solutions to accelerate Technology Transition on the Ballistic Missile Defense System**

The Future Of SBIR And Missile Defense

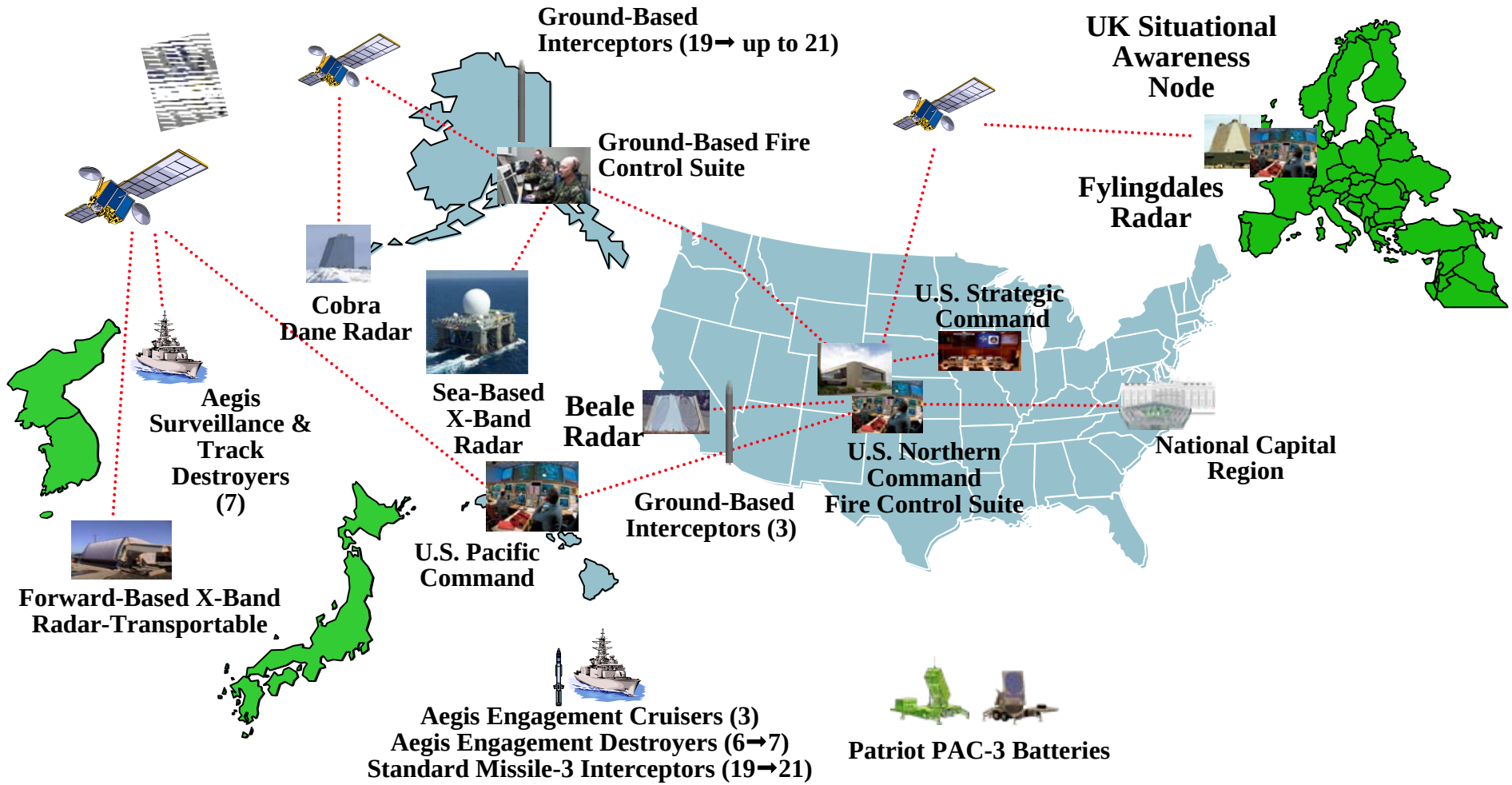
- **SBIR program and Technology Transition key to future system capability**
  - **Technology Transition success is not only product insertion**
    - **Broaden focus is include**
      - **Transition of knowledge**
      - **Transition of understanding**
  - **Capturing all forms of Technology Transition improves SBIR success and system capability**
    - **Technology Transition synchronized with system spiral development and the Block construct can be an ideal approach to planning for incremental improvements in capability**

- **Building collaborative Technology Transition working relationships**
  - **MDA Knowledge Centers, Research Area Leads, SBIR Program Office, Advance Technology, System Engineering, and industry**
    - **Teaming to prioritize promising technology**
    - **Teaming to implement ideas for advancing technology beyond TRL 5, and expediting Technology Transition**


MISSILE DEFENSE AGENCY
DEPARTMENT OF DEFENSE

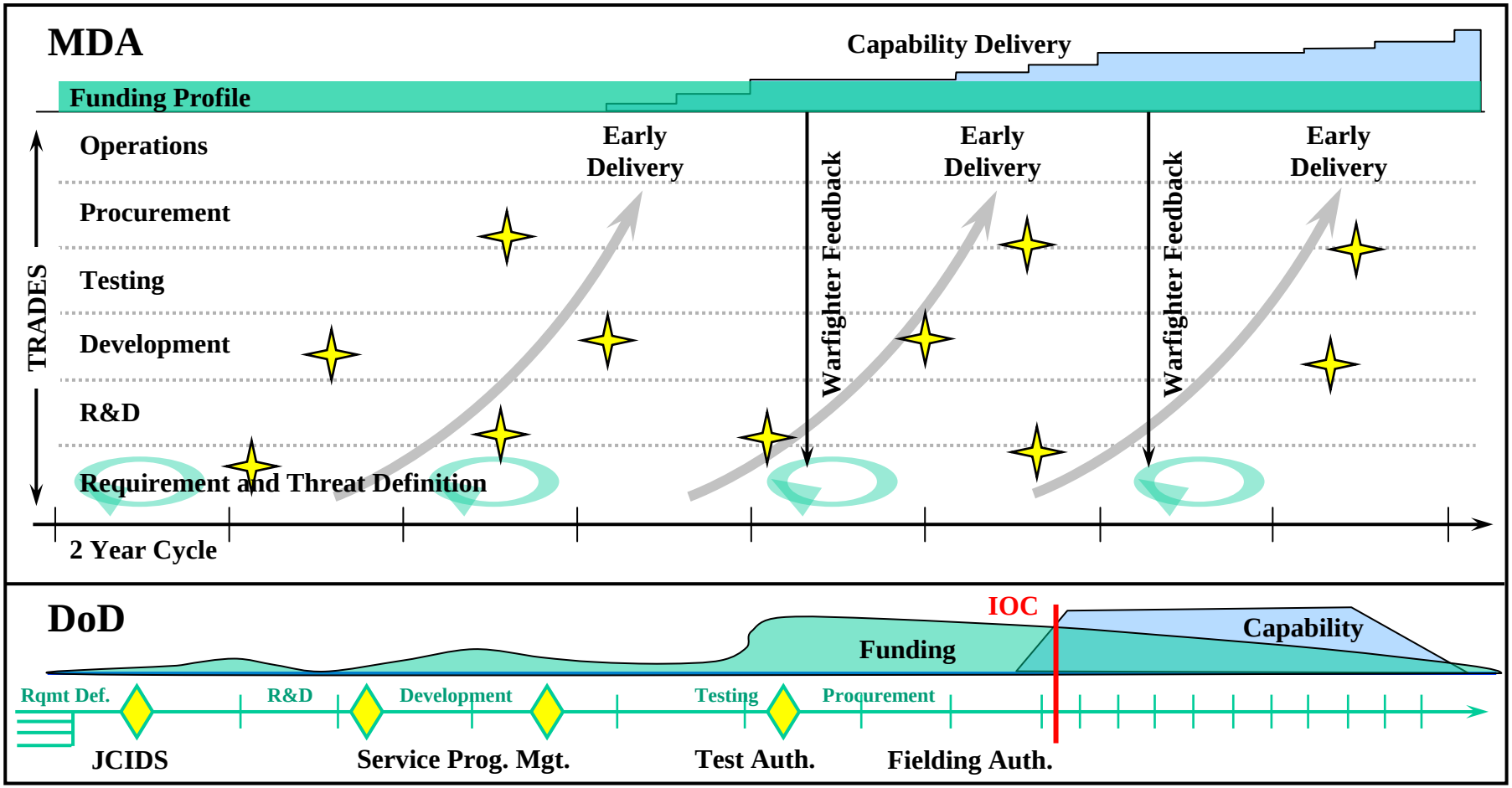
BACKUP

System Configuration
August 2007 ➞ End 2007



None Of This BMD Capability Existed In June 2004

Capability-Based Acquisition



Strengths

- **Fully flexible funding**
- **Combined development and operational testing**
- **Integrated capability management**

Risks

- **Transition to services**

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Missile Defense Technology Needs

- Space Technology
- Interceptor Technology
- Modeling and Simulation
- Discrimination
- Radar Technology
- Information Assurance
- Integration
- Safety / Insensitive Munitions
- Manufacturing Technology
- Airborne Component Technology