Welcome

Mission Adaptive Rotor Industry Day

3 March 2009

Mr. David Neyland
Director, Tactical Technology Office

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What is DARPA's Mission?

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Maintain Superiority

Prevent Surprise

DARPA's mission is to <u>maintain technological superiority</u> of the US military and <u>prevent technological surprise</u> from harming our national security by sponsoring revolutionary, high-payoff research that bridges the gap between fundamental discoveries and their military use.

High Risk

High Payoff

DARPA Organization

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Acting Director, Bob Leheny

Tactical Technology
Dave Neyland
Steve Walker

- Air/Space/Land/Sea Platforms
- Unmanned Systems
- Space Operations
- Laser Systems
- Precision Strike

Strategic Technology
Barbara McQuiston
Larry Stotts, Brian Pierce

- Space Sensors/Structures
- Strategic & Tactical Networks
- Information Assurance
- Underground Facility Detection & Characterization
- Chem/Bio Defense
- Maritime Operations

Defense Sciences
Leo Christodoulou (Acting)

- Physical Sciences
- Materials
- Biology
- Mathematics
- Neuroscience

Information Processing Techniques
Chuck Morefield
Charlie Holland

- Cognitive Systems
- Command & Control Systems
- Computer Language Translation
- High Productivity Computing
- Sensors & Processing

Microsystems Technology
Greg Kovacs
Dean Collins

- Electronics
- Photonics
- MEMS
- Algorithms
- Integrated Microsystems

DARPA Role in Science and Technology

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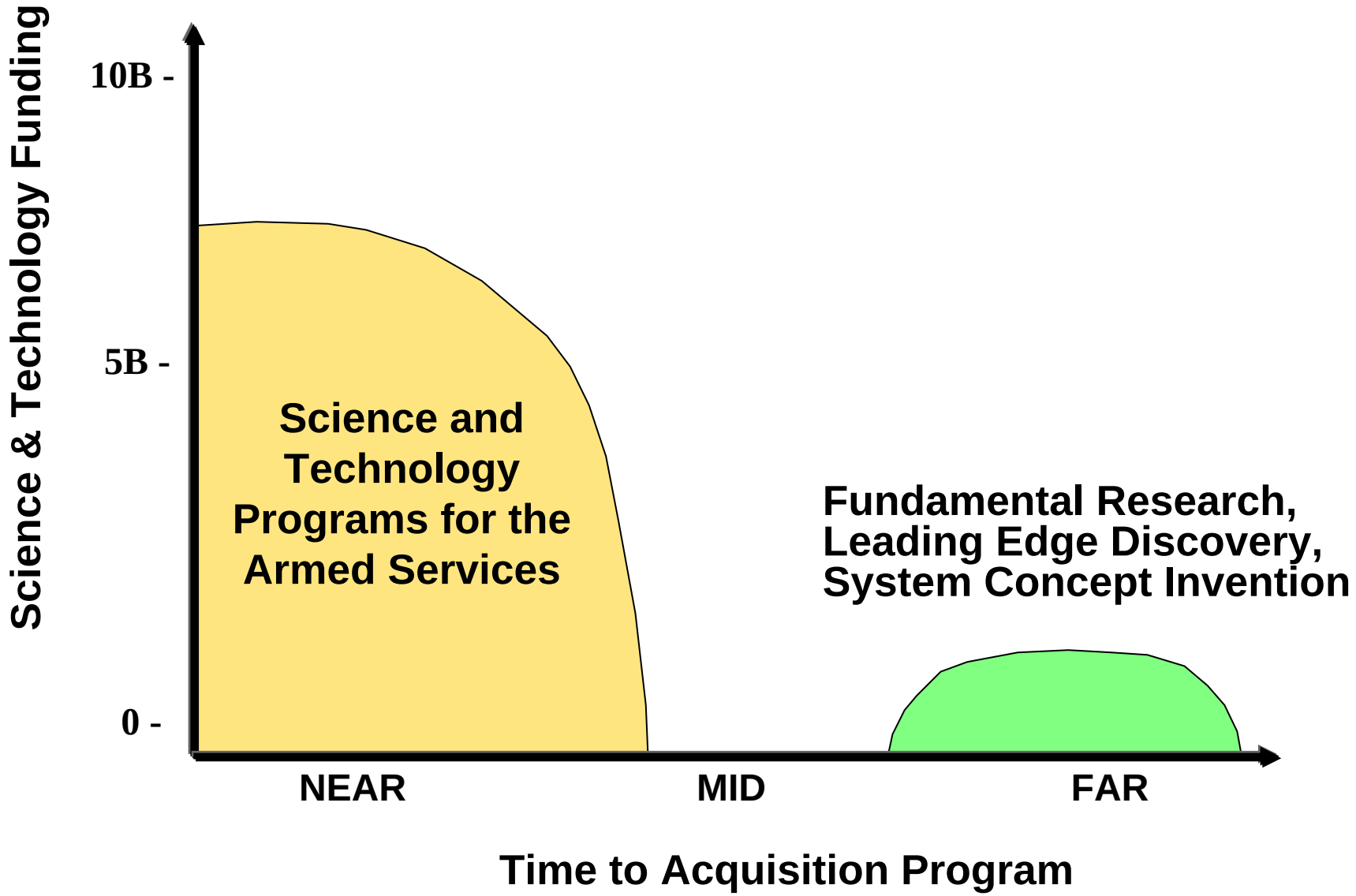

DARPA Role in Science and Technology

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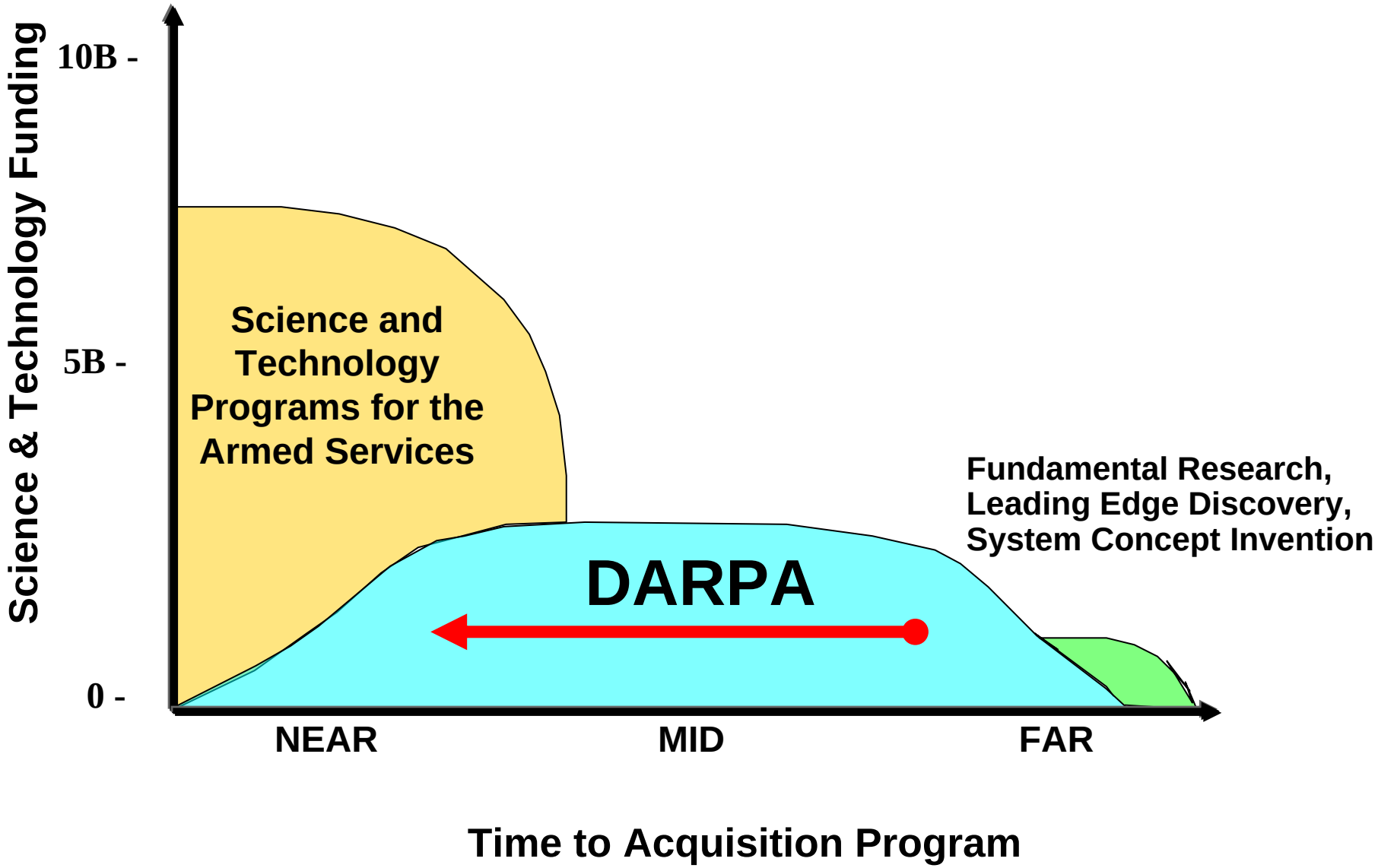

DARPA Accomplishments

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TTO Thrust Areas

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DARPA Unmanned Vehicles

The Increasing Challenge of Autonomy

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Mission Adaptive Rotor (MAR)

Program Goal

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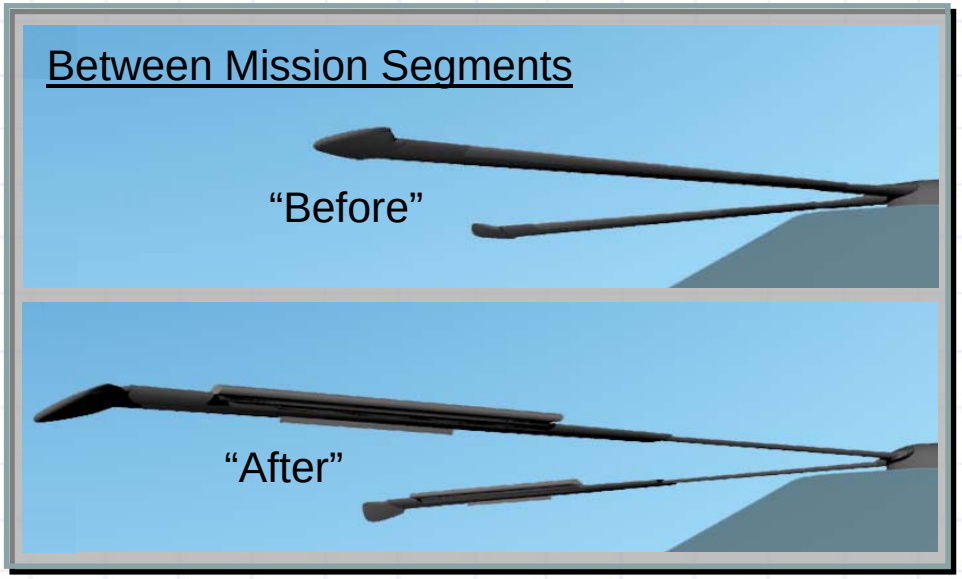
The goal of the Mission Adaptive Rotor Program is to develop "on-the-fly" morphing rotor technology, and to demonstrate the dramatic benefits possible by actively changing the rotor configuration in flight

DARPA believes that dramatic improvements in rotorcraft capabilities – performance, survivability and availability – over that possible with a single, fixed-geometry rotor can be achieved by actively morphing the shape and/or properties of a rotor between disparate flight conditions

- Adaptation <u>between segments of a mission</u> allows optimization of the configuration to maximize the desired attributes during each flight phase

- Adaptation <u>during each rotor revolution</u> enables an optimized design for each of the dramatically different conditions experienced



Mission Adaptive Rotor Program (MAR)
Industry Day Agenda

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7:30 – 8:00	*Registration*	
8:00 – 8:15	Welcome	Mr. Dave Neyland, DARPA/TTO
8:15 – 9:00	Service Comments	Service Representatives
9:00 – 10:00	Mission Adaptive Rotor Program Overview	Mr. Dan Newman, DARPA/TTO
10:00 – 10:15	*Break*	
10:15 – 10:45	Mission Benefits of Active Rotor Controls	Dr. Hyeonsoo Yeo, AFDD, US Army
10:45 – 11:00	BAA Description	Mr. Chris Glista, DARPA/CMO
11:00 – 11:15	DARPA Security	Mr. Mark Dao, DARPA/SID
11:15 – 11:30	Submit Questions	
11:30 – 12:00	Technology Presentations	
12:00 – 12:30	*Working Lunch*	
12:30 – 12:50	Technology Presentations	
12:55 – 1:30	Government Response to Questions	
1:30	Adjourn General Session	
1:30 – 1:45	*Break*	
1:45 – 5:25	Industry Poster Session & Teaming Discussions	
1:45 – 5:25	Proprietary Briefings to Government / Government Caucus	
5:30 – 5:45	Closing Remarks / Look Ahead *(Optional)*	Mr. Dan Newman, DARPA/TTO