Tactical Technology Office

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Office Director

Briefing prepared for Experimental Spaceplane (XS-1) Industry Day

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Mission

The Defense Advanced Research Projects Agency (DARPA) was established in 1958 to **prevent strategic surprise** from negatively affecting U.S. national security and **create strategic surprise** for U.S. adversaries by maintaining the technological superiority of the U.S. military.

To fulfill its mission, the Agency relies on **diverse performers** to apply multi-disciplinary approaches to both advance knowledge through basic research and **create innovative technologies** that address current practical problems through applied research.

As the DoD's **primary innovation engine**, DARPA undertakes projects that are finite in duration but that create **lasting revolutionary change**.

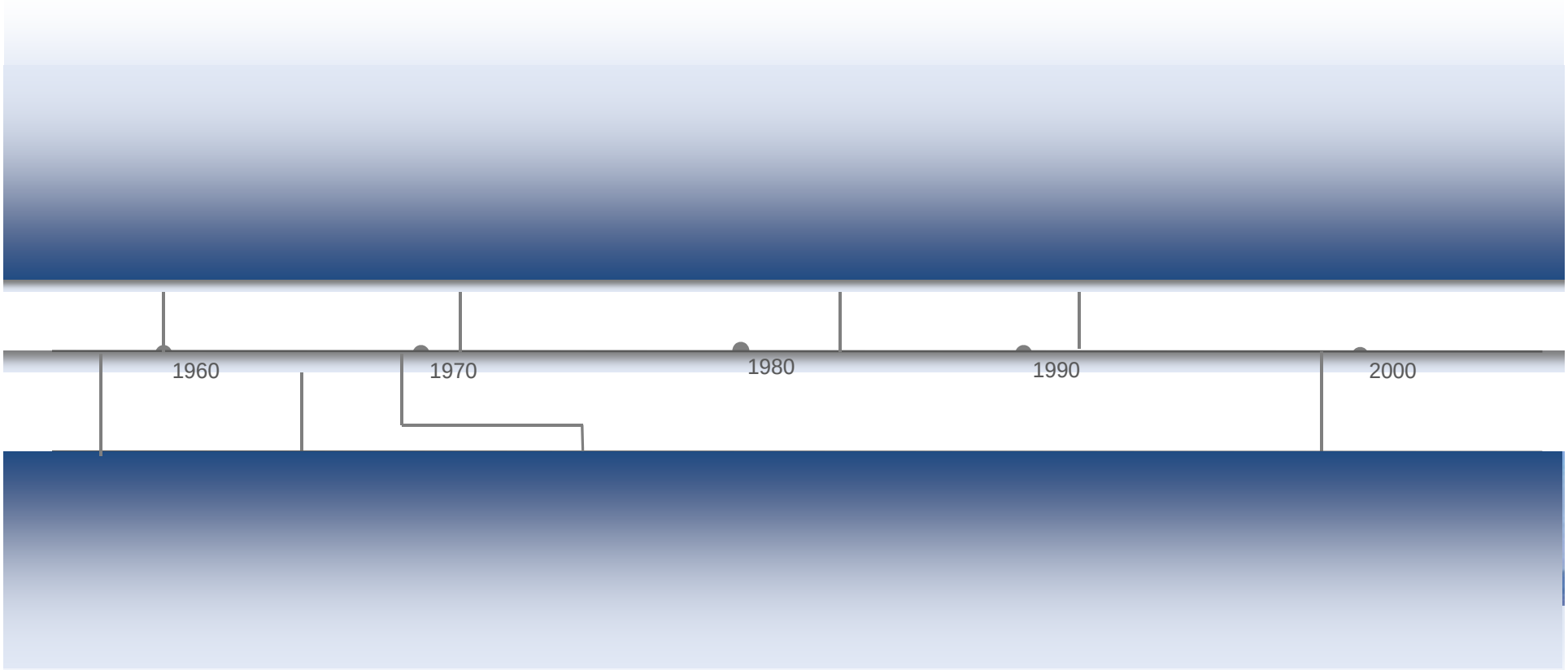
DARPA History

SATURN F1 Rocket Engine
1960

Speech Recognition
1971

Stealth Fighter
1983

Microelectromechanical Systems (MEMS)
1991



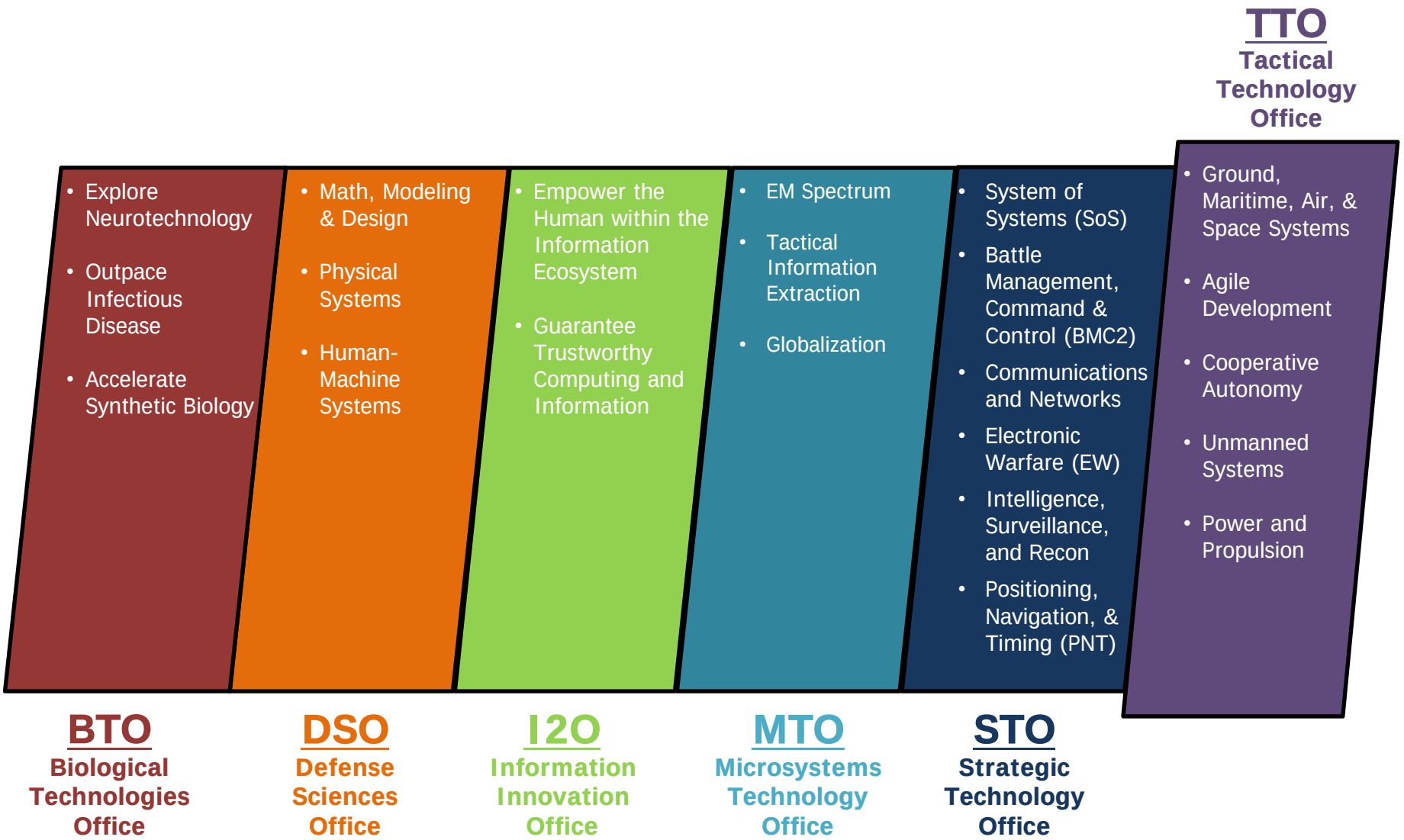
ARPA Established
1958

M16 Assault Rifle
1965

ARPANET
1969

Global Hawk
1998

DARPA Technical Offices



TTO's History

Ground Systems


1967

M16
(Project Agile)

Tank Breaker

Army Tactical
Missile System
(Assault Breaker)

Talon

Boomerang

Netfires

Artist's concept

Iron Curtain

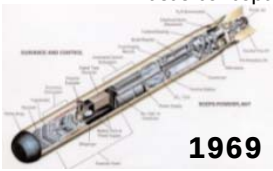
Legged
Squad
Support
System (LS3)

Artist's concept

Persistent Close
Air Support
(PCAS)

Maritime and Undersea Systems

Artist's concept



MK 50 Torpedo
Propulsion System

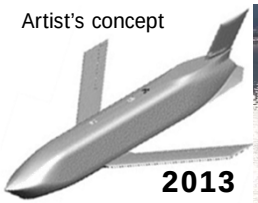
Sea Shadow


1988

Unmanned
Undersea
Vehicle (UUV)

Submarine
Technology
(SUBTECH)

Artist's concept



Long Range
Anti-Ship Missile
(LRASM)

ASW Continuous
Trail Unmanned
Vessel (ACTUV)

Air Systems

Have Blue

Tacit Blue

X-31

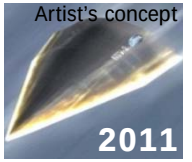
Global Hawk

X-45/46/47

A-160

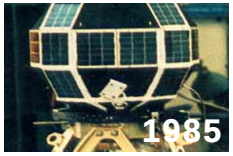
Damage Tolerant
Controls (DTC)

Artist's concept



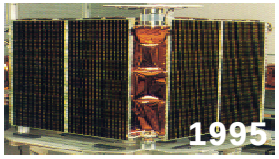
Falcon HTV-2

Space Systems



Global Low Orbiting
Message Relay
(GLOMR)

Pegasus



DARPASAT

Taurus

Falcon Small
Launch Vehicle

Artist's concept

MiTEX

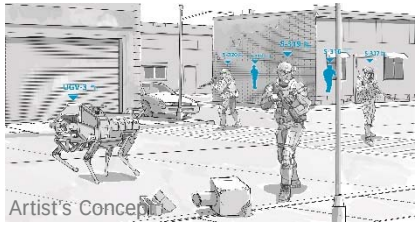
Orbital Express (OE)

Space Surveillance
Telescope (SST)

Platform and System Focus Areas

Ground Systems

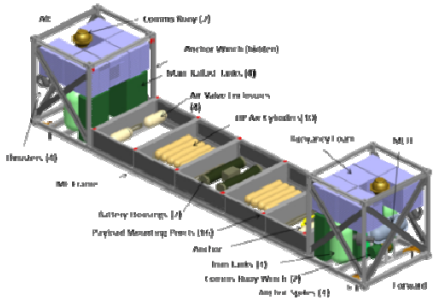
Deployable, mobile capable forces


Artist's Concept


Artist's Concept

Maritime Systems

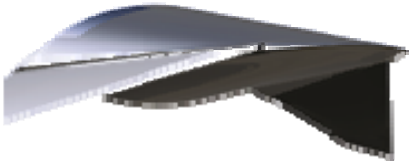
Control the sea, influence events on land


Artist's Concept

Air Systems

Extend range and minimize time


Artist's Concept


Artist's Concept

Space Systems

Resilient and flexible


Artist's Concept


Artist's Concept

Artist's concept

Cross-Cutting Themes

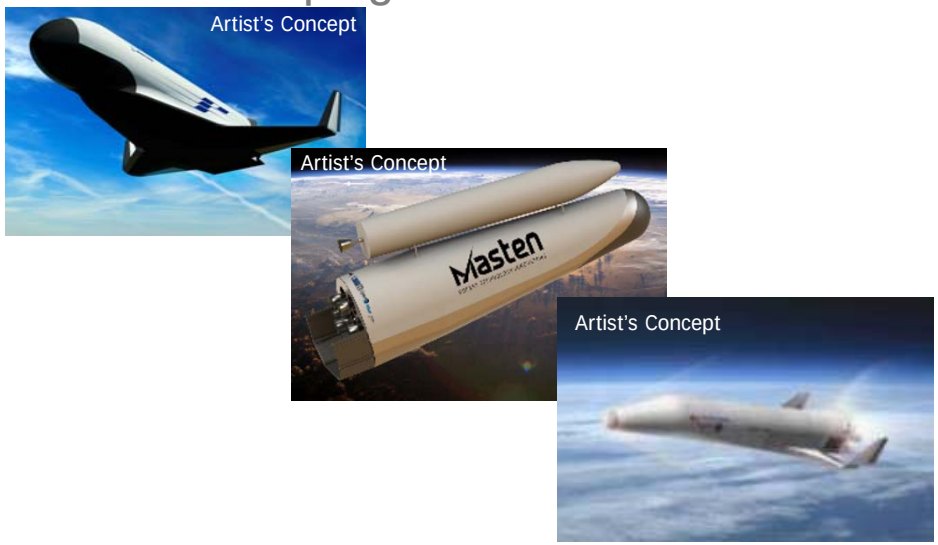
Agile development approach, cooperative autonomy, unmanned systems, power and propulsion

Resilience in Space

Goals:

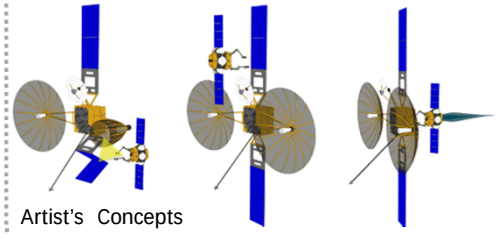
- Affordable routine access — “time to space”
- Reduce escalating systems cost
- Enhanced survivability, reconstitution and autonomy
- Real-time space domain awareness
- New capabilities

Shaping the Present



Experimental Spaceplane (XS-1)
Goal: Affordable, routine and reliable access to space

Creating the Future



Robotic Servicing of Geosynchronous Satellites (RSGS)
Goal: Enabling cooperative satellite operations

Hallmark
Goal: Real-time space domain awareness, command & control

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