Tactical Technology Office Overview

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DARPA Tactical Technology Office

Armaments Systems Forum

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DARPA 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.

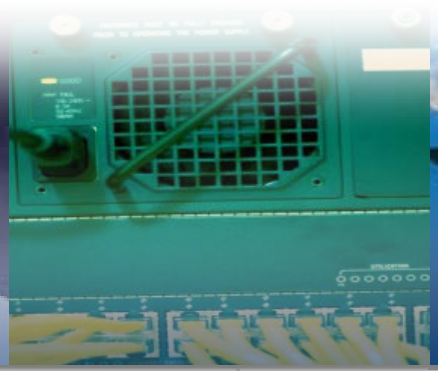
To fulfill its mission, the Agency relies on **diverse performers** to apply multi-disciplinary approaches to both advance knowledge through basic research and **create innovative technologies** that address current practical problems through applied research.

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

DARPA History

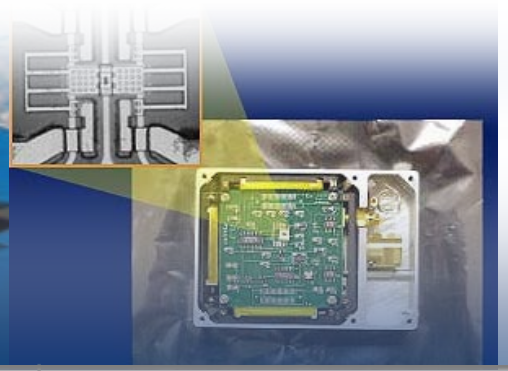
SATURN F1
Rocket Engine
1960

Speech Recognition
1971



Stealth Fighter
1983

Microelectromechanical Systems
(MEMS)
1991

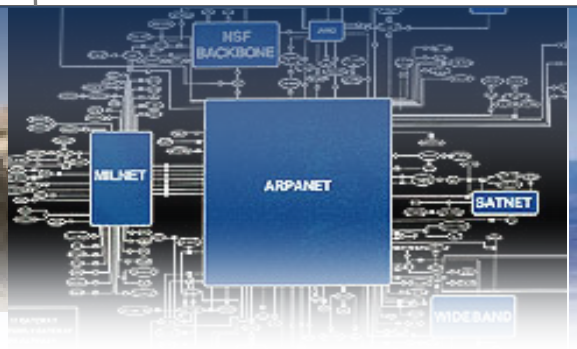


1960 1970 1980 1990 2000

ARPA Established
1958

M16 Assault Rifle
1965

ARPANET
1969



Global Hawk
1998

DARPA Technical Offices

BTO
BIOLOGICAL TECHNOLOGIES OFFICE

- Biological Complexity at Scale
- Neurotechnologies
- Engineering Biology
- Restore, Maintain and Improve Warfighter Abilities

DSO
DEFENSE SCIENCES OFFICE

- Math, Modeling & Design
- Physical Systems
- Human-Machine Systems
- Social Systems

I2O
INFORMATION INNOVATION OFFICE

- Empower the Human within the Information Ecosystem
- Guarantee Trustworthy Computing and Information

MTO
MICROSYSTEMS TECHNOLOGY OFFICE

- Electromagnetic Spectrum
- Tactical Information Extraction
- Globalization

STO
STRATEGIC TECHNOLOGY OFFICE

- System of Systems (SoS)
- Battle Management/ Command and Control (BMC2)
- Communications and Networks (C&N)
- Electronic Warfare (EW)
- Intelligence Surveillance, and Reconnaissance (ISR)
- Positioning, Navigation, and Timing (PNT)

TTO
TACTICAL TECHNOLOGY OFFICE

System Focus Areas:

- **Ground**
- **Maritime**
- **Air**
- **Space**

Crosscutting Themes:

- **Agile Development**
- **Cooperative Autonomy**
- **Unmanned Systems**
- **Power and Propulsion**

TTO's History

Ground Systems


1967
M16
(Project Agile)

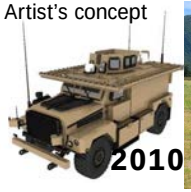

1978
Tank Breaker

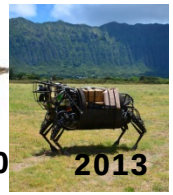

1982
Army Tactical Missile System (Assault Breaker)


2002
Talon


2003
Boomerang


2003
Netfires

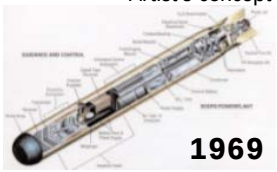
Artist's concept

2010
Iron Curtain


2013
Legged Squad Support System (LS3)

Artist's concept

2013
Persistent Close Air Support (PCAS)

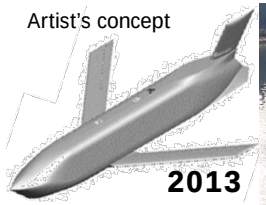
Maritime and Undersea Systems

Artist's concept

1969
MK 50 Torpedo Propulsion System


1984
Sea Shadow


1988
Unmanned Undersea Vehicle (UUV)


1992
Submarine Technology (SUBTECH)

Artist's concept

2013
Long Range Anti-Ship Missile (LRASM)


2016
ASW Continuous Trail Unmanned Vessel (ACTUV)

Air Systems


1977
Have Blue


1982
Tacit Blue

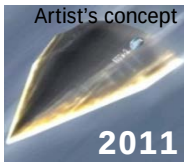

1990
X-31


1998
Global Hawk

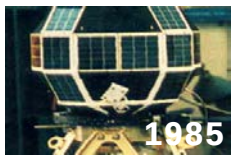

2002
X-45/46/47


2005
A-160

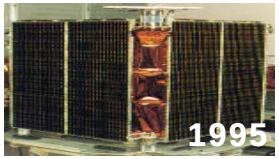

2011
Damage Tolerant Controls (DTC)

Artist's concept

2011
Falcon HTV-2

Space Systems


1985
Global Low Orbiting Message Relay (GLOMR)


1990
Pegasus


1995
DARPASAT


1997
Taurus


2003
Falcon Small Launch Vehicle

Artist's concept

2006
MiTEX

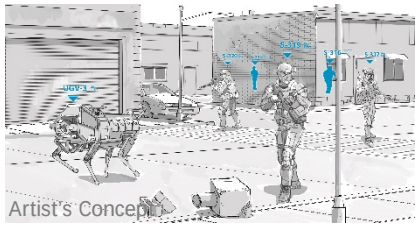

2007
Orbital Express (OE)


2015
Space Surveillance Telescope (SST)

Platform and System Focus Areas

Ground Systems

Deployable, mobile capable forces

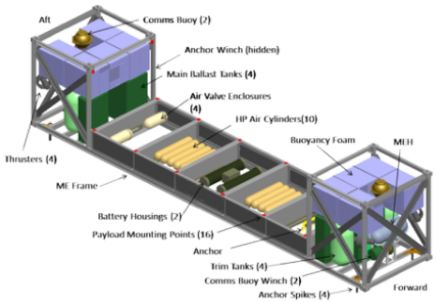


Artist's Concept


Artist's Concept

Maritime Systems

Control the sea, influence events on land

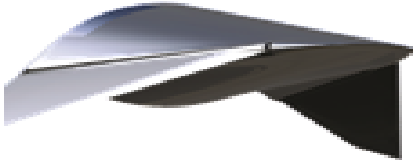


Artist's Concept

Air Systems

Extend range and minimize time


Artist's Concept


Artist's Concept

Space Systems

Resilient and flexible


Artist's Concept

Artist's concept

Cross-Cutting Themes

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

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