

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**.

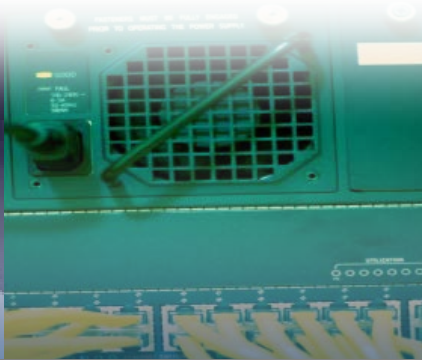


DARPA History

SATURN F1
Rocket Engine
1960



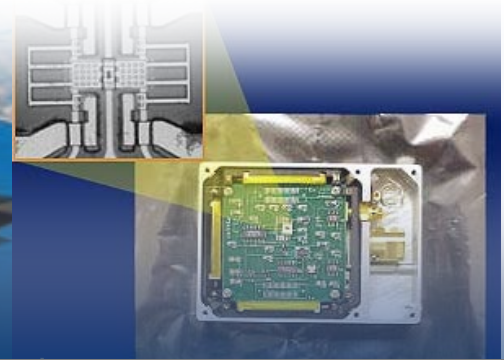
Speech Recognition
1971



Stealth Fighter
1983



Microelectromechanical Systems
(MEMS)
1991



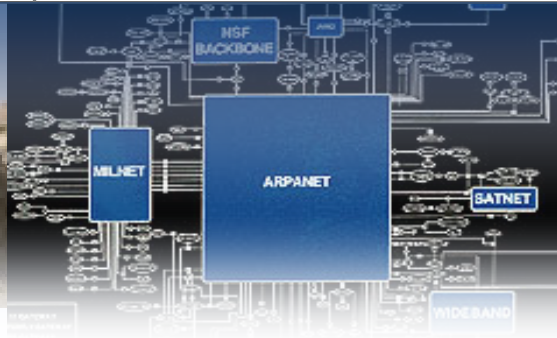
1960

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







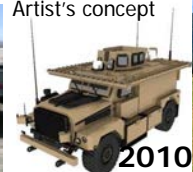


TACTICAL TECHNOLOGY OFFICE

- System Focus Areas:**
- Ground
 - Maritime
 - Air
 - Space
- Crosscutting Themes:**
- Agile Development
 - Cooperative Autonomy
 - Unmanned Systems
 - Power and Propulsion





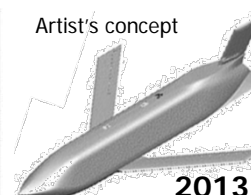



TTO's History








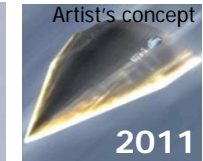
Ground Systems

								
1967	1978	1982	2002	2003	2003	2010	2013	2013
M16 (Project Agile)	Tank Breaker	Army Tactical Missile System (Assault Breaker)	Talon	Boomerang	Netfires	Iron Curtain	Legged Squad Support System (LS3)	Persistent Close Air Support (PCAS)

Maritime and Undersea Systems

					
Artist's concept 1969	1984	1988	1992	Artist's concept 2013	2016
MK 50 Torpedo Propulsion System	Sea Shadow	Unmanned Undersea Vehicle (UUV)	Submarine Technology (SUBTECH)	Long Range Anti-Ship Missile (LRASM)	ASW Continuous Trail Unmanned Vessel (ACTUV)

Air Systems

							
1977	1982	1990	1998	2002	2005	2011	Artist's concept 2011
Have Blue	Tacit Blue	X-31	Global Hawk	X-45/46/47	A-160	Damage Tolerant Controls (DTC)	Falcon HTV-2

Space Systems

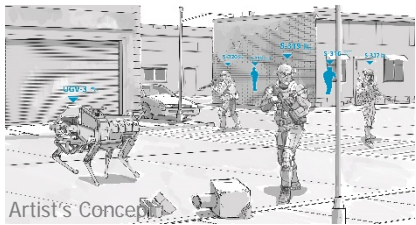
							
1985	1996	1995	1997	2003	Artist's concept 2006	2007	2015
Global Low Orbiting Message Relay (GLOMR)	Pegasus	DARPA SAT	Taurus	Falcon Small Launch Vehicle	MiTEX	Orbital Express (OE)	Space Surveillance Telescope (SST)



Platform and System Focus Areas

Ground Systems

Deployable, mobile capable forces



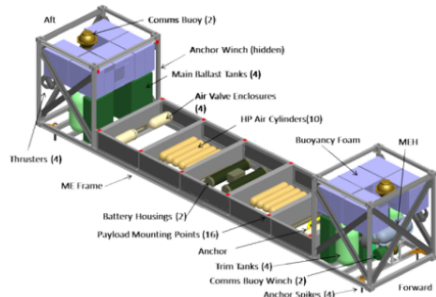
Artist's Concept



Artist's Concept

Maritime Systems

Control the sea, influence events on land



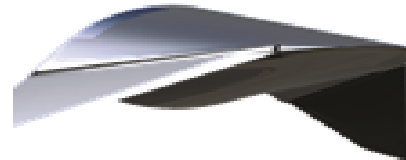
Artist's Concept

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



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