

1996 DOD MCTL MASTER LOCATOR*

MCTL Parts

This master locator lists the eighteen MCTL technology sections and the candidate technology areas for each of the three (3) parts of the MCTL. Technology areas not included in Part I, "Weapons Systems Technologies," were not included for one of the following reasons:

- *Significant technologies identified for that technology area did not satisfy the requirements of the definitions of "Militarily Critical Technology."*
- *Technologies in the technology area have not been identified for inclusion in a weapon system or will not be available for use within the next three (3) years.*

As Parts II and III are developed, changes can be expected on the tentative technology areas shown below.

A short description of the three MCTL parts is shown below.

Part I - Weapons Systems Technologies (WST)

Contains a list of technologies critical to the development and production of superior Weapons.

Part II - Weapons of Mass Destruction (WMD)

Contains a list of technologies used in weapons of mass destruction and their means of delivery.

Part III - Critical Developing Technologies (CDT)

Contains a list of technologies, which when fully developed and incorporated into a U.S. system, will produce increasingly superior military performance or maintain a superior capability more affordably.

	PART				PART		
	<u>I</u>	<u>II</u>	<u>III</u>		<u>I</u>	<u>II</u>	<u>III</u>
	WST	WMD	CDT		WST	WMD	CDT
AERONAUTICS SYSTEMS TECHNOLOGY				ARMAMENTS AND ENERGETIC MATERIALS TECHNOLOGY			
Advanced Concept Turbine Engines			X	Air Dispersed Explosives Systems			X
Aircraft, Fixed Wing	X	X	X	Ammunition, Small and Medium Caliber	X		X
Aircraft, Rotary Wing		X	X	Bombs, Warheads and Large Caliber Projectiles	X	X	X
Air Vehicles, Unmanned		X	X	Energetic Materials	X	X	X
Full Authority Digital Electronic Controls (FADEC)			X	Fuzing, Safing and Arming	X	X	X
Gas Turbine Engines	X		X	Gun and Artillery Systems	X	X	X
Human (Crew) Systems Interfaces	X		X	Mines, Countermines and Demolition Systems	X		X
Ramjet and Scramjet		X	X	Missiles		X	X
Sensors		X	X	Non-Lethal Weapons			X
Signature Control		X	X	Regenerative Liquid Propellant Gun			X
Systems Integration		X	X	Survivability, Armor and Warhead Defeat			X
Test Facility, Propulsion System			X				

* These listings are subject to change as Parts II and III are developed. Technology areas may be added or deleted.

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	<u>I</u>	<u>II</u>	<u>III</u>		<u>I</u>	<u>II</u>	<u>III</u>
	<u>WST</u>	<u>WMD</u>	<u>CDT</u>		<u>WST</u>	<u>WMD</u>	<u>CDT</u>
<i>CHEMICAL & BIOLOGICAL SYSTEMS TECHNOLOGY</i>				<i>ELECTRONICS TECHNOLOGY (cont'd)</i>			
Biological Material Production		X	X	General Purpose Electronic Equipment	X		X
Chemical and Biological Defense Systems	X	X	X	Microelectronics	X		X
Chemical Material Production		X		Opto-Electronics	X		X
Detection, Warning and Identification	X	X	X	<i>GROUND SYSTEMS TECHNOLOGY</i>			
Environmental		X	X	Advanced Diesel Engines	X		
Human Factors		X	X	Human Systems Interfaces for Ground Systems		X	X
Chemical & Biological Dispersion		X		Hybrid-Electric Propulsion Systems			X
<i>DIRECTED AND KINETIC ENERGY SYSTEMS TECHNOLOGY</i>				Sensors for Ground Systems			X
Coil Gun and Railgun			X	Signature Control for Ground Systems			X
Electrothermal and Electrothermal Chemical Gun			X	Structures for Ground Systems			X
High Power Microwaves			X	Systems Integration for Ground Systems		X	X
Lasers, Gas Dynamic & Pulsed Electrical Atomic & Molecular			X	Vetronics	X		X
Lasers, High Energy Chemical	X		X	<i>GUIDANCE, NAVIGATION AND VEHICLE CONTROL TECHNOLOGY</i>			
Lasers, High Energy Excimer			X	Aircraft and Vehicle Control Systems	X	X	X
Lasers, High Energy Solid State			X	Inertial Navigation Systems and Related Components	X	X	X
Lasers, High Energy Free Electron			X	Radio and Data-Based Referenced Navigation Systems	X	X	X
Lasers, High Energy Optically Pumped Gas and Solid State			X	<i>INFORMATION SYSTEMS TECHNOLOGY</i>			
Lasers, High Energy Transfer			X	Command, Control, Communications, Computing Intelligence and Information Systems	X	X	X
Lasers, Short Wavelength			X	Computer Aided Design and Computer Aided Manufacturing (CAD/CAM)	X		X
Particle Beam, Charged			X	High Performance Computing	X	X	X
Particle Beam, Neutral			X	Human Systems Interfaces	X	X	
Supporting Technologies for Directed Energy (DE) Systems	X		X	Information Security	X	X	X
<i>ELECTRONICS TECHNOLOGY</i>				Intelligent Systems	X		X
Electronic Components	X		X	Modeling and Simulation	X	X	X
Electronic Materials	X		X	Networks and Switching	X	X	X
Fabrication Equipment	X		X				

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	<u>WST</u>	<u>WMD</u>	<u>CDT</u>		<u>WST</u>	<u>WMD</u>	<u>CDT</u>
<i>INFORMATION SYSTEMS TECHNOLOGY (cont'd)</i>				<i>MARINE SYSTEMS TECHNOLOGY</i>			
Signal Processing	X	X	X	Ocean Salvage and Deep-Sea Implant			X
Software	X	X	X	Propulsors and Propulsion Systems	X		X
Transmission Systems	X		X	Signature Control and Survivability	X		X
				Subsurface and Deep Submergence Vehicles	X		X
<i>INFORMATION WARFARE TECHNOLOGY</i>				<i>NUCLEAR SYSTEMS TECHNOLOGY</i>			
Combat Identification			X	Fissile Materials Enrichment		X	X
Electronic Attack	X		X	Fission Reactors	X	X	X
Electronic Protection	X		X	Inertial Confinement Fusion		X	X
Electronic Deception			X	Nuclear Materials Processing	X	X	X
Optical Countermeasures	X		X	Nuclear Related Materials		X	X
Optical Counter-Countermeasures	X		X	Nuclear Weapons	X	X	X
Psychological Operations			X				
<i>MANUFACTURING & FABRICATION TECHNOLOGY</i>				<i>POWER SYSTEMS TECHNOLOGY</i>			
Advanced Fabrication and Processing	X	X	X	High Density Conventional Systems	X		X
Bearings	X		X	Magnetohydrodynamics			X
Computer Aided Design, Manufacturing, Engineering, Test and Maintenance			X	Mobile Electric Platform Power	X		X
Metrology X	X	X		Pulsed and High Power Systems	X		X
Non Destructive Inspection and Evaluation	X		X	Superconductive Power Applications			X
Production Equipment	X		X				
Robotics	X	X	X	<i>SENSORS AND LASERS TECHNOLOGY</i>			
				Acoustic Sensors, Air and Terrestrial Platform	X		X
<i>MATERIALS TECHNOLOGY</i>				Acoustic Sensors, Marine, Active Sonar	X		X
Armor and Anti-Armor Materials	X		X	Acoustic Sensors, Marine, Passive Sonar	X		X
Biomaterials		X	X	Acoustic Sensors, Marine Platform	X		X
Electrical Materials	X		X	Electro-Optical Sensors	X		X
Magnetic Materials	X		X	Gravity Meters and Gravity Gradiometers	X		X
Optical Materials	X		X	Lasers	X		X
Signature Control Materials			X	Magnetometers and Magnetic Gradiometers	X		X
Structural Materials, High Strength & High Temperature	X		X	Obscurants X		X	
Special Function Materials	X		X	Radar	X	X	

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	<u>I</u>	<u>II</u>	<u>X</u>		<u>I</u>	<u>II</u>	<u>III</u>
	<u>WST</u>	<u>WMD</u>	<u>CDT</u>		<u>WST</u>	<u>WMD</u>	<u>CDT</u>
<i>SIGNATURE CONTROL TECHNOLOGY</i>	X	X	X	<i>WEAPONS EFFECTS AND COUNTERMEASURES</i>			
<i>SPACE SYSTEMS TECHNOLOGY</i>				Electromagnetic Propagation		X	X
Astronics			X	Electromagnetic Pulse and High Altitude		X	X
Electronics and Computers	X		X	Electromagnetic Pulse for Source Region		X	X
Launch Vehicles for Space Systems			X	High Power Microwave			X
Optronics	X		X	Induced Shock Waves From Detonation		X	X
Power and Thermal Management	X		X	Induced Shock Waves From Penetrating Weapons	X	X	X
Propulsion for Space Systems	X		X	Laser Weapons			X
Qualification and Testing			X	Nuclear Radiation and System Electromagnetic Pulse		X	X
Sensors for Space Systems	X		X	Particle Beam Weapons			X
Signature Control and Survivability			X	Simulation of Pulsed Power Weapons Effects		X	X
Structures for Space			X	Thermal Radiation		X	X
Systems Integration			X	Underground Testing		X	