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# Combatant Command Common Capability Needs

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# Combatant Command Common Capability Needs

Rollup Category	Rollup Subcategory	USAFRICOM	USCENTCOM	USEUCOM	USNORTHCOM	USPACOM	USSOCOM	USSTRATCOM	USOUTHCOM	USTRANSCOM
C2/C4I/Cyber	Architectures & Components	Communications: C4ISR for Multi-National Operations; C4ISR Data Transport; Coalition-shareable Airborne ISR Architecture	Information Sharing: Data Management-Compression and Processing  Information Sharing: Multiple Domain/Cross Domain Assurance	Improved Interoperability with Partner and Allied Capabilities	Threat Information Sharing, Collaboration, Dissemination/Mission Assurance Common Integrative Framework	Architectures and Systems to Support Information Sharing, Assured Connectivity, as well as Enhanced Interoperability among Allies and Partners	Command, Control, Communications, and Computers: Low Visibility/Low Profile/Conformal/Multi-Spectral Antennas. Ability to selectively permit/deny net connection of personal electronic devices.  Proficiency to conduct cyber-enabled SOF operations to influence foreign audiences, reduce risk to the force, and gain advantage over competitors, adversaries, and enemies.	Information Sharing: Multiple Domain/Cross Domain Architecture  NC3 Critical Intel Support	Improved interoperability with partner and Allied capabilities. Threat Information Sharing, Collaboration, Dissemination	Survivable/Adaptable/Secure Comms/Networks, Information Infrastructure Protection and Survivable Systems Engineering
	Cyber Defense	Communications: Cyber Freedom of Action (FOM)	Assured C2 in all environments; Ability to move and secure information across all domains ; reduced threats to automation & autonomy	Cyber COP Capable of Providing COCOM Freedom of Action	Network Resiliency	Cyber Defense/Network Security	Capabilities to counter detection in denied spaces, urban/rural areas, social media, and enhanced deception measures	Build Cyberspace Capability & Capacity  Eliminate theft of intellectual property	Cyber/Information Assurance. Cyber network Defense. Cyber COP capable of providing COCOM freedom of action	Cyber/Information Assurance: Defend Info and Mitigate Threats to Mobility Operations
	Sensors & Radars	ISR: Radio Frequency Direction Finding (RDFD); Stand Off Home-made/ Improvised Explosive Device (HME/IED) Detection; Fused Multi-Int'l Airborne/FMV; Autonomy-enabled PED; Drone Sense & Avoid	Reductions in SWAP across all sensor modalities; while preserving sensor capability and sensitivity; multi-modal sensor suites which leverage onboard processing; reduction in PED for all sensors	C4: Low Vis/Low Phased Array Radio Detect and Ranging (RADAR). Optics: Undetectable	Detect, Track, and ID Air Targets/Northern Approaches Sensors	Persistent Wide Area ISR	Command, Control, Communications, and Computers: Low Vis/Low Pro Phased Array Radio Detect and Ranging (RADAR). Optics: Undetectable Aiming Laser and Advanced Sensors (persistent surveillance systems also referred to as unattended ground sensor (UGS) systems, tactical surveillance systems, and force protection systems).	Persistent Wide Area ISR/Multiple sensor integration for common integrative framework with supporting architecture which enables real-time targeting of mobile / relocatable / high value targets	Persistent Wide Area Surveillance to detect, track, and ID contacts of interest in CENTCOM and Caribbean approaches.  UAS Due Regard Radar for Sense and Avoid foliage penetration.	Ability to Determine Security of a Landing Site for Arrival and Throughput Operations without Use of a Pre-coordinated On-site Survey as well as All-weather/Lights-out Taxi, Take-off and Landing Capability for Mobility Aircraft Operations from Prepared and Unprepared Fields. Enable single-pass, high altitude, precision airdrop capability for both guided and unguided airdrop loads.
	Communications	Communications: Centralized Commercial SATCOM Management; Language Translation; Situational Awareness; Coalition Radio Interoperability	Multi-path C2 capability in the presence of denial, spoofing & jamming; assured C2 ; improvements in underwater communications	Information Sharing/ Data Sharing with Partners and Allies.  Improved capabilities in High North communications	Arctic Communication Capability: 24 Hour Persistent Comms Above 65 Degrees North	Assured, Interoperable and Cross-domain	Assured Communications: Provide communications that function in remote locations, highly contested or denied environments. Communication systems must also be LPI/LPD, resistant to near-peer exploitation or disruption of services.	Strategic Comms: Infrastructure Issues, and Compatibility Netted Force: Assured, resilient architecture and capabilities which support full range of deterrent and operational scenarios	Information/Data sharing with partners, coalitions and allies. Assured interoperable and cross-domain comms. Caribbean Collaboration Environment	Optimize SCI communication systems and infrastructure to improve multi-domain situational awareness of adversary threats and posture AMC for 5th generation warfare in Contested Denied Environments.
	Precision, Navigation & Timing		Assured PNT in all environments; more robust non-GPS reliant PNT	Improve PNT capabilities against jamming and spoofing threats	Critical Time Mgmt. Relative to GPS: Persistent and accurate timing signals	Assured Navigation	Expeditionary Position, Navigation and Timing systems must function in remote locations, highly contested, and/or denied environments,. They are device agnostic, support LPI/LPD, and not reliant on US Government satellites.	Assured PNT in an A2/AD environment		Delivery of joint forces and their sustainment within a GPS denied environment.

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C2/C4I/Cyber	A2/AD		Ability to selectively penetrate A2AD systems at a time and location of our choosing without the need to conduct 'rollback'	ISR/Communications in a contested environment		ISR/Communications in a contested environment	SOF aviation requires precise navigation in Anti-Access/Area Denial (A2AD) environments. Navigation Independent Relative Positioning System (NIRPS) that that can provide precise navigation independent of INS and GPS. Ability to achieve denial of enemy visual augmentation systems (VAS) capability during select phases of combat operations	Cyber/ISR/Communications in a contested environment		Cyber/Information Assurance: Ability to conduct operations in a cyber contested environment. Develop interoperable, off-board and on-board situational awareness as well as kinetic and non-kinetic defensive systems enabling Mobility Air Fleet aircraft to survive, integrate and operate with DOD forces in current and future threat environments.
Force Protection & Medical	Medical	Medical: Extend the "Golden Day"; Disease Surveillance and Prevention; Disease Modeling and Trauma Intervention; Remote / Austere Trauma Medicine; Medical Evacuation; Medical Informatics & Telemedicine	Medical: extend the "golden hour"; provide remote medical care in austere environments; automate medical care/monitoring during patient transport via unmanned systems	Rapid response to pandemic influenza/ infectious disease occurrence  Chemical and biological weapon preparedness and protection	Counter WMD preparedness and response in the domestic AOR	Counter pandemic and infectious disease	Far-forward, Remote/Austere Tactical Combat Casualty Care (TCCC)/ Prolonged Field Care (PFC) for Small Teams; Biomedical Technologies & Protocols for Rapid Diagnostics & Treatment; Far-forward Fresh Whole Blood, Blood Components, & Synthetic Blood Products; Counter WMD (CWMD) prophylaxis & treatment; Human Performance Optimization (HPO) - Precision Physical/Cognitive Performance Optimization & Recovery; Canine Medicine & Performance Optimization.	CBRNE for the Joint Force (Includes flashblindness protection for aircrew)	Biosurveillance, Countering Epidemic, Pandemic and Infectious disease.  Counter IED (land, water-borne)	Virtual borders, decontamination of transportation assets, screen cargo for smuggled goods/explosives/chem-bio threats, stand-off/robotic detectors, enhance aircraft survivability
Domain Awareness	Subsurface	Maritime Domain Awareness (MDA): Beyond-Line-of-Sign; Coalition Interoperability; Automated Anomaly Detection; Common Maritime Picture	Improve all timelines associated with Mine Warfare/Q-routing; automate detection and tracking of underwater systems – manned/unmanned ; provide for assured PNT and C2 during subsurface ops – land & sea	Maritime security/ maritime domain awareness  Improved subsurface awareness and surveillance	Maritime surveillance sub-surface/ mine/under water IED	Maritime security/ maritime domain awareness	Develop integrated solutions capable of rapidly characterizing and mapping complex urban and subterranean environments. Capture and render functional, realistic virtual models of any environment in near-real time to assist with mission planning and execution.	Persistent Wide Area Surveillance to detect, track, and ID air , space, and undersea contacts of interest  Supporting architecture which fully enables netted force effectiveness in fights at range  Workforce development	Persistent Wide Area Surveillance to detect, track, and ID air contacts of interest in CENTCOM and Caribbean Approaches.  UAS Due Regard Radar for Sense and Avoid. Foliage penetration.	Capability to explore, analyze and identify trends and correlations between elements of large data sets.  Synchronized planning, forecasting and collaboration capabilities.
Power and Energy	Power Management	Operational Energy: Expeditionary Basing & Logistics; Reduced SWaP; Alternative Energy (Solar, Wind, Geothermal); Waste-to-Energy Disposal; Expeditionary Water Purification/Energy Efficient Housing, Power Distribution	Reduce the energy burden for forward operations; assure energy & power SCADA systems secure from attack/disruption; reduce power consumption requirements across the force	Ensure secured energy across AOR enabling continued operation in a contested environment	Electrical energy security: ensured power where needed  Electrical energy security: Secured Supervisory Control And Data Acquisition (SCADA)	Secured power and energy in all mission sets.  Humanitarian assistance/disaster relief	Power and Energy: Undersea Manned Power System Safe, scalable non-flammable Li-Ion Cell	Secured Supervisory Control And Data Acquisition (SCADA) and Industrial Control Systems	Technologies that reduce dependence/consumption of fossil fuels while maintaining or improving speed, flexibility, range, and responsiveness.	Technologies that reduce dependence/consumption of fossil fuels while maintaining or improving speed, flexibility, range, and responsiveness.

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Operations & Mission Support	Counter terrorism	Counter-Violent Extremist Organization (C-VEO) - Social Media Analysis; Open Source Intelligence (OSINT) Indications & Warnings.  ISR: Personnel Recovery.	Create Identity Dominance across the battlespace; deny sanctuary for VEOs; leverage all forms of media to provide I&W of potential VOE action(s); improve collection, storage, transfer, and analysis of big data sets	Large scale sentiment and content analysis  Ensure sufficient data collection to enable effective prediction and response	Counter WMD preparedness and response in the domestic AOR	Counter terrorism/ extremism	Tagging, Tracking and Locating (TTL) technologies that can be used on persons and objects - technologies of interest would provide reductions in size, weight and power/price (SWaP2), improved accuracy or new capabilities	Assured PNT  Theater and global Missile Defense Strategic Forces viability (SSBN, ICBM and bomber)  Integrated mission planning capabilities (kinetic and nonkinetic)	Alternative platform and payload systems (APPS) for Counter-terrorism, CTOC, and CIT.  Special Purpose Marine Air Ground Task Force (SPMAGTF).  Counter WMD Preparedness and Response	Automated loading / offloading systems; rapid distribution technologies; innovative delivery technologies; rapidly establish ports of debarkation in austere/anti-access environments .
	Counter transnational crime	Identity Activities: Biometrics, Forensics, Documentation and Media Exploitation, Denial of Anonymity, Coalition Interoperability	Assure linkages to Federal, State, Local, and International crime databases	Enable effective communication and cooperation with local national law enforcement	Counter WMD preparedness and response in the domestic AOR	Counter transnational crime		Resilient Space-based capability	Alternative platform and payload systems (APPS) for Counter-transnational organized crime	
	Persistent ISR	Persistent Long Range ISR which has multi-day duration to overcome tyranny of distance.	Longer loiter time for airborne systems for weeks, months, years without landing , the ability to obtain the stratosphere and function for the same time periods mentioned above, ability to change the zenith over the battlespace and from AOR to AOR under it's own power							
	Pre-Shot capability		Be able to detect any weapon/site that is pointed in the direction of any Troop. And to be able to engage that weapon 1st so the 1st Order of Battle is not lost during any patrol or engagement							
	Counter UAS	The ability to detect, track, identify, exploit, and defeat small UAS.	Be able to detect/take-over control/defeat/stop/kill any adversarial UAS miles out							
Electronic Spectrum Management	EW management in contested environment	Communications: Contested-EW Continuity of Operations (COOP)	Real time characterization of the EW environment ; assure friendly use of the EW spectrum while denying adversary use	Capability to continue normal military operations in a contested EW environment		Electronic Warfare and Operations in contested EMS environment	Communications and navigation in a contested environment	EW management in contested environment  EW test and training  EMS management and exploitation		EW management in contested environment.
Protection	Signature Management						USSOCOM must be able to reduce, obscure, modify or eliminate all observable signature to avoid compromise on deployment, infiltration, and actions on the objective.			

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Weapons	Non-Lethal	Non-Lethal Systems: Mobile Counter-Personnel, Counter-Materiel, Active Denial	Provide a range of non-lethal options for vessel/vehicle stop/detaining personnel, with reversibility as a key attribute	Improve non-kinetic engagement options for operations in contested environments	Maritime Non-Lethal Engagement/Counter UAS Non-Lethal Operations	Non-lethal capabilities across many mission sets (e.g., counter unmanned threats, Vessel/Vehicle stopping)	Scalable Effects Weapons (SEW)-counter material and counter personnel  Maritime Disablement Operations (MDO) Counter Autonomous Systems.	Nuclear weapons recapitalization and viability  Hypersonic capabilities  Nonkinetic capabilities capable of generating required effects at range	Maritime vessel stopping Non-lethal weapons	
	Directed Energy	Directed energy enabling C-UAS, A2/AD defeat, area defense	Provide novel and unique uses for DE: C-IED; counter-mobility; deep magazine engagements; assured C2; wireless energy transfer	Directed energy enabling C-UAS, A2/AD defeat, area defense	Directed Energy-High power optics/laser for track/ID Directed Energy-High energy laser to engage Directed Energy-MM wave radar for Area Denial Directed Energy--High power microwave for Defense	Directed Energy: Offensive/Defensive	Airborne High Energy Laser (HEL)	Missile Defense  Directed Energy (Offensive and Defensive)		High power optic/laser to track/ID/engage threat for self-defense of Mobility Air Fleet assets.  High power microwave for self-defense.
	Kinetic Engagement Options			Terrain shaping capability to deny adversary mobility  Increased kinetic response, tracking, and multi-domain integration			Special Operations Forces Small Unit Dominance (SOF SUD) - Close Combat Lethality Overmatch			