

2020 Combatant Command Common Capability Needs

Rollup Category	Rollup Subcategory	USAFRICOM	USCENTCOM	USCYBERCOM	USEUCOM	NORAD AND USNORTHCOM	USINDOPACOM	USSOCOM	SPACECOM	USSTRATCOM	USSOUTHCOM	USTRANSCOM
C2/C4I/ Cyber	Architectures & Components	Bi & Multi Lateral sharing networks for classified and ISR data, Biometrics analysis, and intelligence data fusion	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. Efficiency 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	Resilient Communications: Need technical solutions that address resilient and secure communications and networks, information infrastructure protection, and engineered systems.
	Cyber Defense		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	Must be able to defend its information, detect and mitigate cyber and electronic threats against mobility platforms, networks, and C2 systems to support uninterrupted operations.
	Sensors & Radars		Reductions in SWAP across all sensor modalities; while preserving sensor capability and sensitivity; multimodal 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 shipment status (where has it been, where is it now, what threats may impact process, and what condition is it in) through system access at the beginning of a movement through the various nodes to the final destination/point of need. Solutions to overcome challenges relating to the integration of asset visibility data into appropriate business processes and system(s) to include, but are not limited to: advanced cryptology, distributed ledger technologies and artificial intelligence (AI).
	Communications	Robust and resilient ground based SATCOM linkages	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		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	Secure means to transition information across multiple classification domains to ensure multi-domain situational awareness in contested environments, enable process improvements and reduce system requirements.
	Precision, Navigation & Timing	Robust Defensive to accurate timing signals to maintain continuity of C2 across the AOR	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 & Timing to include alternatives to GPS	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.
	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		C4ISR 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		C4 must be seamless regardless of theater of operation and/or customer being supported. This includes technologies that allow distributed C2 with mobile platforms (whether on land, sea or in the air) as well as technologies, including AI/ML, that provide the capability to replicate large databases, in a synchronized fashion, across a globally distributed network. In addition, these enclaves must be capable of working "off-line," then seamlessly rejoining the global network following combat or contingency degradation. Additionally, need a C4 capability that can plan, allocate and integrate logistics resources effectively and quickly on a global scale in support of the warfighter operational needs.

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Force Protection & Medical	Medical	Small Footprint, rapidly mobile Damage Control Surgery Teams with associated medical care capability to provide care from Point of Incident to Role 3 care.	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. CBRNE protection. Performance optimization	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, waterborne)	USTRANSCOM needs viable solutions to providemulti-modal patient movement (air, sea, and ground) through the continuum of care to definitive care under a variety of operational conditions (contested, permissive, cyber-degraded environments, etc.).
Domain Awareness	Subsurface		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 nearreal 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.	
Power and Energy	Power Management		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	Secured power and energy in all mission sets. Humanitarian assistance/disaster relief;Robust, flexible and scalable energy distribution systems for tactical/operational forces	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.
Operations & Mission Support	Counter terrorism		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 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		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 and Long range Multi-Int ISR	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 he battlespace and from AOR to AOR under it's own power.			Persistent air and missile indications, warning, and sensors	Persistent, Survivable, Wide Area ISR					
	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	Small UAS threat surveillance; Counter-sUAS threat command and control	Be able to detect/take-over control/defeat/stop/kill any adversarial UAS miles out			Small UAS threat surveillance; Counter-sUAS threat command and control	Defeat sUAS from any domain					
Electronic Spectrum Management	EW management in contested environment	Automated management of the EM spectrum	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		

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Protection	Signature Management						Camouflage, Concealment and Deception (CC&D) Technologies	USSOCOM must be able to reduce, obscure, modify or eliminate all observable signature to avoid compromise on deployment, infiltration, and actions on the objective.				
Weapons	Non-Lethal		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 Engage/Counter UAS Non-Lethal	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		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. Also high power microwave for self-defense.
	Kinetic Engagement Options				Terrain shaping capability to deny adversary mobility Increased kinetic response, tracking, and multi-domain integration		Multi-Domain, long range, precision fires to include hypersonic weapons	Special Operations Forces Small Unit Dominance (SOF SUD) - Close Combat Lethality Overmatch				

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