The CET Annex

Primary Field	Subfield
Advanced Computing	• Advanced supercomputing, including for AI applications • Edge computing and devices • Advanced cloud services • High-performance data storage and data centers • Advanced computing architectures • Advanced modeling and simulation • Data processing and analysis techniques • Spatial computing
Advanced Engineering Materials	• Materials by design and material genomics • Materials with novel properties to include substantial improvements to existing properties • Novel and emerging techniques for material property characterization and lifecycle assessment
Advanced Gas Turbine Engine Technologies	• Aerospace, maritime, and industrial development and production technologies • Full-authority digital engine control, hot-section manufacturing, and associated technologies
Advanced and Networked Sensing and Signature Management	• Payloads, sensors, and instruments • Sensor processing and data fusion • Adaptive optics • Remote sensing of the Earth • Geophysical sensing • Signature management • Detection and characterization of pathogens and of chemical, biological, radiological and nuclear weapons and materials • Transportation-sector sensing • Security-sector sensing • Health-sector sensing • Energy-sector sensing • Manufacturing-sector sensing • Building-sector sensing • Environmental-sector sensing
Advanced Manufacturing	• Advanced additive manufacturing • Advanced manufacturing technologies and techniques including those supporting clean, sustainable, and smart manufacturing, nanomanufacturing, lightweight metal manufacturing, and product and material recovery
Artificial Intelligence	• Machine learning • Deep learning • Reinforcement learning • Sensory perception and recognition • AI assurance and assessment techniques • Foundation models • Generative AI systems, multimodal and large language models • Synthetic data approaches for training, tuning, and testing • Planning, reasoning, and decision making • Technologies for improving AI safety, trust, security, and responsible use
Biotechnologies	• Novel synthetic biology including nucleic acid, genome, epigenome, and protein synthesis and engineering, including design tools • Multi-omics and other biometrology, bioinformatics, computational biology, predictive modeling, and analytical tools for functional phenotypes • Engineering of sub-cellular, multicellular, and multi-scale systems • Cell-free systems and technologies • Engineering of viral and viral delivery systems • Biotic/abiotic interfaces • Biomanufacturing and bioprocessing technologies
Clean Energy Generation and Storage	• Renewable generation

	• Renewable and sustainable chemistries, fuels, and feedstocks • Nuclear energy systems • Fusion energy • Energy storage • Electric and hybrid engines • Batteries • Grid integration technologies • Energy-efficiency technologies • Carbon management technologies
Data Privacy, Data Security, and Cybersecurity Technologies	• Distributed ledger technologies • Digital assets • Digital payment technologies • Digital identity technologies, biometrics, and associated infrastructure • Communications and network security • Privacy-enhancing technologies • Technologies for data fusion and improving data interoperability, privacy, and security • Distributed confidential computing • Computing supply chain security • Security and privacy technologies in augmented reality/virtual reality
Directed Energy	• Lasers • High-power microwaves • Particle beams
Highly Automated, Autonomous, and Uncrewed Systems (UxS), and Robotics	• Surface • Air • Maritime • Space • Supporting digital infrastructure, including High Definition (HD) maps • Autonomous command and control
Human-Machine Interfaces	• Augmented reality • Virtual reality • Human-machine teaming • Neurotechnologies
Hypersonics	• Propulsion • Aerodynamics and control • Materials, structures, and manufacturing • Detection, tracking, characterization, and defense • Testing
Integrated Communication and Networking Technologies	• Radio-frequency (RF) and mixed-signal circuits, antennas, filters, and components • Spectrum management and sensing technologies • Future generation wireless networks • Optical links and fiber technologies • Terrestrial/undersea cables • Satellite-based and stratospheric communications • Delay-tolerant networking • Mesh networks/infrastructure independent communication technologies • Software-defined networking and radios • Modern data exchange techniques • Adaptive network controls • Resilient and adaptive waveforms
Positioning, Navigation, and Timing (PNT) Technologies	• Diversified PNT-enabling technologies for users and systems in airborne, space-based, terrestrial, subterranean, and underwater settings • Interference, jamming, and spoofing detection technologies, algorithms, analytics, and networked monitoring systems • Disruption/denial-resisting and hardening technologies
Quantum Information and Enabling Technologies	• Quantum computing • Materials, isotopes, and fabrication techniques for quantum devices • Quantum sensing • Quantum communications and networking • Supporting systems

Semiconductors and Microelectronics	• Design and electronic design automation tools • Manufacturing process technologies and manufacturing equipment • Beyond complementary metal-oxide-semiconductor (CMOS) technology • Heterogeneous integration and advanced packaging • Specialized/tailored hardware components for artificial intelligence, natural and hostile radiation environments, RF and optical components, high-power devices, and other critical applications • Novel materials for advanced microelectronics • Microelectromechanical systems (MEMS) and Nanoelectromechanical systems (NEMS) • Novel architectures for non-Von Neumann computing
Space Technologies and Systems	• In-space servicing, assembly, and manufacturing as well as enabling technologies • Technology enablers for cost-effective on-demand, and reusable space launch systems • Technologies that enable access to and use of cislunar space and/or novel orbits • Sensors and data analysis tools for space-based observations • Space propulsion • Advanced space vehicle power generation • Novel space vehicle thermal management • Crewed spaceflight enablers • Resilient and path-diverse space communication systems, networks, and ground stations • Space launch, range, and safety technologies