

OSRA TECHNOLOGY BUILDING BLOCKS

The Overarching Strategic Research Agenda (OSRA) provides a harmonised view of relevant European defence research priorities considering future military capability needs and emerging technologies. OSRA defines Technology Building Blocks (TBB) focused on specific defence R&T areas. Developed in the EDA Capability Technology Groups (CapTechs), each TBB provides an in-depth assessment including a roadmap with concrete project ideas. OSRA is the tool for R&T prioritisation in the service of Member States capable of providing input to all available European funding instruments and initiatives.

OSRA TBB	TBB Name	CapTech/WG
1	Autonomous Air Vehicle Operation	Air
2	Cooperative Air Vehicle Operation	Air
3	Detect, Sense and Avoid Systems	Air
4	System Diagnostics, Fault Prognostics, and Self Repair	Air
5	Human-Machine-Interface and Cognitive Ergonomics	Air
6	Propulsion, Power Generation and Distribution	Air
7	Secure Command and Control Systems	Air
8	Rotorcraft Next Generation High Performance Vertical Lift	Air
9	Fixed Wing	Air
10	Munition Life Management	Missiles & Munitions
11	Insensitive Munitions	Missiles & Munitions
12	Fuzing and Ignition Systems	Missiles & Munitions
13	Precision Guided Munition and Missiles	Missiles & Munitions
14	High Performance Gun Launch and missile propulsion	Missiles & Munitions
15	Railgun weapon	Missiles & Munitions
16	Improved tools and methods for qualification and safety	Missiles & Munitions
17	IED Detection and Defeat Technologies	Missiles & Munitions
18	High-performance low-sensitivity and REACH-compliant energetic materials	Missiles & Munitions
19	Improved Warhead and Penetrator design	Missiles & Munitions
20	Pyrotechnics for Decoying and Obscuring	Missiles & Munitions
21	New Production Techniques for Munition Components	Missiles & Munitions
22	Education and Training for Ammunition Technologies	Missiles & Munitions
23	Human Autonomy Teaming	CBRN & HF
24	Human Performance Monitoring & Enhancement	CBRN & HF
25	Customized Training	CBRN & HF
26	Integration of human's clothing and equipment in platforms	CBRN & HF
27	Personal Protective equipment	CBRN & HF
28	Detection, Identification and Monitoring (DIM) of CBR	CBRN & HF
29	CBRN Hazard Management	CBRN & HF
30	CBRN modelling and simulation	CBRN & HF
31	Protection of Critical Infrastructure (PCI) from CBRN	CBRN & HF
32	Protection of food and water supply from CBRN	CBRN & HF
33	Assessment, Diagnosis, and Medical Countermeasures of CBR Hazards	CBRN & HF
34	Human Resources & Social Sciences	CBRN & HF
35	RF Photonics	Components
36	IR imaging Detector & sources	Components
37	Terahertz detectors & sources	Components
38	Microwave Power	Components
39	RF Transceiver modules	Components
40	Enabling Components for Advanced Antennas	Components
41	ADC & DAC	Components
42	Signal Generation and Time Reference	Components
43	System-on-Chip	Components
44	High voltage SiC devices and related energy storage for pulsed power applications	Components
45	Defence critical technologies supply chain	Components
46	Advanced Packaging, PCB and Thermal Management Technologies	Components

OSRA TBB	TBB Name	CapTech/WG
47	Cyber Defence Situation Awareness	Cyber R&T
48	Cognitive Science with cyber implications	Cyber R&T
49	Exploring convergence opportunities between Cyberoperations and Electronic Warfare	Cyber R&T
50	Cross-cutting cyberdefence for land, maritime, air and space	Cyber R&T
51	The protection of military communications and information systems	Cyber R&T
52	Quantum computing and cryptography with cyber implications	Cyber R&T
53	Autonomous cyber response capabilities	Cyber R&T
54	Modelling and Simulation for cyberdefence	Cyber R&T
55	Alternative fuels and drive/propulsion systems	Energy Wg
56	Energy storage: electrical, electrochemical, mechanical, structural and thermal	Energy Wg
57	Engine and power distribution system efficiency technologies	Energy Wg
58	Energy management technologies: innovative and efficient systems	Energy Wg
59	Solar energy generation (thermal and electrical generation)	Energy Wg
60	Militarization of environmental technologies: water and waste water	Energy Wg
61	Energy harvesting / scavenging	Energy Wg
62	Wind energy	Energy Wg
63	Energy and environment technology systems integration	Energy Wg
64	Militarization of environmental technologies: Energy from waste (or waste to energy) technologies	Energy Wg
65	Management and Processing Information from Heterogeneous Sources	Information
66	Coalition Network Security and Protection and Interaction with commercial technologies	Information
67	Cognitive Radio	Information
68	Tactical Cloud Infrastructure for C4ISR Systems	Information
69	Electronic Support Measures (ESM) for Communications	Information
70	Internet of Things (IoT) for Defence	Information
71	Information Process Enhancement by using AI and Big Data	Information
72	Long Range Communication	Information
73	Software Defined Networking (SDN)	Information
74	Land Systems Architecture & Integration	Land
75	Power generation, storage and management for Land Systems	Land
76	Passive and active protection for land Systems	Land
77	Less-than-lethal effectors	Land
78	Manned/unmanned teaming, adaptive cooperation between manned and unmanned systems with different level of autonomy	Land
79	Target / Threat recognition and identification	Land
80	Health and Usage Monitoring	Land
81	Novel User Interfaces for Soldier – Assets integration/control	Land
82	Mobility and Counter-Mobility	Land
83	Weapon system integration	Land
84	Light Weight for High Performance Structures	Materials
85	Materials, structures for Protection Against Military Threats	Materials
86	High temperature materials	Materials
87	Camouflage and signature management technologies	Materials
88	Emerging materials for future platforms	Materials
89	Materials, structures & concepts for platform monitoring	Materials
90	New manufacturing, joining and repair processes	Materials
91	Surface engineering for maximum lifetime and/or hostile environments	Materials
92	Advanced and smart textiles for soldier systems and platforms	Materials

OSRA TBB	TBB Name	CapTech/WG
93	Computational Design and materials modelling	Materials
94	Communication and distributed sensor networks, surface and underwater	Maritime
95	Simulation and Training	Maritime
96	Platform Survivability and Operability in challenging conditions	Maritime
97	Energy and Propulsion	Maritime
98	Increased Autonomy and Robotics	Maritime
99	Identifying and Countering Threats, High-Energy Weapons Integration	Maritime
100	Smart Industrialization and Predictive Maintenance	Maritime
101	Navigation in GNSS denied environment	Navigation
102	Position, Navigation and Timing (PNT) superiority and integration in operations and systems	Navigation
103	Guidance and control in challenged environments	Navigation
104	Autonomous and automated GNC and decision-making techniques for manned and unmanned systems	Navigation
105	Fault tolerance control (FTC)	Navigation
106	Multi-Robot control and cooperation	Navigation
107	Precision guidance and control of weapons	Navigation
108	Key enabling and performance enhancing GNC technologies	Navigation
109	Hyperspectral/multispectral Imaging System	Optronics
110	Passive Imaging Systems	Optronics
111	Novel optical configuration	Optronics
112	Active Imaging System	Optronics
113	Image enhancement	Optronics
114	Image processing	Optronics
115	EO Counter measure systems	Optronics
116	Laser weapon System	Optronics
117	Modelling and simulation	Optronics
118	Data fusion and system integration	Optronics
119	Detection, Tracking and Recognition of Challenging Targets	Radar
120	Advanced front/back end	Radar
121	Electronic Warfare	Radar
122	Multi-Platform RF Systems	Radar
123	Cognitive Radars	Radar
124	Scalable Multi-function RF Sensors (SMRF)	Radar
125	Specific Radar Applications	Radar
126	Disruptive Concepts	Radar
127	Common EU Benchmarks for Validation, Verification and Standardisation	Radar
128	Integrated Live, Virtual and Constructive (I-LVC) for Training, Simulation and Serious Games Solutions	Simulation
129	Artificial Intelligence (AI) and Big Data (BD) for Decision Making Support	Simulation
130	Immersive, Virtual and Augmented Reality	Simulation
131	Cyber Defence Simulation	Simulation
132	Joint Strategic, Operational and Tactical level simulators	Simulation
133	Modelling & Simulation as a Service (MSaaS) for synthetic environment and rapid scenario generation	Simulation
134	Simulation for Systems of Systems (S3)	Simulation
135	Recognized Space Picture (RSP)	Simulation
136	Defence Satellite Reconnaissance Systems	Simulation

