Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Defence, Civil Protection and Sport DDPS
armasuisse / Science and Technology S+T

Status as of February 2021

Layout for publication

Sorting:
1. Security relevance
2. Technology cluster

Security-relevant technologies

Line No.	Technology cluster	Technology / Application	**Capability areas** 1 Command & Control 2 Intelligence service 3 Effectiveness in operation 4 Mobility 5 Protection of own forces 6 Support and sustainability	**Security relevance** 3 critical 2 high 1 medium (0.5 low)
1	Antenna technologies	Adaptive antennas	1, 2	3
2	CBRNE sensor technologies	B-antibodies	2, 5	3
3	CBRNE sensor technologies	Immunoassay detectors	2, 5	3
4	CBRNE sensor technologies	Ge-gamma detectors	2, 5	3
5	Communication technologies	COMINT ESM	1	3
6	Communication technologies	COMINT ECM/ECCM	1, 2, 3, 5	3
7	Communication technologies	Routing technology	1	3
8	Communication technologies	Software defined radio technologies	1, 2	3
9	Communication technologies	Software encryption (cryptology)	1	3
10	Communication technologies	Optical networking	1	3
11	Communication technologies	5G	1-6	3
12	Computer technologies	Operating systems	1-6	3
13	Computer technologies	Virtualization (desktops, networks, datacenters)	1-6	3
14	Cyber security technologies	VPN technologies	1-6	3
15	Cyber security technologies	Firewalls	1-6	3
16	Cyber security technologies	Authentification technology	1, 2	3
17	Cyber security technologies	Vulnerability assessment (computing)	1-6	3
18	Cyber security technologies	Cryptology	2-6	3
19	Cyber security technologies	Digital forensics	2-6	3
20	Energy technologies	Batteries and accumulators	1, 2, 3, 4, 6	3
21	Energy technologies	Power generator	1, 2, 5, 6	3
22	Energy technologies	Mobile power generator	1, 3, 4, 5, 6	3
23	Energy technologies	Mains power	1, 2, 4, 5, 6	3
24	Energy technologies	Independent power supply	1, 2, 5, 6	3
25	Energy technologies	Synthetic fuel	1, 2, 4, 6	3

26	Information technologies	Big data analytics	1, 2	3
27	Information technologies	Data fusion	1-6	3
28	Information technologies	Management information systems	1, 2	3
29	Information technologies	Supercomputer	1-6	3
30	Physical effect technologies	Ballistics (interior-, transitional-, external- and terminal ballistics)	3	3
31	Physical protection technologies	Vulnerability models	1, 2, 3, 5	3
32	Platform technologies	Fixed wing jet fighters	2, 4	3
33	Platform technologies	UAV	2, 4	3
34	Radar technologies	Primary radar	2	3
35	Radar technologies	Recognized air picture	2	3
36	Radar technologies	Identification friend or foe	2	3
37	Antenna technologies	AESA	1, 2	2
38	Antenna technologies	MIMO technology	1, 2	2
39	Antenna technologies	Adaptive beamforming	1, 2	2
40	Antenna technologies	Multifrequency antennas	1, 2	2
41	Antenna technologies	Conformal/Integrated antennas (textiles, aircraft)	1, 2	2
42	CBRNE sensor technologies	Ion drift detectors	2, 5	2
43	CBRNE sensor technologies	Mass sprectrometers	2, 5	2
44	CBRNE sensor technologies	Gamma ray detectors	5	2
45	Communication technologies	HF radio technology	1	2
46	Communication technologies	VHF/UHF radio technology	1	2
47	Communication technologies	VoIP	1	2
48	Communication technologies	Wireless WAN/MAN/LAN technology	1	2
49	Communication technologies	Mobile adhoc networks (MANET)	1	2
50	Communication technologies	Cognitive radio technology	1, 2	2
51	Communication technologies	Directional beam technology	1	2
52	Communication technologies	Hardware encryption	1	2
53	Communication technologies	Wired network technologies	1	2
54	Communication technologies	Time allocation (synchronization)	1, 2	2
55	Countermeasure technologies	Military camouflage	2, 3, 5	2
56	Countermeasure technologies	Multi-spectral camouflage	2, 3, 5	2
57	Countermeasure technologies	Active camouflage	2, 3, 5	2
58	Countermeasure technologies	Stealth technology	2, 3, 5	2
59	Countermeasure technologies	Radiation-absorbent material	2, 3, 5	2
60	Countermeasure technologies	Chaff countermeasure	2, 3, 5	2
61	Countermeasure technologies	Flare countermeasure	2, 3, 5	2

62	Countermeasure technologies	Hardening against electromagnetic pulse	2, 3, 5	2
63	Cyber security technologies	Trusted execution environment	1-6	2
64	Cyber security technologies	Hardware security module	1-6	2
65	Cyber security technologies	Software verification	1-6	2
66	Cyber security technologies	Antivirus software	1-6	2
67	Cyber security technologies	Intrusion detection	1-6	2
68	Cyber security technologies	Denial-of-service techniques	1-6	2
69	Cyber security technologies	Traffic analysis	1-6	2
70	Cyber security technologies	Privacy-preserving technologies	1-6	2
71	Energy technologies	Propellants	3, 5, 6	2
72	Energy technologies	Explosives	3, 5, 6	2
73	Energy technologies	Pyrotechnics	3, 5, 6	2
74	Information technologies	Cloud computing security	1, 2, 4	2
75	Information technologies	Natural language processing	1, 2	2
76	Information technologies	Knowledge graph	1, 2	2
77	Navigation technologies	Satellite-based navigation (GNSS). Ie. GSP, GLONASS, Galileo)	1, 2	2
78	Navigation technologies	Geoinformation technology	2	2
79	Navigation technologies	GNSS ECM/ECCM	1, 2	2
80	Navigation technologies	Inertial navigation systems	2	2
81	Navigation technologies	Multilateration	2	2
82	Optical sensor technologies	Digital camera	2	2
83	Optical sensor technologies	Infrared sensor	2	2
84	Optical sensor technologies	Hyperspectral imaging sensor	2	2
85	Optical sensor technologies	UV detectors	2	2
86	Optical sensor technologies	Photocathode	2	2
87	Optical sensor technologies	Optical amplifier	2	2
88	Optical sensor technologies	LIDAR sensor	2	2
89	Optical sensor technologies	Imagery intelligence	2	2
90	Physical effect technologies	Assault rifle	3	2
91	Physical effect technologies	Grenade launcher / Mortar	3	2
92	Physical effect technologies	Artillery guns	3	2
93	Physical effect technologies	Medium calibre guns	3	2
94	Physical effect technologies	Explosives	3	2
95	Physical effect technologies	Software impact models	3	2
96	Physical effect technologies	Software for mission planning and simulators	3	2
97	Physical effect technologies	Software and networks for fire control	1, 2, 3	2

98	Physical effect technologies	Rocket ballistics	3	2
99	Physical protection technologies	Active protection technologies	1, 2, 5	2
100	Physical protection technologies	ERA technology	5	2
101	Physical protection technologies	NERA technology	5	2
102	Physical protection technologies	Ceramics and composite materials	5	2
103	Physical protection technologies	Electromagnetic armour	5	2
104	Physical protection technologies	Mine detection technology	5	2
105	Platform technologies	Lightly armoured vehicles	2, 4	2
106	Platform technologies	Fixed wing propellars	2, 4	2
107	Platform technologies	Helicopters	4	2
108	Radar technologies	Synthetic-aperture radar	2	2
109	Radar technologies	Radar tracker	2	2
110	Radar technologies	Cognitive radio	2	2
111	Radar technologies	MIMO radar	2	2
112	Radar technologies	Multistatic radar	2	2
113	Radar technologies	Radar signal processing	2	2
114	Radar technologies	Geo warping	2	2
115	Radar technologies	Multi-Sensor Data Fusion	2	2
116	Radar technologies	Classification algorithms	2	2
117	Radar technologies	Signals intelligence	2	2
118	Radar technologies	TCAS Traffic collision avoidance system	2	2
119	Radar technologies	ADS-B Automatic Dependent Surveillance–Broadcast	2	2
120	Acoustic sensor technologies	Analogue and digital microphones	2	1
121	Acoustic sensor technologies	Microphone arrays	2	1
122	Acoustic sensor technologies	Artillery sound ranging	2	1
123	Acoustic sensor technologies	Infrasound	2	1
124	Acoustic sensor technologies	Acoustic location	2	1
125	Antenna technologies	Reconfigurable antenna	1	1
126	Communication technologies	EHF/SHF radio technology	1	1
127	Communication technologies	Terahertz technology	1, 2	1
128	Communication technologies	Repeater- and amplyfying technologies	1	1
129	Communication technologies	Quantum encryption	1	1
130	Computer technologies	Active RFID technologies	1, 2, 6	1
131	Computer technologies	Passive RFID technologies	1, 2, 6	1
132	Computer technologies	Middleware	1-6	1
133	Computer technologies	Database systems	1-6	1

134	Computer technologies	Internet of things	1-6	1
135	Computer technologies	Human computer interaction	1-6	1
136	Cyber security technologies	Deception technology	2-6	1
137	Energy technologies	Hydropower technologies	1, 2, 5, 6	1
138	Energy technologies	Solar collector technologies	1, 2, 4, 6	1
139	Energy technologies	Wind Energy technologies	1, 2, 4, 6	1
140	Energy technologies	BioEnergy technologies	1, 2, 5, 6	1
141	Information technologies	Machine learning	1-6	1
142	Information technologies	Search engines	1-6	1
143	Information technologies	Web crawling technologies	1, 2	1
144	Information technologies	Crowd sourcing technologies	1	1
145	Optical sensor technologies	Spectral imaging	2	1
146	Optical sensor technologies	Interferometry	2	1
147	Optical sensor technologies	Laser	2	1
148	Optical sensor technologies	Image stitching	2	1
149	Optical sensor technologies	Panoramic cameras	2	1
150	Optical sensor technologies	Projection mapping	1, 2	1
151	Optical sensor technologies	Change detection	2	1
152	Physical effect technologies	Rifle cartridges	3	1
153	Physical effect technologies	Small arms and handguns	3	1
154	Physical effect technologies	Pistol cartridges	3	1
155	Physical effect technologies	Hollow-point bullet	3	1
156	Physical effect technologies	Armor-piercing ammunition	3	1
157	Physical effect technologies	Smoothbore guns	3	1
158	Physical effect technologies	Metallurgy and barrel production	3	1
159	Physical effect technologies	Explosive mines	3	1
160	Physical effect technologies	Solid propellant rocket technology	3	1
161	Physical effect technologies	Liquid propellant rocket technology	3	1
162	Physical effect technologies	Fragmentation grenades	3	1
163	Physical effect technologies	Flash-bang grenades	3	1
164	Physical effect technologies	Shotgun rubber cartridges	3	1
165	Physical effect technologies	Shape charge cartridges	3	1
166	Physical effect technologies	Projectile-forming charges	3	1
167	Physical effect technologies	Materials science/ metal alloy	3	1
168	Physical effect technologies	APFSDS technology	3	1
169	Physical effect technologies	Metallurgy for APFSDS	3	1

170	Physical effect technologies	HESH charges	3	1
171	Physical effect technologies	Pressure charges	3	1
172	Physical effect technologies	Thermobaric technology	3	1
173	Physical effect technologies	Mechanical fuzes	3	1
174	Physical effect technologies	Electronic fuzes	3	1
175	Physical effect technologies	Frangible technology	3	1
176	Physical effect technologies	AHEAD technology	3	1
177	Physical effect technologies	Bunker penetrators	3	1
178	Physical effect technologies	High energy laser weapons	3	1
179	Physical effect technologies	High power microwaves	3	1
180	Physical protection technologies	Concrete technology (HPFRC)	5	1
181	Platform technologies	Heavily armoured vehicles	2, 4	1
182	Platform technologies	Track technology	2, 4	1
183	Platform technologies	Multi-wheel off-road technology	2, 4	1
184	Platform technologies	Terramechanics	4	1
185	Platform technologies	Drive and drive transmission technology	4	1
186	Platform technologies	Ground robots (e.g. IED, Rescue)	2, 4	1
187	Platform technologies	Avionics	4	1
188	Platform technologies	Aerodynamics	4	1
189	Platform technologies	Sense and avoid technology	4	1
190	Platform technologies	Micro and mini UAV	2, 4	1
191	Platform technologies	Flight simulator technologies	4	1
192	Platform technologies	Driving smulator technologies	4	1
193	Radar technologies	Airport surveillance radar	2	1
194	Radar technologies	Remote sensing	2	1
195	Radar technologies	Pulse compression	2	1
196	Radar technologies	Deep learning	2	1
197	Radar technologies	Moving target indication	2	1
198	Robotics technologies	Swarm intelligence	1, 3, 4, 5, 6	1
199	Communication technologies	Data compression	1-6	0.5
200	Energy technologies	Lubricants	3, 4, 6	0.5
201	Optical sensor technologies	Analog camera	2	0.5
202	Platform technologies	Transport vehicles	2, 4	0.5
203	Platform technologies	Autonomous or semi-autonomous vehicles	2, 4	0.5
204	Platform technologies	Alternative drive concepts (e.g. legged)	2, 4	0.5
205	Platform technologies	Diagnostic systems	4	0.5