

PASR

Preparatory Action on the enhancement of the European industrial potential in the field of Security research



Activity acronym	STACCATO
Activity full name:	Stakeholders Platform for Supply chain Mapping, Market condition Analysis and Technologies Opportunities
Activity type:	Supporting Activity

Deliverable D 1.2.2 STACCATO Final Taxonomy

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AeroSpace and Defence Industries Association of Europe

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INTRODUCTION TO STACCATO TAXONOMY

The SeNTRE taxonomy has been considered as starting point for the development of a more detailed STACCATO taxonomy.

In order to have a tool to be useful not only for the STACCATO consortium and security equipment and system providers but also for interfacing with end users, the SeNTRE taxonomy has been taken into consideration for the competences mapping in two ways:

1. Technology codification
2. Product/service codification

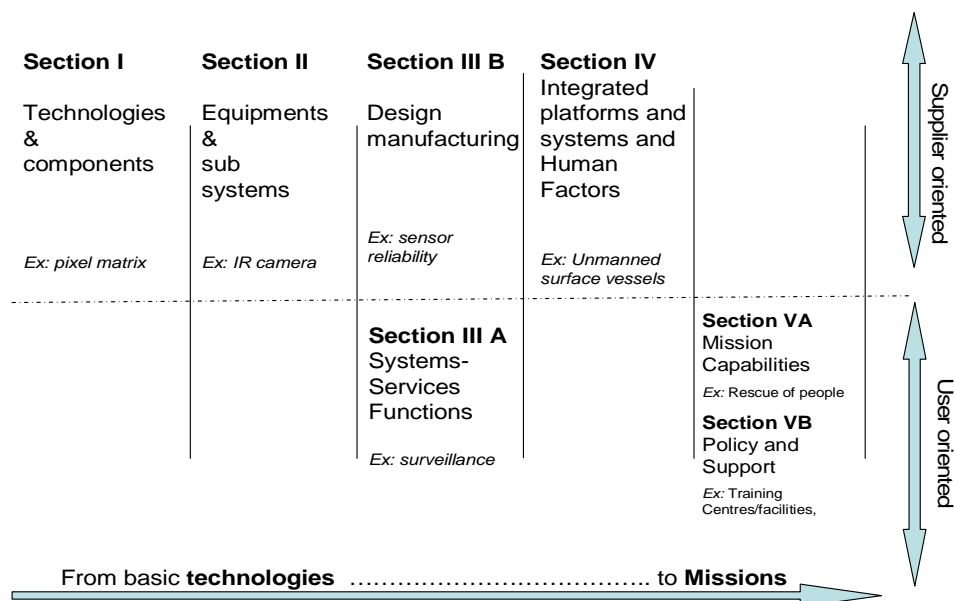
The five levels of SENTRE taxonomy have then been renamed in relation to the elaborated definition and aiming at taking into consideration user and supply oriented taxonomy as well.

Definitions have been therefore elaborated and a correlation has been done with ESRAB functions, especially for what concern user oriented part.

On the base of the new Definition the existing taxonomy has been structured along with 7 sections and simplified in order to make it a genuine working tool for the stakeholder's platform work and workshops.

The figure below illustrated the new definitions adopted for STACCATO taxonomy.

STACCATO Taxonomy Structure: Top Level Sections



Mission = set of functions
 Function = set of capabilities

Fig. 1

The STACCATO taxonomy is structured along with 7 sections and 3 levels in each section. The seven sections represent the top level, each section contains several sub-sections (middle-level), called also *Blue-lines*. Each sub-section in turn contains a number of lower levels (specific items).

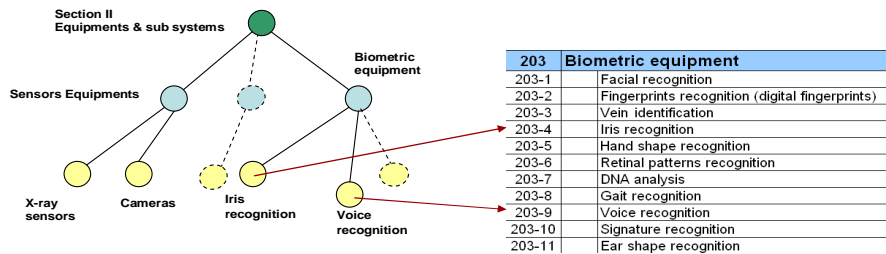
Fig 2. Example.

Structure in detail

The STACCATO taxonomy is structured along 3 levels.

- Upper level or Sections
- Middle level or Subsections (“blue-lines”, in the text)
- Lower level (specific items)

Example:



The seven top level/sections are:

- (I) **Technologies and Components**
- (II) **Equipments and sub systems**
- (IIIA) **Systems-Services Functions**
- (IIIB) **Design-Manufacturing**
- (IV) **Integrated platforms and systems and Human Factors**
- (VA) **Missions Capabilities**
- (VB) **Policy and Support**

The seven top-level sections are provided with roman numbering for traceability; no internal hierarchical ordering between them is implied.

Note that the taxonomy is dual use taxonomy for the domains of security and defence. As such it contains also items from the so-called WEAG taxonomy which was developed for the defence domain. However, the WEAG taxonomy was aimed at Research & Development. The STACCATO taxonomy forms also the basis for the STACCATO data base in which we aim to capture both the systems and subsystems offered by the supply side and the requirements of the user side. Therefore the need is to have entries which can be used by the representatives of suppliers to indicate their capabilities and users to identify their needs. The descriptions on the various levels do meet this need.



STACCATO Taxonomy takes into account also Human Factors aspect. Items related to Human Factors (HFs) are easily identifiable being written with blue font. This facilitates the grouping of Human Factors items.

As the STACCATO taxonomy will grows in scope also the STACCATO Database will be periodically modified in order to accommodate with changes.

Nonetheless, taking into account the important improvement performed in the STACCATO taxonomy after delivering the “Initial Taxonomy” (D 1.2.1 which represent the base of the STACCATO Database), it has been deemed opportune do not replace the initial version with the current “Final STACCATO Security Taxonomy” in the database in order to avoid the loss of data that such a change could inevitably result.

With reference to the current deliverable, the word version of the STACCATO Security taxonomy is following. For the sake of clarity this deliverable consists also of an excel version of the STACCATO Taxonomy.



List of Main Acronyms use in the STACCATO Taxonomy

BGO (Bismuth germanate) gamma ray detectors
CZT (CdZnTe) radiation detectors
DB Database
OS Operating System
NaI (Sodium Iodide) gamma ray detectors
VPN Virtual Private Network

I. Technologies-Components

100	Structural materials and technologies and structural effects analysis
100-1	Ceramics and glass technology
100-2	Ceramic composites
100-3	Composites materials technology
100-4	Powder metallurgy
100-5	Dense alloys
100-6	Organic composites
100-7	Metal matrix composites
100-8	Carbon-carbon composites
100-9	Polymeric materials
100-10	Synthetic fluids and lubricants
100-11	EM radiations absorbers
100-12	Magnetic metals
100-13	Superconductive conductors
100-14	New metallic alloys
100-15	Metallic composites
100-16	New concretes
100-17	Concretes resistant
100-18	Anti blast glasses
100-19	Materials for thermal control
100-20	Nano components and structures (tubes, ceramics, ...)
101	Light and strong materials, surface treatments.
101-1	Light materials for human protection
101-2	Light materials for site protection
101-3	Armor and anti-armor materials
101-4	Self-protective and explosive resistant material technology
101-5	Special function materials
101-6	Structural & Smart Materials
101-7	Surfaces treatments for improvement of mechanical properties
101-8	Surfaces treatments for improvement of life duration, corrosion reduction
101-9	Paints (without CoVs...)
101-10	Replacement of Cd, Hg, Cr
101-11	Simulation for surfaces treatment
101-12	Nano surfaces
101-13	Smart textiles
102	Materials for deterrence
102-1	Fissile materials enrichment
102-2	Nuclear materials processing
102-3	Nuclear-related materials
102-4	Fission reactor
102-5	Inertial confinement fusion (electrostatic, ...)
103	Stealth materials and Technologies
103-1	Radar passive absorbing materials
103-2	IR passive materials
103-3	Multifunctional stealth materials
103-4	Coatings and absorbing materials for laser signature reduction
103-5	Passive materials for acoustic reduction
103-6	Obscurants materials/equipments
104	Survivability and hardening
104-1	Underground nuclear weapons effects testing
104-2	Blast and shock effects

104-3	Structures vulnerability prediction after exposures and structural solutions
104-4	Thermal radiation effects
104-5	Transient radiation effects in electronics (TREE) and Systems-generated electromagnetic pulse (SGEMP) effects
104-6	Nuclear effects on electromagnetic signal propagation
104-7	High altitude electromagnetic pulse (HEMP) effects including dispersed EMP (DEMP)
104-8	Source region electromagnetic pulse (SREMP) effects
104-9	Pulsed-power driven nuclear weapons effects simulation sources
104-10	Hardening against natural environment lighting
104-11	EMC evaluation and hardening
104-12	Strong fields and MFP hardening
104-13	Damage reduction techniques
105	Energetic materials
105-1	Propellants
105-2	Conventional fuels and lubricants
105-3	Explosives
105-4	Pyrotechnics
105-5	(Micro-) pyrotechnology
106	Plasma technology
107	Energy generation storage & distribution
107-1	Electrical generators
107-2	Electrical batteries
107-3	Electrical fuel cells
107-4	Solar cells
107-5	RF power sources and devices
107-6	Acoustic power sources and devices
107-7	Other electric power sources and devices
107-8	Inertial / gravitational devices (flywheels, ...)
107-9	Other Energy storage & conditioning
107-10	Energy distribution
108	Photonic/Optical Materials and Device Technology
108-1	Optical surfaces.
108-2	Passive materials.
108-3	Active and adaptive optical systems (material, sensors, actuators,...).
108-4	Optical busses
108-5	Sights
108-6	Optical fibre material technology
109	Opto-electronics: Laser, optics and related devices
109-1	Lasers based power systems (lasers, optics, fibres, amplifiers, collimating, ...)
109-2	High density conventional systems
109-3	Pulsed and high power systems
109-4	Laser matter interaction
109-5	Short pulses laser propagation
109-6	Flame spectometry technologies
109-7	Laser induced fluorescence
109-8	Quantum Cascade Lasers
109-9	Blooming simulation for components and optronic subsystems
110	Sensor Technology and Components
110-1	Neutronic detection technologies (neutron tubes, ...)
110-2	X-ray technologies
110-3	Gamma technologies

110-4	Ion Mobility Spectrometry technologies
110-5	IR Spectroscopy
110-6	UV/Visible wave sensor technologies
110-7	UV VIS Spectroscopy
110-8	Terahertz technologies
110-9	Terahertz Spectroscopy
110-10	RFsensor technologies
110-11	Micro- and Millimeter Wave sensor technologies
110-12	Hyperspectral technologies
110-13	Multispectral technologies
110-14	Acoustic sensor technologies
110-15	Nanotechnologies for sensors
110-16	NAI detectors
110-17	BGO detectors
110-18	CZT detectors
110-19	Techniques for discrete surveillance
110-20	Sensor related imaging and mapping techniques
110-21	Microelectromechanical Systems (MEMS)
111	Electronic components
111-1	Silicon-based Materials
111-2	III-V Compounds
111-3	Other Semiconducting Materials (AsGa, GaN, ...)
111-4	Insulating & Dielectric Materials
111-5	Carbon-based Materials
111-6	Superconducting Materials
111-7	Magnetic Materials
111-8	Device Concepts and Fabrication
111-9	Device Packaging
111-10	Device Integration/Reliability
111-11	COTs assessment and obsolescence management
112	Signal processing technologies
112-1	Analog Signal Processing Technology
112-2	Digital signal processing technology
112-3	Analog/digital conversion technologies
112-4	High precision time measurement
113	Information technologies
113-1	Image / pattern processing technology
113-2	Pattern recognition
113-3	Data collection, data classification
113-4	Data and Information fusion technologies
113-5	Speech processing technology
113-6	Natural language processing technology
113-7	Data and information management technology (DB, ...)
113-8	Data analysis
113-9	Contextual search techniques
113-10	Jamming and anti-jamming technologies
113-11	Web intelligence
113-12	Text-mining / data-mining
113-13	Time synchronization
114	Artificial Intelligence & Decision support
114-1	IKBS/AI/Expert techniques
114-2	Neural network techniques
114-3	Mathematical modelling development
114-4	Optimisation and decision support technology
114-5	Modelling and simulation

114-6	Operational Analysis tools and techniques
114-7	Knowledge Management
114-8	War gaming techniques
114-9	Actionable intelligence
114-10	Decisional software
115	Simulation tools and technologies
115-1	Virtual and augmented reality
115-2	Synthetic environments
115-3	Synthetic environments - synthetic force generation
115-4	Synthetic environments - natural environment generation
115-5	Synthetic environments - management systems
115-6	Equipment simulation techniques
116	Computing Technologies
116-1	Software engineering
116-2	Protocol technology
116-3	COTS software assessment
116-4	SW Architectures
116-5	High integrity and safety critical computing
116-6	Secure computing techniques
116-7	Software verification and accreditation techniques
116-8	Hybrid computing
116-9	High performance computing
116-10	Grid computing
116-11	Software agents
117	Information Security Technologies
117-1	Content filtering
117-2	Cryptoanalysis
117-3	Cryptography algorithms (including quantum cryptography)
117-4	Cryptography implementation (including quantum cryptography)
117-5	Cyber attack technologies
117-6	Key management
117-7	Intention detection
117-8	Intrusion detection technologies
117-10	Integrity protection
117-11	Intrusion prevention technologies
117-12	IT Authentication technologies
117-13	OS hardening
117-14	Hardware protection technologies (tamper-evidence or tamper-protection)
117-15	Protocol Filtering
117-16	Retro engineering protection
117-17	Secure development
117-18	Secured communication protocols
117-19	Source code Static Analysis (Source code vulnerability analysis)
117-20	Virtual Private Networks (VPN) technologies
118	Communication technologies
118-1	Below microwave frequencies
118-2	Micro- and millimeter wave
118-3	Ultrawide band
118-4	IR / Visible / UV laser
118-6	Acoustic communication, including underwater.
118-7	Optical fibre
118-8	Cable technologies
119	Physiology Science & Medical technologies
119-1	Medical products and materials

119-2	Surgical techniques and medical procedures
119-3	Human survivability, protection and stress effects
119-4	Human health physics
119-5	Neurosciences
119-6	Genome Engineering
119-7	Biomedical technologies
119-8	Rapid diagnosis of infectious disease
119-9	Telemedicine (diagnosis and surgery)
119-10	Novel antiviral, antibiotics, vaccines, and drug development
119-11	C & B knowledge and related data bases
120	Human sciences, including researcha and studies
120-1	Security / Military human resources management technologies
120-2	Human performance enhancement in crisis situations
120-6	Behavioural analyses
120-8	Psychology of workplaces and in emergency situations
120-10	Social analyses of teams and groups
120-13	Crisis Communication
120-14	Human behaviour models
120-25	Human factors in computers security
120-28	User friendliness technologies
120-29	Knowledge management
408B-3	R&D on user friendly technologies , Man-Machine-Interface
408B-4	Anthropometric studies for security systems
408B-5	Special Studies about the automation of human tasks in security related environment
121	Biotechnology
121-1	Biological technologies
121-2	Biomaterials and nanofabrication
121-3	Bio-compatible materials
121-4	Bio sensitive materials
121-5	Rapid analysis of biological agents and of human susceptibility to diseases and toxicants
121-6	Agro/food-biotechnologies
121-7	Contamination and intoxication of agriculture (water beddings, rivers, soil, air, ...)
121-8	Crop and animal viruses
121-9	Food testing and control techniques
121-10	Water testing and purification techniques
121-11	Decontamination techniques

II. Equipments and sub systems

200	Sensor Equipments
200-1	Non-acoustic sensors - UW
200-2	Cameras
200-3	Electrical and electro-chemical sensors
200-4	Explosive detection sensors
200-5	Magnetometers and magnetic gradiometers
200-6	Gravity meters and gravity gradiometers
200-7	Marine active sonar
200-8	Marine passive sonar
200-9	Acoustic and seismic sensors
200-10	Chemical and illicit substances detection
200-11	Biological substances detectors
200-12	Radiological and nuclear detectors
200-13	X-ray sensors
200-14	Gamma sensors
200-15	Active IR sensor equipments
200-16	Passive IR sensors equipments
200-17	Radar sensors equipments
200-18	SAR / ISAR equipment
200-19	Mm-wave sensors equipments
200-20	Micro-sensor systems for active control of structures
200-21	Motion sensor systems
200-22	LADARs, LIDARs equipments
200-23	Terahertz sensors
200-24	Magnetic sensors
200-25	Ultrasonic sensors
200-26	Autonomous small sensors
200-27	Smart dust technologies
200-28	Sensors on a chip
200-29	Sensors sitting
200-30	Mobile sensors networks info collection
201	Signal Protection
201-1	Effective defensive and offensive EW/IW techniques, measures and CM
201-2	Electronic protection
201-3	Optical counter measures: DIRCM
201-4	Optical counter measures: decoys and flares
201-5	Early detection techniques
201-6	Communication analysis
201-7	ELINT equipment
201-8	COMINT equipment
201-9	Radar active materials
201-10	IR active materials
201-11	Active materials (smart) for acoustic reduction
202	Identification equipment
202-1	IFF equipment
202-2	Non-co-operative IFF systems and techniques
202-3	Non-Co-operative Target Recognition equipment
203	Biometric equipment

203-1	Facial recognition
203-2	Fingerprints recognition (digital fingerprints)
203-3	Vein identification
203-4	Iris recognition
203-5	Hand shape recognition
203-6	Retinal patterns recognition
203-7	DNA analysis
203-8	Gait recognition
203-9	Voice recognition
203-10	Signature recognition
203-11	Ear shape recognition
204	Chemical, Biological, Radiological and Nuclear (CBRN) protection and decontamination equipment
204-1	Chemical agent defence, precursors and related materials
204-2	Biological agent defence, precursors and related materials
204-3	Mid-spectrum agent defence
204-4	chemical and biological defense systems
204-5	CB & RN Protection systems - Physical
204-6	CB Countermeasures - Medical
204-7	Biotechnology-based systems
204-8	Infrastructure and goods decontamination
205	Navigation, guidance, control and tracking
205-1	Inertial Navigation Systems (INS) and related components
205-2	Radio navigation, direction finding and map guidance
205-3	Vehicle and flight control equipment
205-4	Tracking equipment (electronic and mechanical seals)
205-5	Satellite navigation based receivers (miniaturization)
205-6	RFID based tracing device
205-7	Bar code based tracing device
205-8	Wi-fi based tracking device
205-9	Sense and avoid equipments
205-10	Unassisted landing systems
205-11	Digitisation of the environment/site
205-12	Geographic Information systems (GIS)
205-13	Environment/site information
206	Directed energy systems technology
206-1	Dazzle lasers against surveillance equipment (low power)
206-2	Deceive and dazzle lasers against missile seekers (low power)
206-3	Laser systems for sensor damage (medium power)
206-4	High energy laser (HEL), structural damage
206-5	High Power Microwave (HPM) (car stopping, antipersonnel, ...)
206-6	Particle beam (PB) systems
206-7	Supporting technologies for directed Energy Weapons
206-8	Low Power Electronic attack
207	Munitions devices and energetic contents
207-1	Gun propulsion
207-2	Mines, countermines, demolition systems, and EOD
207-3	Saving, arming, and futzing
207-4	Conventional munitions survivability
207-5	Ammunition hand and machine guns (small and medium calibre)

207-6	Ammunition large calibre guns
207-7	Kinetic energy (KE) subsystems
207-8	Weapons effects and countermeasures FTA
207-9	Induced shock waves from penetrating weapons
208	Non lethal weapons
208-1	Mechanical/kinetic anti-personnel
208-2	Mechanical/kinetic anti-materiel
208-3	Electromagnetic anti-personnel
208-4	Electromagnetic anti-materiel
208-5	Acoustical anti-personnel
208-6	Chemical anti-personnel
208-7	Chemical anti-materiel.
209	Weapon systems (other than missiles and NLW)
209-1	Small- and Medium-Calibre Weapons
209-2	Guns, Artillery, and Other Launch platforms
209-3	Torpedoes
210	Explosives removal
210-1	Explosive Ordnance Disposal
210-2	Explosives detection equipment
210-3	Mine detection and clearance
210-4	Counter Improvised Explosive Device equipment
210-5	Databases for IED components identification
210-6	High Power Microwave (HPM) for CIED (Counter Improvised Explosive Devise)
211	Survivability and hardening equipment for persons
211-1	Smart clothes and equipments
211-2	Exo Skeleton
211-3	Survivability of the embedded Personal Area Network
212	Forensic technologies, others
212-1	Drugs analysis
212-2	Fire arms and projectiles identification
212-3	Explosion investigations
212-4	Ballistics
213	Buildings platforms
213-1	Critical buildings specific architectures
214	Marine equipments subsystems
214-1	Propulsors and Propulsion Systems
214-2	Ocean salvage and deep sea implants
214-3	Signature Control and Survivability
214-4	Advanced Hull Forms
214-5	Human Systems Integration
214-6	Acoustic Sensors, Marine, Passive Sonar
214-7	Acoustic Sensors, Marine Platform
214-8	Electro-Optical Sensors for marine applications
214-9	Sea and Littoral Region Mine Countermeasures
214-10	Composite marine structures and substructures
215	Space equipments subsystems
215-1	Space Based Lasers
215-2	Structures for Space
215-3	Electronics and computers hardened for space environment
215-4	Space Optics & Optronics

215-5	Propulsion for Space Systems
215-6	Space Systems sensors payloads
215-7	Space Avionics
215-8	Power and Thermal Management
215-9	Space Systems sensors payloads
215-10	Survivability in Space
215-11	Hot structures for launchers
215-12	Thermal protection
215-13	Integration and Qualification
215-14	Space Autonomy
216	Ground equipments subsystems
216-1	Human Systems Interfaces for Ground Systems
216-2	Hybrid-Electric Propulsion Systems
216-3	Sensors for Ground Systems
216-4	Vetronics
216-5	Advanced Diesel Engines
216-6	Land Mine Countermeasures
216-7	Defensive Aids Suites for vehicles
216-8	Structures for transport vehicles
216-9	Structures for tanks
216-10	Structures for other fighting land vehicles
216-11	Light armoured structures
216-12	Ground based robotic structures and subsystems
217	Air equipments subsystems
217-1	Advanced Air Data Systems
217-2	Energy-Management-Systems (EMSs)
217-3	Advanced External Vision
217-4	Health” Monitoring and Diagnostics
217-5	Radars
217-6	Optoelectronical sensors
217-7	Human Systems Integration
217-8	Signature Control and Survivability
217-9	Avionics subsystems
217-10	Defensive Aids Suites for air platforms
217-11	Aeronautical propulsion
217-12	Airframe
217-13	Helicopters structures
217-14	Helicopters mechanical parts
217-15	Man-machine interface
217-16	Flight Control System
217-17	UAVs structures and subsystems
218	Missiles Equipments Subsystems
218-1	Optoelectronical seekers
218-2	EM seekers
218-3	Hybrid seekers
218-4	Other navigation tools
218-5	Communication equipments
218-6	Divert altitude control systems
218-7	Ground or sea launchers for missiles
218-8	Retargeting

218-9	Warheads
218-10	Missiles structures
218-11	Subsonic propulsion of missiles
218-12	Supersonic combustion Ramjet (Scramjet) Propulsion
218-13	Kinetic Energy Missile (KEM) Propulsion
218-14	Terminal Guidance
218-15	Fuses
219	Physical access control and Electronic Authentication Equipment
219-1	Smart cards
219-2	Electronic tagging systems
219-3	Hardware tokens
219-4	Related biometric equipments
220	Human Resources
220-1	Computer adaptive testing (CAT) technology (for assessment of personnel and selection)
220-2	Facilities for Recruitment and selection of Personnel

IIIA. Systems-Services Functions

300A	Risks assessment, modelling and impact reduction
301A	Risks and vulnerabilities assessment
302A	Risk reduction
303A	Protection
303A-1	Civil first responders protection
303A-2	Armed forces protections
303A-3	Population protection
303A-4	Doctrine and operation
303A-5	Training and exercises
304A	Exercise and simulation, training
304A-1	Detection, identification and authentication
305A	Search and detection
306A	Identification
306A-1	Identity management
306A-2	Positioning and localization
307A	Localization
307A-1	Situation awareness & assessment (surveillance)
308A	Surveillance
308A-1	Environmental monitoring systems
309A	Intelligence
309A-1	Information management
309A-2	Intervention and Neutralization
310A	Neutralization
310A-1	Communication
311A	Interoperable secured communications (Security systems architecture)
311A1	Command and Control
312A	Crisis Operations / Management – C3I
312A-1	Population warning systems
312A-2	Optimisation, Planning & Decision Support systems
312A-3	Infrastructure to Support Information Management & Dissemination
312A-4	Incident Response
313A	Search and Rescue and evacuation
314A	Decontamination and de-pollution
315A	Personnel outfit systems
315A-1	Subsurface systems
315A-2	Ground systems technology
315A-3	Air systems technology
316A	Psychological and Social aspects

IIIB. Design-Manufacturing

300B	Operating Environment Knowledge & Modelling Technology
300B-1	Oceanography
300B-2	Terrain science
300B-3	Meteorology
300B-4	Upper atmosphere and space environment
300B-5	lower atmosphere environment
300B-6	Acoustic propagation in air and water
300B-7	Electromagnetic propagation in air and water
300B-8	Pollutants and chemical propagation in atmosphere
300B-9	Chaos theories
301B	Systems Engineering and Design Management
301B-1	Interoperability
301B-2	COTS/MOTS/GOTS system based integration
301B-3	Safety Verification
301B-4	Cost Engineering
301B-5	Concurrent Engineering and Reduced Design Cycle
301B-6	Project Management and Control
301B-7	Reliability and maintainability of systems
301B-8	Integrated systems testing & evaluation
302B	Systems Certification and Failure Investigation
302B-1	Systems certification
302B-2	Failure Investigation
303B	Systems Engineering and Integrated Systems Design
303B-1	Aerodynamics
303B-2	Hydrodynamics
303B-3	Aeronautical Design and Systems Integration
303B-4	Radiation and EMV Hardening
303B-5	Robotics / automation in operational systems
303B-6	Security metrics
303B-7	System repair technology
303B-8	Electro-magnetic compatibility
303B-9	Digital power
303B-10	In-service data capture systems
303B-11	Fault tolerance and reconfiguration system
303B-12	Structural Vulnerability of systems
303B-13	Power management of systems
303B-14	Man Machine Interface / Man System Interface
303B-15	Design for Improved Reliability & Maintainability
303B-16	Advanced Prototyping
303B-17	Knowledge-based Engineering
303B-18	Health monitoring systems
303B-19	Signature Control for Ground Systems
303B-20	Acoustic design
303B-21	Stealth design
303B-23	Buildings design
304B	Manufacturing and fabrication technology
304B-1	Automation of industrial processes
304B-2	Metal working and industrial production

304B-3	Advanced fabrication and processing
304B-4	Bearing
304B-5	Metrology
304B-6	Non-destructive inspection and evaluation
304B-7	Techniques and Systems for Production Manufacturing
304B-8	Lean Manufacturing
304B-9	Process Control Technology
304B-10	Environmentally Friendly Factory Processes
304B-11	Production equipment
304B-12	Robotics
304B-13	Optical coating
304B-14	Dimensional metrology
304B-15	Precision bearings
304B-16	Micromechanical devices
304B-17	Mechanical, Thermal and Fluid-Related
305B	Software design validation and maintenance
305B-1	Software quality insurance
305B-2	Integrated Development Environment (IDE)
305B-3	Computer-aided software engineering (CASE)
305B-4	secure software engineering
305B-5	Design Pattern
305B-6	Agile software development
305B-7	Model Driven Software Development
305B-8	Component-Based Software Development
305B-9	Version Control System
305B-10	Code reuse
305B-11	Debugging tool
305B-12	Software testing processes and tools
306B	Simulation and design tools
306B-1	Sensor simulation
306B-2	Network centric simulation
306B-3	Hardware-in-the-loop-testing
306B-4	Manufacturing Process Simulation
306B-5	Computer aided design
306B-6	Computer aided manufacturing
306B-7	Vehicle Design and Synthesis Tools
306B-8	Digital vehicle
306B-9	Virtual reality centre (digital makeup of an architecture network, ...)
307B	Installations and Facilities
307B-1	Ground stations
307B-2	Site engineering
307B-3	Site sanitizing
307B-4	Wind tunnels
307B-5	Hydrodynamic test facilities
308B	Ergonomic and Human factors
308B-1	Methods, tools and processes to support the integration of people in security systems
308B-2	Analysis of user needs and user requirements for security systems
308B-3	Ergonomic Displays and Presentations.
308B-4	Human factors in error-tolerant systems

IV. Integrated platforms and systems and HFs

400	Marine platforms
400-1	Combat sea surface platforms
400-2	Logistic and support sea surface platforms
400-3	Unmanned surface vessels
400-4	Manned Submarines and deep submergence vessels
400-5	Unmanned Subsurface and deep submergence vessels
400-6	Mini and micro marine platforms
401	Space platforms
401-1	Communication satellites
401-2	Navigation satellites
401-3	Earth surveillance satellites
401-4	Meteo satellites
401-5	Manned space platforms
401-6	Unmanned scientific space platforms
402	Ground platforms
402-1	Ambulances
402-2	Fire engines
402-3	Tanks and armoured fighting vehicles
402-4	Transport vehicles
402-5	C2 and surveillance-vehicles
402-6	Others
402-7	Systems Integration for Ground Systems
402-8	Ground platforms survivability
402-9	Unmanned ground vehicles
403	Air platforms
403-1	Combat aircraft
403-2	Transport aircraft
403-3	Surveillance/C2 aircraft
403-4	Combat helicopters
403-5	Transport helicopters
403-6	Unmanned aerial vehicles
403-7	Lighter-than-air platforms
404	Missiles platforms
404-1	Missiles for space applications
404-2	Ballistic surface-to-surface missiles
404-3	Surface-to-surface missiles
404-4	Surface-to-air missiles
404-5	Air-to-surface missiles
404-6	Air-to-air missiles
405	Simulators, Trainers
405-1	Skills training systems
405-2	Tactical / crew training systems
405-3	Command and staff training systems
406	Deterrence systems
407	Identity management systems
407-1	biometrics solutions

407-2	token management
407-3	secure database management
408	Integrated Surveillance Systems
408-1	Forest / network of sensors
408-2	Wide-scale long-range multi-sensor surveillance
408-3	Site sensors networks
409	Stealth management : Signature Control and Signature Reduction
409-1	Radar signatures
409-2	Micro- and Millimetre wave radar signatures
409-3	Laser signatures
409-4	IR signatures
409-5	Visible/UV signatures
409-6	Acoustic signatures
409-7	Electrical and electrochemical signatures
409-8	Magnetic signatures
409-9	Theory theoretical models technique
409-10	Signature reduction
409-11	Signature control and survivability
410	Stealth Technologies
410-1	low signature apertures
410-2	Conception of stealthy airframes, ships and vehicles
410-3	Stealth management
411	C2, Information and intelligence systems
411-1	Intelligence integration (linking surveillance systems with databases)
411-2	Communication Command Control Information systems
411-3	Intelligence systems
411-4	Information exchanges and interoperable databases
411-5	Optimisation, Planning & Decision Support systems
411-6	Infrastructure to Support Information Management & Dissemination
412	Networks and information security systems
412-1	Cyber security policy management tools
412-2	Cyber attack systems
412-3	Cyber protection systems and architectures
412-4	Network security and data integrity between distributed sensors
413	Communication Systems
413-1	Rapidly Deployable Communication Infrastructure
413-2	Mobile Communications Infrastructure
413-3	Rescue Services Mobile Communication Systems
413-4	Secure Mobile Communication Systems
413-5	Self configuring Networks
413-6	Secured, wireless broadband systems
414	HF's Services to Security
414-1	Human Factors Integration (a.k.a. Human system integration, Human Factors engineering) into the design of systems
414-2	Human Factors in Threat Analysis
414-3	Human Error Analysis (a.k.a soft risk analysis)
414-4	Performance and behaviour improvement on the job of security personnel.
414-5	Human Factors aspects of site protection and access control
414-6	Human Factors aspects in background security checks

414-7	Contribution to crisis management including Lessons Learnt.
414-8	Psycho-social treatment of victims.
415	Equipped Personnel
415-1	Equipped soldier ('soldier system')
415-2	Equipped fire fighter
415-3	Equipped medics
415-4	Health and well-being monitoring systems
416	Integrated systems of systems
416-1	simulation and representation of complexity
416-2	Broadband access to mobile users in dynamic situations / EM difficult scenarios
416-3	Communications systems - below microwave frequencies
416-4	Communications systems - micro- and millimeter wave
416-5	Communications systems - IR / Visible / UV laser
416-6	Communications systems - Acoustic
416-7	Communications systems - Underwater acoustic
416-8	Communications & CIS Security systems
416-9	Communications switching: in level II communication subsystems, with antennas, front end, etc...
416-10	Communications network management and control
416-11	Command & Information Systems Integration
416-12	Information security
416-13	Network and protocol independent secured communications
416-14	Multi-mode secured communications
416-15	Re-configurable communications
416-16	Mobile secured communications
416-17	Protection of communication networks against harsh environment

VA. Mission Capabilities

500A	Preserve the functioning of the State
500A-1	Safeguard secured liaisons
500A-2	Protection of Installations and buildings of vital importance
500A-3	Protection of Authorities
501A	Ensure Identification and control of goods and people
501A-1	Ensure management and control of identities and rights
501A-2	Control and track cross border goods and materials
501A-3	Control and track cross border information
502A	Ensure and Maintaining Law and Order
502A-1	Fight against trafficking
502A-2	Fight against criminality
502A-3	Fight against delinquency and insecurity
502A-4	Manage intervention and neutralisation
502A-5	Manage judicial police operations
503A	Ensure Economic Security
503A-1	Ensure Intelligence (economic intelligence)
503A-2	Use appropriate instruments
503A-3	Ensure continuity of economic activity
504A	Protection of citizens (goods and people)
504A-1	Protect each individual citizen (included protecting fo material and immaterial goods)
504A-2	Secure public area
504A-3	Rescue of people (see rescue,...)
504A-4	Control of environment
504A-5	Secure food chain and wealth products
504A-6	Ensure collective protection (included secure public area)
505A	Avert and foreseen Catastrophes
505A-1	Decrease technological and industrial risks
505A-2	Surveillance of environment in order to alert
505A-3	Ensure Epidemiological Surveillance
505A-4	Surveillance of zones under humanitarian risk (migratory flow, drought,...)
506A	Avert and prepare themselves against aggression
506A-1	Manage intelligence and surveillance actions
506A-2	Evaluation of treats and vulnerabilities
506A-3	Reduction of criminology qualities
506A-4	Take protection measures (proactive and reactive ones)
506A-5	Manage preventative operations
506A-6	Surveillance of environment (control, detection CBRN, abnormal behaviours,...)
506A-7	Ensure Communication and alerts
507A	Control and surveillance of areas
507A-1	Air surveillance
507A-2	Maritime surrounding areas surveillance
507A-3	Costs and boundaries surveillance
507A-4	Surveillance of information flows and illegal content
507A-5	Detection and neutralisation of non authorised people or mobiles (before crisis)

508A	Protection of areas and infrastructures
508A-1	Protection of partially opened sites (ports, airports, hospitals,...)
508A-2	Protection of closed areas (sensitive installations)
508A-3	Protection of open areas (shopping centres,...)
508A-4	Protection of sites where events take place (G8, concerts in open areas,...)
509A	Protection of networks
509A-1	Transport systems
509A-2	Water and power distribution
509A-3	Communication network
509A-4	Information systems
509A-5	Bank Systems
510A	Protection of environment (before, during and after)
510A-1	Fight against pollution
510A-2	Fight against treats to the Environment
510A-3	Monitor the respect of agreements
511A	Security of transport
511A-1	Transport of dangerous materials
511A-2	Surveillance of traffic areas
511A-3	Ensure the continuity of flows
511A-4	Restore security of flows
512A	Crisis management
512A-1	Crisis management operations
512A-2	Manage and lead complex operations
512A-3	Rescue of people
512A-4	Protection of order and rescue forces
512A-5	Protection of chain of evidence
513A	Ensure restoration and reparation
514A	Security of nationals abroad
514A-1	Protection of traffic areas
514A-2	Collection of local data
514A-3	Lead evacuation operations
515A	Lead operation for external security
515A-1	Humanitarian Operations
515A-2	Evacuation Operations
515A-3	Conflict prevention/Peace keeping
516A	Control of disarmament/ fight against proliferation
516A-1	Ensure intelligence
516A-2	Area Surveillance
516A-3	Control and track of flows, substances and materials

VB. Policy and Support

500B	Security Analysis
500-1	Policy, force development and balance of investment studies
500-2	Combined operational effectiveness and investment appraisals
500-3	Platform and system concept studies
500-4	Scenario generation
500-5	Other effectiveness and performance studies
500-6	Political & Cultural, ethical and religious analysis
500-7	Crisis management and Conflict Simulation
500-8	Legal & Ethical constraints
500-9	Multinational and Inter-organisation analysis and planning and operation
501B	Miscellaneous Security Functions and Policy
501B-1	International Security & Counter Insurgency
501B-2	Non-proliferation
501B-3	Hazard assessment
501B-4	Distribution Logistics (e.g. maintaining distribution logistics in cases of severe crises)
502B	Human resources (HR) management for security personnel
502B-1	Recruitment of personnel
502B-2	Selection of personnel (e. g. Baggage and cargo screener selection)
502B-3	Licensing and Certification
502B-4	Working practices, procedures and rules of engagement
502B-5	Staff management and working practices
502B-7	Team (Crew) Resource Management
502B-9	Knowledge management applied to Security issues
503B	Training
503B-1	Operator training
503B-2	Population training
503B-3	Leadership/managers training
503B-4	Training Centres/facilities, e.g. airport training centres
503B-5	Training Development and evaluation
503B-6	Event specific training, e.g. hostage taking hijacking, mine-awareness.
503B-7	Job and task specific training, e.g. Baggage and Cargo screener training .
503B-8	Media training
504B	Scenario and decision simulation
504B-1	Human behaviour modelling and simulation
504B-2	Simulation for decision making (real time simulation)
504B-3	Mission simulation
504B-4	Evacuation and consequence management techniques
504B-5	Impact analysis concepts and impact reduction
504B-6	Structures vulnerability prediction
504B-7	Space Operations monitoring
504B-8	Quick Launch
504B-9	Single-Stage-To-Orbit (SSTO) Reusable Launch Vehicle (RLV)
504B-10	Launch Vehicles for Space Systems
505B	Long term health hazard prevention in security related situations
505B-1	System safety of security systems



505B-2	Fatigue and stress observation, analysis and coping
505B-3	Occupational health services for security personnel (methods, facilities, evaluation)
505B-4	Plans and concepts for disaster medicine and relevant health services