

LUXEMBOURG INDUSTRY AND RESEARCH CAPABILITIES FOR SECURITY AND DEFENCE 2024



THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Foreign and European Affairs,
Defence, Development Cooperation
and Foreign Trade
Directorate of Defence



LUXINNOVATION
#MakingInnovationHappen

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Designed to facilitate the setting up of international partnerships, the third edition of “Luxembourg Industry and Research Capabilities for Security & Defence” highlights the capabilities of Luxembourg industry and research organisations active in the field of security and defence.

Luxinnovation, the national innovation agency, supports the development and implementation of defence-related technologies and innovation by Luxembourg industry and research organisations and helps them meet the needs of European security and defence.

Under the remit of the Luxembourg Directorate of Defence of the Ministry of Foreign and European Affairs, Defence, Development Cooperation and Foreign Trade, Luxinnovation helps these players integrate into the European security and defence value chain, meet key partners and get access to the EU and NATO acquisition and innovation programmes.

This third edition of the catalogue is the most complete public overview of the Luxembourg security and defence community published to date. It includes companies and research centres that offer services and/or products developed or manufactured in Luxembourg which are of interest to the security and defence sector. The intention is to encourage potential partners from around the world to explore the opportunities for international research and business development in Luxembourg in order to establish mutually beneficial partnerships.

User guide

The catalogue is organised by alphabetical order. The entities are presented in fact sheets summarising their activities and services or products, around five capability domains: land, naval, air, cyber and space.

OPERATIONAL DOMAINS



LAND



NAVAL



AIR



CYBER



SPACE

SME

3DPRINT.LU

service provided by AMSOL s.à r.l.



3dprint.lu
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3DPRINT.LU - AMSOL

With 21 years of combined experience, 3DPrint is a leading 3D printing company in Luxembourg and the Greater Region. Its solutions make it easy for all customers to access additive manufacturing on demand. 3DPrint sources 3D printed parts from single copies to serial production in high-performance materials ranging from plastic to metal. By using the latest additive manufacturing and 3D scanning technologies, its customers can overcome the constraints of traditional manufacturing.

- 3D Printing
3D printing, also known as additive manufacturing transforms digital designs into physical objects, layer by layer and it is a versatile solution with a range of advantages.
- 3D Scanning
Highly accurate and reliable solution for creating digital representations of physical objects through 3D scanning, which is the most precise and cost-effective way to digitalise objects.
- CAD Design & Engineering
With its experience in Additive manufacturing and innovative CAD software, 3DPrint offers a tailored service for Governmental Bodies, small businesses or guide experienced engineers in the domain of AM.
- Product Development
With its engineering and design service, 3DPrint ensures not only functionality but also aesthetics of its product. The Product designers take care of ergonomics, product semantics and appearance.
- Workshop / educational training / courses
The practical guide for 3D printing, from interactive workshops on the world of additive manufacturing and 3D scanning to in-depth courses for professional users in the industry.

SME

ACT

ACTinBlack®



www.actinblack.com
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ACTINBLACK EUROPE

Since its inception in 2013, ACTinBlack (ACT) has continuously exceeded the industry standard in the research and development of advanced Night Vision Optics and Devices. Headquartered in Luxembourg, ACT provides superior customer service and solutions to its global market in rapid response time. As a company that was founded on the principles of innovation, accessibility and commitment, it is ACT's vision to outfit its clients with the proper Night Vision solutions they need to ACT-in-Black.

- Night Vision System
- Thermal Vision Systems
- SWIR Vision Systems

SME

ADWÄISEO



www.adwaiseo.eu
information@adwaiseo.eu

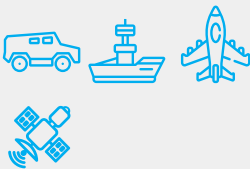
adwäisEO is specialised in digital services dedicated to geospatial data handling. In particular, the company operates components of the Payload Data Ground Segments of Earth Observation satellites, offering services to Space Agencies & commercial satellite operators for archiving, preserving, (re-)processing and disseminating satellite data.

Thanks to cutting-edge expertise in EO data and ICT the company offers high performing and cost-effective solutions such as multi-Petabytes archives, intuitive geoportals and efficient processing solutions on its own clusters and private Cloud, as well as public Clouds (in a distributed manner Cloud) and/or HPC environment.

- Dual-Use R&D in geospatial intelligence: global & systematic daily exploitation of public EO HR data for surveillance (i.e., detection of anomaly of LU/LC) then referral to VHR satellites for final classification/recognition and identification -project & demonstration for a NATO country.
- Internal Dual-Use R&D on the organisation of data sets for ISR data fusion.

LARGE

AIRTECH EUROPE



Airtech Europe is a division of Airtech Advanced Materials Group, the largest manufacturer of vacuum bagging and composite tooling materials for prepreg/autoclave, resin infusion, and wet lay-up processes up to 426°C. Airtech is providing innovative and high-quality composite solutions to a wide range of industries, including aerospace, wind energy, marine, automotive, and general composites.

- Additive Manufacturing and 3D printing tooling services for composites: Large-scale tooling in the form of trim fixtures, holding fixtures, and layout molds.
- Airtech also manufactures a full line of Dahltram® fiber reinforced compounds and filaments for 3D printing of composite tooling and parts.

www.airtech.lu
sales@airtech.lu

SME



www.am-4-am.com
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AM 4 AM

AM 4 AM is developing and producing advanced materials for 3D printing. Thanks to its innovative process, high performance metal powders with unprecedented properties are delivered at low cost and with low resources consumption.

- "HiperAL" - Lightweight/strength materials: High mechanical strength aluminium powder designed for additive manufacturing.
- Advanced materials development: process providing conventional additional properties such as ballistic, magnetic shielding, heat resistance...
- Materials for cold spray and on site repair: AM 4 AM is involved in the development of new materials for cold spray applications in order to provide on-site repair solution for military operations.

SME



www.amphinix.com
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AMPHINIX TECHNOLOGIES

Amphinix Technologies (AT) is a valued provider of complex, tailor-made software solutions for the satellite industry. The company operates from two offices: Luxembourg (since 2002) and Zagreb (Croatia). Amphinix Luxembourg (ATL) provides SatCom's enterprise solutions for commercial and governmental sectors and currently employs +25 people.

ATL's primary field of expertise is in the ground segment solutions - SatCom Virtualisation, Monitor and Control, Mission Operations, Simulations, (Independent) Validation and Verification, Cybersecurity, and 5G/3GPP integration.

- P2P-FSO - ATL is a part of the international consortium for the EDF project. The project is establishing secure and super-fast optical communication between land and maritime vehicles. Amphinix Luxembourg oversees cybersecurity provisions (both on the protocol and firmware level).
- BLINK - ultra-fast, fully virtualized demodulator for Earth Observation data acquisition. The first and by far the fastest modem of a kind.
- MONICA - M&C solutions for the Ground segment in satellite communication. Can be used as a COTS solution or as a customized framework for super-secure governmental missions. It supports various security mechanisms (e.g. encryption, multitenancy...).
- ViSAGE - feasibility study (under the ESA ARTES C&G program) kicked off in Nov 2022, focused on virtualisation and 5G compliant orchestration of ground segment for SatCom. Cybersecurity and Ground Segment resilience are part of it.

SME

ANG



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Based in Luxembourg, ANG is a seasoned expert in the precision engineering sector, with a focus on manufacturing high-quality mechanical components. With decades of experience serving the industrial needs of Luxembourg and the greater region, ANG has honed its skills in machining and thermal treatment processes, including stress-relief annealing. This expertise positions ANG as a reliable partner for the European defence industry, ensuring top-tier precision and quality in every component produced. The company's commitment to adopting advanced technologies and pursuing EN9100 certification further demonstrates its readiness to meet the stringent demands of defence sector clients.

• **Precision Machined Components:** ANG specialises in producing high-precision machined components, crucial for defence applications where accuracy and reliability are paramount. Utilising state-of-the-art machining technology, ANG delivers parts that meet the most rigorous standards required in defence equipment manufacturing.

• **Stress-Relief Annealing Services:** Offering stress-relief annealing, ANG plays a key role in enhancing the structural integrity of metal components used in defence applications. This process significantly improves the mechanical properties of metals, ensuring durability and reliability in demanding military environments.

• **Plasma Nitriding Services:** ANG provides plasma nitriding, a surface hardening process vital for enhancing the wear and corrosion resistance of metal parts used in defence applications. This advanced treatment ensures that components can withstand extreme conditions, thereby extending their operational life in defence equipment.

• **Advanced Automation in Parts Manufacturing:** Embracing automation, ANG offers rapid and efficient production of defence components. This capability is crucial for meeting the high-volume and time-sensitive demands of defence projects, while maintaining consistent quality and precision.

• **EN9100 Certification Compliance:** As ANG is in the process of obtaining EN9100 certification, it ensures adherence to high-quality standards in the aerospace and defence industries. This certification highlights ANG's commitment to excellence and its capability to meet stringent industry regulations and quality standards.

SME

Apateq - PWT



www.apateq.com
info@apateq.com

Apateq offers complete solutions for water and wastewater treatment, supplying compact, containerised, rugged and fully automated equipment that can easily be deployed in the field. Utilising state-of-the-art components, the water filtration units produce clean water from different sources of contaminated raw waters, that comply with the strictest water quality standards.

• The products offered by the company are tailor-made to meet the most stringent water treatment requirements, no matter what the polluted water source might be.

• Wastewater treatment systems

• Drinking water systems

• Containerised equipment

• Rugged construction water treatment systems

SME



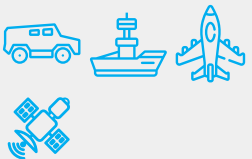
www.artec3d.com
defence@artec3d.com

ARTEC 3D

Artec 3D is a global leader in handheld and portable 3D scanners and has been at the forefront of developing innovative 3D technology since 2007. The company manufactures high-quality, yet easy-to-use portable 3D scanners, smart, user-friendly 3D software and an SDK that provides the best integration possibilities, whatever the application.

- Supporting defense research programmes.
- Identification of non-visible defects and recovery of the samples of military machinery.
- Creation of highly accurate digital models of any equipment, which will enable the design and development of new technologies and systems.
- Digital twin creation.
- Analysing data for reverse engineering of an equipment or part: creating customised details, improving the aerodynamic profile, speeding up manufacturing design project workflow, quality inspection.

SME



www.beyondex.space
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BEYONDEX

BeyondEx transforms geospatial and space data analysis through AI-powered natural language interactions. The company creates intuitive, user-friendly solutions that democratise complex data insights for various applications, including Defence & Security. By integrating the latest Generative AI with satellite imagery and diverse data sources, BeyondEx offers unparalleled situational awareness and strategic intelligence capabilities, making advanced analytics accessible to all levels of expertise.

- Crisis Response and Management: Utilises real-time satellite data analysis for rapid assessment and action in crisis situations, enabling defence forces to make informed decisions swiftly.
- Infrastructure Surveillance and Reconnaissance: Offers AI-powered surveillance capabilities for monitoring critical infrastructure, improving security and operational planning in sensitive areas.
- Terrain and Environmental Analysis: Provides detailed terrain and environmental assessments for mission planning and risk assessment, supporting safer and more strategic deployment of defence resources.
- Threat Detection and Prediction: Combines AI with advanced imagery analysis for early threat detection and situational awareness, and to forecast potential security threats, supporting proactive defence measures, critical for national security.
- Automated Image Recognition for Defence: Automatically identify and classify objects of interest in satellite images for military and security purposes.

LARGE

BLUE HORIZON



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Blue Horizon is a life-science company which aims at becoming a global leader in bio engineering developing and using earth and space technology for the benefit of mankind. Blue horizon works on a combination of micro species (algae, bacteria, fungi, lichen) for earth and space applications. In most cases, the applications are supported by AI based remote sensing tools.

- Land Mine detection by bacteria and remote sensing.
- Reduction of forest fire risks.
- Stabilisation of sand with biological soil crusts to fight against desertification.
- Reduction fire risks.
- Increasing organic soil carbon.
- Usage of organic waste as material.

SME

BRADFORD SPACE



bradford
space



www.bradford-space.com
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Bradford Space is a subsystems design and manufacturing company that specialises in propulsion, attitude and avionics subsystems for satellites from small sats and constellations to the largest flagship missions.

- Propulsion systems, both off-the-shelf and bespoke, enabling reacting mobility on orbit.
- Avionics and attitude control systems well-suited for both civil and defence needs.
- Expertise and capabilities to meet the specific requirements of military users.

LARGE



www.cebi.com
testing.lu@cebi.com

CEBI TESTING SERVICES

Cebi Testing Services performs a wide range of tests for the aerospace and defence industries. Using state-of-the art equipment, Cebi's engineers and technicians offer a complete portfolio ranging from 3D printing and material analysis to mechanical, environmental, climatic and electromagnetic testing. The proximity to Cebi's R&D offices allows additional engineering support. From initial ideation to final confirmation, it is ensured that every step of the clients R&D journey is data-driven.

- Cebi's range of product testing tackles most complex R&D issues:
- Design Verifications & Validations.
- Water & Dust Intrusion Resistance.
- Vibration & Dynamic Stresses and Corrosion Tests.
- Materials Analysis and Electromagnetic Compatibility.
- Endurance Life and Accelerated Aging Tests.

LARGE



www.ceratizit.com
offer.hardmaterials@ceratizit.com

CERATIZIT

Ceratizit is a high-technology engineering group specialised in cutting tools and hard material solutions. Activities in defence industry consist in developing and manufacturing hard materials as components and tools used for high-performance defence equipments.

- Development and manufacturing of Tungsten Carbide cores for ammunitions.
- Development and manufacturing of hammers for rotary forging of gun barrels.
- Development and manufacturing of waterjet nozzles for ceramic defence components manufacturing.
- Development and manufacturing of tools (dies and punches) for ammunition casing forming.

SME



www.changedigital.lu
contact@changedigital.lu

CHANGE DIGITAL

Change Digital positions itself as a transformation-focused service and consulting company, dedicated to offering innovative and reliable solutions to its clientele. Placing customer relationships at the core of its priorities, the company is committed to providing secure and dependable information technology solutions. Our services encompass a comprehensive range of solutions, spanning from business consulting to managed services, including cybersecurity solutions. With a focus on understanding and supporting client needs, Change Digital stands out through its customer-centric approach in delivering IT services and consulting.

- Network Detection & Response Technology.
- Vulnerabilities Scan as a service.
- PenTest as a service.
- Trainings.

SME



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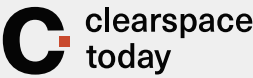
CIRCU LI-ION

Circu Li-ion is a European battery upcycling company. It has developed an automated battery upcycling solution, enabling reuse and clean recycling streams of End-of-life batteries.

- Saving critical minerals in the EU: Through its battery disassembly solution, Circu-Lion enables clean recycling streams and the reuse of battery components (cells, modules, plastics etc.). By reusing most components, the company ensures to decrease the dependency of critical minerals from other countries (i. e. China).
- Waste disposal and Safety issues: the automated robotic disassembly solution, based on machine learning algorithms and AI, is able to disassemble battery packs to cell level. This could be used for military applications (artillery, drones etc.), enabling a safe waste disposal, without the need of exporting critical infrastructure.
- Data: the collection of battery data in every step of the process enables the creation of a global battery database. This Database ensures that critical battery and critical mineral data is collected and stored on European servers.

SME

CLEARSPACE



www.clearspace.today
info@clearspace.today

ClearSpace is an in-orbit servicing (IOS) company created in 2018 whose mission is to remove space debris and provide in-orbit services on operating satellites before they become space debris. ClearSpace is creating technologies that will support a wide range of services: from disposal to inspection, assembly, repair and recycling.

ClearSpace is becoming a global company with dynamic engineering teams in Switzerland, the UK, Germany, Luxembourg and in the US. ClearSpace supports institutions and commercial operators to enhance sustainable space operations and promote a circular space economy. All the Services and Products are proposed from Low Earth Orbit to Geostationary Orbit.

- **Inspection services:** getting in the close vicinity of a space objects in order to examine its physical and dynamic state enables the detection of anomalies or assessments of consequences of a failure, collision or attack in space.
- **Capture/Docking system:** the technology that enables to safely capture another satellite.
- **Life extension services:** performing rendezvous and docking to a functioning satellite running low on propellant thanks to a Servicer which provides station-keeping manoeuvres of the combined satellites for several years and takes over the attitude and orbit control system (AOCS) of the client satellite. The assisted disposal (end of life removal) service is complementary.
- **Refuelling services:** performing rendezvous and docking to a functioning satellite running low on propellant and refuel it with a Servicer through a dedicated interface (this means the client's satellite needs to be priorly prepared).
- **Rendezvous system** (Guidance, Navigation and Control + Sensors): the algorithms and sensors needed to do rendezvous with another object in space in order to perform far to close range operations.

SME

COMPELLIO



www.compellio.io
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Compellio is a software company headquartered in Luxembourg, providing patented (USPTO) global infrastructure components for bridging the gap between web2 and web3 computing. Its mission is to deliver high-performance solutions that combine the best capabilities of both centralised & decentralised worlds, with the aim to break the siloed design approach of mainstream DLTs and create scalable services for public and private organisations. Since 2018, Compellio's team has implemented blockchain-based solutions for large EU institutions, industry players, academic institutions, and SMEs. It also involved in joint research with MIT Connection Science and participates in EU Horizon projects targeting advanced Web3 R&D.

- **Cybersecurity & software supply chain solutions:** Unlock new trust capabilities by strengthening the software supply chain through secure software development practices, verifiable data sharing, and enhanced forensics/recovery from cyber-attacks. Trace the steps of the software supply chain (updates, version control, contributors, audit conformance test/statements, etc.) and control the way they structure, immutably register, and compare data.
- **Circular & sustainable supply chain solutions:** New multi-sector Digital Product Passport (DPP) solution that combines blockchain, verifiable credentials, and decentralized identity technologies to deliver enhanced levels of accountability and transparency within complex supply chains. Generalised framework that can be used to register and trace information related to sustainability claims, ESG disclosures, audit reports, and supply chain collaboration workflows.

SME



www.connectcom.lu
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CONNECTCOM

ConnectCom's aim is to shape and operate best-in-class radio communication technologies enabling organisations to keep their operations and assets safe. ConnectCom's focus centers around "connecting and protecting", in order, to provide innovative communication and surveillance solutions for public safety, industry and defence. Products and solutions include wireless networks for public safety organisation (police, fire brigades etc), ad-hoc or deployable secure solutions for mobile units (defence, special forces), network or visual identification and protection solutions.

- Radio communication systems and networks: Dual use networks for small, mid and large area coverage with underlying encryption standards (digital or analogue technologies).
- Radio communication subscribers: The handheld fix and mobile devices following MIL standards for use in the radio communications networks.
- Bridges and interfaces between heterogeneous radio communication systems and networks: Interfaces that enable the seamless inter-connection of satellite or ground networks.
- Engineering and test capabilities for such developments.

SME



www.ctisystems.com
cti@ctisystems.com

CTI SYSTEMS

CTI Systems offer individual and flexible concepts and systems that ensure that aircraft are serviced safely, economically and in the most time-efficient way possible. To this we count:

- Maintenance, Repair and Overhaul (MRO) service access solutions: (Engine work stands, aircraft dockings, teleplatforms & Aerial jib platforms for MRO and painting).
- Material handling (customised handling and storage devices, specialised overhead cranes and heavy duty monorails, dedicated conveyor technology, all for automated processing).
- Storage of aircraft parts (Automated warehouse solutions incl. process automation software).

- Teleplatforms – aircraft access solution : Teleplatforms operate in all crane-covered hangar areas.
- Engine handling - in Engine overhaul or within Test beds: Dedicated workstations in combination with customized transfer cranes and monorails.
- Maintenance dockings : CTI Systems docking systems are used in aircraft maintenance and overhaul. By enclosing all relevant work areas on the aircraft, they allow simultaneous access and work in any desired work area, resulting in shortest possible turnaround times (TAT).
- The Aerial Jib Platform (AJP) – The advanced access during aircraft paint process. The AJP is the ideal option in hangars that are unsuited to the use of roof-mounted teleplatforms since they are fixed to the hangar floor during operation.

SME



www.cybersecurityspeed.com
info@cybersecurityspeed.com

CYBER SECURITY SPEED

Cybersecurity Speed specialises in cutting-edge security solutions, focusing on Operational Technology, Industrial Control Systems, and Security Operations Centers tailored for the defence sector. Its expertise in safeguarding critical infrastructure against emerging threats positions the company as a key ally for military and defence organisations. Through rigorous assessment, implementation, and monitoring, Cybersecurity Speed ensure the integrity, confidentiality and availability of sensitive operations. Its dedicated team combines strategic insights with the latest technologies to deliver robust, scalable solutions that address the unique challenges faced by the defence industry.

- **Advanced ICS/OT Security Solutions:** Advanced Industrial Control Systems (OT) security solutions are designed to protect critical infrastructure and key resources.
- **Custom SOC Services for Defence:** Tailored Security Operations Center (SOC) services specifically designed for military and defence applications.
- **Cyber Threat Intelligence for Defence Sector:** Actionable insights into potential threats targeting the defence sector. Proactive defence strategies and operational security measures against state-sponsored actors and advanced persistent threats (APTs) by analysing trends and indicators from a wide range of sources.
- **Secure Communication Systems:** Providing secure communication systems that offer end-to-end encryption and are designed to meet the rigorous standards of the defence sector.
- **Drone Defence Systems:** Dual-use technologies capable of protecting military installations and critical infrastructure from unauthorised drone activities. These systems detect, track, and neutralise potential drone-based threats.

SME



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DATA DESIGN ENGINEERING

Data Design Engineering is a forward-thinking enabler of high tech AI adoption and exploitation, leveraging extensive experience across diverse industries. Specialising in space and earth observation, natural language processing, prediction analysis, image processing, voice cloning, and more, we bring cutting-edge solutions to the forefront. Its expertise extends to enhancing and optimising deep learning algorithms deployed on cloud servers, ensuring seamless operation on current edge devices, including satellites. The company develops completely data-driven customised and localised AI solutions & services that are highly accurate, high-speed, have low operational cost and are fully automatable without the need to change existing systems.

- **Emergency Crisis Detection & Monitoring:** Advanced event detection, ripple prediction, and alternative solution generation models to proactively identify potential sourcing challenges arising from diverse events.
- **Intellectual Crime Detection & Monitoring:** Detecting intellectual crimes such as technology theft, tax evasion, and capital flight thanks to a custom real-time social monitoring platform.
- **SAR Mobile Target Tracking:** Mobile target tracking capabilities, specifically tailored for monitoring vessels and other moving objects.
- **3D Single Image Generation:** Leveraging AI and pre-trained models to approximate mapping from satellite imagery to DEMs.
- **Environmental Monitoring by Pre-trained Model:** Meticulously analysing satellite imagery and sensor data.

SME



www.datathings.com
contact@datathings.com

DATATHINGS

DataThings edits and develops software solutions for efficient analytics of massive complex data. Its unique GreyCat technology enables the creation of domain-specific and dedicated digital twins powered by machine learning algorithms to learn from actual operations and support operational decision making. DataThings' technology finds its most powerful usage in the processing data that are relational and evolving in time and/or space. Typical use cases include live monitoring of integrated systems, (large) infrastructures management, and logistics, energy and production data analysis and predictions. Developed from scratch by DataThings with no dependencies, GreyCat allows deployments offline and on premises.

- Alva: Digital Twin of Smart Electricity Distribution Grids, including low, medium and high voltage, learning from actual consumptions to provide loads predictions and grid planning.
- GreyCat: offline data storage and processing solution, to analyse data efficiently in batch and/or create live analytics services with always up-to-date machine learning models.
- Dedicated software development: DataThings partners with their clients to bridge the gap between business specific needs and possible technological solutions, and their implementation and support.

SME



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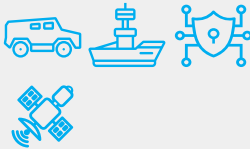
DYNACCURATE

Dynaccurate utilises artificial intelligence to harmonise data from different sources so that information can have common meaning preserved across different machine systems ('Semantic Interoperability'). Its technology is relevant to any knowledge graphs, distributed systems, federated data, etc. The company is particularly well versed for medical use cases. Use cases for its technologies are:

- Data harmonisation across federated sources.
- Data harmonisation/Data MESH/Data Interoperability between different sources/devices/IoT.
- Medical/Clinical application development.

- DyMap is a cloud-based SAAS which can be used off the shelf for:
 - Data harmonisation across federated sources.
 - Data harmonisation/Data MESH/Data Interoperability between different sources/devices/IoT.
- General data interoperability support can be used to support management of Nato Stock Numbers to local catalogues, explicit management of specific physical goods, such as ammunition, medical supplies etc.

LARGE



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EARTHLAB LUXEMBOURG

EarthLab Luxembourg, a Telespazio group entity, has been a leader in defence sector technology since 2015, specialising in artificial intelligence and Earth observation. The company pioneers in developing advanced technological solutions with "dual use" capabilities, catering to both civilian and defence needs. Its innovative approach merges Earth observation data with cutting-edge AI and Big Data techniques to provide accurate analysis and forecasting across various critical domains. A particular focus is placed on securing peripheral networks in vital infrastructures, aiding in protection against disruptions and ensuring the reliability of essential services.

• **Maritime Surveillance:**
It is crucial to analyse the surface activities & the comportment in dark-fish or preservation of protected maritime areas. E.O., GNSS, & A.I. are very important: it offers the possibility of systematically analysing all the area images. Max-ICS platform helps create or improve the A.I. models & supports the automatically scaled deployment within a public cloud.

• **DroneAI:**
EarthLab has launched an innovative solution to push the use of space data and A.I. on disaster/humanitarian response and Defence: it combines E.O. open & commercial data to feed a data processing chain defined by the actors (people detection, Mines detection...).

• **Cybersecurity:**
Developing innovative security solutions and standards for edge networks in critical infrastructures, focusing on robust protection and integration with core production systems.

LARGE



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EBRC

EBRC - European Business Reliance Centre -, a company of the POST Luxembourg Group, is a datacenter, cloud and ICT outsourcing partner for defence in cyber and space projects.

The company has built its expertise for the security, defence and space sectors on:

- international certifications such as ISO 27001 and ISO 22301 and Tier IV certification for their datacenters.
- obtaining confidential/secret accreditation and clearance for their critical people as well as infrastructures.
- its expertise gained from critical industries (financial, health and space sectors as well as operators of essential services – Directive NIS).

• **Three certified Tier IV Data Centers** located in Luxembourg in the heart of Europe, the highest level of certification possible for datacenter hosting.

• **Advisory – ICT Risks** assessment, Governance, Risk and Compliance (GRC), Business Continuity consulting.

• **ICT Managed Services –** Advising, designing, building, operating, maintaining and upgrading IT mission-critical infrastructures.

• **Cloud Solutions –** Trusted and multi-cloud solutions and consulting.

SME



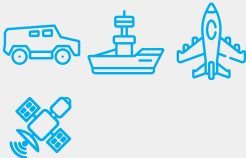
www.ellipsys-lab.com
contact@ellipsys-lab.com

ELLIPSYS

EllipSys is a Luxembourg software publisher specialising in data metadata management.
The company has more than 15 engineers working on research and development and numerous clients in Luxembourg but also internationally.

- {openAudit}, its software, implemented in large companies, makes it possible to understand how information is deployed within an information system, from its sources to its uses. And therefore to know who accesses what data, when, how... Sensitive data can be traced and protected easily and efficiently.

LARGE



www.emtdlab.com
explore@emtdlab.com

EMTDLAB SPACE DIVISION

EMTDLAB Space Division is an operational Space Technology venture that has developed a proprietary AI software platform to optimise shielding materials for space, defence, energy & healthcare market.

- Structural particles radiation shielding panel for spacecraft & satellites.
- Ruggedised shielded computing electronics for radiation intensive environment
Structural & functional panels optimised for corrosion resistance for mobile power unit, batteries and transformers for EMP protection.
- Lightweight 3D printed materials with increased radiation shielding properties.

SME

EMTRONIX



www.emtronix.lu
info@emtronix.lu

EmTroniX designs and produces advanced electronics and embedded software for the NewSpace & Defence industry. The company offers the most objective and cost-effective solutions to all customer's technological needs.

EmTroniX has the significant advantage of having in-house the knowledge required to handle technical and management aspects of space and defence engineering projects development.

With a strong orientation toward Radio-Frequency & Telecommunication, EmTroniX develops FPGA-based products and implements complex Digital Signal Processing systems. The company produces its own products such as On-board Computer, RF sensing Payload, Software Defined Radio, Transceivers using spread spectrum techniques and Low Noise Amplifiers.

- Mars orbiter Proximity-1 SDR autonomous transceiver – Data relay communication with Mars rover and lander elements from different agencies.
- GHOST non-intrusive In-Orbit-Test (IOT) system for efficient monitoring of wideband satellite transponders – On-ground measurement system for non-intrusive In-Orbit-Test of satellite transponders, enabling high-accuracy measurement of key performance parameters of wideband satellite transponders in presence of customer traffic, and avoiding interfering with adjacent satellites during orbital movements.
- Advanced AIS and ADS-B satellite receivers – Efficient spaceborne reception of AIS/ADS-B signals for air/maritime traffic monitoring, while offering high sensitivity, large dynamic range and immunity against Doppler shifts and message collisions.
- JURA (HERA's Juventas Radar) CubeSat – Low Frequency Radar payload to probe a double asteroid.

SME

EOLIS MEDIA COMPANY / GRIDCOP PASSIVE SENSORS



Eolis Media Company is the developer, designer and producer of a unique, patent-backed family of rugged, passive [=powerless] sensors under the brand name "GridCop" to acquire full control, monitor and manage critical infrastructures & assets, without recourse to wireless technology.

- Passive GridCop Sensors – As permanent installation or fly-away system; status monitored include intrusion, flooding, tilting/leaning, traction/movement, t°/fire, etc.
- Consultancy in Infrastructure Securitisation & Monitoring – Focusing on passive means for critical infrastructure & asset monitoring.
- Infrastructure components [sales rep.] – Fibre optic cables & components; concrete manholes [ready for containerised shipping], fully equipped & pre-configured, including GridCop sensors, fibre optic cabinets, closures & boxes.

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jpboevert@eolismedia.com

LARGE



www.euro-composites.com
herrmannnc@euro-composites.com

EURO-COMPOSITES

Euro-Composites, a Luxembourg based private owned company is one of the global leading manufacturers of lightweight composites products for Defence applications. Since its foundation in 1985, the company has acquired a high level of experience in composites mainly for aerospace, land and marine business. The product range consists of various types of honeycomb, panels, formed and/or machined parts as well as ready-to-install parts for high-tech composite solutions. Being NADCAP, AS9001 and EASA 21 qualified, as well as by Airbus, Boeing and other spacecraft and aircraft manufacturers worldwide, Euro-Composites can look back to more than 30 years of experience in composites.

- Blast/Ballistic protection panels Sandwich panels for protection against explosions and ballistic threats as structural components of floor, door or wall elements for aircraft or land vehicles.
- Structural components as sandwich composite constructions for radar and antenna systems for use on land and at sea.
- Radomes for radar/antenna systems.
- Structural components for UAVs.
- Components with signal reduction and electromagnetic shielding.
- Projection screens, structural applications and body constructions for simulators.
- Shelter systems and mobile lightweight containers.
- Transport boxes and composite components for weapon systems.

LARGE



www.eurodyn.com
defence@eurodyn.com

EUROPEAN DYNAMICS LUXEMBOURG

European Dynamics is a leading Information Technologies service provider and software developer, operating internationally as a group of companies, with offices and antennas in Athens, Berlin, Basel, Brussels, Copenhagen, Kaatsheuvel, London, Luxembourg, Milano, etc. The group designs, develops, supports and operates complex IT systems and commercialises a wide range of software products, using state-of-the-art technologies.

- Command and Control platform for border/maritime surveillance with intelligent modes.
- Crisis/ Emergency management platform integrating e-collaboration, document management, incident management and training features.
- AI-based Risk Management System for applying and estimating comprehensive security metrics and indicators collected by various system analysis.

LARGE

EVIDEN



www.eviden.com
olivier.deleuze@eviden.com

EVIDEN

Eviden designs and supplies digital systems to the defence industry for force coordination, decision support and operational readiness. Since 2019, It has been participating in the EDIDP and EDF programmes using its R&D centres in seven European countries. Eviden contributes to these programmes in the fields of collaborative combat, digital soldier, tactical communications, defence electronics, cyber defence, intelligence, digital platforms and emerging technologies (Quantum, AI, security).

• Eviden's systems cover combat information (SICS, CAMO), data exploitation (ARTEMIS), tactical LTE communications (AUXILIUM), cryptography, and cyber security.

SME



www.factiven.io
info@factiven.io

FACTIVEN

FACTiven specializes in safeguarding and enhancing the reliability of space system data. Our mission is to ensure that vital information from space, such as satellite imagery, space traffic insights and AI/ML analytics, remains trustworthy, explainable and secure. We achieve this through innovative solutions, deployed both on-board satellites and on the ground, that trace the journey of data and protect it from manipulation and tampering, even in distributed and Zero-Trust environments.

By fortifying the integrity of space data, we empower organizations to make informed decisions in security and defence contexts.

• SafeDataPath: cutting-edge data traceability and protection solution designed to ensure trustworthy data, particularly in distributed data processing systems and data fusion scenarios. Defence against misinformation and cyberattacks.

LARGE



www.faymonville.com
sales@faymonville.com

FAYMONVILLE DISTRIBUTION

Faymonville Group is the leading full-range manufacturer of special vehicles for heavy load transport and special transport. It produces semi-trailers, lowbed trailers, modular vehicles and self-propelled vehicles that can be used to transport anything exceptionally heavy, long, wide or tall! It manufactures everything itself 100% in-house, from the first sheet to the finished vehicle. As a result, it boasts a flawless level of manufacturing, effective quality and process control.

• Semi-trailers / Trailers.

SME



www.firis-system.com
contact@firis-system.lu

FIRIS

Firis specialises in geospatial digitisation using drones and 100% autonomous rolling stock for automated acquisition of confined spaces. It is constantly looking for new challenges so that it can continue to provide its customers with innovative solutions that improve their processes.

• Integration and usage of LiDARs (including on UAS/drones and UGV/robots platforms), Laserscans and RGB-D/360° cameras in its civil workflow, covering 3D scans, As-Built and CAD re-mapping missions.

SME



FLAWLESS PHOTONICS

Flawless Photonics is an innovator in photonics, revolutionising optical fibers, lasers, and sensors, using proprietary techniques in automation and miniaturisation. Its enabling technology, optimised for the unique requirements and rigours of space, allows the production of optical fibres, without generating light scattering defects that limit lasing power and transmission over long fibre lengths.



www.flawlessphotonics.com
innovation@flawlessphotonics.com

• Fibres and optical components enabling applications from UltraViolet to MidWave InfraRed (MWIR) are one product class enabling civil and defence applications.

• MWIR lasers allow free-space optical communication, sensing, and also semi-conductor manufacturing. MWIR free-space optical communication would allow not only better covert operations and detection avoidance, but also higher robustness to weather conditions compared to current optical communication.

SME



FLEN HEALTH

Flen Health is a 100% family-owned commercial therapeutic company based in Belgium and Luxembourg. For more than 20 years, Flen Health has developed and commercialised innovative skin and wound healing products in Europe and Asia, achieving market leadership positions in the UK and Belgium, plus market presence in 40 countries. Flen Health has well-established partnerships with leading pharmaceutical companies.



www.flenhealth.com
info@factiven.io

• Flaminal, for dermal burns and chronic wounds. It is an alginate dressing that debrides, desloughs, protects wound borders, and promotes granulation tissue formation and healing whilst killing wound bacteria in its dressing structure.

• Flamigel is a hydrogel that contains a dispersed semipermeable lipid. It absorbs exudate on exuding wounds and hydrates dry wounds.

SME



GOMSPACE LUXEMBOURG

GomSpace Luxembourg was established in 2017 and is part of the GomSpace group being a leading developer and provider of small satellites and missions. GomSpace Luxembourg focuses on development, deployment and support of satellite operations solutions including operational support to missions. Furthermore, its local engineering team possess complete mission design and implementation experience for unique satellite projects - currently being applied in Deep Space exploration.



www.gomspace.com
sales@gomspace.com

• Mission control centres and software solutions for efficient satellite operations based on its HOOP product line.

• Support GomSpace customers in satellite mission operations and optimisations of on-going missions.

• Design and implementation of unique satellite missions responding to challenging requirements that demand beyond state-of-the-art solutions.

SME



www.gradel.lu
gradel@gradel.lu

GRADEL

With over 50 years of experience in automated electro-mechanical engineering, GRADEL specializes in developing complex systems for the space market. GRADEL offer a complete range of Mechanical Ground Support Equipment (MGSE) for handling, assembling, and testing spacecraft components. These systems are built to precise specifications using specialized materials to ensure cleanliness, magnetic compatibility, and thermal compatibility. Gradel has also ventured into sustainable lightweight structures and developed the Gradel Robotic Additive Manufacturing process (GRAM) in 2018. GRAM is an endless filament wet winding process enabling the manufacturing of complex 3D structures. Weight savings up to 70% have been proved without compromising stiffness, strength or frequency requirements.

- Composite Armor Manufacturing Unmanned Aerial Vehicles (UAVs).
- Aerospace Components Production: Collaborate with aerospace companies to manufacture lightweight components for aircraft and spacecraft.
- Underwater Systems Development: Utilize your expertise to design and build underwater systems, such as remotely operated vehicles (ROVs) or autonomous underwater vehicles (AUVs).

SME



www.gradellw.lu
gradel@gradel.lu

GRADEL LW

Gradel Light Weight is a multiple fibre winding technology to produce diverse lightweight parts according customer requirements. It is possible to save up to 70% mass keeping same stiffness. Its GRAM (GRADEL Robotic Additive Manufacturing) technology enables the production of small and very large parts up to dia. 3x10M long. GRAM also enables the production of intelligent ultra-light structural components with well-defined functions. GRAM technology saves natural resources and is sustainability driven. The lightest way to build huge today.

- GRADEL LW is active in multiple industrial fields, like space, aero & mobility. It develops the product from early stage to the final product according to customer specifications.

SME



www.helical-ai.com
hello@helical-ai.com

HELICAL

Helical develops large AI foundation models for high-throughput sequencing data (e.g DNA, RNA) and makes them easily useable through a platform. Its mission is to help biotech companies leverage these large foundation models and apply them directly to their specific use-cases (e.g. biomarker discovery). Its platform will enable biotech companies to use these large foundation models quickly and effectively without requiring a complicated IT infrastructure or AI expertise to train them.

- RNA-based Biomarker Identification for Rapid Disease Diagnosis: AI-driven tools to identify unique RNA biomarkers. This will facilitate a quicker and more accurate diagnosis of diseases which in turn is important for both public health and biosecurity.
- Synthetic Biology: Generative AI foundation models to enhance the design and production of biological materials and systems by reducing the trial-and error cycle. This can be used for producing novel materials, drugs, vaccines or genetic engineering for crop optimisation.

SME



www.helixspace.eu
info@helixspace.eu

HELIX SPACE

Helix Space is a Luxembourgish company that started operations on May 2021, and leverages its founder's 30+ years of experience in the space and ICT industries. It serves deeptech/ defencetech companies using spacetechnology, particularly in the fields of digitalisation, cybersecurity, downstream applications, big data, AI, ML and space systems.

- Obtain public or private funding to develop their defence or dual use products.
- Achieve product-market fit to scale-up their business.
- Improve their cybersecurity stand against threat actors.

SME



www.hitec.lu
info@hitec.lu

HITEC LUXEMBOURG

HITEC Luxembourg offers high technology solutions covering different business areas: satellite ground segment technology; customer specific and standard equipment for testing and measuring of physical properties; engineering; consulting; software & ICT development and project management.

- Anchor stations for Gov/Mil SatCom, EO satellite DDL&TTC stations for NATO countries.

SME



Hydrosat



www.hydrosat.com
info@hydrosat.com

HYDROSAT

Hydrosat is a data analytics company that is exploiting the unique capabilities of thermal infrared imagery for applications from agriculture to forestry and national security. Its world-class analytics applied to its proprietary, high-resolution thermal imagery will unlock insights that have historically gone unseen.

- It provides operational intelligence of the battlefield, facility analysis based on heat signatures, early warning of droughts that could lead to unrest or drive human migration, disaster risk assessments, and post-event environmental analyses to aid recovery efforts.

SME

INCERT



www.incert.lu
contact@incert.lu

Incet is a public agency, which is providing products and services related to identity management of both persons and objects, cryptography, and cyber security, and is successfully representing Luxembourg within security international organizations since its creation in 2012.

Incet's continuous mission is to bring secure and trustworthy transformations through digitalization.

Incet is running business projects on four continents, dealing with public authorities, major international companies and organizations. With a never-ending objective to create assets for securing the digital society, Incet is now offering a whole ecosystem of services and solutions providing long term answers to moving challenges.

Public Key Infrastructure

(PKI): At the heart of our operations lies the PKI technology, serving both public and private entities in safeguarding their critical operations.

Key Management System

(KMS): Customised KMS solutions are provided to a diverse range of clientele, including entities like connected car manufacturers, catering to their specific needs.

Cybersecurity / Darknet:

Delivering comprehensive cybersecurity expertise encompassing risk management, threat intelligence, incident response, and security auditing.

Novento: Most referenced

solution for orchestrating and securing international and political gatherings, boasting complete security features alongside logistical support.

Cryptography for privacy:

Pioneering advancements in privacy-enhancing cryptographic technologies, such as Zero-Knowledge Proofs and Fully Homomorphic Encryption, within the realm of digital identity.

SME

INTEGRASYS



www.integrasys-space.com
info.sales@integrasys-sa.com

Integrasys is a Software engineering company focused on RF communication, satcom and 5G-NTN, with products/services required to analyse and design, monitor and manage satellite networks, and to provide anti-jamming solutions as cybersecurity technology.

CleanRF, anti-jamming capabilities, capable of cancelling modulated and CW interferences in real time, from ground and in space.

Beam budget, link budget, providing accurate information about satellite networks footprint, dynamic spectrum management (monitoring and allocator), ITU regulation validation and constellation design.

ControlSat and VectorSat, carrier monitoring, capable of monitoring 200 carriers per second, and detecting and identifying intentional and non-intentional interferences.

InterGEO, interference localization in a 5 km range.

FWsec, blockchain technology to secure firmware from hack attacks, and preserve integrity of the software.

SME



www.ksl-automation.com
info@ksl-automation.com

K.S.L. AUTOMATION

K.S.L. Automation, founded in 2006, is located Ettelbruck/Luxembourg. It offers consultation, project planning, mechanical and electrical construction, programming and implementation of automation requirements – all from a single source. It specialises in vacuum and plasma applications like plasma nitriding equipment, PVD equipment, DLC equipment (manufacturing and services), and electronic and software development.

- Plasma nitriding equipment and services.
- DLC equipment and services.
- Electronic and software development.
- PVD equipment and services.

SME



www.lifteurop.com
info@lifteurop.com

LIFTEUROP

Lifteurop (ALIPA Group) designs, manufactures and distributes standard and customised lifting equipment and accessories. The company benefits from over 65 years of experience thanks to the leading French industrial brand STAS operating under Lifteurop in Europe and all over the world since 2010. Lifteurop has a team and a research department at the service of its customers and distributors.

- Lifting accessories: shackles, lifting rings, hooks,...
- Chain slings: GR80; GR100, stainless steel with different accessories.
- Lifting systems: RSB systems, wire mesh slings, automatic hooks, lifting beams, magnets...
- Wire rope slings: galvanized or stainless steel wire rope slings, Flexfort slings (= vulcanised neoprene rubber coating).
- Textile slings: polyamide, polyester...

RESEARCH ORGANISATION

LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



www.list.lu/en/environment
info@list.lu

ENVIRONMENTAL RESEARCH AND INNOVATION (ERIN)

With more than 200 researchers and engineers, the Environmental Research and Innovation (ERIN) department of the Luxembourg Institute of Science and Technology develops new tools and technologies for a sustainable management of natural resources under global change and for reducing the impact of human activities on the environment. The priority areas are:

- Earth observation (through satellites, airborne platforms, drones),
 - Telecommunication (wireless sensor networks, IoT),
 - Sustainable energy systems,
 - Climate change and environmental impact.
- Decision support tools integrating high-resolution spatial imagery using EO data, telecommunication and AI for disaster management, maritime surveillance, precision agriculture, food security and natural resources monitoring.
 - Intelligent energy systems management platforms for sustainable energy systems (flexible, reliable, resilient decarbonised grids), active power grids (power electronics, energy storage, distributed control), and intelligent energy (AI/ML, energy Internet).
 - Tools and technologies for environmental management and impact assessment (environmental protection including biodiversity and health, life cycle assessment, microbiological risk assessment, water management, environmental management systems, environmental security, decarbonisation, environmental pollution (air, soil, water), circular economy).

RESEARCH ORGANISATION

LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



www.list.lu/en/informatics
info@list.lu

IT FOR INNOVATIVE SERVICES (ITIS)

ITIS develops methodologies, architectures, models, algorithms, software tools, and integrated IT-based systems to achieve a more efficient, optimised, robust, scalable, secure, trustworthy and user-friendly utilisation of data and information technologies both for fully automated systems and for systems with humans in the loop. The activities of the department are supported by an AI, data analytics and visualisation technology infrastructure.

The priority areas of the department are:

- 5G/6G,
 - Automated process-based systems,
 - Digital twin technologies,
 - Explainable AI regulatory sandbox,
 - Interactive technologies for critical incidents.
- Visualisation & interaction for defence: Create control interfaces and simulation applications for defence training, develop dashboards and innovative visualisation techniques (AR/VR) for strategic planning and situational awareness.
 - AI for defence: Develop AI algorithms for optimising secure military communication, enhancing surveillance and reconnaissance capabilities, and decision-making processes in defence systems.
 - Digital twin technologies for defence: Develop digital replicas of defence assets for optimisation and simulation, create virtual training environments, and implement predictive maintenance for defence infrastructure, improving logistics and operational strategies.
 - Cybersecurity for defence: Formulate robust security protocols for defence communication networks, develop new data integrity solutions based on IoT systems, encryption technologies and risk management methodologies to secure data in military operations.
 - 5G, 6G networks, and IoT edge computing for defence: Advance the integration of cutting-edge communication networks within defence operations, ensuring low-latency, secure data transfer and efficient edge computing algorithms for real-time analysis and strategic deployment.

RESEARCH ORGANISATION



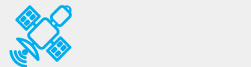
www.list.lu
defence-MRT@list.lu

MATERIALS RESEARCH AND TECHNOLOGY (MRT)

Through its research into advanced materials and processes, the “Materials Research and Technology” (MRT) department, with its 200 researchers and engineers, contributes to the emergence of enabling technologies that underpin the innovation processes of local and international industry. MRT’s activities hinge on four thematic pillars: nanomaterials and nanotechnology, scientific instrumentation and process technology, structural composites, and functional polymers.

- Sensors and actuators, Photocatalysis and energy harvesters.
- Modelling and design of structures and multifunctional composites.
- Adhesion and compatibilization of fibres/ matrix.
- Transparent electronics and smart nanocomposites.
- Bio-based polymers and composites.
- Process engineering and advanced manufacturing.
- Functional Coatings.

SME



www.lmo.space
info@lmo.space

LMO

LMO is a Luxembourg dual-use space company which provides autonomous capabilities to identify, track and characterise other space objects from space. By combining artificial intelligence with sensors, LMO provides unique on-board Space Domain Awareness capability to protect & defend space assets from hazards and threats.

LMO’s capability can also be used to approach, inspect and rendezvous with assets in space to enable In-Orbit Servicing of satellites.

- Payloads for space domain awareness - combinations of sensors and artificial intelligence to identify, track & characterise other space resident objects.
- Payloads for rendezvous & proximity operations - combination of sensors and artificial intelligence to provide ideal approach and docking maneuver for an in-orbit servicing satellite.

SME



www.lunaroutpost.com
info@lunaroutpost.com

LUNAR OUTPOST

Lunar Outpost provides innovative technology and services to enable a sustainable human presence in space. Our solutions comprise space robotics systems that are able to operate in the harsh conditions of the lunar surface as well as energy generation technologies for lunar surface and extreme environments, including Earth applications.

Its expertise in advanced spacecraft and robotics solutions is unmatched, with currently 4 missions to the Moon with the first voyage launching this year on a SpaceX Falcon 9.

• **Lunar Outpost Thermal Energy Storage System - Earth (LOTESS-E):** Energy generation system able to produce thermal or electrical energy by collecting solar light. Light weight and high energy conversion efficiency. Easy to deploy and readily available to support civil and military operations by providing reliable energy in remote and harsh Earth environment conditions.

• **Mobil Autonomous Prospecting Platform (MAPP):** Robotic platform designed for Lunar surface operations. MAPP can operate under the harshest conditions found on Earth to reliably conduct intelligence, surveillance and reconnaissance (ISR) operations to support critical military and civil missions.

• **Canary:** Environmental monitory system able to detect wide varieties of threatening gas species, from industrial pollution up to biological threads caused by unfriendly forces.

• **Thermal control systems** and components for extreme temperature survival and vehicle sustainability.

SME



www.luxdeftec.eu
defence@luxdeftec.eu

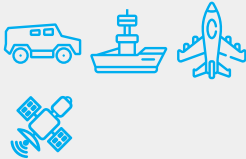
LUXDEFTEC

LuxDefTec, i.e. Luxembourg Defence Technologies, is active since 2005 & specialises in defence, engineering and project management. It offers a range of sporting & defence related products. Its engineers innovate, create and market enhanced products according to requirements. These products are part of its commitment to provide advanced defence technology solutions. Its portfolio goes from single up to complete systems. It possesses knowledge on how to lead successful R&D & miscellaneous engineering projects from start to finish.

• **Product development, procurement, project management, distribution, logistics, system engineering, maintenance, testing in real conditions, integration and equipment evaluation.**

SME

LUXGOVSAT



www.govsat.lu
info@govsat.lu

GovSat is a public-private joint venture between the Luxembourg government and world-leading satellite operator SES. Its mission is to provide secure, reliable and accessible satellite communication services for governments – addressing the demand for connectivity resulting from defence and civilian security applications. Dedicated entirely to governmental and institutional users, the GovSat-1 satellite features high-powered fully-steerable spot beams and an X-band global beam. It is equipped with anti-jamming features, encrypted telemetry and control, and uses assured frequencies. This enables an array of applications such as connectivity for theatres of operation, interconnection of institutional or defence sites, border control, ISR, as well as various types of communications for air, land and maritime missions.

- Satellite communications.
- Service provider.
- End-to-end solutions.
- Satellite operator.
- Anchoring teleport & services.

SME

LUXPROVIDE



www.luxprovide.lu
Info@lxp.lu

LuxProvide runs the national supercomputer, a sovereign platform with an ISO certification in security, ensuring your data is kept safe and secure in Luxembourg, encrypted and only accessed by you on a dedicated environment. LuxProvide works closely with customers to derive value from its business data (optimising internal processes or creating new value-added services) by providing a unique platform that combines data science engineering expertise in big data & analytics, simulations and artificial intelligence.

- Our data engineers and our supercomputer can provide a range of critical services and capabilities due to our exceptional computational power and performance. Some of these services include:
 - Simulation and Modeling: Supercomputers can simulate complex scenarios, such as battlefield situations, weapon performance, or the behaviour of various systems under different conditions.
- Data analysis and intelligence: Supercomputers can analyse vast amounts of data from various sources including satellites, drones, sensors, and intelligence reports.
- Cybersecurity and network defence: Supercomputers can be used to develop and deploy advanced cybersecurity solutions, including intrusion detection systems, threat analysis tools, and encryption algorithms.
- Weather forecasting and environmental analysis: Supercomputers are instrumental in weather forecasting, climate modelling, and environmental analysis, which are critical for military operations and strategic planning.
- Weapon design and testing: Supercomputers can aid defence companies in designing and testing advanced weapons systems, including missiles, aircraft, submarines, and artillery.

SME

LUXSPACE



www.luxspace.lu
info@luxspace.lu

Space activities, from satellite development to data product. LuxSpace has successfully launched and operated satellite systems in the range of 30-150kg. LuxSpace satellite portfolio provides small, medium, heavy versions (up to 250kg) turn key solutions for space missions Data application & services, development and provision, e.g. maritime surveillance

- Maritime surveillance - space based data & fusion with terrestrial services.
- Earth observation.
- RF-monitoring, mapping, detection.
- Space situation awareness and reconnaissance.

SME

LUXTRUST

LUXTRUST



www.luxtrust.com
sales@luxtrust.lu

LuxTrust was created in 2005 at the initiative of the State of the Grand Duchy of Luxembourg, the Chamber of Commerce and the country's main banks to establish a unique national digital identity solution allowing uniformly secure access to banking and governmental applications. These LuxTrust identities are used for security purposes but also as electronic signatures with full legal value. Certified according to the European eIDAS regulation and compliant with the latest European regulations (DSP2, RGPD, ETSI, AML), LuxTrust offers a wide portfolio of qualified trust services (identification, authentication, electronic signature, electronic archiving, electronic registered mail, signature validation, consent management, ...).

- Issuance of digital identities: LuxTrust, a recognized certification authority, offers a wide range of solutions and services allowing natural and legal persons to equip themselves with electronic identities.
- Trust Services Hub (COSI solution) : COSI is an electronic signature service (simple/advanced/qualified) meeting the highest eIDAS standards and managing all signature formats (PAdES, XAdES, CAdES) and all types of documents (Word, PDF, Excel, etc.).
- Electronic archiving (Pineappli solution): Personal or shared digital safe and conclusive electronic archiving (SAE) service accessible from a single screen. The Pineappli solution, ISO 27001 and HDS certified, is both a personal or shared digital safe to store, classify and search your data, an NF461 certified archiving solution, an access point to our trust services (signature, stamp, timestamp, etc.), a secure document transfer solution.
- Personal data & consent (IDKEEP and Fair&Smart solutions): LuxTrust offers solutions to manage personal data and enable businesses to comply with GDPR requirements.
- eIDAS Trust Services: LuxTrust is one of the only trust service providers qualified according to eIDAS for all the services enabling a paperless digital world.

SME



www.maanaelectric.com
lux@maanaelectric.com

MAANA ELECTRIC

Maana Electric is a Luxembourgish company developing In-Situ Resource Utilisation (ISRU) technologies. The goal is to use low value feedstock (for example desert sand) to extract chemicals such as Oxygen, Silicon, Iron, Titanium, Aluminum and others without the use of water and chemicals and with low CO2 emissions. These materials are processed to locally manufacture products, such as solar panels to be installed locally, or for other additive manufacturing applications.

- Green and local metal production (in particular silicon).
- Local and cheap integration of solar panels.

SME



molecular plasma group



www.molecularplasmagroup.com
marcelo.milani@molecularplasmagroup.com

MOLECULAR PLASMA GROUP

MPG helps improve adhesion and protection with its revolutionary molecular coating technology that binds organic chemistry to surfaces. It achieves functionalities like strong bonding of inert materials, antimicrobial, hydrophilic, anti-stick and others. MPG's machines made in Europe can run solvent-free process and be fully automated.

- Adhesion improvement of composite materials
- Repellent finishes for textiles used in garments
- Antimicrobial finishes for protection against biological threats.
- Priming to improve durability of protective coatings

SME



www.netcompany-intrasoft.com
information@netcompany.com

NETCOMPANY-INTRASOFT

Netcompany-Intrasoft is a leading European IT solutions and services group with strong international presence and expertise, offering innovative and added-value solutions of the highest quality to a wide range of international and national public and private organisations. The company's head offices are located in Luxembourg. Netcompany-Intrasoft's Research and Innovation Development (RID) department is at the forefront of innovative IT development and contributes to the advancement of EU state of the art in disruptive technologies such as cybersecurity, internet of things, big data analytics, blockchain etc.

- A Secure Digital Military Mobility System (SDMMS) that facilitates direct and secure exchange of information between nations requesting and approving any military movement.
- Cyber Crisis and Cyber Warfare Exercise 2022 for the European Chemicals Agency.
- Software development services for the ECRIS TCN system of the eu-LISA agency.
- Provision of IT services for the development, maintenance and support of Customs and Taxation Information Systems (DG TAXUD).

SME



neuraspace



www.neuraspace.com
info@neuraspace.com

NEURASPACE

Neuraspace is a Software-as-a-Service end-to-end automated solution for optimising space traffic management and manoeuvring assistance by detecting and mitigating threats to assets in space. It is built on five key pillars:

- data fusion for a comprehensive space domain awareness
- artificial intelligence and machine learning
- automation for resource optimisation
- orbital dynamics for mission operations optimisation and risk management
- data and dedicated tracking services

Neuraspace Pro Software-as-a-Service:

- Resilient Mission Design of satellites and constellations incl. mission analysis, trajectory design, manoeuvre planning, risk mitigation and end-of-life.
- Space Traffic Management in real-time: automated service (conjunction screening, analysis, classification, warning, manoeuvring planning and optimisation).

• Flight Dynamics and Mission Control: support to routine operations such as orbit prediction, prediction of orbit-related events, support of operation of the ground-station network and design of manoeuvres.

• Autonomous tasking of telescope data: software for the autonomous tasking and ingestions of data resulting from telescope observations.

• Data:

- Data and Tracking as a Service.
- Space Situational Awareness (SSA) information.
- Resident Space Objects data and Space Weather data.
- Relying on multiple data sources to build a data warehouse with full traceability contributing to risk assessment and risk minimisation.

SME



NO-NAIL BOXES
a LiPA



www.no-nailboxes.com
info@nnb.lu

NO-NAIL BOXES

With over 60 years of experience, No-Nail Boxes manufactures collapsible plywood and steel boxes for industrial use. The company employs around 70 people to produce close to 450,000 boxes annually, of which 95% are made to measure for clients. No-Nail Boxes crates are designed according to an ISO 9001 certified process and conform to the ISPM 15 standard. They are light, user-friendly, manageable for the operator and can be personalised thanks to different imprint techniques.

Quality, protection of the environment and sustainable use of natural resources are integral parts of the No-Nail Boxes philosophy, as evidenced by the numerous labels and certifications.

• No-Nail Boxes supplies plywood folding boxes that are tailor-made for customers, adapted to their specific needs, and best guarantee product integrity and personal safety.

- EXBOX
- ISIBOX
- EUROBOX
- RIBOX
- CLIP BOX
- DG BOX

SME



www.northstar-data.com
rsvp@northstar-data.com

NORTHSTAR EARTH & SPACE

NorthStar's Space Information & Intelligence (Si²) platform provides transformational Space Situational Awareness services, encompassing also Space Domain Awareness and Space Traffic Management.

These unique services combine data from multiple sources with vital input from dedicated space-based sensors, ensuring continuous monitoring and field of view across LEO, MEO, and GEO orbital domains, thus avoiding the gaps in coverage with ground-based surveillance, particularly over ocean areas.

The first four satellites of NorthStar's first of its kind SSA constellation were successfully launched on 31 January. NorthStar's planned flight of 12 satellites will increase coverage to more than 60% of the sky at any given time and potentially 100% if used in collaboration with multiple sensors and sensor types.

- Data products:
 - Observations,
 - Space objects catalogue,
 - Ephemerides,
 - Attitude rotation rate.
- Operational services:
 - Event detection,
 - Conjunction warning,
 - Flight plan validation.
- Subject Matter Expert Support:
 - Data processing,
 - Data processing,
 - Data fusion.
- Simulations:
 - Modelling and simulation.

SME



www.odysseus.space
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ODYSSEUS SPACE

Odysseus Space envisions to provide light speed connectivity everywhere in the solar system. The company's mission is to enable fast and secure communications between all human assets in space and on Earth.

Founded in 2019 in Luxembourg, Odysseus Space's team of experts has +100 years of collective experience in lasers, optics and space systems.

The company developed Cyclops™, a laser communication solution for fast and secure space-to-ground data transfer. This solution enables new applications for commercial and military applications.

- Cyclops™ is Odysseus Space's end-to-end space-to-ground laser communication solution. It includes providing the laser communication terminals for integration onboard the satellites and access to the Optical Ground Stations network of the company.
- It currently features 10 Gbps communication capabilities for secure, direct, Low Earth Orbit to ground communication. Capabilities for inter-satellite links and Quantum Key Distribution will be added to the solution in the future.

SME



OLIZY

Olizy's current focus is to improve landmine detection to accelerate and automate demining which is currently both expensive and risky. To that effect, it uses artificial intelligence combining real and synthetic data to improve detection rates, relying on proven UAV airborne ground penetrating radar (GPR) as a delivery method

- Automated landmine detection: End-to-end solution deployed through drones to detect efficiently both traditional and minimum/non-metal mines in the most complex and polluted environments, emphasising high reliability, ease of scale and operator safety.



www.olizy.org
defence@olizy.org

SME



OQ TECHNOLOGY

OQ Technology Group (OQTEC) is the fastest growing 5G IoT LEO satellite operator in the world providing uninterrupted cellular coverage for assets and machines anywhere on the planet with its satellite constellation. Established in 2016, OQTEC is headquartered in Luxembourg. It provides global IoT and M2M satcom connectivity solutions based on 3GPP 4G / 5G standards catering to multiple commercial and industrial clients in the verticals of energy, mining, logistics, maritime, agriculture, government and defence. OQTEC has been successful in launching multiple missions proving its experience in telecommunications, embedded systems, and cubesats.



- OQTEC offers a complete 4G/5G satellite-based narrowband IoT connectivity solution based on the 3GPP standards. OQ ONE is a flexible solution for commercial and enterprise customers with possibilities for wholesale distribution, global coverage (roaming with mobile carriers (World SIM Card)), and flexible data plans bundled with the hardware.

- OQTEC also offers engineering design & consultancy services for:

- Telecommunication protocol stack development.
- Waveform and DSP design
- Embedded hardware and software development.
- Satellite mission design, analysis and management.

www.oqtec.com
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SME

ORBITARE LUXEMBOURG



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Orbitare is a small space company founded in 2017 with sites in Luxembourg and Switzerland. Its mission is to develop projects of large social impact based on the use of space infrastructure as its attempt to make the advantages of space accessible to all. The company's current project is Spaceloop, a next generation personal satellite communication system designed for usability and affordability.

- **Spaceloop:** Direct-to-person satellite communication system providing broadcast channels, person-to-person mobile channels, and point-to-point high-capacity links for strategic and tactic defence communications. It is offered as a standalone network with transfer of property of the infrastructure and full control by the user, or as a service from a shared infrastructure.
- **Active in the field of advanced RF technology and digital signal processing,** currently developing a system detecting radar illumination from observation satellites in space with subsequent deception and jamming to avoid identification of ground targets.
- **Advanced digital beamforming antenna system** with option to operate as a processing module of an existing antenna array or delivering a fully integrated antenna system.

LARGE

POST LUXEMBOURG



www.post.lu
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Post Luxembourg is the leading provider of postal and telecom & ICT services in Luxembourg. The company also offers a range of financial services. Through its specialised department Cyberforce, it offers extensive expertise in cybersecurity services. The services cater to various sectors, including the health sector and public entities.

- **Cyberforce's Security Operation Center (SOC)** diligently monitors and safeguards critical infrastructure, ensuring the utmost security for its clients.
- **The expertise of Cyberforce covers both IT and telecom environments** in terms of preventive and reactive services. Cutting-edge techniques are used to cope with evolving telecom security and fraud threats in full respect of privacy preservation. They involve advanced machine learning and quantum safe techniques.
- **5G networks have several aspects that can be relevant to dual-use applications,** including communication infrastructure, critical infrastructure protection, security and surveillance capabilities, command and control capabilities, and the development of advanced dual-use technologies.
- **However, the relevance of a 5G project to dual-use applications would depend on the specific goals, objectives, and context of the project,** as well as applicable laws, regulations, and ethical considerations.

SME

RAFINEX



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Rafinex is a company that is singularly dedicated to providing advanced numerical models for challenging engineering applications. By combining best-in-class stochastic algorithms, HPC and AI-assistance, we provide some of the world's most advanced and most appropriate numerical methods for digital design optimization. Rafinex goes beyond current market tools by accounting for real-life variability using uncertainty quantification methods. Rafinex' peak expertise lies in the areas of robust design optimization, stochastic FEA & optimization algorithms and custom computational mathematical developments.

- Provision of advanced finite-element-analyses (FEA) algorithms and application engineering services for design optimisation (topology optimisation for isotropic and anisotropic structures, fluid-structure optimization).
- Expertise in high-performance-computing (HPC) and customised mathematical algorithms developments including stochastic.
- Uncertainty Quantification (UQ) for optimization of land, air or space vehicles (manned or unmanned/drones) to achieve maximum performance and robustness/resilience under real-life variability operating conditions.
- Application areas include the light weighting of safety critical components. Its stochastic optimisation enables the creation of formally robust optimal designs that continue to perform reliably under uncertainty and variability conditions, including damage.

SME

REDWIRE LUXEMBOURG



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sales@redwirespace.com

Redwire Space Luxembourg specialises in providing advanced robotic systems and mechanisms for space applications, with a primary focus on developing cost-effective, mission-agnostic robotic arm systems. Its flagship product, the STAARK Robotic Arm, enables satellite capture and in-space assembly operations. The company offers feasibility studies and consultancy services for robotic missions to commercial, civil, and defence entities in the EU and the US. In 2023, Redwire introduced the Solar Array Driving Assembly for LEO dual-use constellations. Redwire Space Luxembourg employs 35 professionals in Luxembourg and over 700 in the United States and Belgium, dedicated to advancing space technology and innovation.

- Robotic Arm systems for satellite capturing.
- Vision Systems for rendezvous and contact support.
- Solar Array Driving Mechanisms and Controllers.
- Antenna Pointing Mechanisms and Controllers Star Trackers.

SME



www.rss-hydro.lu
info@rss-hydro.lu

RSS-HYDRO

RSS-Hydro is a company operating internationally in the field of geospatial and modelling intelligence. It uses the latest Earth observation and computer modeling technologies to offer solutions that help our clients to innovate and respond with impact to water related risks, building resilient infrastructure. RSS Hydro also develops and commercialises ML/AI-guided disaster mapping applications using space technologies.

● **FloodSENS:** an AI tool for mapping flood disasters at the global level using Earth Observation. The company develops this dual use SW for both on the ground and in orbit deployment.

● **Flood Modelling:** RSS Hydro delivers GPU-optimised high-precision flood scenario simulations for single sites, including high-end 3D visualisation with NVIDIA scene-generation technology.

LARGE



www.saturne-technology.com
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SATURNE TECHNOLOGY

Experts in metal additive manufacturing, cutting, drilling, welding, machining and laser hardfacing.

Saturne Technology goal is to provide a global solution to aerospace clients that includes power laser technologies such as laser cutting and welding, additive manufacturing for mass production of: design optimisation, specific materials (powder) development, production of prototypes and serial parts.

● **Engines Components**
(Military = M88 engine for Rafale jet fighter - Safran_ Dassault-Aviation / Civil = Leap_CFM engines for Airbus A320 and Boeing 737).

● **Rocket Engines (civil) / Satellites Engines (civil) / Missile propulsion (military).**

● **Naval Components**
(civil = Danfoss) / submarines (military).

● **Cooling systems for military and civil applications.**

LARGE



www.ses.com
marketing@ses.com

SES SPACE & DEFENCE

SES Space & Defence is a subsidiary of SES, the leader in global content connectivity solutions, and is exclusively focused on building, managing, and supporting the most advanced satellite network solutions for Governments worldwide.

SES operates the world's only multi-orbit constellation of satellites with the unique combination of global coverage and high performance, including the commercially proven, low-latency Medium Earth Orbit O3b system. By leveraging a vast and intelligent, cloud-enabled network, SES is able to deliver high-quality connectivity solutions anywhere on land, at sea or in the air, and is a trusted partner to the world's leading telecommunications companies, mobile network operators, governments, connectivity and cloud service providers, broadcasters, video platform operators and content owners. The company is listed on Paris and Luxembourg stock exchanges (Ticker: SESG).

- Leveraging on SES's network of more than 70 communication satellites in two different orbits with a secure ground infrastructure and its industry-leading expertise to manage and deliver high-performance fibre-like connectivity everywhere on the planet.
- Giving government and military customers the control and flexibility to optimise their network on their terms, rerouting traffic through a private connection and landing it at a government-secure gateways, selecting their preferred waveform and hardware.

SME



www.sgigroupe.com
info@sgigroupe.com

SGI INGÉNIERIE LUXEMBOURG

SGI Groupe is an engineering consultancy based in Luxembourg since 1966. With its 100+ engineering staff, SGI plays a leading role in the construction market by providing outstanding support to architects, administration and industry in all the classical fields of engineering (Structural, MEP, infrastructures, rails, roads, bridges,...).

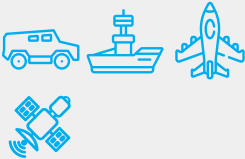
The company is the Wood/Timber construction specialist in Luxembourg. As an innovative company, it has developed in the last years new services in sustainability, Building information modelling (BIM), Logistics and energy consultancy and project management.

SGI can handle projects in English, French and German and the company has permanent subsidiaries in central Africa.

- Civil engineering works and building planification on a long term or temporary use, including existing structures assessment and reinforcing strategies.
- Modular construction design following circular economy principles and assessment of:
 - Industrial production capacity, and product adaptation to match local regulations;
- Local site compliance and work organisation;
- Structural and MEP engineering capacities in severe timing and/or logistical constraints.
- Lifecycle assessment of construction projects, elements and equipment in various life scenarios;
- Structural qualification and finite element analysis of new materials in the construction sector as well as existing structures;
- Renewable energy production, storage and autonomy scenarios, transportation, and management advice.

SME

SKYGRIDS



www.skygrids.eu
defence@skygrids.eu

SkyGrids develops a variety of long range wireless charging solutions, such as charging drones during flight, and has a proven track record of novel technology integrations for several high stake partners.

- With a proprietary tracking technology, SkyGrids has developed long range wireless charging technology for drones providing 24/7 flight capabilities.
- Hereby the company enables continuous operations for drones in security & surveillance with a persistent eye form the sky.

SME

SKYRADAR



www.skyradar.com
info@skyradar.com

SkyRadar provides cutting-edge training equipment for military radar operators and electronic warfare specialists. Its portfolio includes Training Radars, Jammers, Digital Signal Processing units, Electronic Counter-Countermeasures, Military Radar & Tower Simulators, Air Defense Laboratories among others. Catering primarily to military training academies and training departments, the company's solutions support both in-house and remote learning environments. The system design enables concurrent practical training of many trainees.

- NextGen 8 GHz Training Radars.
- SkySim Radar and Attack Simulator.
- DRFM Deception Jammers and Active Targets.
- FreeScopes DSP and Visualisation Environment.
- Military and Radar Tower Simulators.
- C4ISR and CIEMG Training Laboratories.
- Cyber-Resilience and Hybrid Warfare Training Laboratories.
- Air Power and Air Defense Curricula and Train-the-Trainer Programs.

RESEARCH ORGANISATION



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SNT - INTERDISCIPLINARY CENTRE FOR SECURITY, RELIABILITY AND TRUST (UNIVERSITY OF LUXEMBOURG)

With more than 350 skilled research professionals and ten world-class laboratories, the Interdisciplinary Centre for Security, Reliability and Trust (University of Luxembourg) helps public entities and companies of all sizes reach their innovation and optimisation goals.

- New optical sensors and sensor processing.
- GNC for space systems.
- Autonomous operations of drones, ground vehicles and robots.
- Cyberattack-tolerant control of critical infrastructure.
- Models and analysis tools for situational awareness.
- Design and testing of high-performance tactical systems using wireless and satellite communications.

SME

SNOWBALL TECHNOLOGY



SNOWBALL TECHNOLOGY
Pragmatic Cybersecurity



www.snowballtechnology.com
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Snowball Technology is a cybersecurity company that provides consultancy services easing the adoption and operation of modern cybersecurity cloud solutions. It designs and delivers technologies with a focus on optimising, consolidating, and improving security processes to reduce risks and costs. The company is also active in the field of testing and measurement in order to assess and validate the solutions in place.

- SSE (Security Service Edge) with Netskope.
- MICROSOFT Cloud Cybersecurity solutions.
- BAS (Breach and Attack Simulation) with Threat Simulator from Keysight.
- NDR (Network Detection & Response) with Corelign.
- Test and Measurement products and solutions with Keysight.
- PAM (Privileged access management) with Delinea.

SME

SOLARCLEANO



www.solarcleano.com
info@solarcleano.com

SolarCleano designs, develops and manufactures battery powered Automated Guided Vehicles (AGV's) used in complex outdoor environments e.g. deserts. With centimetric precision, thanks to Global Navigation Satellite System (GNSS) and LIDARs', the platforms can serve in many outdoor missions, for e.g. scouting, transport and demining. At the end of 2023, more than 800 SolarCleano robots had been deployed to serve the solar industry in more than 90 countries on all continents. The company maintains its fleet of robots from our control centre in Luxembourg. Remote operation and maintenance of its robots has been developed to enable ease-of-use even in challenging, difficult to access environments.

Autonomous Automated Guided Vehicles (AGV's)

SME

SOLSI-LUX



www.solsi-lux.lu
contact@solsi-lux.lu

SOLSI-LUX markets an innovative, multi-head, industrial manufacturing centre, allowing our customers to run approximately 20 manufacturing processes on a single platform.

SME



www.sparc-industries.com
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SPARC INDUSTRIES

SPARC Industries core business is the development and licensing of ground-breaking electric propulsion (EP) technologies, both hardware (EP thruster designs) and software for the analysis of EP technologies in the SSA/SDA context. To support the process, SPARC Industries developed a product level software for computational plasma engineering purposes called VSTRAP. It is commercially available; and used primarily for SPARC Industries own R&D activities.

- VSTRAP (dual): Computational plasma engineering tool for internal and external use; ITAR-free; Primary focus on Gridded Ion Engine technology (incl. easy-to-use GUI, lifetime assessment, end-2-end simulation, coupling to ESA's SPIS code, automated numerical stability control, and many more); Secondary focus on Hall Effect Thruster technology.
- SPARC also provide itsexpertise as R&D service / project.
- SPECTRAL (def): Software for in-depth analysis of the optical emission of an EP generated exhaust to support SSA/SDA activities. A prototype can be demonstrated upon request. Under development, open for collaboration in specific areas.

LARGE



www.spire.com
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SPIRE GLOBAL

Spire Global is a provider of space-based data, analytics and space services, offering access to unique datasets and powerful insights about Earth so that governments can make decisions with confidence, accuracy, and speed. Spire develops, builds, owns, and operates a fully deployed constellation of 100+ satellite that observe the Earth using radio frequency technology to source valuable data. The company then provides this data as a subscription to organisations around the world so that they can make decisions with confidence in a rapidly changing world, reduce costs from climate and weather risks, and strengthen global security.

- Ship & aircraft tracking: Spire's satellite constellation collects 350 million daily AIS messages and 200 million daily ADS-B messages to monitor the movements of ships and aircraft across the globe.
- GNSS jamming detection and geolocation: Spire operates over 40 satellites that help detect and geolocate signal interference, jamming, and spoofing. These satellites can identify the power, location, and directionality of such events.
- Weather observations and forecasting: Spire offers space-based weather data, weather modeling, soil moisture levels, and data on the ionosphere. Spire is the largest producer of radio occultation and space weather data, and provides a global view with coverage in remote regions like oceans and poles.
- Dark shipping detection: Spire offers a near real-time, global AIS message position validation service that tracks vessels operating in the dark by spoofing or manipulating their reported position in order to conceal nefarious activities.
- Space as a Service: Built on 500+ years of space heritage, Spire offer Space as a Service solutions that empower its customers to leverage Spire's established infrastructure to put their applications in space.

LARGE

STARION SYSTEM LUXEMBOURG



STARION develops tailored engineering solutions, systems development and security services for the space sector for 30 years. Starion also offers an unrivaled range of physical and cybersecurity solutions dedicated for both defence and dual-use such as:



- Model Based System Engineering and Concurrent Design.
- Cyber Resilience against offensive space operations (both cyber and electro-magnetic) and pertinent doctrine/policy.
- QKD and secure communication protocols.
- Security risk assessment for SATCOM systems.
- Security for SATCOM supply chain.
- AI-driven tools for managing space operations.

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LARGE

THALES ALENIA SPACE LUXEMBOURG



Thales Alenia Space in Luxembourg leverages big data, artificial intelligence and cybersecurity technologies to address complex end-to-end systems' challenges, while fostering UI/UX excellence. Its expertise covers innovative design and implementation approaches with customers, proof of concept development (PoC), minimum viable products development (MVP), design and development of key digital building blocks of space systems, roll-out and operations of solutions, experimentation of new technologies and concepts.



- Thales Alenia Space's current projects encompass: Digital Twins, Secured Digital Platforms for Earth Observation, Data Valorisation engines, Advanced Visualisation software.
- Drawing on over 40 years of experience and a unique combination of skills, expertise and cultures, the company delivers solutions for Telecommunications, Navigation, Earth Observation, Environmental Management, Defence, Exploration, Science and Orbital infrastructures.

www.thalesgroup.com/en/global/activities/space
dsp-lu.info@thalesaleniaspace.com

SME

TR'AX TRAILERS



www.trax-trailers.com
info@tr-ax.com

TR'AX, founded in 1986, designs, engineers and produces trailers and semi-trailers in Foetz, Luxembourg, for the recycling industry, heavy haulage and defence activities, forestry activities and the transport industry. Its 100 highly skilled Employees and its experience offer the defence actors answers to all challenges regarding the transport of defence equipment such as assault tanks and armoured vehicles.

- Semi Low loader Trailer INTENSE from 3 up to 5 Axles: Specifically designed up to 82 tons, with some dedicated options for tanks and armoured vehicles (hydraulically widenable loading platform and Lifting Platform up to 40tons for example).

- Low loader Trailers INTENSE for policing, law enforcement activities: from 2 up to 5 Axles: designed for transportation of short-armoured vehicles up to 57 tons, transports of materials and containers, different uses thanks to our TR'AX Trailers ramps for versatile combinations.

- Tailor made Trailers/ Semi Trailers for specific applications (Airplane Transportation, Railways machine)

LARGE

TURGIS & GAILLARD



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Since 2011, Turgis & Gaillard has been developing systems that help NATO's armies to win in multi-domain operations. Turgis & Gaillard's design office creates quickly, quietly and on time, systems adapted to the mission.

The company can integrate the latest sensors on aircrafts. It can make cargo aircrafts perform close air support missions and can turn utility aircrafts into key assets for network centric warfare and air surface integration.

- Because C4ISR is critical to dominating the battlefield, Turgis & Gaillard provides turnkey solutions to deploy connectivity anywhere in the world.

- With ODIN, the company provides a simple and pragmatic way to make the different standards of multi-domain operations communicate with each other: L16, L22, LTE/4G, ROVER. In full

transparency. And the company operates the system for the client: he focuses on the mission and Turgis & Gaillard cares of the networks.

- Its primary project is AAROK, a MALE UAV designed to provide persistent, low-cost ISR and maritime surveillance capabilities and associated C2 capabilities.

RESEARCH ORGANISATION



UNIVERSITY OF LUXEMBOURG - FACULTY OF SCIENCE, TECHNOLOGY AND MEDICINE

The Faculty of Science, Technology and Medicine (FSTM) contributes to the multidisciplinary expertise in the fields of Mathematics, Physics, Engineering, Computer Science, Life Sciences and Medicine. Through its triple mission of teaching, research and service to the society, the FSTM seeks to generate and disseminate knowledge as well as train new generations of responsible citizens, in order to better understand, explain and advance the society and environment we live in.



• Computer Science competencies on developing digital twinning, optimising materials and industrial processes through process design and control tools.

• Materials Science competencies in developing and characterising functional materials.

www.uni.lu
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SME

UPLIFT360



Uplift360 is a materials circular economic startup working at the cutting edge of advanced material technology. The company uses the circular economy (redesign, reuse, regenerate and recycle), and is uniquely focused on the defence and security sector. Armed Forces are the largest users of advanced materials, but most organisations in this sector have no end-of-life plan for their equipment, with the majority ending up in landfill or incinerated.

• We Develop Chemical Process to recycle, regenerate advanced materials.

• RENEW (Fibre to fibre).

• CHEMR (Resin removal).



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SME

WASDI



Wasdi is a Luxembourgish startup that operates a homonymous cloud platform enabling Earth Observation experts to effortlessly develop and deploy algorithms as applications.

The platform offers a unified interface, seamless data access, and online tools, freeing professionals from IT-related challenges.

Wasdi also collaborates with global partners to create specialised applications for international initiatives in different areas (e.g. natural hazards, environmental monitoring and urban areas).

These vertical applications cover various domains such as natural hazards, environmental monitoring, urban areas, and include tasks like flood monitoring, water body mapping, fire assessment, and air quality analysis.



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DISCLAIMER

Selection of entities

The information provided voluntarily by the companies was the subject of a joint verification by Luxinnovation and the Directorate of Defence, promoting a selection of entities having an activity in Luxembourg and having technologies and innovations of interest for security and defence. Each company concerned has validated the information published about it.

The objective is to provide better knowledge of/offers an introduction to the Luxembourg ecosystem without claiming in any way to be exhaustive: the interest is in no way a nominative and complete inventory of the Luxembourg companies concerned.

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THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Foreign and European Affairs,
Defence, Development Cooperation
and Foreign Trade
Directorate of Defence



LUXINNOVATION

#MakingInnovationHappen