

1. LASERTEC SA (ul. Oświęcimska 321, 43-100 Tychy, www.lasertec.pl)

Reprezentuje Regionalne Inteligentne Specjalizacje woj. Śląskiego w obszarze: Przemysł wschodzące, Przemysł 4.0

The branch: Industrial, metalworking, laser welding, coating on metals, integrating robotic laser stations.

LaserTec S.A. is one of the leading manufacturers of laser process stations on the European market. Within the scope of our business activity, we implement innovative laser technologies for the industry: welding, hardening, cladding and 3D cutting as well as hybrid welding. We specialise in selection of process technologies and parameters, performance of technological tests for the customers, design and production of stations as well as integration of laser systems. Furthermore, using laser technologies, we provide the services of hardening, cladding and welding of machine and device parts as well as develop solutions in the scope of automation, mechanisation and robotisation of production processes. The Laser Technology Centre of LaserTec S.A. specialises in services in the scope of laser processing of metal elements, including steel, copper, aluminium, brass and other alloys of metals and plastics.

LaserTec's modern machine park are robotised laser stations with positioners and tracks equipped with: high power lasers, laser welding heads, including Remote Laser Welding head, hybrid welding heads, joint tracking sensors, laser hardening heads with a temperature control system, cladding heads, precise powder feeders, cutting heads. Our company holds a certificate confirming implementation and application of the quality management system according to standard EN ISO 9001:2008 issued by TUV NORD CERT GmbH. The in-house metallography laboratory offers professional and broad scope of performance tests of pre- and post-processing metals, welded joints or hardened details. Rich experience and qualifications of our engineers guarantee professional and high standard services. We have also developed laser welding technology for lithium-ion cell modules used in electric battery. Currently, we work on the technology of building batteries for electric vehicles and we provide research in the field of energy storage methods.

LaserTec's interest in participating in Muni Word 2020 is related to the **search for partners and suppliers to start the production of batteries for electric vehicles**. It will also enable to familiarize with current trends on the **electromobility market in the area of the innovative technological solutions for urban space**.

2. KSK Developments Sp. z o.o. (41-814 Zabrze ul. Ks. Jerzego Badestinusa 39, www.ksk-dev.com)

Reprezentuje Regionalne Inteligentne Specjalizacje woj. Śląskiego w obszarze: Przemysł wschodzące, Technologie informacyjne i telekomunikacyjne

The branch: Electronics & IT

KSK Developments, in its current formal and legal form as a limited liability company, has been operating on the Polish market since 2014. He designs, manufactures and sells devices for "Smart City" and "IoT" projects. These devices are:

- for traffic management on parking spaces
- for pedestrian and traffic management in urban agglomerations
- for the management of biochemical processes in municipal composting plants - for monitoring and archiving processes in the trenchless construction of underground engineering installations.

The products offered by the Company were created in cooperation with the Silesian University of Technology, the Institute of Building Mechanization and Rock Mining and as own research work. The applicant operates mainly on the European market. The products are sold in Poland, UK, Romania, Belgium, Turkey, Latvia, the Eurasian Union and others. KSK Developments also implements light source projects (in LED technology) for military and civil projects for the British company Oxley.

KSK Developments products and services:

- **For traffic management on parking spaces** - the product offered for the above purpose is a wireless monitoring system of parking spaces in uncovered spaces.
- **For traffic and pedestrian traffic management in urban agglomerations** - an integrated vehicle and pedestrian detection system at intersections with traffic controlled by acyclic controllers (sensor pedestrian buttons, magnetic sensors for vehicle detection). The system is offered in cable and wireless versions. Another product offered for the above purpose is a wireless monitoring system for open parking.
- **For the management of biochemical processes in urban composting plants** - lances and sensors for measuring temperature, air composition and humidity level. They are offered in cable and wireless versions. The wireless version works in LoRa technology dedicated to distributed networks. The devices are used in composting plants where the amorphous, foul-smelling mass gives a full-bodied fertilizer smelling of forest mulch. In order to achieve this effect, it is necessary to measure compost piles in such a way as to ensure the existential comfort of biochemical microorganisms undergoing transformation. The wireless version is particularly attractive (large, powerful loaders are moving around the area), and the advantages over competitive products are beyond dispute.
- **For monitoring and archiving processes in the trenchless construction of underground engineering installations** - teleoptic systems TSP-02, TSP-03, TSP-03-3G, TSP-mini and strain gauges. Trenchless technologies for constructing underground engineering installations are used to locate underground networks necessary for human existence, without disturbing the surface and disrupting the life of microflora and microfauna in ground layers. Their use prevents organoleptic supervision of the process, which must be carried out by the devices manufactured by the Company.

During the mission KSK Developments would like to present:

- a **wireless system for monitoring the occupancy of parking spaces, especially in open parking lots**. The system works based on point-mounted magnetic sensors that respond to disturbances of Earth's magnetism caused by the parking vehicle. The implemented radar module guarantees 100% detection efficiency. The information created by the detectors is wirelessly distributed via the LoRa network to the management center, to a variable content table or to an application on a mobile device. Measurement of parking spaces eliminates unnecessary vehicular traffic in search of free space and the associated emission of toxins (exhaust fumes, tires, brake linings). The driver is led to a free parking space near the destination. The sensors also have a module for communication with a priority vehicle. This gives the opportunity to consciously manage (and enforce) the parking space, favoring people with physical disabilities or women at night. The system should also stimulate the service of temporary paid use of parking space. This applies, among others, to housing communities with squares in attractive places, which can be made available on certain conditions while the residents are at work.
- a **wireless vehicle detectors and vandal-proof, wireless pedestrian buttons that work with acyclic controllers that manage intelligent intersections**. Wireless data transmission from our devices eliminates the need for onerous, polluting earthworks. Aesthetic shape, resistance to vandalism, ability to communicate with disabled people, wireless communication with the controller - make our sensor button for pedestrians stand out from competing products.
- **radar sensor that monitors the filling level of containers** (e.g. with waste) and toilets is also worth presenting. Monitoring of these containers allows you to optimize the receipt of their contents or monitor the correctness of the contract (e.g. commune - city cleaning plant).

3. Digital Core Design Sp. z o.o. Sp. K. (ul. Wrocławska 94, 41-902 Bytom, www.dcd.pl)

Reprezentuje Regionalne Inteligentne Specjalizacje woj. Śląskiego w obszarze: Technologie informacyjne i telekomunikacyjne

The branch: Electronics & IT

DCD company was founded in 1999. Since two decades, the company has been specializing in designing innovative IP Core solutions and SoC systems, resulting in over 70 different architectures. The skills of DCD engineers and product innovation have been confirmed by the sale of approximately 1,000 licenses to companies from around the world, including Rafael, Yitran, Intel, Philips, Toyota, Sony, Apple and many others. Until now, the company has implemented projects for companies in automotive, telecommunications, aviation, defense, rail transport, consumer electronics, medical and many other industries. From early beginnings, the company systematically conducts research and development activities carried out in-house by the R&D department, leading to the development of new products and services, as evidenced by the history of hitherto implementation and marketing of new products.

The **main business profile of the company is based on creating innovative SoC (System-on-Chip) solutions containing microprocessors, controllers and peripheral systems from DCD offer and their implementation in specific industries**. Among proprietary products based on which the company carries out implementation projects, one should highlight, among others, hardware bus controllers: I3C, I2C, SPI, CAN, USB, LIN and several UART types, as well as **the world's fastest industrial processor from the 8051 family - DQ80251** as well as the D32PRO - **first Polish fully configurable 32-**

bit processor for applications in embedded systems and IoT. The latest solution developed by DCD is the CryptOne - proprietary cryptographic system. These solutions have been fully developed, designed and implemented by DCD engineers.

DCD products and services:

1. CryptOne - a 100% secure cryptographic system, fully proprietary solution developed by Digital Core Design, which meets the current requirements of cryptography security, set by the US NSA and the European Commission. As the only solution currently offered, it also meets the requirements of Directive PSD2 (EU) 2015/2366 related to double authentication. CryptOne is a fully scalable solution, meaning it can be used in many industries, e.g. fintech, IoT, industry 4.0, smart grid etc.

2. DQ80251 - the world's fastest industrial processor from the 8051 family, over 75 times faster than the standard created by Intel, thanks to which it performs more operations, in a shorter time and with lower energy consumption.

3. Peripheral modules:

- Automotive: DCAN FD, DLIN
- Ethernet – DMAC-RMII
- I3C
- Smart Card
- USB
- UART
- SPI
- HDLC