

DOCUMENT TITLE:

SMART FACTORY SOLUTIONS FROM BULGARIA

**Project: Improving RD and business policy conditions for
transnational cooperation in the manufacturing industry**

Acronym: Smart Factory Hub

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PU	Public	X
PP	Restricted to other Programme participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only for members of the consortium	

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1 INVENT

Smart Factory solution provider profile

Organization:



RFID Bulgaria Ltd.

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Bulgaria

Website and social media:

Website: <http://www.rfid.bg>

Contact details:

Bisser Stoyanov
Tel. +359 2 444 27 47
E-mail: office@rfid.bg

Type of organization:

SME

Market sectors:

Electrical and electronic engineering industries

Services provided:

- Engineering
- Manufacturing

Smart Factory solution



Product/Solution webpage:

<https://invent.one>

Type of solution:

Product

Smart Factory description:

INVENT is a solution for contactless inventory taking, based on the modern RFID (Radio Frequency Identification) technology. RFID is based on “reading” information from a microchip which is embedded in a compact label or tag. Such a label is affixed to every single asset or item. A specialized mobile terminal is used for scanning. It reads the tags very fast, from a big distance and even without direct line of sight.

INVENT is a stand-alone solution designed specifically the inventory taking process. It is compatible with every accounting software or ERP, based on file exchange or low-level integration.



Figure: INVENT

Keywords:

RFID technology
auto-identification
web services,
mobile apps

Example of Product/Service usage:

The implementation process has only 3 steps:

1. Import the asset data from your program.

INVENT allows flexible data management of assets that you handle with existing software. For this purpose, import - export of files. Virtually any accounting or warehouse program works seamlessly with INVENT.

All fields that describe the asset - type, location, date of issue / acquisition, number, etc. are accepted. The program allows easy searching, sorting, editing and filtering on criteria you specify.

2. Marking assets with non-contact labels.

Once you submit data about available assets in Excel, we process and prepare the labels.

Each label prints the necessary data (inventory number, name, serial number, etc.) and the chip is coded for INVENT. You get ready-to-stick labels - sorted by location or other criterion you specify.

The information printed on the label is not necessary for the operation of the system - it only makes it easier for you to identify assets and stick to the proper labeling of the right asset.

Together with the labels, you also receive a database of fully processed data - ready to work with INVENT.

Such a tagging procedure (which is undoubtedly the only embarrassment in the implementation of INVENT) is made easier.

3. Inventory.

The inventory is done using a mobile reader. It is only necessary to select the location in which it is located and a list of units of inquiry is loaded on the mobile terminal screen.

Asset scans are divided into the following categories:

- Found - which are kept in the current location and found during scanning;
- Missing - not found when scanning with the terminal;
- Others - who are in a different location but are found in the current (moved). The screen shows the location where they are taken.

INVENT allow data from the inventory to be processed and transferred back to the accounting program, where all changes (asset shifts in new locations, missing, duplicate, etc.) are automatically reflected. Thus, slow procedures for describing asset movement "by hand" in the accounting program are avoided.

Easy to implement, available as an on-premise installation as well as cloud service. Not too complex – just focusing on the specific area which need improvement of the identification. Cost effective. The implementation is 2 hours for one person. Can be used as a service, when installed on our cloud server. Another option is installation at the customers' infrastructure. Than MS SQL server and IIS is required. For the mobile application – it is installed on Android or iOS phone and can work either connected to the server or in offline mode.

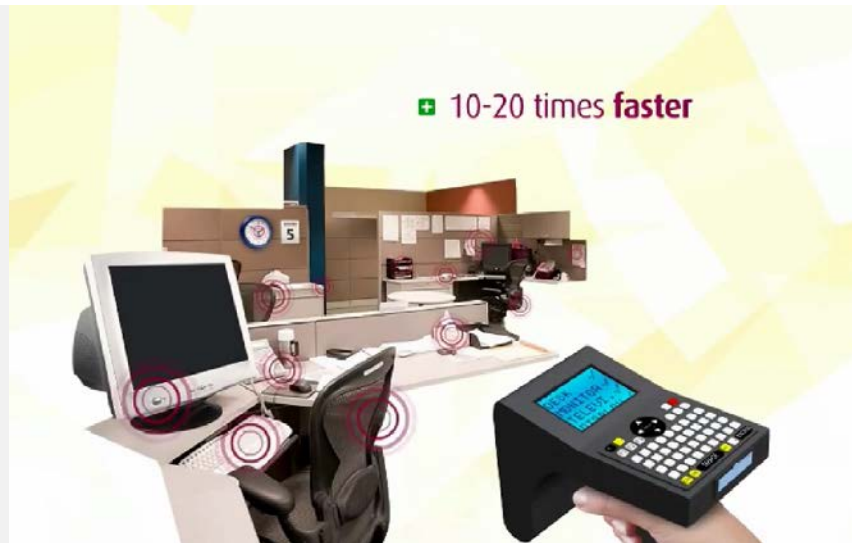


Figure: INVENT system

Improvement areas covered by the Product/Solution:

- Lower energy costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved maintenance/uptime
- Improved information for business analytics
- Improved remote monitoring capabilities
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

- Implementation in the production processes

Other relevant information about the product/service:

- Attachment1: Company and product logo
- Attachment 2: Product presentation
- Attachment 3: Video about SF solution (<https://youtu.be/NDdHj2MKPrk>)

Product/service technological focus:

- Electronic measurement systems
- Measurement Tools

Market availability:

- Available on the market

2 Virtual Engineering Center (VEC)

Smart Factory solution provider profile

Organization:



Technical University – Sofia

Sofia 1113, 25, Charles Darwin str., office 2
Bulgaria

Website and social media:

Website: <https://tu-sofia.bg/>

Contact details:

Prof. D-r Eng. Georgi Todorov

Tel. +359 2 444 27 47

E-mail: gdt@tu-sofia.bg

Type of organization:

University

Market sectors:

Automotive industry

Biotechnology

Construction

Electrical and electronic engineering industries

Mechanical engineering

Services provided:

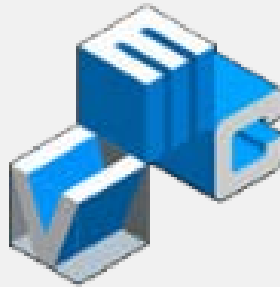
Education/Training

Engineering

Research and development

Services

Smart Factory solution



Virtual Engineering Center (VEC)

Product/Solution webpage:

<http://vec.tu-sofia.bg>

Type of solution:

Service

Smart Factory description:

Virtual Engineering Center (VEC) is a Centre of Excellence for Technology Development and Transfer

Provides Industry 4.0 oriented services to ICT and mechatronics industry: Product Design & 3D Modeling in mechatronics and robotics; Virtual and Augmented Reality (VR & AR); Simulation: Virtual Prototyping (VP) And Engineering Analyses and optimization; Product Lifecycle Management (PLM) / PDM software development; Additive manufacturing, Rapid prototyping and tooling.

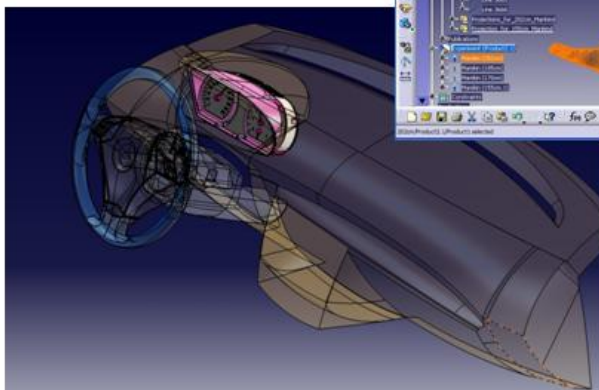
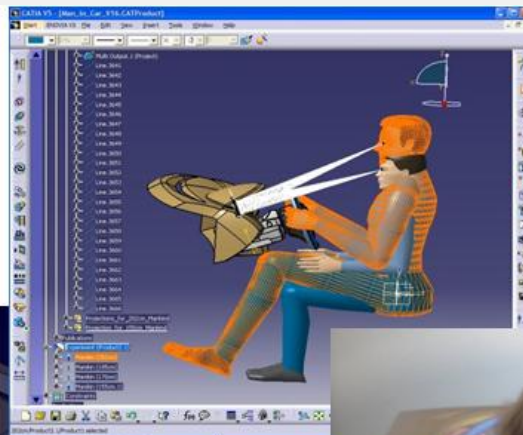


Figure: VEC

Keywords:

3D Modelling and Design;
Engineering Analyses;
Rapid Prototyping;
Virtual and Augmented Reality

Example of Product/Service usage:

Virtual Engineering Centre @ Technical University – Sofia, integrates several research labs in Technical University Sofia (Computer Visualization, Virtual Reality Lab, CAD/CAM/CAE Lab, Lab for System Design and Assembly Automation, Mechatronics Lab, Lab for Complex Automation of the Discrete Manufacturing).

It provides services through R&D projects with industrial partners and government institutions as well.

VEC explores and develops novel technologies that are introduced in production processes to achieve cost efficiency.

Provided service in Product Design & 3D Modelling is directed to develop innovative products for industrial partners in the fields of mechatronics and robotics. The development includes conceptual design, detailed design, simulations (engineering analyses), technical documentation and prototyping. VEC provides various services in the field of Rapid Prototyping (RP) and Tooling (RT), using modern prototyping systems.

Another field of services is related to Virtual and Augmented Reality technology application for industrial purposes. Education and training in above described fields is another provided service in VEC.

All VEC services are oriented towards new product development processes. Research and development activities are directed to innovative technologies as RP&RT and their various applications (as in medical implants for instance).

Improvement areas covered by the Product/Solution:

- Increased speed of production operations
- Decreased manufacturing costs
- Lower energy costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved product quality
- Improved coordination with customers
- Improved compliance with customer specs or regulatory requirements
- Improved information for business analytics
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

Implementation of the novel technology

Other relevant information about the product/service:

Attachment1: University and product logo

Attachment 2: Product presentation

Attachment 3: Video about SF solution (https://youtu.be/7cVDQ8vf_P0)

Product/service technological focus:

Construction Technology

Design and Modelling / Prototypes

Market availability:

Available on the market

3 Green Monitor

Smart Factory solution provider profile

Organization:



Interconsult Bulgaria
1309 Sofia 7, Indzhe Voivoda Str.
Bulgaria

Website and social media:

Website: <https://www.icb.bg/>

Contact details:

Nikolay Penov/ Stoyan Boev
Tel: +359 2 920 11 20
E-mail: icb@icb.bg

Type of organization:

SME

Market sectors:

OTHER (Business Software)

Services provided:

Consulting
Services

Smart Factory solution



Green Monitor

Product/Solution webpage:

<http://greenmonitor.icb.bg>

Type of solution:

Product

Smart Factory description:

Green Monitor - Software for Real-Time Monitoring and Predictive Maintenance of Machines

In a factory, Green Monitor collects raw data from a machine's control systems (or retrofitted sensors), transforms it into actionable information through mathematical calculations, and visualizes it in user-defined dashboards and instruments. Green Monitor helps everyone in the manufacturing hierarchy—from Machine Operator to Factory Manager—to monitor the information they need to contribute to an efficient production process.

Keywords:

Software
Improve production planning,
Improve efficiency
Effectiveness of operations

Example of Product/Service usage:

The product was created as a result of Innovation Norway project: NøBG10-0008 and with collaboration with Trondheim Technical University. Green Monitor is gathering information from machines and internal system and visualizing the data with different dashboards.

Most of the providers of IoT software focus on one type of CNC machines. Our solution tries to obtain data from different machines by using adapters from the controllers. Green Monitor uses neuron networks to improve accuracy of the linear movements of the CNC machines. The product is mainly focused on improvement of the service of the CNC machines.

Green Monitors tries to reach zero downtimes of the machines. By servicing the machines regularly, scrap is greatly reduced.

Thanks to predictive maintenance risk of contractual obligations is reduced.

The service can be implemented on site and on the cloud. Part of the product is always implemented on site. Typical implementation concerns installation of the product, developing drivers for CNC controllers, integrating the product with existing ERP and Mesh systems and developing KPIs, which are important for the client.

Every SME follows different KPIs aside from the KPIs assigned for the machines. SMEs have the opportunity to have visualised data on custom dashboards depending the company's strategy. The product can be extended to provide information for predictive and preventive maintenance. Can be connected to legacy software systems and it will be hosted in the cloud.

From condition monitoring to online monitoring.

From condition-based maintenance to predictive maintenance.

Resulting in improved efficiency and sustainable production in High cost countries as Norway.



Figure: The picture above shows a special widget that allows companies to see key KPI's for a given machine.

Improvement areas covered by the Product/Solution:

- Increased speed of production operations
- Decreased manufacturing costs
- Lower energy costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved information for business analytics
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

- Implementation in the production processes

Other relevant information about the product/service:

- Attachment1: Company and product logo
- Attachment 2: Product presentation

Product/service technological focus:

- Electronic measurement systems

Energy efficiency
Waste Management
Water Management
Safety

Market availability:

Available on the market

4 PRIM.BG

Smart Factory solution provider profile

Organization:



ANTIPODES LTD.
Sofia 1421 Bulgaria46 Chervena Stena str.
Bulgaria

Website and social media:

Website: <http://www.antipodes.bg>

Contact details:

Dimitar Giulev
Tel: +359 2 964 11 05
E-mail: info@antipodes.bg

Type of organization:

SME

Market sectors:

OTHER (Business Software)

Services provided:

Consulting
Services
Other (BPM systems, ERP systems, CRM system)

Smart Factory solution



PRIM.BG

Product/Solution webpage:

<http://PRIM.bg>

Type of solution:

Service

Smart Factory description:

PRIM.BG – Cloud-based ERP system

An ERP system that combines CRM, sales, purchases, logistics management and finance, all organized in the way, the successful companies work. The product is web based and works on all kind of devices. It is developed on Perl/ Angular JS and MySQL as database. It is easily scalable and currently used by one of the biggest enterprises in Bulgaria.



Keywords:

Software
 Cloudbased,
 ERP as a service

Example of Product/Service usage:

Awareness

The system enables managers to effectively manage information flows and daily business processes such as sales, orders, warehouse logistics, financial documents, and so on

Control

The monitoring of all ongoing events in the system provides unified, and more importantly - vital information about the company. At the same time, this control over the business processes allows for always informed management decisions

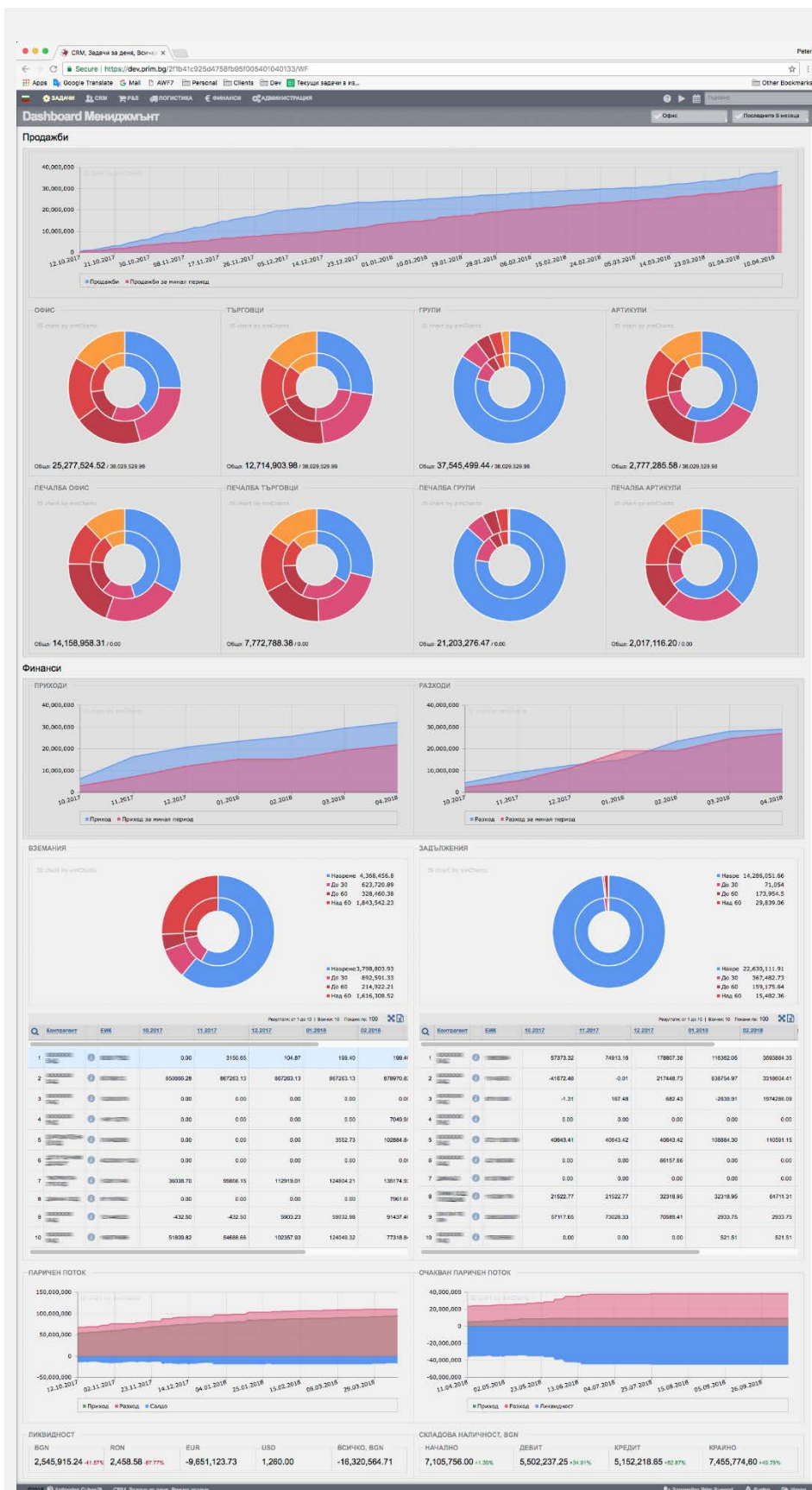
Streamlining

A key advantage of using the system is the optimization of the company's entire business, achieved by increased staff productivity, a significant reduction of mistakes and generally by reducing the time needed to complete any task

Growth

PRIM.BG is a software platform for small and medium businesses. We offer a solution that brings all the benefits of large and expensive ERP systems, but with streamlined processes and interfaces, to help smaller companies start quickly, yet be able to up the complexity when they need it

PRIM is an evolution of our Antipodes. Cubes™ERP system and is used by many customers. Now we are just making it available to greater audience by offering it as a service. We are still making small adjustments to make it easier for smaller companies to start using it.



Improvement areas covered by the Product/Solution:

- Decreased manufacturing costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved information for business analytics
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

- Implementation in the production processes

Other relevant information about the product/service:

- Attachment1: Company and product logo
- Attachment 2: Product presentation

Product/service technological focus:

- Electronic measurement systems
- Measurement Tools

Market availability:

- Available on the market

5 LoRaWAN™

Smart Factory solution provider profile

Organization:

Comicon Ltd.

Sofia 1113, 25, Charles Darwin str., office 2
Bulgaria

Website and social media:

Website: <http://www.comicon.bg/>

Contact details:

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Tel. +359 2/ 974 4324

E-mail: comicon@comicon.bg

Type of organization:

SME

Market sectors:

Electrical and electronic engineering industries

Services provided:

Engineering

Manufacturing

Research and development

Services

Smart Factory solution

LoRaWAN™

Product/Solution webpage:

www.aspires.eu

Type of solution:

Product

Smart Factory description:

LoRaWAN™ Modbus TCP gateway is developed in 2 versions - for mobile and fixed applications.

The products is developed under the ASPIres project funded by EC. The goal of the project is to develop advanced concepts for early detection systems of fires that integrates sensor networks and mobile (drone) technologies for data collection and acquisition of those data at existing Crisis Management Information Systems (CMIS).



Figure: LoRaWAN™ Modbus TCP gateway

Keywords:

Gateway,
Industrial communication,
wireless sensor network

Example of Product/Service usage:

The LMG gateway:

- Connects LoRa® wireless sensors at a distance up to 15km to supervision and control of automation equipment.
- Collects data from LoRaWAN™ Class A sensors.
- Supports predefined set of LoRaWAN™ devices.
- Send data to registers of a targeted Modbus TCP server.
- Supports Modbus TCP client functionality.
- Exists in 2 versions:

- mobile - based on 3G cellular network, for use on a mobile vehicles incl. drones
- fixed - based on Ethernet.
- Battery power supply or main power supply.
- Application: oil and gas, water and wastewater, industry, agriculture, environment, transport.

The product can be used in systems for remote monitoring and data acquisition – for example in the fields of fire prevention, agriculture, meteorological systems, industrial structures, etc. For the implementation of the product resources normally used for implementation of equipment for industrial automation are necessary (trained staff, some instruments)

Technical limitations: The LMG gateway can connect devices and collect data at a distance up to 15 km (this is a limitation of the LoRa WAN technology). Implementation limitations: For the mobile version of the gateway some limitation regarding the possible route, etc. of the chosen mobile device can be applied

Improvement areas covered by the Product/Solution:

Lower energy costs
Improved maintenance/uptime
Improved remote monitoring capabilities
Improved safety

Product/Solution is related to the following type of implementation:

Implementation of the novel technology

Other relevant information about the product/service:

Attachment1: Company logo
Attachment 2: Product presentation

Product/service technological focus:

Measurement Tools
Environment
Safety
Micro- and Nanotechnology related to agrofood
Technologies for the food industry

Market availability:

In development

6 Building Management System

Smart Factory solution provider profile

Organization:

“Bulsource Consulting” Ltd.
Ferdinandova str./blvd. 60, 8000 Burgas,
Bulgaria

Website and social media:

Website: <http://bulsource.com/>

Contact details:

Stoyan Nikolov
Tel. +35989 783 4295
E-mail: s.nikolov@bulsource.com

Type of organization:

SME

Market sectors:

OTHER (IT-software)

Services provided:

Consulting
Education/Training
Engineering
Research and development
Services

Smart Factory solution

Building Management System

Product/Solution webpage: No

Type of solution:

Product

Smart Factory description:

The product is addressed to all smart buildings, businesses which would like to have monitor and control of the systems installed and work within in single interface. The system is Easy cost-effective integration with personal touch to every detail. For now the system is used only in Burgas and Sofia, Bulgaria. The system is perfect for buildings that want to report energy efficiency. Hotels, office and business buildings, Smart Buildings, commercial and entertainment buildings, manufacturing buildings and etc. With the right use of the management system, it could return the investment for 36 months. One of the main advantages of the system, along with the reduction of the total cost of servicing and maintenance of buildings in the building providing comfort, security, safety and security, is the predictability of events of different nature and detailed archiving of events from all interconnected subsystems.

Keywords:

Smart,
Automation,
Integration,
Management

Example of Product/Service usage:

The system is open (modular), allowing for easy expansion / upgrading of components (controllers, I / O modules, etc.) and information open to work with different protocol compatible devices. The building automation system is configured to allow building systems to work in the most efficient way possible to best serve the needs of staff, staff and the environment, now and in the future. The system is completely open without any restrictions, and behind it is a young, experienced team who would personally pay attention to every detail of the implementation of such a system. Much more efficient than the main competition on the market.

Improvement areas covered by the Product/Solution:

Improved maintenance/uptime
Improved remote monitoring capabilities
Improved safety

Product/Solution is related to the following type of implementation:

Implementation of the novel technology

Other relevant information about the product/service:

Attachment1: Company logo
Attachment 2: Product presentation

Product/service technological focus:

IT and Telematics Applications
Energy efficiency
Electronic measurement systems
Measurement Tools

Market availability: Developed

7 ReCheck

Smart Factory solution provider profile

Organization:



ReCheck BV.

Urmonderbaan 22, Gate 2 6167RD Geleen Netherlands

Website and social media:

Website: <https://recheck.io/>

Facebook: <https://business.facebook.com/recheck.io/>

LinkedIn: <https://www.linkedin.com/company/27097879/admin/updates/>

Youtube: https://www.youtube.com/channel/UCIXm_uSys5AutwELCiT-hlg

Twitter: https://twitter.com/recheck_io

Contact details:

Emiliyan Enev

E-mail: info@recheck.io

Type of organization:

SME

Market sectors:

OTHER (IT-software, blockchain)

Services provided:

Information Processing & Systems, Workflow

IT and Telematics Applications

Smart Factory solution



ReCheck

Product/Solution webpage:

<https://recheck.io/>

Type of solution:

Product

Smart Factory description:

Providing blockchain infrastructure for traceability, authentication and digitalization in various industries. ReCheck offers API solutions for utilizing the value of blockchain in business solutions with minimum friction. ReCheck offer technology tools that protect product authenticity and give digital life of physical products. With ReCheck businesses can register content on blockchain and create unique identities of items. Then the companies can use these identities to run smart contracts and execute transactions in secure and transparent environment (for example transactions related to authentication, traceability, product documentations, ownerships, etc.). ReCheck is technology partner of organisations that want to utilise blockchain in their operations and provides infrastructure to run pilots and test hypotheses about the value of blockchain in certain operation.

Keywords:

Agile development.
Scrum.
Kanban.
CD/CI.
Unit Testing.
Block Chain.

Example of Product/Service usage:

By applying knowledge and expertise in blockchain technology and development of smart contracts. **Used within the EU. Appropriate to use in** Industrial enterprises, Private businesses, Logistic companies, Art Galleries and Collectors. Digitalisation of product documentation, automation of operations related to authentications, decreasing labour costs by executing smart contracts. **By the** full traceability of products across supply and value chains **the quality of the productions is ensured. The system is implemented easily by** mobile Application, Web Application, Physical data carrier (electronic tag), access to blockchain network. **Some of the**

benefits of ReCheck are Next level of Trust for data, assets and transactions, Increased value of goods, Paperless documentation, Transparency and Tracking, Authenticity verification. The blockchain technology offers the highest level of encryption protection of ID.

Improvement areas covered by the Product/Solution:

- Lower energy costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved maintenance/uptime
- Improved information for business analytics
- Improved remote monitoring capabilities
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

Implementation in the production processes

Other relevant information about the product/service:

Attachment1: Company and product logo
Attachment 2: Product presentation
Attachment 3: Video: <https://www.youtube.com/watch?v=-2dUCU7Fo5w>

Product/service technological focus:

Electronic measurement systems
Measurement Tools

Market availability:

Available on the market

8 Black Sea Smart Alliance

Smart Factory solution provider profile

Organization:



CRYPTOVARNA

CryptoVarna NGO.

1 Sofia str, Varna 9000, Bulgaria

Website and social media:

Website: <https://cryptovarna.com/>

Facebook: <https://www.facebook.com/groups/123317971755498>

LinkedIn: <https://www.linkedin.com/company/cryptovarna/>

Youtube:

<https://www.youtube.com/playlist?list=PL6B6CjaJlvV2Myat3i1Et0r902lSe3DbIt>

github: <https://github.com/CryptoVarna>

Contact details:

Galin Dinkov,

Marten DemirevTel

E-mail: info@cryptovarna.com

hello@innovator.bg

Type of organization:

Business support organization

Market sectors:

OTHER (IT-software, blockchain, IoT, ect.)

Services provided:

Consulting

Education/Training

Engineering

Manufacturing

Research and development

Services

Smart Factory solution

BLACKSEA

Smart Alliance

Black Sea Smart Alliance

Product/Solution webpage: NO

Type of solution:

Service

Smart Factory description:

We've created an union of companies and experts from different aspects of the Smart Technologies, working together on projects for:

- Smart Agriculture
- Smart City
- Smart Ports

The tech is based on:

- Internet of Things sensors (IoT)
- Low Power Wide Area Networks (LPWAN)
- Blockchain Technology
- Smart Contracts
- Cloud Systems
- Renewable Energy

Part of the solutions are:

- Remote fire-alarm system with autonomous and battery powered smoke-detectors, mobile app for control, secure audit log in blockchain and lots more features.
- Agriculture solution for monitoring and optimizing plantations, fields and silos including solar power supply, wide variety of sensors (humidity, temperature, ...), LPWAN transmitter, gateway, Cloud platform, CMS, mobile app and the ability to collect, analyse data with Machine Learning and implement. optimized settings to achieve better and bigger production.
- Smart City Infrastructure - covering the City of Varna with LoRa WAN and Blockchain. This will be used for data collection from public sensors and for public services such as mobile parking usage and reservation, public records and micro payments.

Keywords:

Novel technology,
Comprehensive smart solutions,
Cost effectiveness,

Internet of Things sensors (IoT),
Low Power Wide Area Networks (LPWAN),
Blockchain Technology,
Smart Contracts,
Cloud Systems,
Renewable Energy,

Example of Product/Service usage:

The technical solutions in the alliance involve, Internet of Things sensors (IoT), Low Power Wide Area Networks (LPWAN), Blockchain Technology, Smart Contracts, Cloud Systems, Renewable Energy, combining them makes the alliance unique in the world of the Smart Technology and Industry 4.0 service providers. Most of our competitors either produce hardware equipment for smart solutions or offer specific product for a single market. We combine all necessary technologies to offer a complete solution for the digital transformation of entire industry. And we have the knowhow and the experts for that.

Improvement areas covered by the Product/Solution:

- Lower energy costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved maintenance/uptime
- Improved information for business analytics
- Improved remote monitoring capabilities
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

Implementation of the novel technology

Other relevant information about the product/service:

Attachment1: Company and product logo

Attachment 2: Product presentation

Attachment 3: Video:

<https://www.youtube.com/playlist?list=PL6B6CjaJlvV2Myat3i1Et0r902lSe3DbIt>

Product/service technological focus:

- Agriculture
- Micro- and Nanotechnology related to agrofood
- Electronics, Microelectronics
- Telecommunications, Networking
- Energy efficiency
- Industrial Manufacture
- Electronic measurement systems
- Measurement Tools

Other Industrial Technologies
Creative products
Creative services
Education and Training

Market availability:

Available on the market

9 Mimirium

Smart Factory solution provider profile

Organization:



Mimirium Ltd.

26 Bratya Shkorpil Str., Office 8, Varna, Bulgaria

Website and social media:

Website: <http://www.mimirium.io>

Facebook: <https://www.facebook.com/Mimirium/>

LinkedIn: <https://www.linkedin.com/company/mimirium-ltd/>

Contact details:

CEO - Georgi Hristov

CTO - Galin Dinkov

Tel: +359 888 800 488

E-mail: info@mimirium.io

Type of organization:

SME

Market sectors:

OTHER (IT-software, blockchain, IoT, ect.)

Services provided:

Consulting

Education/Training

Engineering

Manufacturing

Research and development

Services

Smart Factory solution



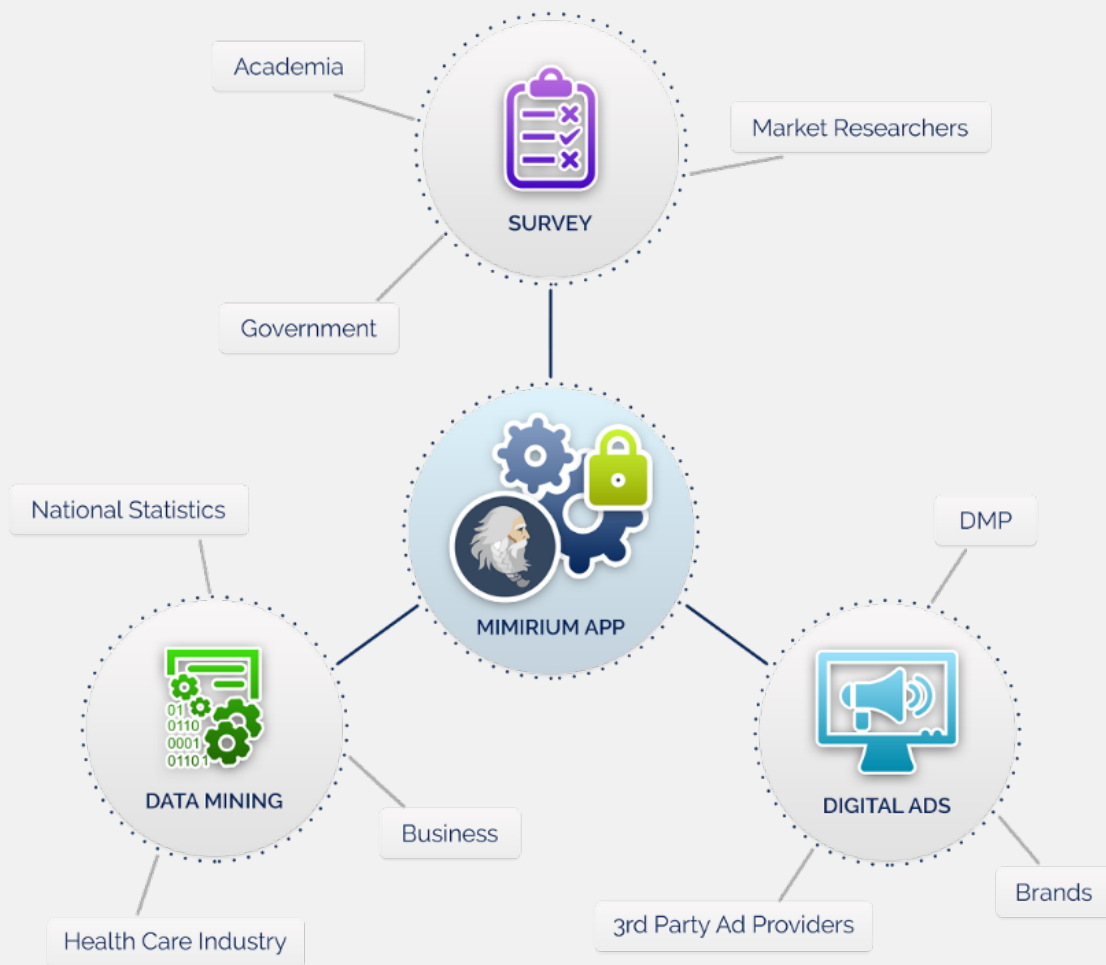
Mimirium
Distributed User-Owned Personal
Database with Anonymous Business Interface

Product/Solution webpage: <http://www.mimirium.io>

Type of solution:
Product

Smart Factory description:

Mimirium is a software that collects user information and stores it securely on his devices. All users running that software form a distributed network database which can be used to extract aggregated anonymous information. For his participation the user earns rewards in the form of cryptocurrency. The system allows the business to perform powerful targeting being 100% GDPR compliant. The software utilizes modern cryptographic techniques, blockchain and machine learning.



Keywords:

Software,
 Cryptocurrency,
 GDPR compliant,
 Perfectly Secure,
 User Incentives,
 Lower Cost for the Business

Example of Product/Service usage:

Mimirium is one of a kind software for Smart Statistics. It combines the innovations in the Machine Learning along with the Distributed Computing and the Blockchain thus solving the problems with the Big Data storage, user privacy and huge computational needs. We create the first real case of perfectly distributed, anonymous and secure database which support queries and lot more.

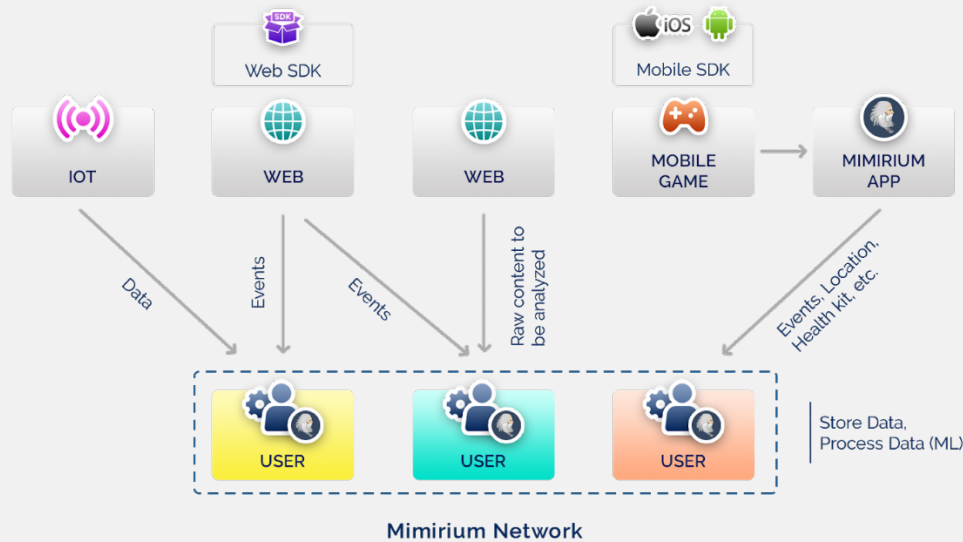


Figure. Mimirium network – data collection model

Improvement areas covered by the Product/Solution:

- Improved maintenance/uptime
- Improved information for business analytics
- Improved safety
- Developed visualization capabilities

Product/Solution is related to the following type of implementation:

- Implementation of the novel technology

Other relevant information about the product/service:

- Attachment1: Company and product logo
- Attachment 2: Product presentation

Product/service technological focus:

- Information Processing & Systems, Workflow
- IT and Telematics Applications
- Creative products
- Creative services

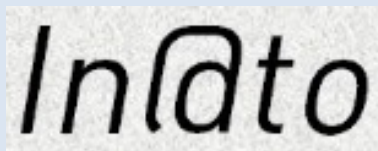
Market availability:

- Available on the market

10 UPI - Unified Platform for Innovations

Smart Factory solution provider profile

Organization:



INATO Ltd.

26 Bratya Shkorpil Str., Office 8, Varna, Bulgaria

Website and social media:

Website: no

Contact details:

Contact person: Lyubo Blagoev

Tel: +359 888 365 477

E-mail: lyuboblagoev@gmail.com

Type of organization:

SME

Market sectors:

OTHER (IT-software, blockchain, IoT, ect.)

Services provided:

Consulting

Services

Smart Factory solution

UPI- Unified Platform for Innovations

Product/Solution webpage: No

Type of solution: Product

Smart Factory description:

UPI isn't a conventional tool for complicated software systems building. UPI is a comprehensive environment for runtime-modelling of IoT collaboration, supported by machine learning, Natural

sub-Language Processing and so on. The UPI- environment has a unique internal architecture- Semantic Network Based Architecture- SNBA. The main novelty in UPI-based systems is that the humans and machines in Smart Factories are presented as a collaborating object with different degree of intelligence. Now it can be pointed out two directions of Smart systems development- IoT platforms building and some approaches for AI elements building.

The UPI-approach combines those two directions in a common comprehensive environment with unique Semantic Network Based Architecture. Decreases the cost of Smart systems building with more than 40-50%.

UPI introduces a new approach for quality estimation- this is a semantic approach which is more informative and understandable.

The risk is extremely reduced by using decentralised approach for software building.

The UPI-environment can be used for Smart systems building.

The UPI-development process needs only UPI-environment and base software development tools which can be used free of charge in the mode of decentralised programming.

Keywords:

Smart systems,
Cryptocurrency,
IoT,
Collaboration,

Example of Product/Service usage:

The heart of Smart Factory is a Smart Control System which consists of collaborating sub-systems with high degree of autonomy and elements of Artificial Intelligence.

The UPI-approach for Smart Control System building uses full model presentation of concepts, data and processes in the environment with SNBA. This decreases the system's cost, provides powerful tools for risk management and the level of system quality is measured by the human feeling of semantic collaboration with the machines. High effective development process without limitations of the complexity and further development of AI-elements ensuring smart functionality.

Improvement areas covered by the Product/Solution:

Improved coordination with suppliers
Increased speed of production operations
Decreased manufacturing costs
Improved information for production decisions
Improved agility and responsiveness in the production process
Improved product quality
Improved coordination with customers
Improved maintenance/uptime
Improved information for business analytics
Improved remote monitoring capabilities
Improved safety

Product/Solution is related to the following type of implementation:

Implementation in the production processes

Other relevant information about the product/service:

Attachment1: Company and product logo

Attachment 2: Product presentation

Product/service technological focus:

Information Processing & Systems, Workflow

Measurement Tools

Standards

Other Industrial Technologies

Market availability:

Available on the market

Attachments

- **MANDATORY: 10 minutes (5-15 slides) presentation of the SF Product/Service in PPT or PDF**
- **MANDATORY: Organization logo or Solution/product logo in a *.jpeg or *.gif format**
- Additional material about the Product/Service (such as datasheets, videos, pictures,...)

LEGEND (PLEASE DELETE FOR THE FINAL VERSION):

Type of organization	Select one from the following: <ul style="list-style-type: none"> • Business support organization • Development agency • Large company • Ministry/Government/State agency • R&D • SME • University • University incubator • OTHER (Please specify)
Market sectors	Select one or more sectors the organization is focusing to: <ul style="list-style-type: none"> • Aeronautics industries • Automotive industry • Biotechnology • Chemicals • Construction • Cosmetics • Defense industries • Digital economy • Electrical and electronic engineering industries • Food industry • Gambling • Healthcare industries • Maritime industries • Mechanical engineering • Medical devices • Postal services • Pressure equipment and gas appliances • Raw materials, metals, minerals and forest-based industries • Social economy • Space • Textiles, Fashion and creative industries • Tourism • Toys • OTHER (Please specify)
Services provided	Select one or more services provided by the Organization: <ul style="list-style-type: none"> • Consulting • Education/Training

	<ul style="list-style-type: none"> • Engineering • Manufacturing • Policy • Research and development • Services • OTHER (Please specify)
Type of Smart Factory solution	Select the type of a Smart Factory: <ul style="list-style-type: none"> • Product • Service
Product/Solution is related to the following type of implementation	Select one or more areas improved by the Product/Service implementation: <ul style="list-style-type: none"> • Improved coordination with suppliers • Increased speed of production operations • Decreased manufacturing costs • Lower energy costs • Improved information for production decisions • Improved agility and responsiveness in the production process • Improved product quality • Improved coordination with customers • Improved compliance with customer specs or regulatory requirements • Improved maintenance/uptime • Improved information for business analytics • Improved remote monitoring capabilities • Improved safety • Developed visualization capabilities
Improvement areas covered by the Product/Solution	Select the improvement area: <ul style="list-style-type: none"> • Implementation of the novel technology • Implementation in the production processes • Implementation of the human resource management systems
Product/service technological focus	Select one or more technologies that the product/service is addressing: AGRICULTURE AND MARINE RESOURCES <ul style="list-style-type: none"> • Agriculture • Resources of the Sea, Fisheries • Silviculture, Forestry, Forest technology AGROFOOD INDUSTRY <ul style="list-style-type: none"> • Food quality and safety • Micro- and Nanotechnology related to agrofood • Technologies for the food industry BIOLOGICAL SCIENCES <ul style="list-style-type: none"> • Biology / Biotechnology • E-Health • Genome Research • Industrial Biotechnology • Medicine, Human Health • Micro- and Nanotechnology related to Biological sciences ELECTRONICS, IT AND TELECOMMS <ul style="list-style-type: none"> • Electronic circuits, components and equipment • Electronics, Microelectronics • Information Processing & Systems, Workflow • IT and Telematics Applications • Multimedia

	<ul style="list-style-type: none"> • Telecommunications, Networking <p>ENERGY</p> <ul style="list-style-type: none"> • Biogas and anaerobic digestion (AD) • Carbon capture and energy • Energy efficiency • Energy production, transmission and conversion • Energy storage and transport • Fossil Energy Sources • Nuclear Fission / Nuclear Fusion • Other Energy Topics • Renewable Sources of Energy <p>INDUSTRIAL MANUFACTURING, MATERIAL AND TRANSPORT</p> <ul style="list-style-type: none"> • Aerospace Technology • Construction Technology • Design and Modelling / Prototypes • Industrial Manufacture • Materials Technology • Packaging / Handling • Plant Design and Maintenance • Process control and logistics • Traffic, mobility • Transport and Shipping Technologies • Transport Infrastructure <p>MEASUREMENTS AND STANDARDS</p> <ul style="list-style-type: none"> • Amplifier, A/D Transducer • Electronic measurement systems • Measurement Tools • Recording Devices • Reference Materials • Standards <p>OTHER INDUSTRIAL TECHNOLOGIES</p> <ul style="list-style-type: none"> • Other Industrial Technologies <p>PHYSICAL AND EXACT SCIENCES</p> <ul style="list-style-type: none"> • Chemistry • Meteorology / Climatology • Micro- and Nanotechnology • Physics • Separation Technologies <p>PROTECTING MAN AND ENVIRONMENT</p> <ul style="list-style-type: none"> • Waste Management • Water Management <p>SOCIAL AND ECONOMICS CONCERNS</p> <ul style="list-style-type: none"> • Citizens participation • Creative products • Creative services • Education and Training • Information and media, society
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	<ul style="list-style-type: none">• Infrastructures for social sciences and humanities• Socio-economic models, economic aspects• Sports and Leisure• Technology, Society and Employment
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