Wireless communications solutions for industrial applications: aerospace, oil & gas, plant monitoring and building automation

Summary

A Romanian company with more than 20 years' experience offers their developed wireless technology to industry partners via commercial agreement with technical assistance. The solutions offered are based on communication devices such as radio modules, wireless routers or gateways, ultra-wide band evaluation kit, ISA100 wireless kit and similar industrial wireless technology. These solutions are meant to be adapted to all types of industries and to very particular requirements.

Creation Date	15 June 2016
Last Update	07 June 2017
Expiration Date	18 December 2017
Reference	TORO20160615001

Details

Description

The Romanian company developed wireless solutions and it has filed a list of patents in the field of communications granted in USA, Europe and Japan.
The wireless technology integrated onto control and monitoring systems have characteristics specific to industrial applications: time diversity, collision avoidance, frequency diversity, automatic repeat-reQuest, spectrum management, mesh topology, graph routing, duocast, ease of deployment, link and transport layer security, sophisticated security, sleep mode for routing devices, object oriented architecture and IPv6 (Internet Protocol version 6) capability at device level.

More specifically, the wireless applications for operations can be developed for monitoring temperature, pressure, humidity, gas emissions and other various solutions for industrial critical conditions. The operation can be adapted to the remote control of industrial machines or mechanical systems, not just for monitoring and collecting data. Such solutions are possible because of the wireless standard's real time communication capability. The need behind the control and monitoring operations in industrial development is the reduction of machines maintenance costs, the increase of safety standards and the quality of operations.

The company's industrial wireless technology is compatible with many types of infrastructure projects, it is functional in harsh and hazardous environments, it is reliable and it offers a high security level.

Their solutions cover:

Aerospace:

1. Wireless monitoring system for satellite temperature and acceleration in preflight testing
- redundancy for temperature and accelerometer nodes
- temperature data acquisition with 10 thermocouples/1 node
- cold temperature junction compensation in real time
- data acquisition system able to read simultaneously 8 accelerometers
- TEDS (Transducer Electronic Data Sheet) data reading
- 4 kHz accelerometer sampling
2. Communications bus replacement between the satellite's modules
- the industrial wireless technology has been ported onto UWB (ultra wideband)
- actuator control is using wireless technology

Oil & Gas:
1. Steam traps
- integrated with wireless technology, transmits data collected about the steam pressure and temperature from the Modbus (serial communication protocol) to a centralized monitoring system.
- the Modbus server can be connected with 127 devices.
2. Plant Monitoring
- large number of devices that are auto configured in large networks
- can support 100 subnet devices
- several collocated subnets
- gathering data as fast as 250 ms sampling period
- 99% reliability
- low power
- dynamic bandwidth location
- redundancy paths for data transmission

Remote control for industrial cranes:
- gathering data as fast as 250 ms (millisecond)
- the latency is lower than 100 ms
- any combination of network communications can be validated
- less than 1 second for a device to join the control setup
- Lite System Manager (SM) that can run on an embedded platform
- Lite SM capabilities: 150 nodes, 200 links, 120 control packets

The radio modules:
- Include ready-made communication stacks
- Available for sub-GHz, 2.4GHz and UWB physical layers
- guarantee high integration flexibility, being able to support 3 types of interfaces: UART (universal asynchronous receiver-transmitter), SPI (Serial Peripheral Interface), I2C (Inter-Integrated Circuit).

The company is serving industrial products and services providers who are looking to integrate communications solutions with their products. The wireless technology is flexible, reliable and secure. The standards are adaptable to any type of devices.
By providing innovating products and wireless technology the company is offering to potential partners long term solutions that are cutting costs and reducing the energy consumption under commercial agreement with technical assistance.

Advantages and Innovations

One thing that makes the company stand out is the drive towards innovation and recognition for the importance of R&D. Through its research activities, the company has pushed the limits of industrial Wireless Sensor networks technology on several occasions, such as when porting the wireless technology implementation from the 2.4 GHz bandwidth specified by the standard to

new physical layers, namely Ultra-Wide Band and sub - 1 GHz. These activities are generating new intellectual property, which finds its way into the company's products and helps maintaining the technological competitive advantage.

On the international industrial market, the company gained a good reputation concerning wireless solutions for niches like oil & gas, aerospace, plant monitoring, and other industry sectors. The projects already developed and implemented are successful stories which helped build trustful long term partnerships. The company is ISO9001 certified.

The two main company's divisions, hardware and software are working together in order to obtain automated systems for communications. The hardware team's responsibility is to design radio modems and wireless router accordingly to the requirements for reliability, manufacturing, cost and long life time. The software team, on the other hand, is handling the definition and implementation of critical standards that form the base of the industrial IoT (Internet of Things) ecosystem. Together they are highly committed to meet every standards and expectations.

Stage of Development

Already on the market

Comments Regarding Stage of Development

Patents granted in USA, Europe and Japan.

IPR Status

Patents granted

Profile Origin

Private (in-house) research

Keywords

Technology

01006004	Narrow Band Technologies
01006005	Network Technology, Network Security
01006008	Satellite Technology/Positioning/Communication in GPS
01006009	Signal Processing
01006013	Communications Protocols, Interoperability

Market

01004002	Data communication components
01004003	Communications processors/network management
01004007	Network test, monitoring and support equipment
01004008	Other data communications
01006004	Communications services

NACE

J.61.2.0	Wireless telecommunications activities
J.61.3.0	Satellite telecommunications activities

J.61.9.0 Other telecommunications activities

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

ICT Industry and Services

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English

Client Country

Romania

Partner Sought

Type and Role of Partner Sought

Potential partners are industrial products and services providers with focus on monitoring, control and other communications solutions, interested to integrate wireless technology.

The kind of partnership sought is commercial agreement with technical assistance. Other partnership types can be considered upon discussion.

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments

Technology Request

Technical cooperation in implementation of a 5-axis 3D printing technology with fused deposition modelling (FDM)

Summary

A company from Poland working on a project related with implementation of a new 5-axis 3D printing technology with focus on application in various industrial processes. The company is currently developing a project that assumes the use of a new 3D printer employing the fused deposition modelling (FDM) printing technology. Partners interested in starting technical cooperation and ready to share their expertise are welcome.

Creation Date	24 November 2016
Last Update	15 December 2016
Expiration Date	15 December 2017
Reference	TRPL20161124001

Details

Description

A Polish company dealing with 3D printing technologies and distributing computer-aided design, manufacturing and engineering (CAD / CAM / CAE) software aiding the design and manufacturing process in specific sectors of the industry with a knowledge driven focus on the field of mould and die industrial application, including the design and manufacture of plastic injection moulds, sheet metal stamping dies, progressive dies, 2D to 5-axis milling, electrode production, multi-axis laser cutting, wire electrical discharge machinines (EDM) and others. These products and technologies support various manufacturing industry sectors such as automotive, electronics, medical, white goods and aerospace.

The company is currently working on a project related with implementation of a new 5-axis 3D printing technology and is looking for international partners willing to share expertise and knowledge in that area. Technical cooperation agreement is considered.

Technical Specification or Expertise Sought

The project assumes the use of a 3D printer with the following technical parameters:

- large work surface with dimensions of 300 x 300 x 300 mm,
- 5 axis kinematics (X, Y, Z + rotation B, C) - there are no 5-axis printers available on the market using the fused deposition modelling (FDM) printing technology
- automatic replacement of printer heads,
- graphic interface with a 15" touchscreen

- closed working chamber with controlled temperature
- high definition video camera installed inside, for process monitoring
- dedicated software, for 5-axis printing

Keywords

Technology

02001001	3D printing

Market

08003007	Other industrial equipment and machinery

NACE

C.28.9.9	Manufacture of other special-purpose machinery n.e.c.

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

ICT Industry and Services

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

2015

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
Polish

Client Country

Poland

Partner Sought

Type and Role of Partner Sought

Partners ready to provide technical cooperation in development of the project in implementation of a 5-axis 3D printing technology.

Type and Size of Partner Sought

SME 11-50,University,R&D Institution,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

Technical cooperation agreement

Attachments

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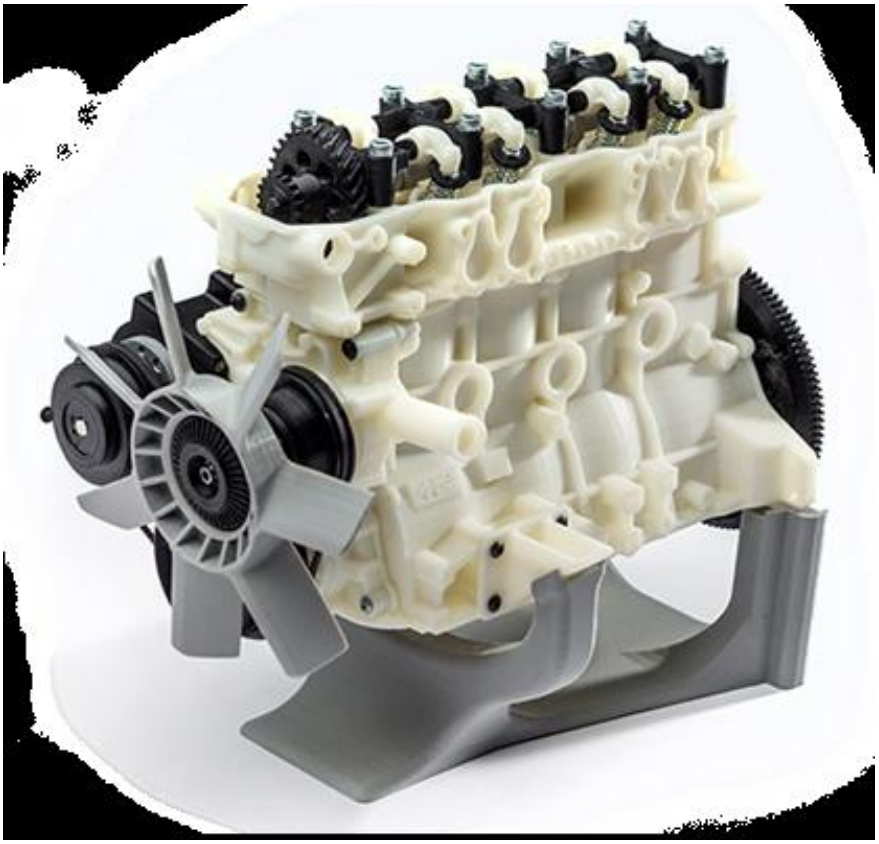
04.png



03.png



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