

**DOCUMENT TITLE:**

# **SMART FACTORY SOLUTIONS FROM SLOVENIA**

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

**Acronym: Smart Factory Hub**

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Dissemination level		
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 REWO

### Smart Factory solution provider profile

**Organization:**

**Viar d.o.o.**  
Jenkova ulica 13, 3000 Celje  
Slovenia

**Website and social media:**

Website: <https://www.viar.si/>  
Social media (Facebook): <https://www.facebook.com/weareviar/>  
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**Type of organization:**

SME

**Market sectors:**

- Automotive industry
- Electrical and electronic engineering industries

**Services provided:**

- Services
- Education/Training

### Smart Factory solution

## REWO

**Product/Solution webpage:**

[www.rewo.io](http://www.rewo.io)

**Type of solution:**

Software and service

**Smart Factory description:**

REWO is a visual digitization platform, which drastically improves capturing and communicating knowledge to anyone within the company's ecosystem.

- Save years of knowledge

REWO offers an efficient way of capturing, preserving, and sharing knowledge throughout your company ecosystem. Share knowledge in the form of visual instructions to your workers, distributors, customers, and more.

- Ensure standardization

Standardize your processes through tracking and visualization of instructions. Don't just write bullet points but guide your coworkers with step-by-step videos showing precisely how tasks are executed.

- Immediate assistance onsite

Wherever you or your expert workers are, remotely assist your colleagues, your customers or others by seeing what they are seeing and visually guiding them through any process or procedure.



**Figure: REWO**

**Keywords:**

Industry4.0  
Digitalization  
Knowledge management  
Internet of Things

**Example of Product/Service usage:**

- **Procedures and Work Instructions**

Procedures describe a process, while a work instruction describes how to perform the conversion itself. Process descriptions include details about the inputs, what conversion takes place (of inputs into outputs), the outputs, and the feedback necessary to ensure consistent results.

- **Training and onboarding**

Ensure that all new employees are inducted into your company according to the specific requirements of your workplace environment. Quickly create content tailored to your workplace, take for example the specific characteristics of the safety protocols necessary within a laboratory or steel factory. REWO allows you create a step by step visual introductions, which allow you to receive a step by step confirmation that everything has been understood by an employee.

- **Field work support**

Your field service workers can't bring with them all the manuals when they are working outside your company. Remote assistance is a key feature of REWO that will help you reduce repeat visits by connecting workers on the field with experts in the office.

- **Product instructions for distributors and buyers**

Many books, manuals, industry standards, and regulations deal with some aspect of product instructions. Unfortunately, much of this information is scattered, hard to find, overly technical, or narrow in perspective. It's also hard for the buyer to follow instructions if they are not explicit enough.

- **Machinery and equipment manuals**

REWO gives your operators more ownership of their machines: Enable workers to initiate the startup process for a machine and enter in the right values for production rather than having to wait for an engineer to do it for them. REWO also allows you to quickly resolve issues when they happen. Quicker intervention times will save yourself from costly production line outages/late deliveries penalties.

- **Complex or small batch assembly**

REWO can be used to break a complex or infrequently performed assembly process into logical visual steps. This works particularly well when dealing with small batch production that only happens a couple of times per year. Visual instructions allow assembly workers to refresh their knowledge before starting. The same goes for complex production where there is a high probability of mistakes.

- **Lean manufacturing**

The hardest part of lean manufacturing is teaching processes to workers when they have been doing it in a certain way for many years. REWO make Single-minute exchange of die (SMED) simpler by visualizing the new process. It also allows you focus on TPM and to transfer basic maintenance operations from your maintenance staff to your machine operators.

- **Asset migration or relocation**

Moving production machines or production lines is a complex process. With thousands of parts involved, all situated or orientated in a certain way there is a high potential for something to go wrong when reassembled in a new location. This could result in costly site visits from engineers or unproductive Skype/phone calls trying to resolve any issues. REWO allows you to document the disassembly and guide someone through the reassembly process once the asset is moved to its new location.

- **Quality Assurance**

REWO is used to show workers exactly how to execute precise measurements or other QA processes where there is a low tolerance for any faults. Your customer today is not only looking at the values you measured but also how you got to those values. Ensure you successfully get through supplier audits by using REWO to guide and train your workers on the QA.

**Improvement areas covered by the Product/Solution:**

- Increased speed of production operations
- Improved agility and responsiveness in the production process
- Improved product quality
- Improved maintenance/uptime

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

- Implementation of the novel technology
- Implementation in the production processes

**Other relevant information about the product/service:**

- Attachment 1: Service presentation
- Attachment 2: REWO logo
- Attachment 3: Promo Video link (<https://drive.google.com/open?id=1RXn4Y1PVeCgK-QpCwHelqEb4d4fknI4R>)

**Product/service technological focus:**

- Information Processing & Systems, Workflow
- IT and Telematics Applications
- Multimedia
- Telecommunications, Networking
- Education and Training

**Market availability:**

Available on the market since 2018

## 2 IPSPlus

### Smart Factory solution provider profile

**Organization:**

**InIn d.o.o.**  
Ciril Metodova 38, 9000 Murska Sobota  
Slovenia

**Website and social media:**

Website: <http://www.inin.si/>  
Social media (Facebook): <https://www.facebook.com/inindoo/>  
Social media (LinkedIn): <https://www.linkedin.com/company/inin-d.o.o./>

**Contact details:**

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E-mail: [inin@inin.si](mailto:inin@inin.si)

**Type of organization:**

SME

**Market sectors:**

- Manufacturing

**Services provided:**

- Services

### Smart Factory solution

#### IPSPlus

**Product/Solution webpage:**

<http://www.inin.si/en/software-solutions/manufacturing/>

**Type of solution:**

Software and service

**Smart Factory description:**

IPSPlus is complete and easy to use software designed for small and mid-sized manufacturing companies that offer advanced work orders, bills of materials and other features that your company needs to maximize efficiency. It offers high level of flexibility, which means that it is customized for your production process. The process of implementation also involves blueprint

- **Increase efficiency**

- **On-time delivery**

- **Reduced costs**

- **Enhanced product quality**

- **Integration**

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**Keywords:**

Industry4.0  
Digitalization  
Production process  
Manufacturing software  
Cost efficiency

**Example of Product/Service usage:**

- **Easy to use and complete solution** – one solution including all modules that manufacturing company needs for covering its information flow. It covers manufacturing process, material process and engineering.
- **Work orders** – custom made, series and semi-product work orders – all adjusted for specifics of manufacturing process. It allows you to create both simple and complex work orders for a variety of tasks. You can also establish accountability at each step of the manufacturing process.
- **Flexibility** – solution can be adjusted to fit production process and specifics of any manufacturing company.
- **Inventory management** – provides features that helps you manage multiple warehouses, automatic material reorders, generate purchase orders and more.
- **Products management** – solution includes managing semi-manufactured products, finished products, defective product and cooperation
- **Material evaluation** – material evaluation with direct connection to liquidation
- **Cost Price calculation** – solution provides the feature of cost price calculation for each product or semi-manufactured product (comparability with flat-rate costs of manufacture)
- **Production tracking** – feature for production tracking using barcodes and scanners.
- **Optimized purchasing** – solution helps manufacturing company with material orders with quantity and time suggestion
- **Internal work orders** – automatically generated internal work orders for semi-products
- **Production stages** – solution includes defining multilevel work orders that utilize production stages, which helps manufacturing company track work order status and see if everything is according to schedule.
- **Work order instructions and multilevel bills of material** – solution allows company to create work order instruction and multilevel bills of material for each product. It makes production faster and accurate, because instructions and list of required material is always available for workers.
- **Accompanying documentation** – each product and/or work order can require different accompanying documentation. Solution provides feature that helps you determining required documentation and providing instruction for attaching it to the product or order.

**Improvement areas covered by the Product/Solution:**

- Production process
- Efficiency
- Administration

- Communication with partners
- Stock optimization

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

- Implementation in the production processes

**Other relevant information about the product/service:**

- Attachment 1: Company logo
- Attachment 2: Service presentation
- Attachment 3:

**Product/service technological focus:**

- SQL Database

**Market availability:**

Available on the market since 1990 with major updates in 2017.

### 3 8DReport.com

#### Smart Factory solution provider profile

**Organization:**

**Promigra d.o.o.**  
Krasinec 47 A, 8332 Gradac  
Slovenia

**Website and social media:**

Website: [www.8dreport.com](http://www.8dreport.com)  
Social media (LinkedIn): <https://www.linkedin.com/company/8d-report/>

**Contact details:**

Branko Starašinič  
Tel. +386 51 321 287  
E-mail: [branko@promigra.com](mailto:branko@promigra.com), [branko@8dreport.com](mailto:branko@8dreport.com)

**Type of organization:**

SME

**Market sectors:**

- Automotive industry
- Electrical and electronic engineering industries
- Information Technology

**Services provided:**

- SaaS (Software as a Service)
- Consulting
- Research and development

#### Smart Factory solution

#### 8DReport.com

**Product/Solution webpage:**

[www.8dreport.com](http://www.8dreport.com)

**Type of solution:**

Service

### Smart Factory description:

8DReport.com is a problem-solving portal for production companies. It is based on a well-known and proven 8D methodology.

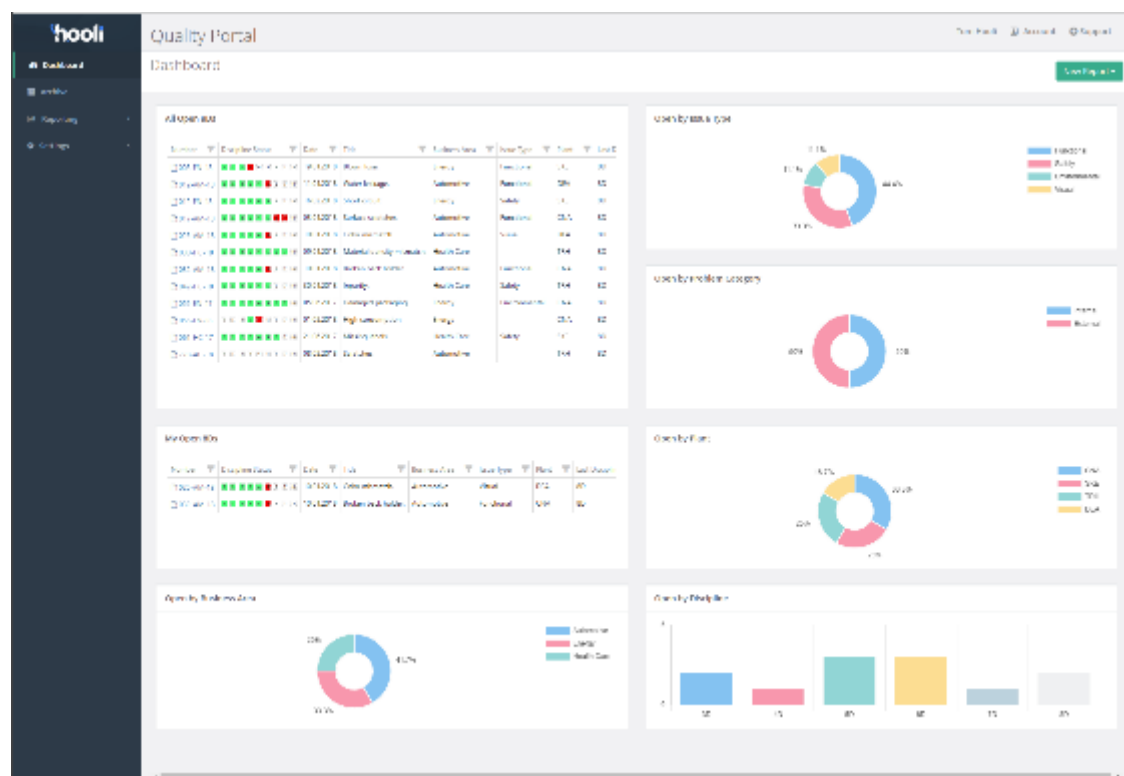
Unlike other software solutions that just enable recording of corrective actions, 8DReport.com makes problem solving a team sport.

8DReport is a cloud application that brings together people from anywhere in the world to work on a given problem. Team can include persons from any plant in the company, suppliers or customers. They can work on the same document at the same time. Every change someone makes others see immediately. All team members get informed about the progress via email messages and rich graphical tools in the portal.

In the dashboard users get a graphical overview of currently open problems. They can quickly see in which areas they should focus their attention. Rich graphical reports help you not only solve problems quickly but also improve your problem-solving processes.

Every time a new problem is opened the archive gets analysed for similar problems and results get presented to the operator. This way he never misses a recurring problem.

Templates in the portal are very customizable. A company can design many different templates that match their problem types or individual customer requirements.



**Figure: 8DReport.com**

**Keywords:**

8D Report  
Corrective Actions  
Problem Solving  
SaaS

**Example of Product/Service usage:**

- A company received a customer claim. A quality engineer opens a new 8D report and invites other team members to help. All team members get informed about the new claim and their role in solving it. They are always on the same page about the current progress and status of the given problem.
- The quality engineer gets a graphical overview of currently open problems and which ones are not meeting the deadlines. This way he can spend less time with busy-work and focus on the problems that need his attention.
- A company sends a claim to a supplier. Instead of requesting a PDF report at the end of the process they open an 8D report in their portal and invite the supplier to use it. This way the company gets all the previously mentioned analytics to monitor the supplier progress.
- Internal audits: For findings of an internal audit a company creates an Internal Audit Report that includes all the findings of the audit. Each finding has a link to a Corrective Action related to the finding.
- The templates can be easily customized and the company built a special template for implementing Internal Audit Corrective Actions.
- As the Corrective Actions get implemented the statuses in Internal Audit Report get automatically updated.

**Improvement areas covered by the Product/Solution:**

- Improved coordination with suppliers
- Improved coordination with customers
- Decreased manufacturing costs
- Improved product quality
- Improved compliance with customer specs or regulatory requirements
- Improved information for business analytics
- Improved information for product decisions

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

- Implementation of the novel technology
- Implementation in the production processes

**Other relevant information about the product/service:**

- Attachment 1: Logo
- Attachment 2: Product brochure
- Attachment 3: Product introduction (<https://vimeo.com/249637380>)

- Attachment 4: Template editing (<https://vimeo.com/8dreport/8d-template-editing>)

**Product/service technological focus:**

- Process control and logistics
- Industrial Manufacture
- Information Processing & Systems, Workflow
- IT and Telematics Applications
- Technologies for the food industry

**Market availability:**

Available on the market since 2018

## 4 ROBO-FLEX

### Smart Factory solution provider profile

**Organization:**

**VIRS d.o.o.**  
Industrijska ulica 4B, 9220 Lendava  
Slovenia

**Website and social media:**

Website: [www.virs.si](http://www.virs.si)  
Social media (Facebook): <https://www.facebook.com/virs.si/?fref=ts>  
Social media (LinkedIn): <https://www.linkedin.com/company/virs/>

**Contact details:**

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E-mail: [anita.gjerek@virs.si](mailto:anita.gjerek@virs.si)

**Type of organization:**

SME

**Market sectors:**

- Mechanical engineering (Robotization and automation of production processes)

**Services provided:**

- Engineering
- Manufacturing
- Education/training
- Consulting

### Smart Factory solution

#### ROBO-FLEX

Ready to weld!

**Product/Solution webpage:**

<https://www.virs.si/avtomatizacija-in-robotizacija/robo-flex-basic/>

**Type of solution:**

Product

### Smart Factory description:

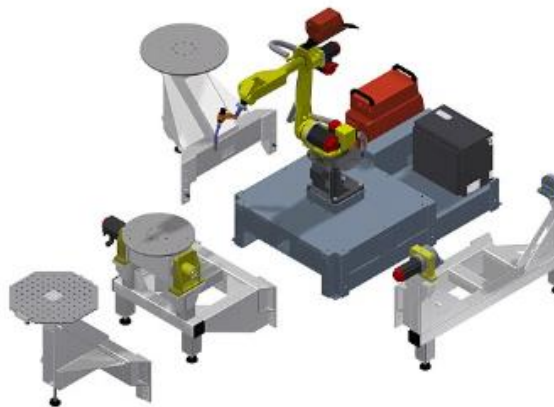
#### Flexible robotic cell ROBO-FLEX

Robo-flex Basic is a robotic welding cell for every pocket. It consists of a robot, robotic steering and all the necessary welding equipment. It is mounted on a compact base which allows an easy transport with a forklift. The welding cell makes it very easy to add additional modules (e.g. positioners) to extend the usability of the welding robot.

Robo-flex Advanced is a robotic welding cell extended with additional modules. The latter can be installed, if necessary, on any of the three fixing points on the Robo-flex Basic version. The extension is possible with three modules at the same time or with four external robotic axes.

#### ADVANTAGES

- Accessible to every user including small businesses
- Suitable for small and large series
- High flexibility of the welding robot
- High productivity
- Possibility of modular extension
- Easy moving of the cell
- Very favourable price
- Easy control and programming



**Figure: Robo-flex Advanced**

#### Keywords:

- Smart Automation and Robotics
- Welding Robot
- Flexible Production
- Internet of Things
- Automated Intelligence
- Production management
- Industry 4.0 ready



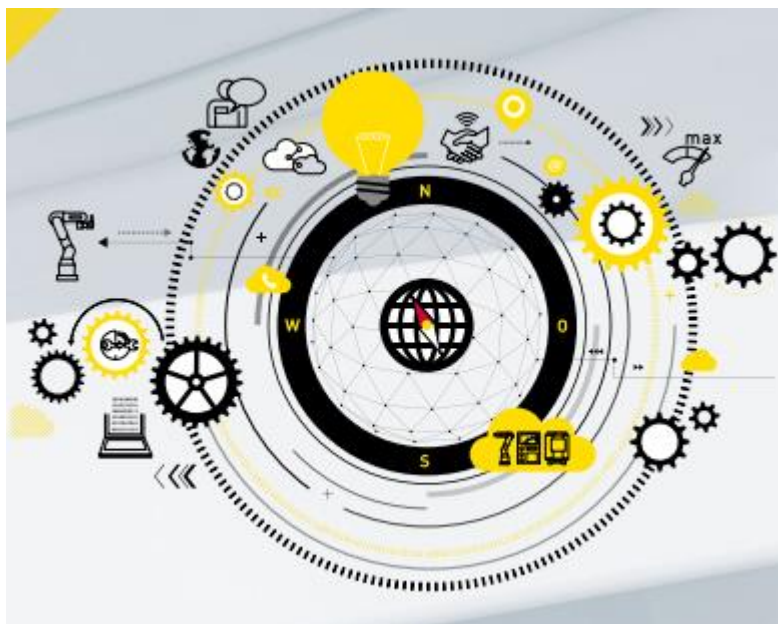


Figure: Smart Automation and Robotics

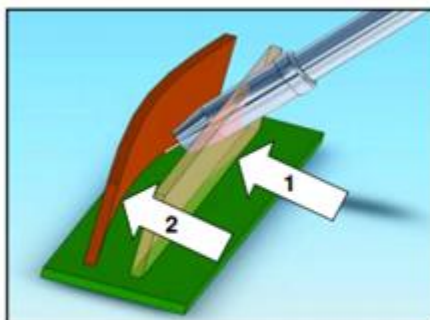
Example of Product/Service usage:



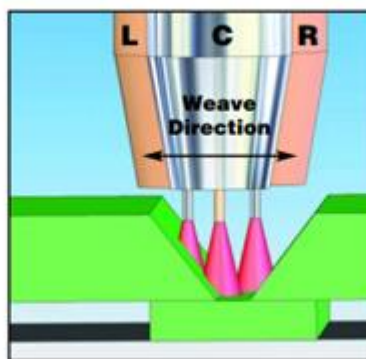
In the example presented below, the buyer of the unit is a manufacturer of axial flow fans that are installed in ventilation systems for ventilation of buildings, in fire protection, in underground garages and other industrial applications.

The specifics of the buyer's products are cones which are welded by the so-called TAST function that allows the robot to follow the joint independently and at the same time correct it - no correction is needed from the programmer or robot operator.

### TAST Overview



1. Original programmed path
2. TAST used to compensate for part warping or inaccurate fixturing.



Current Feedback (A):		
L	C	R
220	180	160

TAST measures welding current at the sides of the joint during weave motion and makes adjustments to the weld path automatically.





**Improvement areas covered by the Product/Solution:**

- 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 information for business analytics
- Improved remote monitoring capabilities
- Improved safety

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

- Implementation of the novel technology
- Implementation in the production processes

**Other relevant information about the product/service:**

- Attachment 1: Company logo
- Attachment 2: Product presentation

- Attachment 3: Video about SF solution  
([https://www.youtube.com/watch?time\\_continue=14&v=KhvI06QnPjo](https://www.youtube.com/watch?time_continue=14&v=KhvI06QnPjo))

**Product/service technological focus:**

- Industrial Manufacture
- Construction Technology

**Market availability:**

Available on the market since 2015



## 5 People and organizational development for Smart Factories, supporting IT solutions providers

### Smart Factory solution provider profile

**Organization:**

**Team Training International – Slovenia**  
Cankarjeva cesta 7, 1000 Ljubljana  
Slovenia

**Website and social media:**

Website: <http://teamtraining.si/>

Social media (LinkedIn): <https://www.linkedin.com/company/team-training-ljubljana/>

**Contact details:**

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**Type of organization:**

SME (People and organizational development)

**Market sectors:**

- Automotive industry
- Electrical and electronic engineering industries
- Mechanical engineering industries
- Chemical Industry
- Food industry
- Sanitary technology and bathroom ceramics

**Services provided:**

- Consulting, Training, Coaching

### Smart Factory solution

## People and organizational development for Smart Factories, supporting IT solutions providers

**Product/Solution webpage:**

<http://teamtraining.si/>

<https://www.linkedin.com/company/team-training-ljubljana/>

**Type of solution:**

Service

**Smart Factory description:**

**Team Training International – Slovenia** is a member of **Team Training International** which is a group of training and consulting companies throughout Europe with more than 40 years of experience (founded in 1972, Vienna). We are partnering with the „European Trainer Association“ (EUTAS), focused on West European countries, and local consultants, trainers and coaches in many other countries and cultures.

**Specialties:**

Change Management, Leadership and Management, Individual and Team Development, and Business Negotiation

We are **experts in people and organizational development**. Together with our clients we develop their strategies, mission, vision and values. We **support companies with their change projects and change processes** (organizational culture change, process change, software implementation, reorganization) in the planning and designing phases as well as during the implementation phase. As an **expert for “the people side in the change process”**, Team Training ensures a complete and smooth change process implementation.

From people perspective in IT projects we need to be aware of **three milestones**:

- **Before the project:** It is necessary to overcome potential users' and managers myths, to eliminate their fears and to prepare them mentally for the specific IT solution. Why is that important? One of the biggest reasons that IT solutions fail is because those who could benefit the most don't understand what is in it for them and they don't understand how it will help the company. They need to fully understand how the benefits to them and the company far outweigh the risks of change.
- **During the project:** Users need to go as fast as possible through a process from not knowing what a specific IT solution is to being a fully competent user. Management needs to have (from the very beginning) a clear vision of the successful long-term implementation, its impact on business process and they need to support users during the whole process. A project team (from client side and IT solution provider side) with clear roles and rules needs to be formed. It is necessary to be aware of the phases of project team development (from individuals to a tribe), especially in the phase of storming, where the whole project is often in danger to fail. In complex IT solutions there is a large proportion of the time spent getting the data right, so the whole team needs to be patient. A new system demand from both sides a lot of flexibility and dealing with unpredictable situations.
- **After the implementation/project:** Improving IT solution and customer service is an ongoing challenge. After a certain amount of time, it is necessary to re-initiate the motivation and commitment for working with the solution and to look at the potential for possible improvements.

We support our clients to improve their communication, sales and negotiation skills, leadership and management competencies or their ability for effective time management.

Our coaches and trainers offer individual coaching, group coaching, organize team events and facilitate large group workshops suitable for 20 or up to several hundred participants.

“Our mission is to develop human potential in organizations worldwide. We provide our clients with creative and valuable solutions. We promote open communication, participative leadership, team work, realisation of humanistic values in the economic environment, client orientation and change as sustainable and positive evolution process. With professional trainings, workshops, coaching sessions and consultancy we enable successful, professional and human work in organizations. We encourage searching, initializing and affirming of changes towards a positive vision for all stakeholders.”

#### **Example of Product/Service usage:**

We support TTI's partner Lean Scheduling Europe in IT projects where manufacturers add APS functionality to their ERP systems. We specifically help with points such as:

- Client-side stakeholders **understand the significance and benefits of APS solution** for the company,
- they have **a clear vision of the successful and long-term implementation** of APS solution,
- they are **motivated** for the project.

We have long-term experiences with projects in the automotive, mechanical engineering, consumer goods industry etc. We have been **cooperating with several international groups** (e.g. Magna, Andritz, Geberit) for a long time.

#### **Improvement areas covered by the Product/Solution**

- Implementation of the human resource management systems
- Supporting companies with their change projects and change processes (organizational culture change, process change, software implementation, reorganization) in the planning and designing phases as well as during the implementation phase.

#### **Other relevant information about the product/service:**

- Attachment 1: Team Training Logo
- Attachment 2: Trainer Profil - Eva Gabrijel (<https://www.linkedin.com/in/eva-l-gabrijel-6aa90615a/>)
- Attachment 3: Trainer Profil – Jelka Lavrih Sztajnbok (director) <https://www.linkedin.com/in/jelka-lavrih-26056124/>)

#### **Product/service technological focus:**

Our services are suitable for all sectors.

We do not offer IT solutions. As an expert for “the people side in the change process”, we support the implementation of IT solutions. For example: We support our partner where manufacturers add APS functionality to their ERP systems.

**Market availability:**

Available on the market since 1992 (in Slovenia). International group since 1972.



## 6 SMIP - Smart Information platform

### Smart Factory solution provider profile

**Organization:**

**3 PORT d.o.o.**

Vojkovo nabrežje 30a, 6000 Koper  
Slovenia

**Website and social media:**

Website: <https://www.3-port.si>

Social media (Facebook): <https://www.facebook.com/3PORT/>

Social media (LinkedIn): <https://www.linkedin.com/company/3-port-informacijski-in-eniring-d-o-o-/>

**Contact details:**

Damjan Šavko

Tel. +386 40 635 647

E-mail: [damjan.savko@3-port.si](mailto:damjan.savko@3-port.si)

**Type of organization:**

SME

**Market sectors:**

- Internet of things (Smart Energy, Smart City, Smart Factory)
- Information Systems for Public Administration (back-office processes, e-business with citizens)
- Geographic Information systems (GIS applications related to space and spatial planning)
- Logistic and transport (cargo handling and storage, mobile applications for field work)

**Services provided:**

- Services (SaaS)
- Consulting and project management
- Research and development

### Smart Factory solution

### SMIP – Smart Information platform

**Product/Solution webpage:**

<https://www.smipcloud.com/>

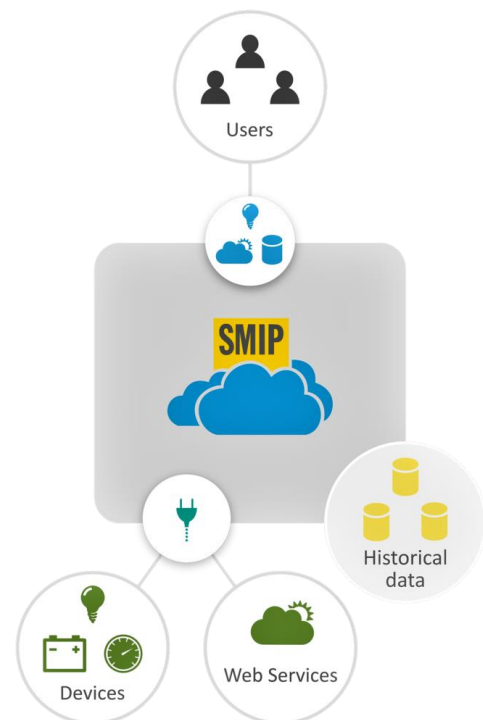
**Type of solution:**  
Service

## SMIP platform overview

SMIP is a web based IoT platform that can connect a variety of smart devices, applications and users. It is used to visualize, monitor, store and manage data from devices or other data sources (such as web services...)

SMIP platform is a highly modularized system that consists of:

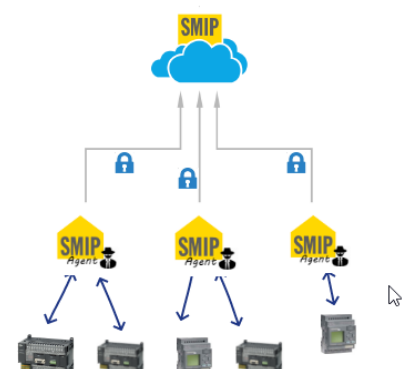
- Running custom content tailored to specific device types.
- Real-time data visualization from devices and other data sources.
- Logging data from devices and other data sources.
- Manipulating obtained data or calling external modules for data manipulation (e.g., machine learning, generate predictions, generate optimizations...).
- Historical data visualization.
- Alarming, reporting and messaging.
- Secure data access based on users, realms, roles, privileges and user-to device ownership relations.
- Web Application container running SMIP management applications and custom applications tailored to specific user needs.
- Powerful administration tools supporting different levels of administration privileges.
- Look & Feel customization.
- Full internationalization (i18n) support that enables localization of all content in SMIP including SMIP's system applications and messages.
- Appropriate time zone handling of timestamped (historical) data.



## SMIP Agent (edge gateway)

SMIP Agent is an IoT gateway running a custom version of the SMIP platform tailored for embedded devices. Its main functionalities are:

- **device connectivity:** connects to (local) devices (sensors, controllers...) through various interfaces (Ethernet, USB, CAN, RS-485...) and implements various



protocols (Modbus RTU, Modbus TCP/IP, W-MBUS...). Support for new protocols, devices, etc. is continuously expanding.

- **service connectivity:** may connect to various (REST-ful) WEB services like weather services, smart grid energy optimization services, etc.
- **cloud connectivity:** primarily connects to SMIP cloud, but may connect to other clouds like IBM Bluemix, Microsoft Azure, Amazon Alexa, etc., if required.
- **communication encryption:** all communication with the cloud uses TLS 1.2 encryption
- **certificate trust store updates:** a local SMIP Agent's trust store can be updated when needed (future-proof TLS connections to clouds with newer certificates) from SMIP cloud
- **alarm generation:** SMIP Agent can generate configurable alarms and send them to the cloud or other gateways
- **scriptable logic and scheduler:** SMIP Agent runs custom scripts that use normalized data from various sources. Designed for the needs of edge computing of tomorrow
- **remote maintenance:** software upgrades, configuration (content) upgrades, system and performance statistics (CPU load, memory consumption, I/O byte transfers and timings,)

### Keywords:

SMIP, IoT cloud, SaaS, smart devices, smart products, IoT gateway, edge computing

### Example of Product/Service usage:

As mentioned above SMIP is an IoT platform upon which we can build a variety of IoT solutions. In the last couple of years, we used SMIP as a foundation in several applications spanning across different IoT areas:

#### Smart Energy:

- **HEMS** – Home Energy Management System
- **BEMS** – Building Energy Management System

#### Smart cities

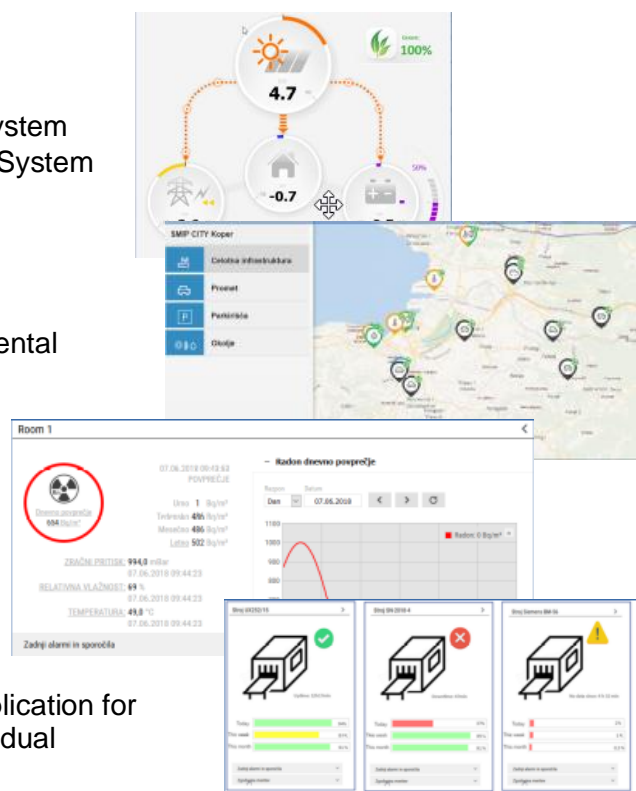
- **SMIP City** (pilot project) – a system for monitoring data generated in the urban environment (traffic counters, environmental measuring stations, parking lots...)

#### Smart buildings

- **SMIP Sense** - an indoor air quality monitoring system (radon, CO<sub>2</sub>, oxygen, humidity, temperature, air pressure...)

#### Smart factories

- **SMIPeR Machine Monitoring** – an application for the continuous monitoring of each individual machine in the production line



**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
- Developed visualization capabilities

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

- Implementation of the novel technology
- Implementation in the production processes

**Other relevant information about the product/service:**

- Attachment 1: Company logo
- Attachment 2: Service presentation
- Attachment 3:
- Platform overview, features, reference projects, demos are available on <https://www.smipcloud.com/>

**Product/service technological focus:**

SMIP is a general focus technology platform that can be used in any kind of IoT project involving collection of data from spatially dispersed devices.

**SMIPeR Machine Monitoring technological focus:**

- Industrial Manufacture
- Information Processing & Systems, Workflow
- IT and Telematics Applications

**Market availability:**

SMIP as a platform has been available and in use since late 2015. SMIP Sense and SMIPeR products are on the market since 2018.

## 7 InFrame Synapse MES

### Smart Factory solution provider profile

**Organization:**

**Inden d.o.o.**  
Cesta v Mestni log 88a, 1000 Ljubljana  
Slovenia

**Website and social media:**

Website: [www.inden.si](http://www.inden.si)  
Social media (Facebook): <https://www.facebook.com/inden.si/>  
Social media (LinkedIn): <https://www.linkedin.com/company/inden/>

**Contact details:**

Dušan Božič  
Tel. +386 31 556 721  
E-mail: [info@inden.si](mailto:info@inden.si)

**Type of organization:**

SME

**Market sectors:**

- Digital economy

**Services provided:**

- Consulting
- Research and development
- Services

### Smart Factory solution

#### InFrame Synapse MES

**Product/Solution webpage:**

<http://www.inden.si/InFrame-Synapse-MES.html>

**Type of solution:**

Product

**Smart Factory description:**

InFrame Synapse MES system is a powerful Industry 4.0 tool for digitization of production lines in factories. It is modular and scalable to tailor various needs of different productions.

Service oriented architecture enables fast integration with other IT systems (like ERP, WMS or shop floor IT systems). InFrame Synapse enables factory managers and line manager to make quick, informed decisions about their processes with all the data from the machine, workers and other systems available at their fingertips.

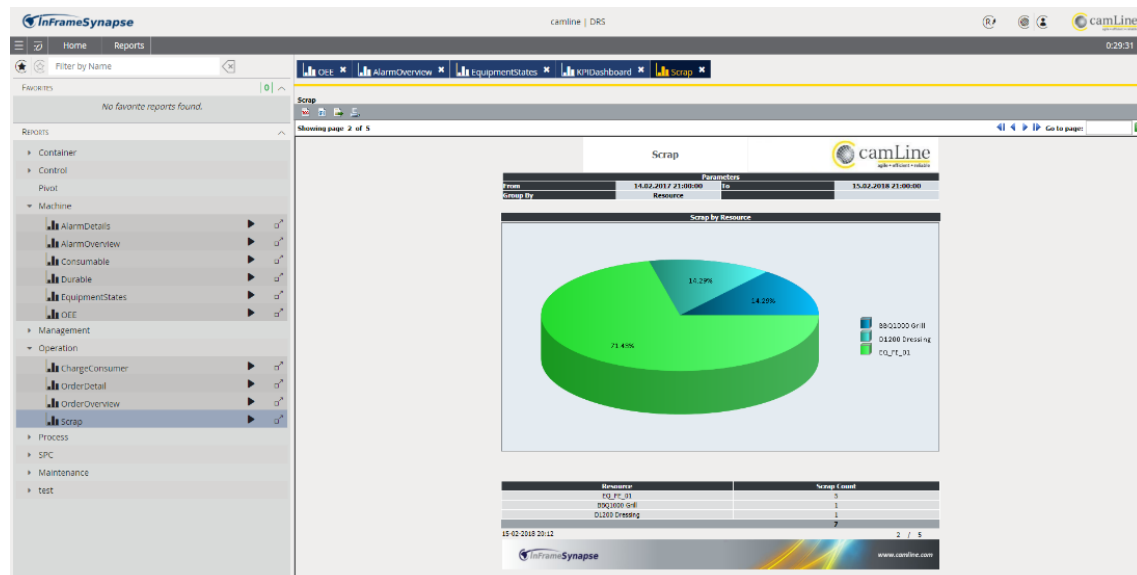


Figure: InFrame Synapse MES

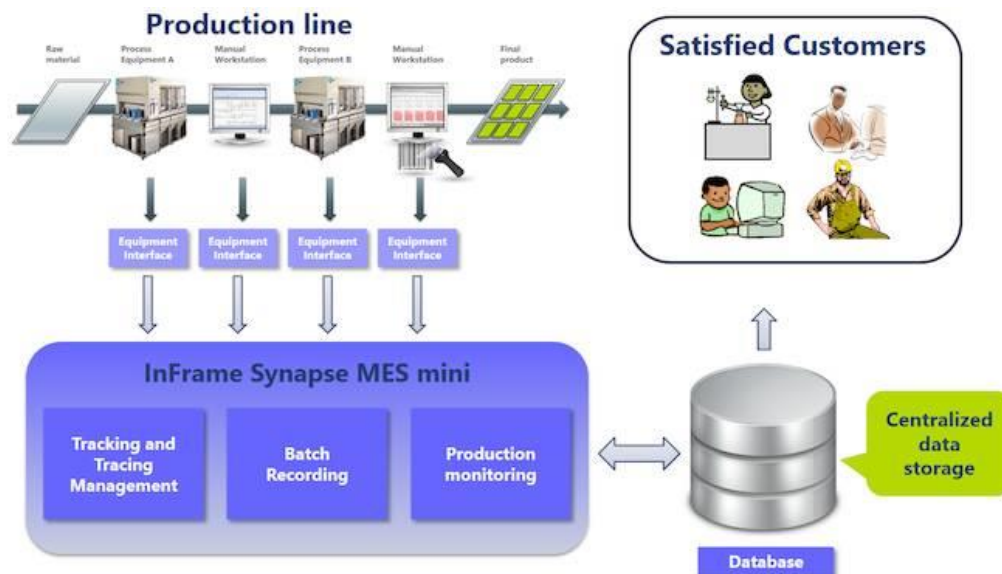
### Keywords:

Factory management  
 Production management  
 SaaS

### Example of Product/Service usage:

InFrame Synapse MES system can be implemented in factories that have discrete manufacturing production. Targeted companies should employ 40-50 employees, or with more machines. The system handles work orders, recipes (machine parameters), alarm management, quality management in production, scrap detection and prevention, operator control, automated machine data capture and full production traceability which is becoming more and more important in the manufacturing sector. System allows companies to start manufacturing paperlessly.

The system is modular therefore it can be implemented as a small-scale solution that focuses on most important manufacturing issues and can later grow to full-scale solution for a full smart production support with all the machines and work places within the production integrated with the InFrame Synapse MES system.



**Figure: InFrame Synapse MES after implementation**

**Improvement areas covered by the Product/Solution:**

- Increased speed of production operations
- Decreased manufacturing costs
- Improved information for production decisions
- Improved agility and responsiveness in the production process
- Improved information for business analytics
- Improved remote monitoring capabilities
- 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:**

- Attachment 1: Company logo
- Attachment 2: Product presentation
- Attachment 3: Video about SF solution  
<https://www.youtube.com/watch?v=8CxCW1x3kLA>

**Product/service technological focus:**

- Industrial Manufacture
- Electronic circuits, components and equipment
- Information Processing & Systems, Workflow

**Market availability:**

Available on the market since 2016

## 8 Robotic solutions

### Smart Factory solution provider profile

**Organization:**

**DESMAN d.o.o.**

Kolodvorska ulica 5, 9241 Veržej  
Slovenia

**Website and social media:**

Website: <http://www.desman.si/en/>

**Contact details:**

Franc Dešman

Tel. +386 41 907 337

E-mail: [info@desman.si](mailto:info@desman.si)

**Type of organization:**

SME

**Market sectors:**

- Automotive industry
- Electrical and electronic engineering industries

**Services provided:**

- Services
- Education/Training

### Smart Factory solution

#### Robotic solutions

**Product/Solution webpage:**

<http://www.desman.si/en/>

**Type of solution:**

Service

**Smart Factory description:**

Our services include robot commissioning, simulation, online and offline programming. We follow factory standards for BMW (L3, L7, L8) Scania, Audi (WASS), and Daimler (Integra 5).



**Keywords:**

Industry 4.0  
Robot commissioning

**Example of Product/Service usage:**

- Robot Commissioning: ABB IRC5 and KUKA KRC2/4, Off-line programming and simulation
- Experience with applying robot applications: Handling, Welding, Glueing, Nutwelding, Screwing and other.
- Installing, adjusting and testing communication interfaces I/O (profinet, interbus) for robot and PLC communication
- Assisting and Support in debugging for automatic operations
- Providing procedure optimisation for meeting quality demands
- Cycle time optimisations with adjusting robot paths and logic
- Provide technical support in developing and improving processes in off-line cell simulation



**Figure: Robot commissioning**



- Increased speed of production operations
- Improved agility and responsiveness in the production process
- Improved product quality
- Improved maintenance/uptime

- Implementation in the production processes

- Attachment 1: Service presentation
- Attachment 2: Demonstration video
- Attachment 3:

- Automotive industry
- Industrial Manufacture
- Other Industrial Technologies - Robotics

Available on the market since 2015.

## 9 HRM 4.0

### Smart Factory solution provider profile

**Organization:**

**KADRING d.o.o.**

Trg svobode 26, 2310 Slovenska Bistrica  
Slovenia

**Website and social media:**

Website: <http://www.kadring.si/>

Social media (Facebook): <https://www.facebook.com/Kadring-106357099409305/>

Social media (LinkedIn): <https://www.linkedin.com/company/kadring/>

**Contact details:**

Urška Kukovič Rajšp

Tel. +386 40 602 491

E-mail: [urska.kukovic@kadring.si](mailto:urska.kukovic@kadring.si)

**Type of organization:**

SME

**Market sectors:**

- Automotive industry
- Electrical and electronic engineering industries
- Raw materials, metals, minerals and forest-based industries

**Services provided:**

- Consulting
- Services
- Education/Training

### Smart Factory solution

#### HRM 4.0

**Product/Solution webpage:**

<https://www.hrm40.si/>

**Type of solution:**

Software and Service

### **Smart Factory description:**

HRM 4.0 is a result of the cooperation of one of the largest human resources agencies in Slovenia with an innovative computer house, the goals of which were complete digitization of all administrative processes and development processes in the field of employee management. The solution is based on excellent user experience in web technology, ease of use, easy connectivity (SOA, REST API), mobility and flexibility. The basic goal of the application is to effectively support development of personnel, which requires the following conditions: Relief of routine work with appropriate IT support, empowerment of managers and easy to access knowledge bank for managing strategic HRM functions (talent development, management by objective, building competences, annual interviews, measuring commitment, etc.). HRM 4.0 is a HR program, which supports the implementation of the strategic HR function and enables the introduction of the processes necessary for the transition to industry 4.0. The program offers leaders and HR personnel support in the field of employee development and at the same time automates an important part of routine tasks.

- **Timesaving HR solution**

By automatization of standard HR tasks in the field of recruitment, training and HR administration, HRM 4.0 saves time and gives a great overview of the entire company. In particular the one-time entry of data needed for many activities is indispensable for HR optimization and making a shift to strategic HRM.

- **All important documents in one place**

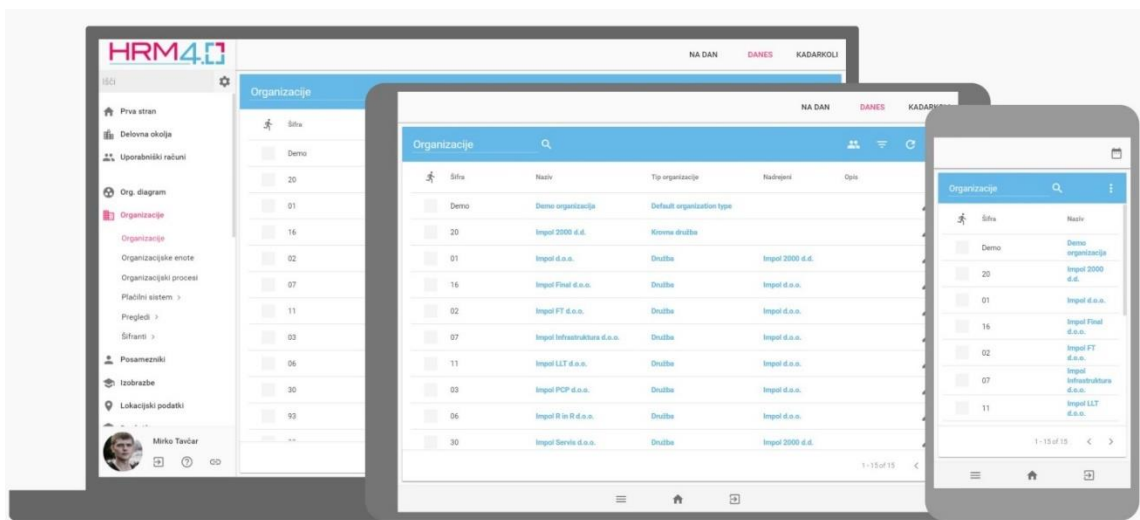
All HR documents and other documents, needed for HR management and providing safety at work, are safely stored in one place. Changes in the system and in the documents are traceable in time. HRM 4.0 is also a great solution for making your HRM paper-free.

- **Excellent analytics**

Personnel overview, analysis of competences of specific teams or individuals, personnel statistics and other important information are supported by excellent analytics, based on OLAP cubes.

- **Mobility**

HRM 4.0 can be used on mobile devices and therefore easily accessed everywhere. It was specifically designed for usage in different manufacturing facilities.



**Figure: HRM 4.0**

**Keywords:**

Industry4.0  
 Digitalization  
 HRM

**Example of Product/Service usage:**

- Development of competences

HRM enables the development of personnel through targeted management, monitoring of activities, competence development, knowledge management, performance measurement (360-degree appraisal), monitoring of company dynamics (measurement of organizational climate, questionnaires, forums) and promotion of innovation (reporting of useful proposals, innovations, implementation follow-up).

- Training

An overview of all training (training, which is obligatory due to legal requirements, and other training and skills development), automatization of alerts, received on e-mail, before the expiration of training validity (for obligatory training – especially connected to safety at work). Automatization of invitations to training, certificates and a good overview of all gained skills and competences.

- Measuring employee's satisfaction

On-line questioners can speed up the process of measuring employee's satisfaction. Pre-entered questions can guide HR professionals and leaders when constructing a questionnaire, tailored to company's specific needs.

- Safety at work

HRM enables companies to master the field of occupational safety (all records in one place, medical examinations – automated alerts when the validity of certain documents expires and new medical check-ups are needed, work accidents – all necessary documents in one place,

incidents – employees can report incidents, which occur in the workplace and can lead to endangered safety at work; to goal is to identify risks for employee's health and safety and implement effective measures).

- Quality Assurance

By maintaining properly qualified employees through timely and efficient training and specifically set goals, HRM 4.0 can contribute to achieving specifying quality standards – set for manufacturing or services.

**Improvement areas covered by the Product/Solution:**

- 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 compliance with customer specs or regulatory requirements
- Improved information for business analytics
- Improved safety

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

- Implementation of the human resource management systems

**Other relevant information about the product/service:**

- Attachment 1: HRM 4.0 logo
- Attachment 2: Company logo
- Attachment 3:

**Product/service technological focus:**

- Information Processing & Systems, Workflow
- Education and Training
- Safety
- Technology, Society and Employment

**Market availability:**

Available on the market since 2017.