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**Regional Action Plan  
for the Lodzkie Region  
under the project  
"Translating Industry 4.0 to improved SME  
policy instruments targeting innovation"  
INNO PROVEMENT (INTERREG EUROPE)**

#### PART I – General information

<b>Project:</b>	INNO PROOVEMENT “Translating Industry 4.0 to improved SME policy instruments targeting innovation”
<b>Partner organization:</b>	Partner no. 3: Lodzkie Region
<b>Country:</b>	Poland (POLSKA)
<b>NUTS 2:</b>	PL71 - Lodzkie
<b>Contact person:</b>	Bogumiła Grzelczak
<b>E-mail address:</b>	projekty.miedzynarodowe@lodzkie.pl
<b>Phone number:</b>	+48 42 291 98 98

#### PART II – Policy context

*The Action Plan aims to impact:*

Investment for Growth and Jobs programme:	
European Territorial Cooperation programme:	
Other regional development policy instrument:	X
Name of the policy instrument(s) addressed:	
1. European Funds for Łódzkie 2027 (FEŁ 2027)	
2. Łódzkie Region Development Strategy 2030	

*Further details on the policy context and the way the action plan should contribute to improve the policy instruments:*

The development of the SME sector towards Industry 4.0 is currently one of the main trends in the Polish economy. In recent years, there have been numerous public and private initiatives aimed at both popularization of this idea and support (financial and training) for digital transformation of Polish companies.

The necessity of transforming the Polish economy in accordance with the Industry 4.0 concept has been identified in the strategic document of the Polish government "Strategy for Responsible Development until 2020 (with an outlook until 2030). An important moment from the point of view of dissemination of knowledge about the fourth industrial revolution was the establishment of the state-owned Future Industry Platform, whose aim is to support

- digital transformation processes,
- implementation of digital products and services and
- introduction of business models based on the latest solutions in the area of e.g. intelligent data analysis, automation and communication of machines and people with machines, virtualization of processes, and cyber security.

The Lodzkie Region, for the last years, while creating instruments dedicated to innovation development in the SME sector, has based on "The Lodzkie Region Development Strategy until 2020". The "Strategy" is an official document adopted by a resolution of the Board of the Lodzkie Region, defining key areas of support not only for the economy, but also for the environment, transport, and social issues. "Łódzkie Region Development Strategy until 2020" was approved in 2013. At that time, the concept of Industry 4.0 was not yet widely known and therefore it was not included in the scope of intervention of the Lodzkie Region. Also, the Regional Operational Programme of the Lodzkie Region for 2014-2020, the content of which interacts with the "Strategy" did not contain elements pointing to solutions from the area of Industry 4.0.

Despite this, with the development of digital transformation of companies in the world, also in the Lodzkie Region in recent years there have been initiatives directly related to Industry 4.0. Supporting this type of solutions was the main objective of the Startup Spark acceleration program, implemented from 2016 until today by the Lodz Special Economic Zone. As part of the program, a number of industrial solutions based on the Internet of Things, virtual and augmented reality, and process automation were developed.

Projects related to the implementation of digital solutions (e.g. implementation of ERP, MES systems, production automation) were implemented by companies from the SME sector also from the funds of the Regional Operational Programme (even though the support of Industry 4.0 was not the main area of intervention in this programme). In 2019, a 5G Competence Centre was also established at the Technical University of Lodz, whose main objective was to disseminate knowledge on 5G technology, including the benefits of its implementation in relation to Economy 4.0.

The above circumstances were a signal for the Lodzkie Region that including the Industry 4.0 concept in the mainstream of the region's economic development should be one of its priorities.

The Lodzkie Region's involvement in the INNO PROVEMENT project enabled to gain knowledge of practical solutions for improving local policy in terms of Industry 4.0.

In the first phase of the project dedicated to the exchange of knowledge and experience between partners, the Lodzkie Region was mostly interested in defining the concept of Industry 4.0 in strategic documents (such as "Lodzkie Region Development Strategy" and "Regional Operational Programme"). An important inspiration for the actions described in this Action Plan were the following good practices indicated by the project partners:

- Marche Region Law No. 25/2018 "Enterprise 4.0: Innovation, Research and Training". The initiative allowed the Italian region of Marche to start adapting the regional production system to an innovative approach called " Smart Factory",
- Digital Transformation of Greek Industry - Industry 4.0. The project was designed to develop a national Industry 4.0 strategy and a relevant action plan,
- Adjustments to the 2017/2019 calls. Actions taken by the Portuguese managing authority COMPETE 2020 to integrate Industry 4.0 into the main area of support, among others by defining the term "Industry 4.0" in relevant documents.

One of the main challenges that the Fourth Industrial Revolution poses to public institutions is also the dissemination of knowledge about successful examples of digital transformation. For this reason, Lodzkie Region decided to participate in a pilot action within the INNO PROVEMENT project "Night of Industry 4.0". The pilot action comes from a good practice presented by the project leader, the Ministry of Finance from Hungary. The issue of appropriate education of entrepreneurs in the field of digital transformation is crucial for the success of projects implementing solutions in the area of Industry 4.0.

This is confirmed both by experience gained during thematic meetings with project partners as well as during discussions with regional stakeholders.

In this context, the Lodzkie Region has included the following actions in the Regional Action Plan:

- inclusion of Industry 4.0 in the main area of support at the level of the "Lodzkie Region Development Strategy 2030";
- introduction of references to Industry 4.0 to the "European Funds for Łódzkie 2027 (FEŁ 2027)" programme (program replacing the Regional Operational Program);
- pilot action "Night of Industry 4.0".

The first action has already been implemented. "Lodzkie Region Development Strategy 2030" was adopted on May 6, 2021. More details on this document can be found below, in the description of action no. 1. Due to the COVID-19 epidemic, action no. 2 planned in this document, i.e. "introducing references to Industry 4.0 in the programme "European Funds for Łódzkie 2027 (FEŁ 2027)", could not be implemented in the current financial perspective. However, taking into account that this is the type of action related to the change of the structure of the instrument, this action should be implemented in the first half of 2022.

Links:

- „Strategy for the Responsible Development until 2020 (with an outlook until 2030 r.): <https://www.gov.pl/web/fundusze-regiony/informacje-o-strategii-na-rzecz-odpowiedzialnego-rozwoju>
- „ The Lodzkie Region Development Strategy 2020”: [https://rpo.lodzkie.pl/images/konkurs\\_2.3.1\\_cop\\_28122015/SRWL\\_2020.pdf](https://rpo.lodzkie.pl/images/konkurs_2.3.1_cop_28122015/SRWL_2020.pdf)
- „ The Lodzkie Region Development Strategy 2030”: [http://strategia.lodzkie.pl/wp-content/uploads/2021/05/SRWL-2030\\_6.05.2021\\_uchwalona.pdf](http://strategia.lodzkie.pl/wp-content/uploads/2021/05/SRWL-2030_6.05.2021_uchwalona.pdf)

### Part III – Details of the actions envisaged

#### ACTION 1:

*Name of the action:*

**Including Industry 4.0 in the main area of support at the level of „Łódzkie Region Development Strategy 2030”**

1. **Relevance to the project** *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)*

The action aims to make the digital transformation of the SME sector a priority when it comes to the economic development of the Lodzkie Region. One of the inspirations for introducing the topic of Industry 4.0 within the regional strategic document was a good practice submitted to the INNO PROOVEMENT project by the Marche Region, that is, "Law of the Marche Region No. 25/2018 'Enterprise 4.0: Innovation, Research and Training'". The practice of the Italian region is not only interesting from the perspective of promoting Industry 4.0 solutions in companies but also of linking digital transformation with the circular economy. For many years, the Lodzkie Region has been implementing projects related to the promotion of a non-linear approach to economy (e.g. SCREEN project under Horizon 2020 and Green Hub under the Regional Operational Programme of the Lodzkie Region).

A second important source of inspiration in the designing and implementation of this action was the good practice of the Thessaly Region: "Digital Transformation of Greek Industry - Industry 4.0." The aim of the Greek project is to formulate a national strategy for Industry 4.0, indicating, among other things, the actions necessary to be taken in terms of digital transformation of Greek enterprises. The Lodzkie Region, through, among others, the appropriate content of "Lodzkie Region Development Strategy 2030", wants to achieve the same goal, but on a regional level. The Greek project also refers to the concept of a circular economy, which makes it even more interesting from the perspective of the Lodzkie Region.

2. **Nature of the action** *(please describe precisely the content of action 1. What are the specific activities to be implemented?)*

The Lodzkie Region Development Strategy 2030 is a document that involved a number of institutions in its creation. The main author of the document is the Office for Spatial Planning of the Lodzkie Region in Łódź - a budgetary unit of the Lodzkie Region Self-government. The adoption of the Strategy was preceded by a series of social consultations involving, among others, local government units, entrepreneurs, representatives of the world of science, and non-governmental organizations.

The Lodzkie Region Development Strategy 2030 is the most important document of the region self-government defining the vision and objectives of the regional policy in the economic, social and spatial aspects as well as the actions necessary to achieve them. The strategy was approved by the Self-Government of the Lodzkie Region on May 6, 2021.

Industry 4.0 is mentioned as one of the main development trends of regional economy. The strategy defines Industry 4.0 in this way:

*Industry 4.0, also known as the fourth industrial revolution, is a trend involving the use of advances in IT, automation, and information and communication technology (ICT) in manufacturing. It brings about a comprehensive digital transformation of all assets and a deeper integration with partners creating value chains within digital ecosystems. Today, companies are connecting and integrating processes and*

*equipment in an advanced way, enhancing automation as a result of the third industrial revolution, and using cloud technology and 3D printing. The burden of planning production and supervising processes is being shifted from people to computers thanks to the use of advanced algorithms and the Internet of Things.*

In the "Development Vision" presented in the Strategy, the opportunities related to exploiting the potential of Industry 4.0 are mentioned at the very beginning. The authors of the document see Industry 4.0 as a chance for companies in the SME sector of the Lodzkie Region to build a competitive advantage in the national and international arena.

One of the Operational Objectives defined in the Strategy is:

*supporting the reindustrialization of the region's economy, including the use of Industry 4.0 solutions, such as advanced systems for data integration, analysis and processing, using the Industrial Internet of Things, collaborative robots, implementations of artificial intelligence, self-diagnostics, data cloud and the Circular Economy, and the production and storage of low-carbon electricity.*

Similarly to good practices from the Marche Region and Thessaly Region mentioned in the previous section, the "Lodzkie Region Development Strategy 2030" also links Industry 4.0 with the concept of Circular Economy.

The strategy is a document that is a reference point for all actions taken by the Lodzkie Region in terms of regional policy. Therefore, it will also influence the shape of specific instruments supporting economic development of the Lodzkie Region, including, above all, the program European Funds for Lodzkie 2027 (FEŁ 2027), which is the follow up to the Regional Operational Programme for the Lodzkie Region.

**3. Stakeholders involved** (please indicate the organisations in the region who are involved in the implementation of the action1 and explain their role)

- Lodzkie Region Spatial Planning Office in Łódź

A budgetary unit of the Lodzkie Region Self-Government responsible for, among other things, the elaboration of the region's development strategy plans, their updates, and the preparation of reports on the achievement of regional policy objectives.

- The Regional Policy Department of the Marshal's Office of the Lodzkie Region

The tasks of the Regional Policy Department include issues related to, among others, the coordination of programming and monitoring of regional development, coordination of work on regional operational programmes (ROP LR 2007-2013, ROP LR 2014-2020 and for the financial perspective 2021-2027), including tasks related to planning, programming, monitoring, coordination of the management and control system, evaluation, running information points, certification.

- Lodzkie Region Board

The executive body of the Lodzkie Region. Its tasks include, among others, preparation of drafts of the region's development strategy, spatial development plan and regional programs, as well as their implementation.

- University of Lodz

The external expert - professor of the University of Lodz was also involved in the substantive preparation of the Strategy.

**4. Timeframe** *(please specify the timing envisaged for action 1)*

The action was carried out at the end of the first phase of the project. "Lodzkie Region Development Strategy 2030" was approved on May 6, 2021.

**5. Costs** *(please estimate the costs related to the implementation of action 1)*

9 400 euro net - cost of expert advisory services in preparation of the Strategy

20 118 euro net - ex-ante evaluation of "Lodzkie Region Development Strategy 2030"

**6. Funding sources** *(please describe how action 1 will be financed. Is it through the policy instrument(s) indicated in part II):*

European Social Fund under Technical Assistance of the Regional Operational Programme of Lodzkie Region 2014-2020

## **ACTION 2**

*Name of the action:*

**Introduction of references to Industry 4.0 to the "European Funds for Lodzkie 2021-2027" (program replacing the Regional Operational Program)**

1. **Relevance to the project** (*please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?*)

The proposed action was developed on the basis of the experience of the first phase of the INNO PROVEMENT project involving the exchange of experience and good practices between project partners. The Lodzkie Region was interested in solutions, at the level of particular operational programs, that enable direct support of digital transformation projects in the SME sector. In this context, the good practices presented by the partner from Portugal, COMPETE 2020 - Managing Authority of the Competitiveness and Internationalisation Operational Programme, were particularly inspiring:

- "References to Industry 4.0". Practice involving the implementation of mechanisms to assess whether a given investment project is in line with the concept of Industry 4.0,
- "Adjustments to 2017/2019 calls". Actions to include Industry 4.0 in the main area of support, e.g. by defining the term "Industry 4.0" in relevant documents.

The still in force Regional Operational Programme of the Lodzkie Region 2014-2020 does not contain any direct references to Industry 4.0, so the implementation of projects related to digital transformation took place within the framework of priority axes dedicated to the development of innovation and research and development activities. Including the Industry 4.0 concept in the main area of support within the future budget perspective will create the possibility of more effective and systemic activities aimed at the development of digitization in the SME sector of the Lodzkie Region.

2. **Nature of the action** (*please describe precisely the content of action 2. What are the specific activities to be implemented*)

The European Commission is currently involved in consultations regarding the signing of the Partnership Agreement for the European Funds for Lodzkie 2027 program (this program replaces the Regional Operational Program).

The initial draft of the program envisages support for digitization of the SME sector under the priority "Innovative Lodz" (specific objective: "Increasing growth and competitiveness of SMEs, including through production investments").

The support within the above mentioned priority includes, among others, the digital transformation of the economy, which will assume the following:

*transformation of business models of enterprises of the Lodzkie Region towards Industry 4.0 and data-driven economy, in particular automation, robotization and digitization of enterprises, increasing the use of process systems, supporting the switching of companies to the digital supply chain and introduction of ICT to daily operations.*

The business environment should support the transformation of SMEs. The description of the priority indicates therefore



*the necessity to create professional consulting support that goes beyond the current offer of business environment institutions and support for the development of process and product excellence systems of enterprises through dissemination of systems and quality standards among enterprises, support for demand for pro-quality services of business environment institutions (including mentoring, networking, changing business models, internationalisation).*

Activities related to training and raising the level of knowledge of SMEs about digital transformation are crucial for the successful implementation of projects in this area. Development of digital competences within the offer of business environment institutions will enable implementation of projects such as:

- Leader of Industry 4.0 and Engineer of Industry 4.0. Development of digital competences of managers of SME companies and employees;
- Workshops, trainings. Dissemination of knowledge about the concept of Industry 4.0 together with the presentation of a consulting offer;
- Closer cooperation of the Lodzkie Region with chambers of industry, competence centers, digital innovation hubs (DIH), universities. Joint organization of conferences, trainings, participation in research projects;
- Grants for the development of Industry 4.0. Programs of financial support in such areas as: purchase of business management systems, creation of artificial intelligence algorithms, training using VR/AR, innovation grants.

Inclusion of the Industry 4.0 concept in the mainstream support will enable more dynamic development of digitization of enterprises in the Lodzkie Region.

**3. Stakeholders involved** *(please indicate the organisations in the region who are involved in the implementation of the action 2 and explain their role)*

- The Regional Policy Department of the Marshal's Office of the Lodzkie Region

The tasks of the Regional Policy Department include issues related to, among others, the coordination of programming and monitoring of regional development, coordination of work on regional operational programmes (ROP LR 2007-2013, ROP LR 2014-2020 and for the financial perspective 2021-2027), including tasks related to planning, programming, monitoring, coordination of the management and control system, evaluation, running information points, certification.

- Lodzkie Region Board

Executive body of the Lodzkie Region. Its tasks include, among others, preparation of drafts of the region's development strategy, spatial development plan and regional programs, as well as their implementation.

**4. Timeframe** *(please specify the timing envisaged for action 2)*

IV qtr. 2022 r.

**5. Costs** *(please estimate the costs related to the implementation of action 2)*

57 400 euro net - evaluation research "Ex-ante evaluation of financial instruments for European Funds for Lodzkie 2027"

**6. Funding sources** *(please describe how action 2 will be financed. Is it through the policy instrument(s) indicated in part II):*



European Social Fund under Technical Assistance of the Regional Operational Programme of Lodzkie Region 2014-2020.

### ACTION 3

*Name of the action:*

#### **Pilot Action „ Night of Industry 4.0”**

1. **Relevance to the project** *(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come)*

The pilot action aims at organizing for SMEs by regional authorities (MA 2021-2027) a study visit in a companies that successfully implements the concept of Industry 4.0. The selected companies will share its experience with micro and small entrepreneurs who do not have sufficient knowledge in this area.

Industry 4.0, also called the fourth industrial revolution, is a trend involving the use of achievements of IT, automation and ICT in production. It means comprehensive digital transformation of all assets and deeper integration with partners co-creating the value chain within digital ecosystems. Today, companies are connecting and integrating processes and equipment in advanced way, deepening automation as a result of the third industrial revolution and using cloud technology and 3D printing. The burden of planning production and supervising processes is being shifted from people to computers through the use of advanced algorithms and the Internet of Things.

The practice, which is the basis of the pilot action "Night of Industry 4.0" and is to be tested in the realities of Lodzkie Region, comes from Hungary and it was identified during the exchange of knowledge within Innoprovement project. The practice has been implemented by the Hungarian partner since 2017 and it was conducted online in 2020. For Lodzkie Region, the most important aspects of the practice are:

- increasing the visibility of companies carrying out digital transformation in order to facilitate future cooperation between companies forming the SME sector and also between manufacturing companies and Industry 4.0 technology providers;
- promoting the practice of digitization among entrepreneurs and the local community;
- demonstrating that digitalization improves the industrial work environment for both white and blue collar workers.

This practice is a new and interesting way to engage SMEs in the digital transformation process. Important aspect of this practice is to promote good practices related to the complex implementation of solutions from Industry 4.0 and transfer knowledge between companies that successfully go through the process of digital transformation and those that are at the beginning of this road.

The issue of increasing digital competences of companies from the SME sector and promotion of the Industry 4.0 concept among local entrepreneurs is crucial for carrying out effective digital transformation of the industry in the Lodzkie Region.

2. **Nature of the action** *(please describe precisely the content of action 3. What are the specific activities to be implemented)*

The pilot action in the Lodzkie Region will be carried out on a small scale. It will assume two study visits of representatives of companies from the SME sector to production companies that have comprehensively implemented solutions from the area of Industry 4.0, i.e.: integrated data management system in the enterprise and the use of IIoT technology (Industrial Internet of Things) in production. Study visits within the pilot action will refer to regional specializations specified in the RIS3 strategy (specialization will be selected at a later phase) after the analysis of applications from SMEs.

The pilot action will have a regional character and will concern the Lodzkie Region. The pilot event will be organised in a hybrid form, i.e. it will involve both physical participation in selected companies (factories) and on-line participation. In case of another COVID-19 outbreak, the event will be entirely organized online.

The pilot action consists of the following parts:

- analysis of the regional situation and selection of a company that has successfully implemented the concept of Industry 4.0 on its own area, and is ready to share its experience with representatives of SMEs that have no experience in the implementation of this type of activities,
- development of evaluation criteria, application form and promotion of the event through the following distribution channels: Facebook, LinkedIn, websites of the Marshal's Office, mailing to companies,
- analysis of applications and selection of companies from the SME sector interested in participating in the study visit (the number of participants will depend on the interest and organizational capabilities of the company which is to share the experience); arrangements with the company which is to share the experience (e.g. number of participants, intellectual property rights, security, etc.),
- develop an agenda and materials for participants,
- study visit,
- evaluation of the event (collecting participants' opinions) with conclusions and recommendations concerning the possibility of organizing more events of this type in the future,
- follow-up activities, including dissemination of the results and recommendations to other companies from the SME sector, local authorities and business environment institutions.

The pilot action and a possible continuation within the own project of the Lodzkie Region is aimed mainly at developing awareness among the management staff of the companies from the SME sector about the benefits but also about the threats connected with the digital transformation of the companies of the Lodzkie Region. The need to take action related to the dissemination of knowledge of the SME sector in the field of broadly understood Industry 4.0. is the main conclusion of the evaluation of workshops conducted for entrepreneurs from the Lodzkie Region in May this year under the Innoprovement project.

In a longer perspective, this will result in an increase in the competitiveness of the economy of the Lodzkie Region.

**3. Stakeholders involved** *(please indicate the organisations in the region who are involved in the implementation of the action 3 and explain their role)*

- Promotion Department of the Marshal's Office of the Lodzkie Region

The unit responsible for the implementation of the INNO PROEVEMENT project. Within the pilot action the unit will be responsible for the implementation of the public procurement procedure as well as for the coordination of the whole pilot action on a regional and international level.

- The contractor selected in the framework of the public procurement procedure

The contractor will be responsible for the implementation of the contract according to the specifications provided by the Lodzkie Region.

**4. Timeframe** *(please specify the timing envisaged for action 3)*

Pilot action will be carried out in II qrt. 2022 r.

In case of success of the pilot action, the initiative will be organized as a repeated event as an own project of the Lodzkie Region, implemented under the program European Funds for Lodzkie 2027 - FEL 2027 (successor of the Regional Operational Programme of the Lodzkie Region 2014-2020).

At the moment it is difficult to determine when the first calls for proposals under the European Funds for Lodzkie 2027 program will be announced, we expect that it will be in the second half of 2022.

Therefore, the continuation of the pilot action "Night of Industry 4.0" will be possible to implement from 2023.

**5. Costs** *(please estimate the costs related to the implementation of action 3)*

21 975,00 euro (data based on the information provided by the Ministry of Finance in Hungary in the good practice description)

**6. Funding sources** *(please describe how action 3 will be financed. Is it through the policy instrument(s) indicated in part II):*

European Regional Development Fund under the INNO PROVEMENT project.

Date: 13.04.2022v.

**Name of the organisation(s) :**

Urząd Marszałkowski  
Województwa Łódzkiego  
Departament Promocji  
90-051 Łódź, al. Piłsudskiego 8

**Signatures of the relevant organisation(s):**

p.o. Zastępcy Dyrektora  
Departamentu Promocji :

Bógumila Grzelczak