



Industry 4.0

Approach of Ministry of Economy of the Slovak Republic

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Why did MoE decide to deal with the Industry 4.0 issue?

- The share of industry in GDP of the SR is almost 28%;
- Covers 1/3 of the jobs in the Slovak economy;
- Relevant qualified workforce in line with market needs;
- Improving the commercialization of research results;
- The key role is the emphasis on innovation as one of the main tools for increasing productivity and competitiveness of companies;

Why did MoE decide to deal with the Industry 4.0 issue?

- **Robotics**
- 437 industrial robots per 10,000 employees in South Korea;
- Slovakia - 66 to 93 industrial robots per 10,000 employees;
- The automotive industry accounted for 39% of world robot orders in 2013;
- Enterprises operating in the field of automation, robotics and digital technology are highly export-oriented

Concept of Intelligent Industry

- **"The Concept of Intelligent Industry for Slovakia"**, approved by the Government on 26 of October 2016;
- Prepared in cooperation with industry and academia;
- Role model - Industrie 4.0 (Germany), Smart Industry (Netherland);
- **Access to adaptation to new technological trends, changes in the industrial structure** due to digitization and new requirements on the part of consumers;
- The fields of robotics, automation, digitization and ICT are among the economic and **perspective areas of specialization of the Slovak Republic**;

Concept of Intelligent Industry

- **Transformation of industry** in traditional thinking into a new type of industry that uses all the knowledge in terms of: digitization, internet economy, robotization and interconnection of industry with science-research institutions and education;
- **Advertisement** is one of our highest priorities;
- Importance:
 - the **cooperation** of applied R&D with industry,
 - **implementation** of new technologies and materials,
 - **coordination** of effective funding for R&D support;

Concept of Intelligent Industry - Tasks

1. Set up the **Platform of Intelligent Industry** with the participation of representatives of the state administration, the academic community, the business and the industrial sector;
2. Develop an **Action Plan of Intelligent Industry** in cooperation with representatives of the business (industrial) and the academic sector;

Action Plan of Intelligent Industry - Vision

"To create conditions for the development of the Slovak industry, which will be based on digitization. In order to increase the competitiveness of enterprises in the interest of sustainable growth of income, employment and quality of life".

Action Plan of Intelligent Industry

- **Areas of Action Plan:**
 - Research and innovation,
 - Labour market and education,
 - Security of cross-linked systems,
 - Reference architecture, standardization and normative formation, framework of legal conditions,
 - Information and promotion.
- The **objectives** in implementation:
 - maintain (or improve) the employment situation,
 - greater stability of the Slovak economy,
 - development of new technology and development companies or the growth of existing technology companies,
 - growth of export,
 - development prospects for the future.

Action Plan of Intelligent Industry

- **Barriers** in Slovakia:
 - different levels of state of enterprises prepared for the introduction of measures of intelligent industry to production practice,
 - impact on the further development of human resources,
 - financing, investment,
 - human-robot cooperation, security of cyber-physical systems
 - unpreparedness of some universities and secondary schools to changes in market demands,
 - lack of skilled workforce.

Action Plan of Intelligent Industry – Proposed measures

R&D and Innovation

- Creating sector-oriented consortium made up of industry, applied research and academia in order to realize research, development and transfer of results into practice;
- Implementation of system tools to support intelligent industry research agenda and reinforcement of applied research funding;

Action Plan of Intelligent Industry – Proposed measures

Safety and Security

Ensure that production facilities and products do not create any threat. Data and information must be protected against misuse and unauthorized access.

- Issue a Security Concept for the Intelligent Industry with government support to implement its principles;

Standardization and normative formation, framework legal conditions

Ensure a common understanding of concepts, defining standards, identifying barriers, and setting up legislation.

- In relation to Intelligent Industry, evaluate the state of domestic legislation and EU legislation, to process on conditions of the SR;

Action Plan of Intelligent Industry – Proposed measures

Labour market and Education

- Identification of business requirements in relation to the necessary human resources relevant for the Intelligent industry by 2020 and with a outlook till 2030;
- The need to increase the knowledge and skills of young people for digital times in formal education;
- Co-financing higher education by private capital;

Action Plan of Intelligent Industry – Proposed measures

Information and Promotion

Promotion of projects and activities related to the Intelligent Industry, public education.

- Web site - the basic information platform on Intelligent Industry;
- Information support for Intelligent Industry;
- The public and micro, small and medium-sized enterprises have the opportunity to get to know the concept and methodological and technological solutions of Intelligent industry;

Actual possibilities of financing provided by MoE

Calls from the Operational Programme Research and Innovation

- Call to support **smart innovation in industry** aimed at implementing intelligent solutions to existing technologies;
- Call to **promote innovation** through industrial research and experimental development within the domain **Industry for the 21st century**;
- Call to **promote innovation** through industrial research and experimental development within the domain **Vehicles for 21st Century**;

Thank You for your attention.

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