Action Plan

Part I – General information

Project: **SHARE 4.0**

Partner organisation(s) concerned: **all**

Country: **Slovakia**

NUTS2 region:_____

Contact person: **Ing. Artur Bobovnický, PhD.**

Email address: **artur.bobovnicky@siea.gov.sk**

Phone number: **+421 905 985 937**

Part II – Policy context

The Action plan is taking place at a critical juncture for European policymaking. Russia´s invasion of Ukraine has initiated a new geopolitical era, with the Kremlin´s extraordinary use of force spurring Europe to transition away from its energy dependence on Russia. This geopolitical backdrop follows two years of turbulence fuelled by the COVID-19 pandemic. The moment presents a rare historical opportunity for Europe – and particularly the Central and Eastern Europe (CEE) region – to broadly transform its growth strategy to achieve greater sustainability and prosperity. If Europe and its regions adopt a prudent policy course, it can promote employment, enhance productivity, improve the quality of life, and transform the continent into a centre of talent and innovation.

The conflict has highlighted the ability of CEE countries to collaborate with peers, deliver aid during a humanitarian crisis, and present a united and firm front against an aggressor. It furthermore, underscores the heightened potential for region to leapfrog and emerge anew as a centre for innovation, a magnet for international capital, and a laboratory for cross-border collaboration, mutual assistance, and intensified exchange of skilled workforce.

SHARE 4.0 is a vital example of such cooperation and the Action plan, presented herein is a proof that the joint effort contributes to the path to tech-driven transformation of environment represented by a unique combination of traditional industries and corporations as well as new technological start-ups. The CEE region and particularly Slovakia and Austria among them, are well positioned to embrace underlying Industry 4.0 technologies and other productivity-enhancing systems. Private sector digitisation, the green economy, and reforms towards Industry I4.0 could be common enablers and denominators fopr a shared regional policy approach to innovation.

a) Identification of key stakeholders:

The **key stakeholders** are **SMEs** in all cross-border regions participating in this project, but in an extended view all SMEs in both countries and large companies. These companies can be further subdivided into those that use industry 4.0 technologies and those that offer these technologies. Addressing these two groups requires different channels.

The **second group of stakeholders** are **policy makers** on two levels – national, that are influencing overall policy environment in the countries and on regional level, which could facilitate faster and more focused implementation of several policies for well-being of the region.

The **third group** are **STR organisations** (science, technology and research)

Last but not least, **the fourth stakeholder group** are **clusters** that could be efficiently used as a lever to mobilize several hundreds of SMEs and companies across the regions.

Partners of SHARE 4.0 are deeply involved in regular discussions with all four types of stakeholders by the nature of their scope of existence.

b) **Round tables with stakeholders and/or questionnaire on key topics included in the AP**

Partners in Slovakia are regularly organizing round tables/workshops with all relevant stakeholders groups. The recent forum was held in November 2022 and was focused on digital transformation of the Slovak industry.

For better understanding of current issues in digital transformation of SMEs in Slovakia were run several surveys that well described the barriers of the digital transformation acceleration. The results are astonishingly similar in Slovakia, Austria, and other European countries: the barriers for digital transformation are three:

- access to talent (available skilled workforce or possibility to upskill and reskill existing workforce)
- access to finance (including better understanding of all financial aspects of digital transformation)
- networking (the real opportunity to regularly learn from more experienced entrepreneurs, share experiences, find best practices)

Part III – Details of the actions envisaged

Strategy for Action plan´s development and actions identification

Based upon

a) Overall SHARE4.0 Concept Development Procedure, where partners agreed that it is important to re-visit the full SHARE4.0 Development Concept, as it already sets up some key structures for how a lasting network could be formulated and managed to deliver ongoing, added-value in the coordination of industrial technology development topics between the two territorial areas. In Figure 1, below, the SHARE4.0 development concept is illustrated, that includes a transition image from the operating project to the ongoing existence of the Smart Industry Network SK-AT (SIN SK-AT).
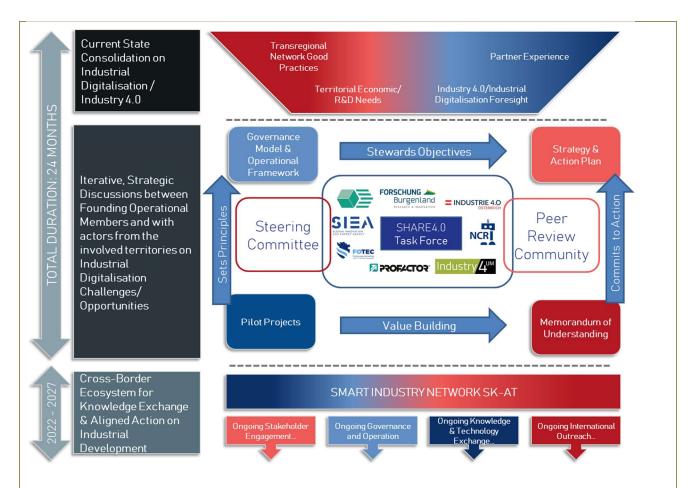
Fig. 1

b) a joint strategic session held on June 30 in Bratislava, where some partners have agreed that the strategy of Action plan has to follow three key characteristics:

- **Sharing Knowledge**
  - Networking throughout the existing initiatives (GAIA X, EDIHs, DIHs, ECCP etc.)
  - Joint initiatives attractive for stakeholders (cross border platform SIN SK-AT, business safaris, jointly organised/supported conferences etc.)

- **Focus on specialisation**
  - New materials,
  - Robotics
  - IoT
  - space industry
  - Industry 4.0
  - Additive manufacturing
  - Digital Twin

- **Digital & Green Transition**
  - Participation in lighthouse projects of EC

The actions identified herein are split into two categories – short term and medium-term related. Actions 1 to 3 are short term related and will result in the MoU official signatory ceremony, planned for October/November 2022. It will earmark the establishment of the Smart Industry Network SK-AT (SIN SK-AT)

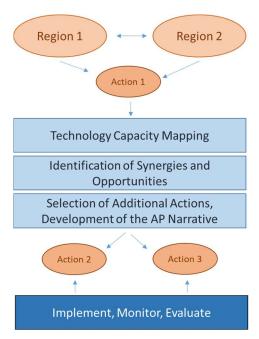Other Actions are medium term related and are presented in the summary table.

Action 1:

Assessment of capabilities regarding its level of maturity in potential areas of cooperation and collaboration (I4.0 ecosystem development)

    1. **Relevance to the project**

Work package 4 of the SHARE 4.0 envisioned several items necessary to develop and implement the Action plan: identification of key stakeholders and round tables or questionnaire. Innovation ecosystem theory presents two broad categories of government approaches to supporting innovation. The first is a top-down approach where public sector acts as a planner or orchestrator of innovation process. The public sector is is responsible for driving demand for innovation through appropriate policies, regulations and/or measures that steer the market. The second arrangement is premised on a bottom-up logic that encourages collaboration and partnership and promotes a culture of innovation. The public sectors acts more as a facilitator, promoting innovation indirectly, though, for example, the market and the promotion of the benefits of innovation, encouraging collaboration and building resilience towards failure..

In our case, we have adopted a hybrid of bottom-up and top-down approaches based on national priorities, capabilities and general economic needs.

 In general it could be presented in the chart (Fig. 2) as follows:

2. **Nature of the action**

In cooperation with another partner of SHARE 4.0 – Industry4UM we have launched two questionnaires (as a substitution of round tables, that were suppressed due to the COVID-19 pandemic). The first one intended to provide the feedback on status quo of penetration of I4.0 in Slovakia. The other one intends to cover the real needs in the area of education of engineers for I4.0 – upskilling and reskilling programs. Results are part of separate reports.

3. **Stakeholders involved**

SMEs, cluster Industry4UM, Ministry of Economy, department of Competitiveness, Bratislava self-governed region represented by Interreg steering committee member, as well as in the case of Trnava self-governed region. All of these stakeholders were involved in several modes of this hybrid top-down and bottom-up approach used. Ministry of Economy and representatives of self-governed regions were consulted on their expectations of the Action plan, while SMEs have been asked what the key obstacles in implementing I4.0 are. As far as education (access to talent) has been identified as one of the key topic, the second questionnaire was prepared to cover this field of actions of the National platform I4.0. Results of the prioritising the various topics in the field of digital transformation were presented on separate workshop amnd are included in the Annexes to this AP.

4. **Timeframe** (*please specify the timing envisaged for action 1*)
November 2021 – questionnaire 1 – report in January 2022
February 2022 – on-line meeting with Ms. Zuzana Illiťová, BSK
April 2022 – in person meeting with Mr. Martin Svoboda, MoE SR
June 2022 – questionnaire 2, report in July 2022

5. **Costs**
Activities described required only personnel costs in the amount of over 15 mandays

6. **Funding sources**
Project SHARE 4.0

ACTION 2

Establishment of the Slovak National Platform for I4.0

1. **Relevance to the project**

As mentioned in the Part II. Policy context, one of the major barrier for proper, fast and efficient digital transformation is insufficient opportunity for networking of SMEs with other stakeholders. Therefore, there is imminent need for creating such type of entity/platform in Slovakia (in Austria this already exists several years – Platform I4.0). Therefore SIEA with full support of other partners has initiated the works ending with establishment of the Slovak National I 4.0 (SNI 4.0 P)
Platform. SIEA has been tasked by Ministry of Economy to start works ending by establishing the National I4.0 platform by mid-year 2022 by the official assignment letter.

2. **Nature of the action**

Coordination various stakeholders and raising the interest of the SMEs and midcaps in Slovakia towards planned SNI 4.0 P

3. **Stakeholders involved**

- Ministry of Economy of the Slovak Republic as the main policy maker in the area of industrial policy, industry development and support of development of relevant measures increasing the competitiveness of the industry in Slovakia.
- Other relevant stakeholders are SMEs that are operating in manufacturing, industrial associations and big multinational players established in Slovakia. Over 40 companies across Slovakia working in various sectors and industrial segments
- Clusters as the multipliers

4. **Timeframe**

March 2022 – November 2022

5. **Costs**

Costs are related to work of SHARE 4.0 expert

6. **Funding**

SHARE 4.0 budget

ACTION 3

Establishment of the Cross border platform for cooperation of national I4.0 platforms – Smart Industry Network SK-AT (SIN SK-AT)

1. **Relevance to the project**

As mentioned in the Part II. Policy context, one of the major barrier for proper, fast and efficient digital transformation is insufficient opportunity for networking of SMEs with other stakeholders. Therefore, there is imminent need for creating not only Slovak National I 4.0 Platform, but also establish a cross border linkages that will enable faster and more efficient exchange of best practice, utilization of various test beds in Austria and Slovakia and implementation of EDIH services in Austria and Slovakia in benefit of SMEs in both countries.

2. **Nature of the**

All partners of SHARE 4.0 will jointly develop and sign a commitment letter (Memorandum of Understanding) that will create a basis for further development of cross border joint initiatives either among the signatories or among other stakeholders as mentioned (EDIHs, policy makers, national I4.0 platforms, clusters)

3. **Stakeholders involved**

all SHARE 4.0 project partners

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

September 2022 – November 2022

5. **Costs**

Costs are related to work of SHARE 4.0 expert

6. **Funding**

SHARE 4.0 budget

Medium-term actions

The medium-term actions are following the areas of activities identified in Fig.1 for the Smart Industry Network SK-AT:

- **Stakeholder Engagement –** a key element is attracting as many stakeholders as possible to work jointly towards the strategic goals identified in the strategy and action plan. It was agreed that the best way to do so is to involve the stakeholders in concrete actions

- **Governance and Operation –** it was agreed upon that the overall goal of an efficient governance model is to use existing infrastructure (e.g. besides the SHARE 4.0 project the E-DIHs, DIHs, GAIA-X national hubs, EIT-Manufacturing, etc.). In doing so no parallel structure will be built and at the same time it will be guaranteed that the Smart Industry Network SK-AT remains relevant. Moreover no extra secretariat will be needed.

- **Knowledge Sharing and Technology Exchange** – by combining relevant initiatives (see above) it is assumed that the interest among all identified stakeholders remains high and thus knowledge sharing and the exchange of relevant technologies will be continued.

- **International outreach –** several countries (e.g. the Czech Republic, Poland, Slovenia, Hungary, Croatia) have articulated their interest in exchanging good practise examples (e.g. on E-DIH, EIT-Manufacturing and GAIA-X), so there is a clear view on having an outreach beyond the programme region covered by the project SHARE 4.0.

In the following table are described activities (actions 4-10), their timing and expected outputs.

Funding of the relevant mid-term activities is based on activities of SIEA and its ERDF funding projects and internationally funded project KSP (Korean Ministry of Finnace).

Area of Activity	Activity/ Action No.	Timing	Expected Output
Stakeholder Engagement Support for business and R&D and innovations is characterised by focusing or strengthening of programes and improving ease of access and use, especially for SMEs. Impact should go beyond economic gains and increases the well-being of citizens, e.g. environmental gains from digitisation	**A 4: Creating a guiding coallition** * put together group with enough power to lead the joint work *getting the group work together like a team	Nov.2022 - Nov. 2023	MoU for SIN SK-AT joined by other selected partners, including regional governments and /or companies interested in cross-border cooperation and/or EDIHs from our regions
	A 5: Consolidating gains and creating more chances * Reinvigorating the process within new projects, themes	Nov. 2022 - Nov. 2027	At least one new Interreg/Horizon Europe project supported by several current (SHARE 4.0) project
Governance Guiding principles: Trust, Collaboration and Team work; Shared responsibility, Decentralized, Redeuced regulations and procedures; Mutual respct, Openness, Ownership	**A 6: Develop a vision and strategy** * Creating a vision to help direct the joint work effort *Developing the strategy for achieving the vision	Jan.2023 - July 2023	Strategy is split into two separate strategies: a) Strategy for development of the cluster innovation ecosystem in Slovakia with aim to finalize by mid 2023 b) Recommendation of a new set of policies supporting further enhancement of I4.0 in Slovakia. Task will be performed within the Knowledge Sharing Program funded by Ministrey of Finance of Republic of Korea. Expected outcom is to be presented in mid 2023
	A 7: Establishing a sense of urgency * Examining the market and competive realities * Identifying and discussing majopr opportunities	June/ Nov. 2023	Recommendations for setting up a new support policies will be delivered to Ministry of Economy of the Slovak Republic
	A 8: Generating short-term "wins" * Planning for visible improvements in performance * Creating those "wins"	Nov. 23/June 2024	Innovation and Digitisation vouchers planneed in the component 17 of the Recovery and Resilience Facility of the Slovak Republic will be focused on I4.0 in selected calls. SIEA will be implementing those vouchers on behalf of Research and Innovation Authority (VAIA).
Knowledge Sharing Networking and cluster initiatives continue to emerge while various tools (e.g. grants) are being used and to promote collaboration between industry and research. Linkages and coperation between regions both within and between countries is becoming more important.	**A 9: Anchoring new approaches in the EU** *Articulating the connection between new approaches/behaviours and organisationa/regional success	March 2023 September/Oct. 2024 September/Oct. 2025 September/Oct. 2026	In March 29/30 SIEA has organized 1st National Cluster Conference and international cluster meeting Clusters Meet Regions. Among other items of the program was I4.0 and digitisation of the Slovak industry a key element. The National cluster conmferences are planned in the years 2024-2026 from the resources of ERDF project supporting networking and industrial clusters in Slovakia. SIEA is implementing agency of this project.
International Outreach Linking domestic firms to foreign sources of R&I. With the continuing internationalisation of S&I tapping into foreign sources of knowledge becomes more important. International outreach is important part for S&I players, e.g. academia and is creating an important aspect of attractivity to participate	**A 10: Organising annual joint conference of SIN SK-AT** * in cooperation with both funding platforms and EDIHs EXPANDI 4.0 and	2023 -2027	5 international conferences (2023 til 2027) on the topics that are identified in our strategy: o New materials, o Robotics o IoT o space industry o I4.0 o Additive manufacturing

Date: Nov. 27, 2022

Name of the organisation :

Slovak Innovation and Energy Agency

Signatures of the relevant organisation: