

WPT4

D.T4.2.3

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Transnational industrial innovation agendas

Version 1  
1/2022

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<b>Project information</b>	
Project Index Number:	CE1519
Project Acronym:	CHAIN REACTIONS
Project Title:	Driving smart industrial growth through value chain innovation
Website:	<a href="https://www.interreg-central.eu/Content.Node/CHAIN-REACTIONS.html">https://www.interreg-central.eu/Content.Node/CHAIN-REACTIONS.html</a>
Start Date of the Project:	01.04.2019
Duration:	36 Months
<b>Document Control page</b>	
Deliverable Title (overall):	D.T4.2.3-7: Transnational industrial innovation agendas
Deliverable Title (target sector):	D.T4.2.3 – Transnational industrial innovation agenda for the advanced manufacturing sector
Lead Contractor of the Deliverable:	PP2 – Styrian Technology Park
Responsible PP:	PP1 – PBN PP5 – RDA
Authors:	PBN – Klaudia Keringer RDA – Jan Naxera, Marek Bures
Contractual Delivery Date:	30.11.2021
Actual Delivery Date:	31.01.2022



## Table of content

1	INTRODUCTION.....	3
2	TIIA for the advanced manufacturing sector .....	4
2.1	Background.....	4
2.2	Expected impact.....	4
2.3	TIIA overview.....	5
2.4	TIIA description.....	7
2.4.1	Development of collaboration in the Digital innovation hub networks.....	7
2.4.2	AR/VR utilisation in medical sector .....	8
3	Conclusions .....	9

## Abbreviations

IGA – Innovation and Growth Alliance

TIA – Transnational Innovation Activities

TIAW – Transnational Innovation Agenda Workshop

TIIA - Transnational industrial innovation Agenda

TIIR – Transnational Industrial Innovation Roadmap

TNIS – Transnational networks of innovations stakeholders



## 1 INTRODUCTION

CHAIN REACTIONS project addresses the challenge for industrial regions not benefitting from innovation activities from large leading corporations to increase regional capacity to absorb new knowledge and turn it into competitiveness edge and business value. There is a strong need to help SMEs to overcome capacity shortages for innovation and integration into transnational value chains. The project aims at empowering regional ecosystems with the knowledge and tools to help businesses overcome those barriers and generate sustained growth through value chain innovation.

In order to create transnational open spaces for collaboration (e.g. value chain based) the activities for Building open collaboration spaces for transnational RIS3 implementation (WPT4), will be based on previous project activities, mostly IGAs established in each of the target regions (O.T2.1) and Value chain innovation models and instruments implemented in each target region as a driver to S3 (O.T3.2).

More specifically, the activities for preparation of Transnational industrial innovation agendas (A.T4.2) will be based on Thematic industrial innovation roadmaps (O.T4.1), which have been developed in each of the selected industrial sectors by transnational networks of relevant innovations stakeholders will be established and build on identified technological and societal trends of potential innovative developments (technologies, processes, business models and their interactions).

Each **transnational industrial innovation agenda**, i.e. concrete innovation activities to be performed in the project regions and transnationally in order to realise the necessary development identified in the roadmaps and ensure industrial leadership in the selected industrial sectors, will be based on the outcomes of the 2<sup>nd</sup> TIAW.

The agendas will be coherent with S3 in the project regions and will provide the basis for potential future joint activities and transnational investments.

Overall, the thematic innovation agendas are one of the three outputs within the WPT4, linking the identified potential with plans for transnational exploitation:

- O.T4.1 Thematic industrial innovation roadmaps;
- **O.T4.2 Thematic innovation agendas;**
- O.T4.3 Thematic transnational exploitation plans and open collaboration spaces.



## 2 TIIA for the advanced manufacturing sector

### 2.1 Background

The TIIA is based on the previous project activities:

- D.T4.1.1 - establishing transnational networks of innovations stakeholders for the advanced manufacturing sector,
- D.T4.1.6 - transnational industrial innovation roadmap workshops,
- D.T4.1.7 - transnational industrial innovation roadmap for the advanced manufacturing sector,
- D.T4.1.17 - industrial innovation workshop for the advanced manufacturing sector in the regions of Czech Republic and Hungary,
- D.T4.2.1 - transnational innovation agenda workshop 1, and
- D.T4.2.2 - Transnational innovation agenda workshop 2.

During the TIAW #2 the following TIA were proposed:

Name of TIA
Development of collaboration in the Digital innovation hub networks
AR/VR utilisation in medical sector

### 2.2 Expected impact

Within the partnership of the project Chain Reaction PBN and RDA prepared the Transnational Innovation Agenda for the advanced manufacturing sector. There are two proposed transnational activities. The main impact that the partnership expects to reach, by implementing the Digital Innovation Hubs collaboration fostering is the upskilling of workers competencies in the field of digitisation in partnering regions. Regarding the AR/VR utilisation in medical sector the expected impact is the increase of efficiency when performing the physical and mental rehabilitation either in the hospitals or in patients' households.



2.3 TIIA overview

**Transnational industrial innovation agenda for the advanced manufacturing sector in the Hungary and Czech Republic region**

Name of TIA	Timeframe	Partners involved	Expected impact	Estimated costs	Source of founding	Geographical scope
Development of collaboration in the Digital innovation hub networks	2022-2027	PBN, RDA, WTP	<p><b>Development of research activities:</b> The research activities will focus mainly on the field of automation and robotics utilisation, where optimisation algorithms and artificial intelligence will be developed. Further activities will be focused on man-machine interfaces supported by VR and AR technologies.</p> <p><b>Creation of educational programmes:</b> All partners feel, that there are still shortcomings in the staff training in digitization techniques. One part of TIA will be focused on the development of special detailed trainings for deepening the employees knowledge.</p> <p><b>Development of strategies:</b> Strategies bridging the gaps between political proclamations, companies' capabilities and smart specialisation strategies must be develop in order to harmonise the approaches.</p>	1.350.000 EUR	Interreg CE / Digital Europe	Transregional



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<p>AR/VR utilisation in medical sector</p>	<p>2022-2024</p>	<p>PBN, RDA, GAPR</p>	<p><b>Musculoskeletal therapy:</b> rehabilitation in the virtual world and transform the therapy session into a gamified experience in VR</p> <p><b>Neurorehabilitation:</b> helps stroke patients and patients with functional disorders to unblock barriers and improve physical condition faster by hacking perceptions of reality.</p> <p><b>Ergotherapy:</b> teach patients to perform their typical daily activities in VR (training sessions?) or with special apps</p>	<p>480.000 EUR</p>	<p>Interreg CE / Horizon</p>	<p>Transregional</p>
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## 2.4 TIIA description

### 2.4.1 Development of collaboration in the Digital innovation hub networks

<p><b>Description of TIA</b></p> <p>The aim of the proposed transnational innovation action is further cooperation and development of project proposals suitable for European Digital Innovation Hubs calls within the Digital Europe funding programme. The fields cover by the partners are the artificial intelligence, robotics, sensor technology, computer vision and virtual and augmented reality.</p>
<p><b>Role of TNIS members</b></p> <p>All the partners will have the same responsibilities to foster the collaboration and wide spreading of the digitisation activities in their regions. The specific tasks will be assigned according to the specific project proposals.</p>
<p><b>Starting date</b></p> <p>2022</p>
<p><b>Duration</b></p> <p>6 years</p>
<p><b>Region of implementation</b></p> <p>Hungary, Czech Republic, Poland</p>
<p><b>Estimated cost</b></p> <p>1.350.000 EUR</p>
<p><b>External needs</b></p> <p>Cooperation with business partners and technology implementors</p>
<p>The activity is expected to strengthen the value chain impacts and the transnational cooperation of the consortium. It is expected that the involved partners, regions can learn from each other and improve their digitalisation related skills. Mutual cooperation can result in the design of new educational programmes or development of the regional strategies facing toward the digitisation. Joint participation on research activities will expand the experience of involved parties and thus will improve their knowledge.</p>
<p>The proposed activity is completely consistent with several European strategies that are aiming for the fostering of the digital competencies. The main strategies are the Shaping Europe's digital Future and a European Data Strategy. In the partnering regions the activity is in line with the regional smart specialization strategies.</p>





## 2.4.2 AR/VR utilisation in medical sector

<p><b>Description of TIA</b> To help to increase the quality, efficiency and volume of physical and mental rehabilitation using VR and Motion Tracking technologies. The goal should be achieved by the development of software platform for diagnosis, game exercises and reports (each partner could use it on their own language).</p>
<p><b>Role of TNIS members</b> Development of AR and VR applications – VR Medical – CZ, am-LAB – HU, Zbigniew Religa Foundation - PL Testing and promoting of the application – PBN, RDA, GAPR</p>
<p><b>Starting date</b> 2022</p>
<p><b>Duration</b> 3 years</p>
<p><b>Region of implementation</b> Hungary, Czech Republic, Poland</p>
<p><b>Estimated cost</b> 480.000 EUR</p>
<p><b>External needs</b> Collaboration with hospitals and social care institutions.</p>
<p>Digitalisation is the main and essential skill for the hospitals and for the social care institutions as well. In the region it is extremely needed to upgrade these skills in the health sector and also in the social care sector. The workers in these sectors are extremely overburdened and with smart solutions, such as care robots and telemetry system, or some specially developed applications we could help the connection between the senior patient and the doctor or social care worker. Families could also be involved, because we could make easier for them to connect with their senior relatives, even if they live far (or abroad). Security is also a major point in this topic, to help the lonely senior generation to make them feel comfortable and safe in their own environment.</p>
<p>The proposed activity is in line with the EU strategy Together for health.</p>



### 3 Conclusions

By implementing the Transnational industrial innovation agenda for the Advanced Manufacturing and Health the PBN and RDA Pilsen expects to achieve impacts in digitalisation, social and health sector. Apart from the activities, conducted by the members of TNIS suggested during the TIAW, there is need for additional discussion on detailed workplan and specific goals to be achieved in order to for the future project proposals. The total cost of foreseen activities is 1.830.000 €, which are foreseen to be covered by project proposal in programmes Interreg Central Europe, Digital Europe or Horizon Europe.