

Smart Specialisation Platform for Industrial Modernisation

Thematic Partnership

ARTIFICIAL INTELLIGENCE & HUMAN-MACHINE INTERFACE

Start Date June 2018

MONITORING PROGRESS REPORT

Reporting Period: from June 2018 to December 2018

This Report is presented to the relevant Working/Steering Committee.
It contains three parts:

- I. Management Report prepared by the Lead Region(s)***
- II. Progress Report prepared by the Lead Region(s)***
- III. Previous versions of the Progress Report; i.e., part II of past reporting periods***

The report is a “cumulative” report, i.e. it is updated every six months and covers the entire period of the Partnership.

Confidentiality: this document (part I) will be made available to the public via the Partnership's web page except for chapter *II.E. Self evaluation*.

Based on the monitoring results, the European Commission will decide on the following year's support.

Executive summary (max. 250 words):

The partnership has started working after the approval of the Theme on May 7th. After the preparatory activities carried out by the lead partner in May and June 2018, during the second semester the following actions were carried out:

- *Conference call with the European partners on July the 12th to update and plan next steps*
- *Meeting with the Emilia-Romagna AI&HMI Working Group on September the 21st to work on the discussion topics and prepare the partnership kick-off meeting*
- *Kick off meeting with partners in Bologna on October the 16th*
- *Discussion and approval of the Governance of the European partnership and request to partners to nominate their representatives;*
- *Work on the 'Discussion Topics' with the partners: a form has been defined to collect information on Discussion Topics proposed by partners, namely on:*
 - > *Advanced perception and safe human-machine collaboration for the factory of the future*
 - > *Beautiful / Comfortable / Adaptive working environments, suitable for continuous worker involvement and training in real/virtual configuration;*
 - > *AI-accelerated Mechatronics*
 - > *Promotion of data integration and analysis data for understanding, simulating and /or optimizing behavior of user in industry and service context.*
 - > *Analysis and automatic classification of data for semantic search and access to data for processing and simulation*
 - > *Digital Twins for manufacturing*
 - > *Smart Retail*
 - > *Indoor GIS for Industrial Facilities*
 - > *Monitoring, Quality Assessment, and Imaging-assisted Operations in Machine Tools*
- *Meetings with local stakeholders by all partners;*
- *Enlargement of the partnership with new partners: Baden Wuerttemberg, Orebro and Slovenia*
- *Dialogue with ReConfirm coordinator to define partnerships' needs and possible support: operational support for mapping activity was agreed and a ReConfirm broker assigned*
- *Participation to the IM Platform Steering Committee on November 27th.*

I. Management Report prepared by the Thematic Platform/Lead Region(s)

I.A. Partnership Action Fact Sheet

- **Partnership:** *Artificial Intelligence & Human-Machine Interface*
- **Partnership's web-page:** *http://s3platform.jrc.ec.europa.eu/artificial-intelligence*
- **S3 Thematic Platform:** *Industrial Modernisation*
- **Objectives:** *The partnership intends to support the adoption of Artificial Intelligence enhanced cyber-physical system, and more specifically AI driven HMI, exploiting the knowledge, competencies and capacities of the stakeholders of participating regions so to accelerate the innovation processes of companies, including SMEs. More precisely, interregional collaboration among regional stakeholders will be addressed to:*
 - **1. ENHANCE AND ACCELERATE THE LEVEL OF AUTOMATION SYSTEMS PRODUCTION AND USE**
 - *defending today's competitive advantage within automation and robotics Value Chains;*
 - *making the European value chains robust and integrated as an evolution of today's supply chain;*
 - *fostering new joint projects pipelines in several deployment areas l.*
 - **2. INTRODUCE THE AI CONCEPT, DESIGN AND INDUSTRIALIZATION METHODOLOGIES**
 - *promoting cross fertilization with other sectors with similarity in terms of I4.0 KETs;*
 - *creating enlarged and multicultural design teams (technical and human-centric disciplines);*
 - *creating new companies or new networks of companies, mainly SMEs organized into open design communities.*
 - **3. INCREASE THE LEVEL OF EDUCATIONAL SYSTEMS OF BOTH PRODUCERS AND USERS**
 - *working on education districts and industrial district integration;*
 - *involvement education and industry foundations/organisations.*
- **Lead Region(s):** *list of regions/countries leading this partnership*

<i>EMILIA-ROMAGNA.</i>

- **Official partner regions:** *list of regions/countries that have officially committed to follow this partnership and have been active in the last six months.*

<i>North Brabant(NL)</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Navarra (ES)</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Trento Province (IT)</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Baden-Württemberg (DE)</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Örebro län (SE)</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Slovenija</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
<i>Any other comments</i>		

- **Other regions:** *list of regions/countries that have expressed their interest in this partnership but have not signed a commitment letter).*

<i>Lombardia</i>	<i>Please enter here...</i>	<i>Please enter here...</i>
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Any other comments		

- **Intentions to join:** list any regional/national authorities
(Please list here all other regions that have expressed their interest to join the partnership)

- **Other participants (other than national/regional authorities):**
(Please list here all other (non-region) participants (clusters, institutes, RTOs, etc.))

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Any other comments		

<p>Representative of Lead Region 1: (name, institution, address, phone, e-mail) ASTER S. Cons. p. A. Francesco Paolo Ausiello via Gobetti 101, 40129 Bologna, Italy +39 051 6398099 francescopaolo.ausiello@aster.it</p>	<p>Representative of Lead Region 2 (if applicable): (name, institution, address, phone, e-mail) Please enter here...</p>
<p>European Commission Coordinator: (name, e-mail) Please enter here...</p>	<p>Any other relevant information: Please enter here...</p>

I.B. Thematic Working Areas (WA)

- **Thematic Working Areas** (if any, please list of WAs, region(s) in charge of it, names and affiliations of involved regional/national authorities, and other actors)

Working Area	Region in Charge	Involved regions	Other actors
1)HMI evolution including new interface local and remote devices and technologies.	Emilia Romagna	Other involved regions	Other actors
2)USER experience data analytics: physiological and biomechanical data analysis to improve the workers experience and performance	Emilia Romagna	Other involved regions	Other actors
3)USER centered Design:Machine / System user-centered design to	Emilia Romagna	Other involved regions	Other actors

<i>leverage the operators' skills that includes</i>			
<i>4)AI enhanced Cyber-Physical Automation</i>	<i>Emilia Romagna</i>	<i>Other involved regions</i>	<i>Other actors</i>
<i>It is the intention of the lead region to consider to identify leading regions/partners for each working area.</i>			

I.C. Overview of past activities (past six months, the 2nd half of 2018)

Past Meetings

<i>Title</i>	<i>Date</i>	<i>Place</i>
<i>First AI&HMI partnership conference call meeting</i>	<i>12/07/2018</i>	<i>First conference call of the partnership (coordinated from Bologna Aster offices).</i>
<i>2nd E-R Regional Workgroup Meeting</i>	<i>21/09/2018</i>	<i>Bologna ASTER offices</i>
<i>AI&HMI kick-off meeting</i>	<i>16/10/2018</i>	<i>Bologna CNR Research Area</i>
<i>All partners will involve regional stakeholders and organise local working groups and meetings, places and dates to be defined.</i>		

Past Workshops

<i>Title</i>	<i>Date</i>	<i>Place</i>
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<i>Any other comments</i>		

Past Dissemination Activities

<i>Title</i>	<i>Date</i>	<i>Place</i>
<i>ReConfirm Side event</i>	<i>10 October 2018</i>	<i>Brussels</i>
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<i>Any other comments</i>		

I.C. Overview of future activities (the next 6 months – the 1st half of 2019)**Future Meetings**

<i>Title</i>	<i>Date</i>	<i>Place</i>
<i>Regional workgroups meetings</i>	<i>November and December</i>	<i>Each Region plans its local workgroup meetings</i>
<i>Partnership conf call</i>	<i>First half of December</i>	<i>Conf call coordinated by (Bologna ASTER offices)</i>
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<i>Any other comments</i>		

Future Workshops

<i>Title</i>	<i>Date</i>	<i>Place</i>
<i>Please enter title here...</i>	<i>Please enter date here...</i>	<i>Please enter place here...</i>
<i>Please enter title here...</i>	<i>Please enter date here...</i>	<i>Please enter place here...</i>
<i>Any other comments</i>		

Future Dissemination Activities

<i>Title</i>	<i>Date</i>	<i>Place</i>
<i>To be defined</i>	<i>20 Nov 2018</i>	<i>Trento</i>
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<i>Any other comments</i>		

II. Progress Report prepared by the Lead Region(s) of the partnership, describing **results achieved during this period**, in no more than 3 pages (the report is “cumulative”).
All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended technical reports and/or proceedings of workshops may be provided separately as an annex to this report (and should be referenced in the report).

II.A. Innovative results

- Innovative results and achievements that could be attributed to the Partnership.
(Specific examples of Results vs. Objectives)
Still not applicable
- Tangible short- and medium-term socio-economic impacts achieved or expected.
(Specific examples)
Creation of the community of research and business actors, including in particular companies willing to engage and collaborate for the definition of innovative projects and demo projects.

II.B. Inter-regional and inter-partnership collaborative results

- Additional results obtained from working with other partnerships under the thematic S3 Platforms. (Specific examples)
Still not applicable
- Evaluation of the involvement of relevant business sector (clusters, SMEs, business associations, chambers of commerce, etcetera) in the Partnership activities. (Specific examples)
Two Emilia-Romagna Clust-ERs have been involved in the setting up of the regional Working Group: the Clust-ER MECH and Clust-ER INNOVATE. They have indicated experts from the research sectors and companies to be invited to take part in the group. At the moment the group is composed by 10 representatives of universities and 2 representatives of companies (one big company and one SME). The Emilia-Romagna SMEs business association (CNA) has been involved and has expressed interest in contributing to the development of the contents of the topics.
All partners are working to strongly involve both big companies, SMEs and business associations into their local workgroups.
In the case of Navarra Region, the partner institution is AIN, the Asociación de la Industria Navarra, which has started working with its members to identify needs and opportunities.
- Evaluation of whether **the level of inter-regional cooperation is sufficient** to potentially provide **practical and relevant socio-economic impacts**. (Specific examples)
Still not applicable in terms of specific examples.

II.C. New activities

- Involvement of regions from EU13 Member States in the Partnership, in particular with respect to scoping, mapping and/or matchmaking. *In addition, justification should be provided if no EU13 regions are involved.*
Slovenija entered the partnership in November. Mapping and scoping activities has been carried on by the Jozef Stefan Institute of Ljubljana.
- Involvement of regions/countries from outside of EU28 Countries. (Number of participants from non-EU countries. Specify their contribution)
None.

- Advancement and promotion of the Partnership through publications and other communication/outreach activities. (*Number of outreach activities that resulted from the Partnership. A complete list with references and web-links should be given in an annex*)
Still not applicable
- Activities and projects with partnerships working under other S3 Thematic Platforms (*Agri-Food, Energy and Industrial Modernisation*).
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