SERVICE REQUEST

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Deliverable 4.6 – Report on the potential of the regional industry

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Deliverable 4.6

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Request for Service for a Specific Contract on “Advancing the Design of the South-East European International Institute for Sustainable Technologies (SEEIIST)”

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1. Introduction

The South Eastern European Institute for Sustainable Technologies (SEEIIST) is being established in the Western Balkans, comprising 10 countries: Albania, Bosnia and Herzegovina, Bulgaria, Montenegro, Greece, Croatia, Kosovo*, Northern Macedonia, Serbia, and Slovenia. Some of them are EU members and some are in the process of joining.

![Figure 1: The SEEIIST region](image)

The new SEEIIST center shall offer a unique ecosystem for heavy-ion Hadron cancer therapy with the following unique worldwide features and integral parts:

1. Strong emphasis on research: The SEEIIST facility will place particular emphasis on a 50% research fraction of the total beam time.

2. Training of young talents: The realization of the facility will take several years which gives sufficient time to train not only the future team which will help to build and later operate the installations, but also to form a user community

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*This designation is without prejudice to positions on status, and is in line with UNSCR 1244/99 and the ICJ Opinion on the Kosovo declaration of independence*
3. Engagement of clinical and scientific networks: The two networks will be used to recruit the ‘teachers’ who will train the new experts coming mainly from the SEE region, in numbers exceeding the needs of the Facility.

4. Technology transfer: The procurement of the different components for the accelerator and the beamlines (magnets, vacuum system, girders, beamlines, power supplies, control systems, etc.) can be preferentially assigned to local industries. Moreover, the Project will give rise to spin-offs not directly linked to it.

In this way, SEEIIST will contribute to the various EU programs such as EU2020 strategy, WBRIS (Western Balkans regional R&D strategy for innovation), EUSDR (Danube strategy), EUSAIR (Strategy for the Adriatic and Ionian region), EaP (Eastern Partnership), supports the transformation process of this region and targets specific areas of interests in technology transfer for both the EU and the Western Balkan countries.
2. The EU strategies relevant for SEEIIST region potential development

The EU remains committed to the three main objectives of the EU2020 Strategy for Growth and Development in all programming schemes: smart (developing an economy based on knowledge and innovation), sustainable (promoting greener, more competitive and more economic enterprises) and inclusive growth (ensuring social and territorial cohesion by promoting a high-employment economy).

R&D and innovation programs have a strong influence on the achievement of the 5 main objectives, in particular the target of spending 3% of European GDP on R&D and increasing the number of people employed from 69% of the population aged 20-65 to 75%.

With seven flagship programs, the EU addresses progress and targets. The implementation of the SEEIIST project will support virtually all initiatives, including chapters (1) Innovation Union, (3) Digital Agenda for Europe, (5) Globalization Age Industrial Policy and renewable energies, social equity, and rapprochement with the EU.

Activities supported financially under the ‘Innovation Union’ program promotes excellence and smart specialization, strengthen cooperation between universities, research, and industry, carry out joint cross-border planning, and improve cooperation for higher-value disciplines. The program focuses on research and innovation and is specifically designed to reform regional and national R&D and innovation systems. By adapting and integrating national, regional, and European funding programs, it aims to ensure the dissemination of technology across the EU.

The ultimate goal of "Digital Agenda for Europe" is to further develop an effective digital single market. It includes the reform of the research and innovation funds and increased support for ICT to strengthen European integration, cooperation, exchange, and thus the technological power of Europe.

Pioneering activities within the Industrial Policies for the Globalization Agenda aim to promote the green economy, the internationalization of SMEs, technological renewal, and the development of an environment conducive to the creation and growth of innovative SMEs.

The coordination of research, innovation, industrial and digital policies is therefore very important in this context to modernize national economic reform programs and related policies. It is even more important for the SEEIIST region to examine them in more detail.

2.1. The Southeast European and western Balkans strategies

The South East European Strategy 2020 (SEE2020) is closely aligned with the EU2020 vision. It aims to improve living conditions in the region and to put competitiveness and development back in the spotlight. The strategy is implemented by the Regional Cooperation Council (RCC). The SEE2020 strategy has proven to be a useful policy instrument focusing on regional cooperation in the areas of connectivity, competitiveness, skills and mobility, rule of law and Security Cooperation. The results are obvious: over 70% of citizens in the region tend to agree that
regional cooperation can contribute to the political, economic, or security situation of their economies. Beyond the borders, there is a common interest in uniting to survive. The next program will be developed to advance the transformation of regional cooperation. The Strategy and Work Program (SWP 2020-2022)\(^4\) builds on the results of SEE2020 and on “Towards a sustainable Union by 2030”, which includes all 17 sustainable development objectives. In 2022 SEE, the position must be defined by working more on strengthening the regional economic area (implementation of a multi-annual action plan for a Regional Economic Area with free flow of goods, services, capital, and labor), by promoting SEE an open and interconnected region/destination, by developing human capital as a driver of economic prosperity, by working on better digital connectivity as part of the digital integration agenda for WB, a cleaner and climate-neutral region, and on the commitment of local authorities. Strengthening the regional economic area should aim at enabling a secure region through good governance and the rule of law, strengthening the policy framework for the implementation of regional programs, the security of EU standards and the rule of law.

Competitiveness, skills, and mobility are strongly focused on investment, increasing the region’s industrial potential, innovative research, and development. One of the objectives of this pillar is to facilitate science-industry cooperation, technology transfer, and the free movement of students, researchers, and workers by further aligning financial support for science-industry cooperation and building an open and interconnected region.

2.2. The Western Balkans Regional R&D Strategy for Innovation (WBRIS)

The World Bank ‘WBRIS’\(^5\) suggested that the Western Balkans need to invest up to 1.5% of GDP by 2020 to gain the innovation potential. Just raising public expenditures is not enough but the focus should be on the excellence of research, on cooperation and technology transfer between research institutions and industry and on innovation policies that will promote innovation business and innovative start-ups. The plan was not realized completely but with smaller steps through EDIF (Western Balkan Enterprise Development and Innovation Facility).

2.3. The European Strategy for the Danube Region (EUSDR)

The Danube Strategy (EUSDR)\(^6\) is for better coordination between 9 EU and 5 non-EU countries on the Danube river. As a Macro-Regional Strategy and is designed to boost the development of the Danube Region with the targets: to invest 3% of GDP in R&D by 2020, broadband access for all EU citizens in the Region, and an increase of 50% in the number of patents obtained in the Region. One of the main focus areas defined in the revised existing Action Plan, relevant to the proposed SEEIIST project, is to develop knowledge-based society through research, education, and information technologies. This experience, along with ongoing work will be important to the SEEIIST.

2.4. The Strategy for the Adriatic and Ionian Region (EUSAIR)

(EUSAIR)\(^7\) is another important strategy for the Adriatic and Ionian Region and as a macroregional strategy has the general objective to promote green prosperity in the region through jobs creation and growth, and by improving its

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attractiveness, competitiveness, and connectivity, while preserving the environment and ensuring healthy and balanced marine and coastal ecosystems. Linking on the results and experience gained by implementing this strategy will be important to include in the SEEIIST implementation.

2.5. The Eastern Partnership (EaP)

The Eastern Partnership (EaP) is a policy initiative that aims to deepen and strengthen relations between the European Union (EU), and its six Eastern neighbors: Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine. At present, the EU is undertaking some exercise in all the EaP countries and also supporting the early preparatory phases for smart specialization. For this reason, it will be very important to follow the activities and identify this region as a possible next SEEIIST center location.

2.6. National economic reforms in the SEEIIST region

Fulfillment of the economic criteria is a key requirement for EU membership, as set out in the Copenhagen criteria. It implies a functioning market economy is in place that can withstand competitive pressure inside the EU single market.

In 2014, the European Commission invited all enlargement countries to enhance economic policy and its governance through the preparation of annual Economic Reform Programs (ERPs). The EC assessments of the 2019-2021 Economic Reform Programs (ERP) of the seven-candidate countries and potential candidates (WB6+ Turkey) highlights several issues for each of the WB6 that are relevant for the new project.

2.7. National Smart Specializations

In line with the EU2020 priorities and recommendations, smart and specialization strategies (S3) have been formulated by national and regional authorities across Europe. All economies in the SEEIIST region will also need to develop a smart specialization strategy. A common platform for new strategies is to transform and/or improve their ecosystems by focusing on investment in R&D and innovation through the European Structural Funds (ESIF). The growth of innovation-driven entrepreneurship is becoming increasingly important for the SEEIIST region, both in the context of the endorsement of smart code specialization and the EU approach. The distributed deployment of SEEIIST in the designated countries of the region contributes precisely to all the objectives of the continuation of the EU2020 program as well as to the objectives of all sub-programs for the Western Balkans...

In this context, SEEIIST should be used as a lever to achieve the objectives of these strategies and as an excellent polygon for financing and achieving the objectives of the policies.

The S3s are now an important milestone in the assessment process of the non-EU SEEIIST countries. The formal development of an S3 country strategy underlined their commitment to European integration, regional cooperation, and smart growth through research and innovation. Plans have accelerated since 2017, with Serbia and Montenegro participating in a pilot project to develop an S3 country strategy under JRC guidance in its design, imple-

7 https://www.adriatic-ionian.eu/about-eusair/
8 https://eeas.europa.eu/diplomatic-network/eastern-partnership_en
mentation, and monitoring. Kosovo* decided last year to develop a strategy and joined the S3 platform, while Serbia and Montenegro have identified its priority areas. Other countries are at different stages of S3 development.

It is now important for all countries in the SEEIIST region to identify the priority areas of the countries and to design appropriate policies. In this respect, the proposed project for the SEEIIST center offers several countries the opportunity to invest in world-leading technology and to foster entrepreneurial and research communities to engage regional talent and innovation capabilities.
3. The SEEIIST region demography

In this section, we expand further to summarize the main features of each country that is relevant for the proposed SEEIIST project. Key statistical and policy level information is drawn from the national The global competitiveness report\(^{11}\), The global innovation index \(^{12}\) Economic Reform Programs for WB6+Turkey\(^{13}\), the Smart Specialization Platform\(^{14}\), the Wikipedia report on a single EU country\(^{15}\), the New Cohesion Policy\(^{16}\), Key figures on enlargement countries\(^{17}\), the EUROSTAT\(^{18}\).

There are strong similarities between SEEIIST countries. They share similar histories, cultures, and economic development, although their natural assets are very different. Their public research organizations (PROs) are organized similarly and have strong similarities in framework conditions.

3.1. Demographics and socio-economic data

The SEEIIST region includes 10 economies, some of them are already EU members and some are in the integration process. The population in the region in 2020 is 42,973,694\(^{19}\) and in between, 235 world economies in the region regarding the world population are ranked at the 35\(^{th}\) place after Ukraine and before Iraq. The biggest population in regional economies is the Greeks 10,42 million followed by the Serbs 8,74 million and the lowest population we meet in Montenegro 0,63 million and Kosovo 1.81 million. The yearly change in population in the whole region is -0,29 and at the worldly rank at 219\(^{th}\) place like Portugal. We can find a positive change in Kosovo +0,06 and Montenegro and Slovenia 0,01, while Bulgaria with - 0,74 is a tail. The median age of the population in the region is 41 years, where at Kosovo with 29,10 are the youngest and in Greece with 45,6 are the oldest inhabitants as in median age.

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14 https://s3platform.jrc.ec.europa.eu/
15 https://en.wikipedia.org/wiki/List_of_sovereign_states_in_Europe_by_GDP_(PPP)_per_capita
18 https://ec.europa.eu/eurostat/data/database
19 https://www.worldometers.info/world-population/population-by-country/
The SEEIIST land area is 528,986 km² wide and on a world scale, the whole region will be ranked at the 47th place after France. The density of the population is 81/km² and it is worldly at the 130-place, like Greece. The highest density economy in the region is Kosovo with 159 inhabitants per km² and the sparsely populated economy in Montenegro with 47 inhabitants per km². In the region, 61% of the population is living in an urban area where Greece with 84.9% is leading and Kosovo with 38% is at the bottom of the list.
Figure 4: Population density and percentage of the urban living population
The SEEIIST region is handicapped with 63,586 migrants that are yearly leaving the region and this is bringing the region at the 16-place world ranking in between 235 countries after Romania and the Philippines. Some migration is probably happening in between regional economies but overall, the trend is still not positive. Bosnia and Herzegovina with 21,585 migrants that are leaving home economy yearly are the most handicapped while Serbia with 4000 migrants yearly entering the economy is most in favor.
3.2. GDP per capita

The Gross Domestic Product\textsuperscript{20} per capita in SEEIIST region was recorded in 2019 at 18.589 international dollars or 20.143 Euro. The GDP per capita in the region is equivalent to 147\% of the world’s average. The highest GDP per capita is in Slovenia with 37.283 Euro and the lowest in Kosovo at 4.813 Euro per capita. The 10 years average GDP per capita growth shows the positive economic performance just in Greece by -2.2\% the recession is still recorded.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{gdp_per_capita.png}
\caption{GDP per capita 2019 EUR}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{gdp_growth.png}
\caption{10 year average annual GDP per capita growth %}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{yearly_gdp.png}
\caption{Figure 6: GDP per capita and 10-year average annual Growth}
\end{figure}

\textsuperscript{20}https://en.wikipedia.org/wiki/List_of_sovereign_states_in_Europe_by_GDP_(PPP)_per_capita
3.3. Gross expenditure on R&D (GERD) and R&D Intensity

Research and development is a driver of innovation and focus of all strategies and S3 policies in the region. The ratio of R&D expenditure relative to GDP in the region\(^{21}\) is 0.68 and is far below the Western Balkan and Danube Strategy goal (1.5% and 3%). The immediate result of bigger national expenditure on R&D expenditure is also a bigger number of patent application per 1 million of the population where Slovenia with 2% of GDP expenditure on R&D activities is showing the biggest patent tendency with 51 patents application per million of the population while the average for the region is 7.6 patents. The local economies still prioritize other investments then research and development. Establishment of the SEEIIST as a world-leading state of the art technology can change this attitude and push foreign investments on another level. The total inward FDI as a % of GDP in the last 5 years for the regional was 4.4%, where Montenegro is leading and Greece and Bosnia and Hercegovina are far behind.

Figure 7: R&D expenditure as % of GDP and 5-year average FDI investments

When analyzing data for the SEEIIST region, focusing on economies on attaining full EU membership and EU investment priorities in 2021-2027 Cohesion Policy beyond 2020 is important to interpret it in the context of the smart, sustainable and inclusive growth with a target for R&D expenditure of 3% of GDP. According to the WEF reported data in The Global Competitiveness Report 2019 the R & D intensity was 0.68%. SEEIIST project can contribute to intensify the R&D investment and consequently to open new quality jobs and stimulate new FDI flow.

Figure 8: Patent application/million of population

[Graph showing patent applications per million population for various SEEIIST countries]

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4. The Global Innovation Index

The Global Innovation Index (GII) aims to capture the multidimensional facets of innovation and provide tools to help adjust policies to promote long-term output growth, productivity improvement, and employment growth. The GII provides a key tool and a rich database of detailed metrics for economies that included 129 economies in 2019.

Among other things, the key findings of the GII 2019 edition are:

- Innovation inputs and outputs are still concentrated in very few economies so that the global innovation gap persists.
- Most top science and technology clusters are located in the USA, China, and Germany; Brazil, India, Iran, the Russian Federation, and Turkey are also in the top 100 list, while the Balkan region plays a less important role.

In its 2019 edition, the GII analyses the medical innovation landscape of the next decade and examines how technological and non-technological medical innovations will change healthcare worldwide. It also explores the role and dynamics of medical innovation in shaping the future of healthcare and the potential impact it can have on economic growth.

The most important result of the analysis of the medical innovation landscape was that creating healthy living conditions through medical innovation requires more investment in innovation and increased diffusion efforts. The following six findings emerged, which are also important for the development of the region and the SEEIISTS as an improvement of the regional health system:

1. High quality and affordable healthcare for all is important for sustainable economic growth and the overall quality of life of citizens. Although significant progress has been made in many areas in recent decades, there are still significant gaps in access to high-quality health care for large parts of the world’s population.
Medical innovations are crucial to closing the gaps in global health care. Nevertheless, there are obstacles to health innovations and their dissemination today that must be overcome urgently. Firstly, productivity in health research and development has slowed down in the recent past; identifying new cures for new diseases is laborious and time-consuming. As a result, breakthrough cures have not yet been found for many acute and chronic diseases, such as cancer, depression or Alzheimer’s. Secondly, innovation in health care generally diffuse more slowly than in other sectors. The transition of medical innovations from the “bench to bedside” is a long process, sometimes stretching over decades. This is due to the complexity of the health innovation ecosystem and the different incentives of the health care actors involved.

Fortunately, there is a resurgence of healthcare R&D and healthcare innovation, which may help to overcome the decline in innovation productivity of the pharmaceutical industry in recent decades. These innovations span several dimensions, including core sciences, drug development, care delivery, and organiza-

Figure 10: Comparing the number of medical technologies and pharma patents
tional and business models. **Figure 9 shows the most promising areas for medical innovation in the coming years.** Innovations related to medical technology, in particular, are flourishing, with the number of medical technology patents being more numerous and growing faster than pharmaceutical patents over the last decade (**Figure 10**).

4. The convergence of digital and biological technologies is disrupting healthcare and increasing the importance of data integration and management across the healthcare ecosystem. Innovations in the health sector today are developing massively around big data, the Internet of Things, and artificial intelligence, leading to enormous power shifts within and outside the health sector. This phenomenon will also drive future health-related innovations into non-technological areas, such as the reorganization of business models and new processes instead of just using new technologies.

5. Emerging markets have a unique opportunity to benefit from medical innovation and invest in new healthcare delivery models to bridge the healthcare gap with more developed markets. Care should be taken to ensure that new healthcare innovations and their associated costs do not widen the health gap between rich and poor. The real challenge for developing economies is often the lack of minimally functioning health systems - and not necessarily a need for more R&D or new technologies. Low-tech or adapted technology applications can save more lives than the latest high-tech solutions.

6. Finally, the GII Report 2019 proposes a number of key priorities for health innovation policy, including the importance of adequate funding for medical innovation, especially for public sector research; the development of functioning medical innovation systems; facilitating the innovation path “from lab to bedside”; creating and maintaining a skilled health workforce; the transition from research on therapeutic products to innovation in the field of prevention; the careful assessment of the costs and benefits of medical innovations; support for new data infrastructures and digital health strategies, with emphasis on the creation of data infrastructure and the development of methods for efficient and secure data collection, management and sharing.

### 4.2. Regional innovation performance

To better understand how the region as a whole performs in terms of GIs, for the 9 countries of the SEEIIST region (GII report in 2019 did not include Kosovo). Looking at the aggregate indicators (Table 1), the region is best-performing indicators are Institutions, Human capital, and Creative output. Market and business sophistication and knowledge and technology output are the areas where a region as a whole can make significant improvements.

**Table 1: GII indicators 2019 in the SEEIIST region**
Additionally, the analysis of the average ranking for each GII indicator was carried out. The GII indicators at a more detailed level at which the region performs best on average are presented in Table 2.

**Table 2: GII indicators at which the region performs best on average.**

<table>
<thead>
<tr>
<th>#</th>
<th>GII Indicator</th>
<th>Regional average</th>
<th>ALB</th>
<th>BiH</th>
<th>BUL</th>
<th>CRO</th>
<th>GRE</th>
<th>MNE</th>
<th>NMA</th>
<th>SER</th>
<th>SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.2.4. ISO 9001 quality certificates</td>
<td>22,67</td>
<td>39</td>
<td>8</td>
<td>2</td>
<td>12</td>
<td>7</td>
<td>59</td>
<td>24</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>3.3.3. ISO 14001 environmental certificates</td>
<td>20,78</td>
<td>48</td>
<td>20</td>
<td>2</td>
<td>6</td>
<td>22</td>
<td>56</td>
<td>12</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>2.1.5. Pupil-teacher ratio, secondary</td>
<td>23,38</td>
<td>45</td>
<td>21</td>
<td>52</td>
<td>1</td>
<td>12</td>
<td>n/a</td>
<td>22</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>7.2.4. Printing, publications &amp; other media output</td>
<td>25,56</td>
<td>5</td>
<td>53</td>
<td>48</td>
<td>9</td>
<td>36</td>
<td>6</td>
<td>18</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>5</td>
<td>7.2.3. Entertainment and media market</td>
<td>27,00</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>27</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>6</td>
<td>7.2.1. Cultural and creative services exports</td>
<td>31,11</td>
<td>22</td>
<td>96</td>
<td>19</td>
<td>7</td>
<td>38</td>
<td>14</td>
<td>35</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>7</td>
<td>7.2.2. National feature films produced</td>
<td>33,44</td>
<td>54</td>
<td>26</td>
<td>44</td>
<td>64</td>
<td>13</td>
<td>10</td>
<td>43</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>2.2.1. Tertiary enrolment</td>
<td>35,25</td>
<td>51</td>
<td>n/a</td>
<td>26</td>
<td>32</td>
<td>1</td>
<td>48</td>
<td>69</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>7.3.3. Wikipedia yearly edits</td>
<td>35,67</td>
<td>57</td>
<td>34</td>
<td>30</td>
<td>37</td>
<td>43</td>
<td>44</td>
<td>29</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>5.2.3. GERD financed by abroad</td>
<td>36,44</td>
<td>53</td>
<td>23</td>
<td>10</td>
<td>37</td>
<td>27</td>
<td>60</td>
<td>59</td>
<td>18</td>
<td>41</td>
</tr>
</tbody>
</table>

A very high average pupil-teacher ratio in secondary education indicates a high level of educational activity, which is a key determinant of innovation capacity. Higher education is crucial for economies to move up the global value chain and the region has a high average rank in tertiary education enrolment.

The region is characterised by a high output of creative goods and services, which is reflected in the areas of printing, publications and other media, development, entertainment and media market, export of cultural and creative services and production of national feature films.

The high-quality standard of output is typical for the region, which is evidenced by the high number of issued certificates of conformity with the ISO 9001 standard on quality management systems and the high number of issued certificates of conformity with the ISO 14001 standard on environmental management systems.

The high level of gross R&D expenditure financed from abroad (GERD) demonstrates the trust and international cooperation network that has developed between regional R&D actors and R&D financiers from abroad.

The above indicators show that the region’s greatest potential lies in its human capital, which, supported by a relatively good education system, produces an internationally recognised workforce known for its creativity, innovative capacity and high production standards.

On the other hand, the GII indicators, where the region is on average the worst performer, are presented in Table 3:

**Table 3: GII indicators for which the region performs worst on average.**

<table>
<thead>
<tr>
<th>#</th>
<th>GII Indicator</th>
<th>Regional average</th>
<th>ALB</th>
<th>BiH</th>
<th>BUL</th>
<th>CRO</th>
<th>GRE</th>
<th>MNE</th>
<th>NMA</th>
<th>SER</th>
<th>SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.2.2. State of cluster development</td>
<td>92,11</td>
<td>112</td>
<td>97</td>
<td>61</td>
<td>119</td>
<td>117</td>
<td>86</td>
<td>99</td>
<td>81</td>
<td>57</td>
</tr>
<tr>
<td>2</td>
<td>4.3.3. Domestic market scale</td>
<td>89,00</td>
<td>107</td>
<td>97</td>
<td>69</td>
<td>75</td>
<td>53</td>
<td>128</td>
<td>112</td>
<td>73</td>
<td>87</td>
</tr>
<tr>
<td>3</td>
<td>5.2.1. University/industry research collaboration</td>
<td>86,67</td>
<td>73</td>
<td>114</td>
<td>69</td>
<td>111</td>
<td>122</td>
<td>61</td>
<td>108</td>
<td>76</td>
<td>46</td>
</tr>
<tr>
<td>4</td>
<td>3.2. General infrastructure</td>
<td>83,78</td>
<td>94</td>
<td>99</td>
<td>69</td>
<td>85</td>
<td>100</td>
<td>47</td>
<td>120</td>
<td>84</td>
<td>56</td>
</tr>
<tr>
<td>5</td>
<td>4.3.2. Intensity of local competition</td>
<td>82,78</td>
<td>72</td>
<td>97</td>
<td>81</td>
<td>117</td>
<td>69</td>
<td>92</td>
<td>95</td>
<td>84</td>
<td>38</td>
</tr>
<tr>
<td>6</td>
<td>6.3.4. Foreign direct investment, net outflows</td>
<td>79,67</td>
<td>116</td>
<td>75</td>
<td>51</td>
<td>88</td>
<td>104</td>
<td>123</td>
<td>45</td>
<td>62</td>
<td>53</td>
</tr>
</tbody>
</table>
One of the main drawbacks hampering the region’s innovation performance is the state of innovation linkages. Innovation linkages and public-private/academic partnerships are essential for innovation. In emerging markets, areas of prosperity have developed around industrial or technological clusters and networks, which contrasts sharply with the poverty that may exist in the rest of the region. The region is characterised by a very poor level of cluster development and a low level of research collaboration between universities and industry. The level of knowledge absorption is also low, mainly due to low payments for intellectual property and low high-tech imports.

All countries in the region are strongly affected by the small market size and low intensity of local competition in their domestic markets.

In addition, the region has a poor general infrastructure, including low per capita electricity production, poor logistical performance and low gross capital formation, consisting of expenditure on additions to fixed assets and net assets of the economy, including land improvements (fences, ditches, drains), the purchase of plant, machinery and equipment, and the construction of roads, railways and the like, including schools, offices, hospitals, private housing and commercial and industrial buildings.

Innovation output is questionable, particularly in terms of the quality of scientific publications, as measured by the index of cited documents H index and in terms of net outflows of foreign direct investment.

The above-mentioned indicators show that the region would definitely benefit from activities that would make it possible to promote innovation linkages and public-private/academic partnerships that would be carried out at regional level, overcoming the constraints of domestic markets, and that would entail improvements in logistics, energy and other areas of general infrastructure.
5. Human capital index

The Human Capital Index (HCI) measures the amount of human capital that a child born today can expect to have at the age of 18. It measures the productivity of the next generation of workers against a benchmark of complete education and full health. It is constructed for 157 countries.

It is composed of five indicators: the probability of survival to age five, a child’s expected years of schooling, harmonized test scores as a measure of the quality of learning, adult survival rate (fraction of 15-year olds that will survive to age 60), and the proportion of children who are not stunted.

Globally, 56 percent of all children born today will grow up to be at best half as productive as they could be; and 92 percent will grow up to be at best 75 percent as productive as they could be.

Rankings and GCI indicators for the region are shown in Table 4:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>ALB</th>
<th>BiH</th>
<th>BUL</th>
<th>CRO</th>
<th>GRE</th>
<th>KOS</th>
<th>MNE</th>
<th>NMA</th>
<th>SER</th>
<th>SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI Rank</td>
<td>56</td>
<td>58</td>
<td>44</td>
<td>36</td>
<td>42</td>
<td>80</td>
<td>59</td>
<td>88</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>HCI</td>
<td>0.62</td>
<td>0.62</td>
<td>0.68</td>
<td>0.72</td>
<td>0.68</td>
<td>0.56</td>
<td>0.62</td>
<td>0.53</td>
<td>0.76</td>
<td>0.79</td>
</tr>
<tr>
<td>- Survival to Age 5</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
<td>0.99</td>
<td>0.99</td>
<td>1</td>
</tr>
<tr>
<td>- Expected Years of School</td>
<td>13</td>
<td>11.7</td>
<td>12.9</td>
<td>13.3</td>
<td>12.9</td>
<td>12.8</td>
<td>12.4</td>
<td>11.2</td>
<td>13.4</td>
<td>13.6</td>
</tr>
<tr>
<td>- Harmonized Test Scores</td>
<td>429</td>
<td>461</td>
<td>498</td>
<td>505</td>
<td>474</td>
<td>375</td>
<td>433</td>
<td>382</td>
<td>521</td>
<td>532</td>
</tr>
<tr>
<td>- Learning-adjusted Years</td>
<td>8.9</td>
<td>8.6</td>
<td>10.3</td>
<td>10.8</td>
<td>9.8</td>
<td>7.7</td>
<td>8.6</td>
<td>6.8</td>
<td>11.2</td>
<td>11.6</td>
</tr>
<tr>
<td>- Adult Survival Rate</td>
<td>0.94</td>
<td>0.91</td>
<td>0.87</td>
<td>0.91</td>
<td>0.94</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.91</td>
<td>0.93</td>
</tr>
<tr>
<td>- Not Stunted Rate</td>
<td>0.77</td>
<td>0.91</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.91</td>
<td>0.95</td>
<td>0.94</td>
<td>-</td>
</tr>
<tr>
<td>Comparing HCI to the SEE average</td>
<td>lower</td>
<td>lower</td>
<td>lower</td>
<td>higher</td>
<td>lower</td>
<td>lower</td>
<td>lower</td>
<td>lower</td>
<td>higher</td>
<td>higher</td>
</tr>
<tr>
<td>Comparing HCI to the GDP level</td>
<td>higher</td>
<td>higher</td>
<td>higher</td>
<td>higher</td>
<td>lower</td>
<td>inline</td>
<td>higher</td>
<td>lower</td>
<td>higher</td>
<td>higher</td>
</tr>
</tbody>
</table>

The Human Capital Index shows that there are significant differences in the performance of countries in developing their human capital. Slovenia stands out, followed by Serbia and Croatia. In contrast, North Macedonia and Kosovo* are the least successful in developing productive human capital.

Looking at the region as a whole, only two countries have a lower human capital index than one would expect for their income level. This suggests that the quality of human capital originating from the region is relatively high on average.

6. Western Balkans Labor Market Trends

Wage levels in the individual Western Balkan countries are lower and more broadly spread than in the peer countries of the EU. Expressed in terms of PPP - Purchasing Power Parities to reflect price level differences between countries in 2017, wage levels in all Western Balkan countries were lower than in most of the EU peer countries. Only Bulgaria had lower wage levels than most Western Balkan countries, comparable to those of Serbia and Kosovo. Besides Slovenia and Croatia, among all Western Balkans countries, wage levels were highest in Montenegro and Bosnia and Herzegovina. At the lower end of the league was Albania. Since 2010, wage levels - expressed in PPPs - have risen in Albania and Kosovo, while they have fallen in the other Western Balkan countries.

More recently, with some improvements in quantitative labor market indicators and a generally more favorable macroeconomic situation, regional policymakers have started to pay attention to the supply-side problems of stagnating wages, a shrinking working-age population (except for Kosovo and Albania) and increased emigration rates. A common impetus was the increase in the minimum wage, sometimes after several years of nominal stagnation and real decline. In recent years, this policy has been implemented most aggressively in Albania and North Macedonia Serbia, as shown in Table 5.

Table 5: Gross minimum wage in EUR

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>157</td>
<td>157</td>
<td>160</td>
<td>181</td>
<td>181</td>
</tr>
<tr>
<td>Federation BiH</td>
<td>280</td>
<td>280</td>
<td>311</td>
<td>311</td>
<td>311</td>
</tr>
<tr>
<td>Republika Srpska</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>317</td>
<td>337</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>214</td>
<td>219</td>
<td>239</td>
<td>240</td>
<td>282</td>
</tr>
<tr>
<td>Kosovo</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>Montenegro</td>
<td>288</td>
<td>288</td>
<td>288</td>
<td>288</td>
<td>288</td>
</tr>
<tr>
<td>Serbia</td>
<td>235</td>
<td>235</td>
<td>235</td>
<td>253</td>
<td>285</td>
</tr>
</tbody>
</table>


Lagging far behind the European average in the overall level of economic development, the five Western Balkan countries (Kosovo has not yet conducted an LCS) have correspondingly far lower labour costs than the EU average, as presented in Figure 11

A combination of relatively high-quality human capital and very low salaries, well below the lowest of any European Union member states but Bulgaria, provides very fertile conditions for brain drain.

According to the findings of the World Economic Forum four Balkan countries top global ranking with the biggest brain drain. Bosnia and Herzegovina (BiH), Croatia, North Macedonia, and Serbia are among the top-ranked countries with the biggest brain-drain in the world, according to the Global Competitiveness Report released by the World Economic Forum. On the scale of 1 to 7 (1= all talented people leaving the country; 7= all talented people staying in the country), BiH scored 1.76, followed by Croatia (1.88), North Macedonia (2.13) and Serbia (2.31). According to the report, the country most affected by brain-drain is Haiti (1.70).

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26 https://europeanwesternbalkans.com/2020/02/03/wef-four-balkan-countries-top-global-ranking-biggest-brain-drain/
7. Innovation policies for the economic transformation of the region

The innovation ecosystems in the Balkans and their performance can only be improved effectively and successfully through a well-articulated combination of policy support measures. At the same time, such combinations should address key elements of the innovation system such as institutions, strategies, projects and actors. Two key success factors in this context are the mobilisation of the business sector – and private capital – and the ability of governments to tailor policy instruments and funding to the specific needs and potentials of the economy.

7.1. Smart specialization

Smart specialisation is a European approach to foster knowledge-intensive development, a key element of the Europe 2020 strategy for smart, sustainable and inclusive growth with strong links to the renewed EU Industrial Policy Strategy.

Smart specialisation provides a useful methodological policy framework capable of catalyzing efforts to improve innovation ecosystems, as observed in a large number of EU countries and regions.

The EU European Commission has identified regional development, competitiveness and smart specialisation as key areas for joint support activities in the enlargement and neighbourhood countries. The Regulation on pre-accession funding clearly identifies smart specialisation as a thematic priority for assistance to the enlargement countries.

The new EU Strategy for Western Balkans spells out how smart specialisation can be implemented through technology transfer and start-up support to boost entrepreneurship and innovation across the region.

In 2017, the heads of government of Albania, Bosnia and Herzegovina, North Macedonia Kosovo, Montenegro and Serbia endorsed a multi-annual Action Plan for a Regional Economic Area in WB. The Plan includes economic development strategies based on knowledge and innovation and builds on the experience of EU Member States and regions with smart specialisation.

The first two strategies in Serbia and Montenegro have already been adopted and the smart specialisation strategy in North Macedonia is planned to be implemented by the end of 2020. Albania and Bosnia and Herzegovina have not yet started with smart specialisation strategy design, nor has Kosovo.

7.2. Building innovation communities and systems

Regional and national innovation systems are complex and involve a variety of actors and stakeholders, while public resources for policy intervention are limited. As a result, the potential impact of public interventions on the innova-
tion behaviour of actors in innovation systems is often negligible, especially when they are thinly spread across all sectors and stakeholders.

The smart specialisation approach advocates focusing public intervention on those areas with the greatest potential impact and spill-over effects on growth and employment, under the umbrella of a long-term vision of sustainable economic transformation. However, it is not enough to make evidence-based decisions in priority areas; it is also necessary to identify and involve the key stakeholders who can change the subsystem in which they operate.

The literature on socio-economic networks shows that a significant change in the behavior of actors in a system occurs when at least 10% of key actors change their behaviour. Considerable efforts are therefore needed to identify the main actors in key-value chains, the main research centres and innovative companies.

7.3. Supporting transformative and innovative projects

There is clear evidence that the implementation of innovation policies needs to focus on specific projects and practical activities which together can support the objectives and tasks of the actors of the innovation ecosystem.

EU JRC activities in the Western Balkans have so far focused on capacity building and the exchange of best practices in the domain of technology transfer. These have been carried out as part of the EU Strategy for the Danube Region and in response to specific requests for support from DG NEAR, the body responsible for the EU enlargement process. Such activities are an important part of building the capacity of the different actors for the future implementation of innovation policy. A series of activities to actively promote technology transfer and innovation in the East, and South Europe was launched in the Western Balkans.

7.4. Nurturing transnational cooperation

The economies of the Western Balkans are surrounded by EU Member States and cross-border cooperation is therefore one of the main mechanisms for cooperation - between the WB economies themselves, but also with the surrounding EU Member States and regions, including multilateral international cooperation supported by the European Commission through the EU macro-regional strategies.

In addition to the European Commission, cross-border cooperation through investment projects in the WB has been supported by numerous organisations such as the European Bank for Reconstruction and Development, the European Investment Bank, the World Bank and the OECD. In the context of EU enlargement, the European Commission has promoted cross-border cooperation in the Western Balkans through the Instrument for Pre-accession Assistance, an approach largely based on the principles of the Structural Funds, such as multi-annual programming, strategic partnerships and co-financing, adapted to the specificities of EU rules and regulations.

Through its Smart Specialisation Platform, the JRC has been supporting innovation-based cooperation between WB economies and its cooperation with EU countries and regions since 2013, in particular in the framework of the two EU macro-regional strategies covering the WB area (Danube and Adriatic-Ionian).

7.5. Cooperation among the Western Balkan economies and with the EU

In recent years, research and innovation cooperation between Western Balkan economies has been rather laborious and has only recently begun to recover. Despite the existence of bilateral agreements on scientific and technical
cooperation between WB economies, cooperation has often been removed from strategic planning and in practice has been limited to small ad hoc bottom-up projects.

An important innovation of WB EU cross-border cooperation is that programs involving regions on both sides of the EU's external borders have a common budget, common management structures, and a common legal framework and implementation rules, which helps to balance partnerships between participating countries.
8. Macro-regional specialization and competence alignment in project implementation

For the successful implementation of such a complex project, a whole range of skills, competences and capacities is required. Smart specialization strategies define priority areas where individual countries have comparative advantages. These priority areas are characterized by a critical mass of innovative and internationally competitive companies and research actors and stakeholders with capacities and a proven track record in their field of expertise. In addition, several countries have excellent, world-renowned research institutions and global niche leaders in certain areas of expertise (marked E in the table).

The following table shows how well smart specialization priority areas of each country match the needs of project implementation. In the case of North Macedonia, preliminary priority areas from the ongoing smart specialization design process were used. In the case of Albania, Bosnia and Herzegovina and Kosovo, which have not yet started their smart specialization design process, the results of the JRC macro-regional mapping study were used.

Table 6: Matching S3 specialization priorities and SEEIIST project implementation needs

<table>
<thead>
<tr>
<th>Competence for implementation needed \ Country</th>
<th>ALB</th>
<th>BIH</th>
<th>BUL</th>
<th>CRO</th>
<th>GRE</th>
<th>KOS</th>
<th>MNE</th>
<th>NMA</th>
<th>SER</th>
<th>SLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil engineering</td>
<td>***</td>
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<td>***</td>
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<tr>
<td>Electrical engineering</td>
<td>***</td>
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<td>**</td>
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<td>***</td>
<td>***</td>
<td>***</td>
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</tr>
<tr>
<td>Engineering (consultancy, design, planning, prototyping, construction, production, installation, measurement, maintenance.)</td>
<td>***</td>
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<tr>
<td>- Magnetic and electromagnetic engineering</td>
<td>***</td>
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<tr>
<td>- Vacuum and cryogenics and high voltage engineering</td>
<td>***</td>
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<tr>
<td>- Mechanical engineering</td>
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<tr>
<td>- Optics and laser components</td>
<td>***</td>
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<tr>
<td>Computer systems, computational power and imaging</td>
<td>***</td>
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<td>***</td>
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<tr>
<td>Computerized command, control and management</td>
<td>***</td>
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<td>***</td>
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<tr>
<td>Radiation and acceleration physics</td>
<td>E</td>
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<td>E</td>
<td>E</td>
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<tr>
<td>Sensors, detectors, measurements, safety and protection for all fields</td>
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<td>**</td>
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<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
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<td>**</td>
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<tr>
<td>Transportation systems (cars, cranes, AGV,</td>
<td>**</td>
<td>***</td>
<td>***</td>
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<td>**</td>
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<tr>
<td>Green power (wind, hydro and solar energy production)</td>
<td>***</td>
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<td>***</td>
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</tr>
<tr>
<td>Supercomputing, (storage, imaging, computational power, distributed system control)</td>
<td>***</td>
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<tr>
<td>Research in accelerators design, construction, maintenance and running, and in particle physics</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
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<td>***</td>
</tr>
<tr>
<td>Research in the field of health, cancer treatment with neutrons, Helium and other heavy ions</td>
<td>***</td>
<td>***</td>
<td>***</td>
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<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Maintenance of big infrastructure objects</td>
<td>**</td>
<td>**</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>AI - computerized support, system monitoring running and maintenance</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
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<td>**</td>
<td>**</td>
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</tr>
</tbody>
</table>

The analysis shows that none of the individual countries possesses all the competencies required to implement the SEEIIST project. On the other hand, if all the countries join together where each country contributes com-
petence for the areas of their smart specialization, a region as a whole basically has all the competences required to implement the SEEIIST project, which is a clear indication that the project should be implemented at macro-regional level. The only competence that is not in line with regional S3 strategies is the "Radiation and acceleration physics" where at least 3 globally renewed research institutions in 3 different countries are specialized.
9. Accelerated access for stakeholders: e-registration of interest

Slovenian Academy of Engineering, together with partners (Switzerland CERN) and GSI FAIR (Germany), are actively involved in the SEEIIST project development from December 2019. The acquired task taken over is TASK 4 Working Group 3 on the SEEIIST initiative, legal aspects and sustainability strategies with the focus on 4.2 Regional potential and conditions for the site, and 4.3 Coordination and sustainability strategy for the institute.

The present paper aims to outline the strategy, activities, and methodology conducted for the presentation of regional potential and the potential of the regional industry. The task of presenting the potential of the SEEIIST region (10 economies, EU, and non-EU members, small fragmented markets with little industrial cooperation and complicated local legislation and restrictions in the mobility of people, knowledge, and capital) is quite challenging.

9.1. Strategy and methodology

We have chosen the top-down approach to describe the regional potential and the bottom-up approach to show the potential of the regional industry.

The top-down approach to the disclosure of regional potential allows us to present all regional strategies of the EU, including smart specialization strategies if implemented. By presenting the strategic objectives, key performance indicators, activities, and results achieved, the potential, responsiveness, willingness, and capacity for participation and cooperation are demonstrated. The second part of the top-down approach is the statistical and demographic data collected, together with the indices of innovation, competitiveness and human capacity, which show how the region compares with other countries in the world, the ranking of the region as a whole and the individual economies, and show the strengths and weaknesses. The methodology imposed for this part of the paper was mostly desk research.

To uncover and demonstrate the potential of the regional industry, the bottom-up approach was implemented. First, we decided to demonstrate the potential in three groups of organizations, i.e. network, research, and industry organizations. The network organizations are represented by associations such as chambers of commerce, academies, associations, incubators, science and technology parks, accelerators, and similar, where they deal with members and affiliation and can easily address several members from the research or industry community. The research organizations are mainly universities, national or private, research institutes, research companies while the segment of industrial organization is meant to include micro, small and medium enterprises, start-ups, bigger and large companies. We are interested in the companies that correspond to the technological areas for the establishment and operation of the SEEIIST center. Furthermore, our interest has been broadened by matching the SEEIIST areas of interest with smart specializations strategies or proposed areas in the regional economy.

9.2. Activities from December 2019 to June 2020

The first action plan was to address the research organization through national engineering academies, the network organization through national incubators and science and technology parks, and the enterprises through the national chamber of commerce. As soon as the SEEIIST areas of interest were identified, active communication with representatives and also with companies began. We prepared promotional materials and, for a bottom-up ap-
As all communication shifted to the electronic media, we changed our intention to collect signet letters of interest to register companies willing to participate in the development of SEEIISTS on the center website. And since a restriction hinders travel between economies, a team of local experts and animators was hired for each economy. Their task is to promote the SEEIIST initiative, select the appropriate organizations, determine their willingness to cooperate, and instruct them to register on the website. Local experts were carefully selected because they have to have good connections to the academics or research institutions and a good network of companies (Attachment 2). We rely on the directors of TTO, incubators, and science and technology parks. All of them are performing bridge activities between academia and industry.

Simultaneously we develop a 2-step registration procedure, a communication interface, and all-new introductory, presentation, and invitation documentation (Attachment 3). The campaign for raising awareness of the SEEIIST project was not only on local experts. From local chambers of commerce and databases available for industrial organizations, we succeed to obtain a list of companies that are active in the field of engineering, research, and green energy. From the CERN we communicated the list of companies from the region that are already cooperating in procurement activities. The first round of emailing information about the SEEIIST project, invitation to register, and invitation to participate in the Sarajevo conference was send at the beginning of July 2020. (Appendix 4).

9.3. Attachment 1: Initial documentation and expression of interest (March 2020)

Picture 1 Presentation of the SEEIIST project
Dear Sir/Madam,

It's our pleasure to invite you, your organization, and the companies you represent to discover, recognize, and take advantage of participating in the development and construction of the SEEIST (South-Eastern European International project for sustainable technologies).

The main goal of SEEIST is the realization of a "facility for nuclear isotope therapy and biomedical research" based on a state-of-the-art particle accelerator design developed in collaboration with the main European research centers. Such a regional center of excellence will create a great opportunity for the businesses and other stakeholders and strengthen local scientific expertise for future projects and the development of a sustainable economy and social cohesion.

The Slovenian engineering academy (SIA) is together with ten companies as its main partner in the design phase of SEEIST that aims to become a large-scale international facility on medical care and research based on hadron radiation. The European Commission will support this development. SEEIST contributes to the European Union strategy, supports the transformation process of this region and targets specific areas of interest in technology transfer for both the EU and the wider Balkan countries.

Advanced science-medical infrastructure in the region - an exceptional opportunity for industry and its development in the region.

For the real regional impact, especially the inclusion of the regional industry is one of the most important for realizing the success of SEEIST. As the inclusion of the regional industry in SEEIST is not such self-evident first the potential of the regional industry has to be explored and analyzed. The potential of the regional industry shall be mainly (but not exclusively) focused on the high-value added segments of products and services - the construction of the SEEIST would require more than 100 companies. The development and the production of many different components can preferentially be assigned to the local industry. Additionally, the potential for the start-ups in the SEEIST domain shall be explored in accordance with the already developed regional start-up ecosystem.

The new facility shall offer a unique ecosystem for hadron cancer therapy with the following particular features unique worldwide with a special focus on:

- The R&D cooperation and procurement of the different components for the accelerator, the beamlines (magnets, vacuum system, grinders, beamlines, power supplies, central systems, etc.), and the medical part of SEEIST can be preferentially assigned to local industries;
- Technology transfer: the SEEIST will give rise to spin-offs not directly linked to it on such a regional center of excellence will support the other create a great opportunity for the businesses and other stakeholders and strengthen local scientific expertise for future projects and the development of a sustainable economy and social cohesion. You can be the part of the SEEIST:

- By giving some initial information about the SEEIST opportunities and support to your stakeholders.
- Identify the industrial capacity and potential in your country – region.
- Provide the list of the companies interested in being the part of SEEIST.
- Sending us an info (attached) and your feedback, questions and proposals.

It is also our pleasure to invite you and your business community to participate at the SEEIST Annual Industry Conference (https://seeist.com/events/seem-2021/). The workshop and its social events from 15th-17th April 2021 in Stavanger (please check the events, since the Conference might be postponed due to the circumstances connected with the COVID-19)

Useful Information:
- SEEIST website: https://seeist.com/
- For any additional information please contact:
  - Jurek Laješek jurek.lajasek@gmail.com, (SIA regional expert)
  - Jasna Burger jasna.burger@republikom.com, (GI4 project manager)

Picture 2: The SEEIST project description as an attachment to the email
EXPRESSING INTEREST for participation in the development and construction of the South-East European International Institute for Sustainable Technologies SEEIST, the first European cancer treatment research and patient center

STATEMENT OF INTENT

The purpose of this Expression of Interest is to express the willingness of (Company) represented by (Director), to actively participate in the process of establishing the first European cancer treatment research and patient center in the region, the South-East European International Institute for Sustainable Technologies (SEEIST), a regional institution for transferring public research results on a global market, a central institute for heavy ion cancer treatment research, community empowerment and a helping aid for heavy ion cancer therapy regional implementation.

(Company) declares that with the pool of SEEIST experts it posses the expertise to provide all the required services for supporting the establishing process of the first heavy ion cancer treatment research and patient center and especially for:

- reviewing the regional industrial potential to contribute to the design, construction, and service implementation;
- offering and proposing identified know-how (in selected fields) needed for center design, construction and running;
- raising national and international visibility of the SEEIST;
- attracting future local industries, collaborating partners and branch network integration.

From the long-term perspective the sustainable collaboration for research exploitation and center multiplication is envisaged also by human resources selection, training, and development and by know-how and the best practice transfer.

(Please and Date)

(Representative Name and Signature to be certified and stamp)

EXPRESSING INTEREST for participation in the development and construction of the South-East European International Institute for Sustainable Technologies SEEIST, the first European cancer treatment research and patient center

STATEMENT OF INTENT

The purpose of this Expression of Interest is to express the willingness of (Company) represented by (Director), to actively participate in the process of establishing the first European cancer treatment research and patient center in the region, the South-East European International Institute for Sustainable Technologies (SEEIST). A regional institution for transferring public research results on a global market, a central institute for heavy ion cancer treatment research, community empowerment and a helping aid for heavy ion cancer therapy regional implementation.

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- reviewing the regional industrial potential to contribute to the design, construction, and service implementation;
- offering and proposing identified know-how (in selected fields) needed for center design, construction and running;
- raising national and international visibility of the SEEIST;
- attracting future local industries, collaborating partners and branch network integration.

From the long-term perspective the sustainable collaboration for research exploitation and center multiplication is envisaged also by human resources selection, training, and development and by know-how and the best practice transfer.

(Please and Date)

(Representative Name and Signature to be certified and stamp)

Picture 3: The LOI letters for companies and associations
9.4. Attachment 2: TOR for local experts and list of experts

Background to the SEEIIST project

The SEEIIST project aims at the realisation of a “Center for Tumour Hadron Therapy and biomedical research” based on a state-of-the-art particle accelerator design. The Slovenian Academy of Engineering (SIA) together with CERN and FAIR is partner in the design phase of SEEIIST. The European Commission will support this development as the implementation of SEEIIST contributes to the EU Western Balkan Strategy, supports the transformation process of the region and targets specific TT areas of interest for both the EU and the Western Balkan economies (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Montenegro, North Macedonia, Serbia, Slovenia and Greece). The involvement of the regional industry is one of the important success measures of the SEEIIST. As the inclusion of regional industry in SEEIIST is not so obvious, the potential of regional industry must be first identified. The opportunity for regional science and industry lies in the establishment, maintenance and operation of SEEIIST, in the development and production of various components and in the strengthening of local scientific expertise for future similar projects.

For the Western Balkans region, the SEEIIST centre represents an opportunity to develop state-of-the-art accelerator technology, scientific objectives, medical cancer treatment and a huge contribution to the development of a sustainable economy and social cohesion.

<table>
<thead>
<tr>
<th>Project:</th>
<th>SEEIIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor:</td>
<td>IAS – Slovenian Academy of Engineering</td>
</tr>
<tr>
<td>Contract No:</td>
<td></td>
</tr>
<tr>
<td>Scope of the work:</td>
<td>The task is to join a team supporting the SEEIIST project aiming at the regional promotion and capacity building for one economy from the SEEIIST region and to work with other team members to exchange best practices and implement opportunities for cross-border cooperation in the development of SEEIIST.</td>
</tr>
<tr>
<td>Expert Profile:</td>
<td>Non-key expert</td>
</tr>
</tbody>
</table>
| Qualifications and skills: | ● Relevant university degree.  
● Professional level of English, both spoken and written.  
● Computer literacy (MS Office applications). |
| General professional experience: | ● Minimum of 5 years of professional experience in similar tasks for the academia and industry collaboration activities linking research teams, start-ups, and industry. |
| Specific professional experience: | ● At least 5 years of experience in supporting technology transfer activities, business models and market development activities.  
● Knowledge of at least one of the SEEIIST regional languages. |
| Proposed expert(s): | AL: Arjan Vrhen, director, Oficinica Incubator, Tirana  
BIH: Vedran Simunovic, director, Intera Mostar  
BUL:  
CRO: Slavko Misic, director, Zicar Zagreb  
HR: Miroslav Koroljevic, director, MK Ltd, Theiss solventi  
KOS: Gentit Berisha, director TTO, Universa Pristina  
MNE: Velibor Bozic, director, STP Podgorica  
NMA: Vladimir Atanasevski, director, INNOFEIT, Skopje  
SR: Jovana Vesic, director BIT, Beograd |
| Total days: | Promotion: 1 day in May 2020, Identification/motivation: 1 day in June 2020 |
| Deliverables: | Promotion: social media, web pages, 1-on-1 communication  
Identification: up to 4 research teams (cancer treatment, ICT, accelerators, green power), up to 4 companies (start-up, SME, bigger company) registered on a SEEIIST web page |
| Location: | The main place of work will be home-based. |
| Task duration: | May 2020 – July 2021 |
| Reporting: | To the IAS in early June and July with a brief report on the progress of the contractually agreed activities. |

Picture 4: The TOR for local experts and a list of suggested experts
9.5. Attachment 3: 2-step procedure for registration

Picture 6: Design of a 2-page registering procedure (Part 1)
Picture 7: Design of a 2-page registering procedure (Part 2)

INFORMATION ABOUT THE organisation

There was an error trying to send your message. Please try again later.

Representative

Name (required)

Your Email (required)

Current Work position

Legal representative (CEO, Director, Procurator, Rector, Dean, President)

Other (required)

Organisation

Organisation name

Logo

Picture 8: Filling in screen (Part 1)
Picture 9: Filling in screen (Part 2)

Picture 10: A sample of a certificate issued at the end of a registration procedure
Picture 11: Certificate on the screen
9.6. Attachment 4 – Initial mailing documentation for e-registration of interest

Dear Madam or Sir,

We invite you to participate in the implementation and operation of the SEEIST https://seeist.eu/, the first Hadron Cancer Therapy, and the Biomedical Research Centre in Southeast Europe.

More than 200 companies would be needed to carry out the construction activities of the multi-regional center, from design, construction, and testing to operation and maintenance.

For the regional academic and industrial organizations, this is an opportunity to implement their high-quality products and services in a project that is important for “people, profit and the planet”. It is intended to be the first center in our region to be established with regional companies and to reproduce it in our neighborhoods.

Register your interest in becoming part of the procurement community in advance at https://seeist.eu/expresson-for-interest/.

Prof. Stane Pejovnik – general secretary

<table>
<thead>
<tr>
<th>Elements of registration Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email from the registering person</td>
</tr>
<tr>
<td>Work-position from the registering person</td>
</tr>
<tr>
<td>Legal-representative of the organization</td>
</tr>
<tr>
<td>Organisation-name</td>
</tr>
<tr>
<td>Logo optional</td>
</tr>
<tr>
<td>Web-page-Address</td>
</tr>
<tr>
<td>Address, City, Location</td>
</tr>
<tr>
<td>Company-ID-number</td>
</tr>
<tr>
<td>Number-of-employees</td>
</tr>
<tr>
<td>Type/nature of the organization (pick one only)</td>
</tr>
<tr>
<td>Technology/competence area</td>
</tr>
<tr>
<td>Procurement code (Pick up to tree)</td>
</tr>
<tr>
<td>Short description of the organization</td>
</tr>
</tbody>
</table>

Picture 12: Promotion and invitation to interest registration email
SF(16) – SEEIST – Deliverable 4.6

Picture 13: Multilanguage project description as an attachment to emailing
10. Plans and future activities

In the last period (December 2019 - June 2020) we have informed over 600 organizations in 10 economies of the SEEIIST region and about 100 companies from the AT, IT, FR, BE, GE, CH, and the UK. As our activities were focused on the region, we received 110 confirmations of cooperation from the region and up to 10 confirmations of the organization from EU countries (SEEIIST Appendix 12 Registered organization until 27.7.2020). The result is based on two rounds of promotion in June and the active participation of regional promoters/local experts. In Bulgaria there was no active promoter and the animation was done only by e-mail, and the result is not so good. Even organizations with long decision-making processes (universities, larger research institutes, larger companies), where consensus between several stakeholders is required, did not succeed during this pandemic and holiday period. In parallel with the publicity, we worked on the disclosure of e-mail addresses of industrial companies already involved in procurement activities for the development of larger public research facilities across the EU. SEEIIST Appendix 13 region lists the collected generic e-mail addresses of 161 companies from the then SEEIIST region and SEEIIST Appendix 14 EU lists the 5792 generic e-mail addresses from the rest of the EU.

Figure 12: Registered organizations by country (until 27.7.2020)
Figure 13: Registered organizations by type/nature (until 27.7.2020)

Plans for the next phase (July 2020 - January 2021) include reviewing and expanding the interested regional industry and identifying synergies between similar existing or new projects in the region.

Verification, quality control and presence/completeness in individual segments of the technological areas for construction, operation and maintenance of the SEEIIST center is a must. We will be able to identify areas where insufficient regional industrial presence or low quality is detected and where additional monitoring and identification is required.

In order to identify regional industry and expand interest, we will focus the promotion and cooperation activities on next segments:

- specific regional universities and institutes where they have medical faculties and particle physics departments
- regions with a low or average interest in cooperation
- to SEEIIST technology areas with low representation
- about companies that have experience in working with CERN

Several EU projects in the region stimulate multi-regional cooperation and contribute to the existing and future objectives of the EU Strategy for Growth and Development (The Southeast European and Western Balkans Strategy, The Western Balkans Regional R&D Strategy for Innovation, The Danube Strategy, The Strategy for the Adriatic and Ionian Region, National Economic Reform programs with smart specialization strategies as part of the enlargement process, large infrastructure project in the fields of health, ICT, green energy and infrastructure). Identifying synergies and linking the SEEIIST project to existing strategies will help to achieve better strategy results and the fulfilment of success indicators. The distributed deployment of SEEIIST in the region contributes precisely to the objectives of the continuation of the EU2020 program and to the objectives of all sub-programs for EU members or for countries still in the accession process. The region would definitely benefit from activities that would make it possible to promote innovation linkages and public-private/academic partnerships that would be implemented at regional level, overcome domestic market constraints and bring about improvements in logistics, energy and other general infrastructure throughout the SEEIIST region.
LIST OF APENDIXES:

- APPENDIX 1: Albania potentials for collaboration with SEEIIST
- APPENDIX 2: Potentials of Bosnia and Herzegovina for cooperation with SEEIIST
- APPENDIX 3: Bulgaria potentials for collaboration with SEEIIST
- APPENDIX 4: CROATIA’s potentials for collaboration with SEEIIST
- APPENDIX 5: Industrial potentials of GREECE for collaboration with SEEIIST
- APPENDIX 6: KOSOVO’s potentials for collaboration with SEEIIST
- APPENDIX 7: Industrial potentials of MONTENEGRO for collaboration with SEEIIST
- APPENDIX 8: North Macedonia’s potentials for collaboration with SEEIIST
- APPENDIX 9: SERBIA’s potentials for collaboration with SEEIIST
- APPENDIX 10: SLOVENIA’s potentials for collaboration with SEEIIST
- APPENDIX 11: SEEIIST Region statistic and demographic data, innovation, competitiveness and human capacity indexes
- APPENDIX 12 Registered_organisation_until_200727
- APPENDIX 13 Region_ generic_e-mail addresses
- APPENDIX 14 EU_ generic_e-mail addresses
Responsible Organization for this deliverable:
- SAE: Iztok Lesjak M.Sc, Project member and a regional expert
- SAE: Janko Burgar M.Sc, CGO & Project manager
- SAE: Damjan Golob, Project member

Quality Assurance made by:
- SAE: Janko Burgar M.Sc, CGO & Project manager
- SAE: Dr. Stanislav Pejovnik, General secretary & Project member