



RICAIP Internationalisation Strategy

With a Focus on Communication

Deliverable 7.5

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1 Introduction and Executive Summary

The following document summarizes the internationalisation strategy of RICAIP from a marketing and communication perspective. RICAIP as an evolving science and service provider for its clients and target groups has a service and education portfolio which has to be advertised alongside the publication and communication of scientific advances and results.

Thus, deliverable 7.5 RICAIP Internationalisation Strategy provides insights into how RICAIP is and will be attracting / approaching its target groups, what activities of marketing and communication are already established and what activities are foreseen to strengthen the effort. In this framework, the deliverable will provide a short overview of the important objectives and target groups for RICAIP, it will highlight the rules RICAIP marketing and communication activities abide by and it gives an overview on current achievements and future plans.

The following deliverables provide further information on RICAIP as an evolving science and service provider:

1. D2.4: RICAIP EU Roadmap Strategy: long-term objective and strategy for the RICAIP Industrial Testbed Core as an important European Research Infrastructure
2. D2.5 Science as a Business Strategy: summarizes RICAIP key aspects, partners, customers, activities and services as well as other aspects of RICAIP business strategy
3. D2.6 RICAIP Sustainability Plan: describes how RICAIP can maintain sustainability over the next decade and highlights costs / revenues planning
4. D2.7 RICAIP Responsible Research and Innovation Strategy focuses on the scientific aspects and RICAIP's RRI implementation and monitoring
5. D7.1, D7.2: Dissemination and Communication Strategies: focus on dissemination, marketing and communication efforts incl. an overview of target groups, media, campaigns, etc.

In the following chapters the deliverable will link internationalisation to existing developments within RICAIP and highlight activities and measures taken to set up marketing and communication activities with an international focus. Especially chapter 3 and 4 will provide an overview on already existing marketing and communication activities and tools whereas chapter 5 will provide measures to boost the internationalisation aspect within RICAIP's marketing and communication activities.

2 Objectives and Target Areas

The overall goal and approach of this document is to put the particular elements of our already established communication and dissemination strategy into the internationalisation context and marketing that goes beyond the Czech Republic and Germany to extend the outreach to other countries in Europe and worldwide.

As most of the channels and outputs have been communicated in English, they already address the largest possible audience. A concise analysis of the target groups as well as traffic on the website and

social media channels in terms of the countries' distribution shall help us to reflect the international aspects into already implemented activities and address the international audiences. Based on that, guidelines will be created to impact also other countries in Europe and beyond.

RICAIP as a science and service provider is depending on a strong interaction with its "clients / customers", i.e. its target groups. Thus, it is important for RICAIP not only to raise visibility on a national scale in the Czech Republic and Germany but in the long run in Europe and internationally. Active communication is needed with the scientific community, industry and other target groups.

As stated above, the Internationalisation Strategy is oriented towards different deliverables and developments. In D2.5 the business strategy is highlighted. In D7.1 and D7.2 details on the target groups are provided (see chapter 5 of D7.1 Dissemination strategy and standards and chapter 5 of the communication strategy and standards). Other aspects, such as objectives, tools, channels, communication roadmap, and publications are detailed as well.

The internationalisation in marketing and communication will focus on the following target areas:

1. Industry Collaboration

Manufacturing companies, service and technology providers are the major target group for RICAIP. Industry collaboration through public-funded research and innovation projects as well as industry contracts are one main revenue source for RICAIP to sustain long-term. With the internationalisation of its offers and communication, RICAIP attracts companies from abroad to engage in contracting or research and innovation projects. Reaching out to the broader portfolio of industrial partners at the international level beyond the available and to some extent traditional German-Czech supply-customer chains will spread and mitigate the risk of economic or political fluctuations and will contribute to the RICAIP sustainability and independence from the local / regional situation.

2. Research and Education

Attracting internationally renowned top researchers and highly qualified young researchers from abroad to RICAIP thus increasing the percentage of international top researchers working with / in RICAIP. Research priorities have to be promoted and made visible outside of RICAIP to attract research partners in Europe and internationally and to form strong scientific and research cooperation and excellence. Expanding RICAIP international visibility and attractiveness to students/ workers shall be accompanied with imparting international skills to all students. As with top researchers, RICAIP also aims to increase the percentage of qualified students from abroad as well as their admission, supervision and integration into RICAIP activities. To boost the impact of lectures, RICAIP aims to increase the percentage of courses/lectures/workshops held in English to attract a larger number of highly qualified graduates from abroad. The focus on internationalisation in research and education will secure a solid pool of higher potential for future top scientific results and on the other hand, the current diversity of knowledge and new ideas.

3. Management and Services

Strengthening internal processes in terms of systematic incorporation of internationalisation processes into measures for RICAIP quality assurance are administrative and institutional prerequisites for successful facilitation of international cooperation on different levels and with different target groups. The internationalisation aspects shall be implemented for example in welcome service, administration processes such as assistance in getting work permits for employees from abroad.

3 Basic Rules on Communication in Different Channels

3.1 Language

- The main communication language of the RICAIP is English
- Nevertheless, English is not a limitation but opens the room for broader customization of the content to broader audiences. Thanks to the current technologies, the primary creation of the content on the website in English enables to have automated translation of the texts in seven other languages in addition to English.
- This approach can be also applied in promotional materials and overall online communication.
- To secure a sufficient linguistic level on daily bases, several tools are used by the team to ease the translation into English – namely Google Translator, DeepL Translator, and Grammarly. Cross-check of the translated texts with the multiple uses of these tools is recommended.
- Important documents, such as the Annual Report, are reviewed by an English editor to maintain the high level, accuracy and quality of the translated texts

In general, the following set of rules shall contribute to the clarity and intelligibility of the communicated content in the international environment:

- All materials and messages shall be prepared in time and with relevance to the communicated topic
- They must be true, authentic
- Language must be clear, using precise and overall accepted terminology to minimize the potential ambiguity of messages

3.2 Corporate Design and Visual Identity

The technological and scientific environment is properly dynamic and the emphasis on branding and international recognition is properly required and valued. Thanks to comprehensive and unified visualization, the brand becomes recognisable and unique. The development of the RICAIP project brand started already in the Phase 1 (logo, font, colours...) of the project and it was developed and improved during the Phase 2 (colour update, modernizing and complexity of the design). All communication materials and their appearance depend on the rules that were created within the framework of the visual identity.

3.3 Examples on Selected Tools and Channels

- **SCIENTIFIC PUBLICATIONS**

In each research environment, research publications ensure scientific and international cooperation. These are usually the most visible entity and reflect the quality of the research centre. We publish scientific publications on social networks, or on the basis of them we create stories, interviews or articles that explain in a simpler form what scientific success the researchers have achieved.

In terms of formal dissemination, a clear acknowledgement of the RICAIP shall be followed in case of own scientific indicators but also in cases where the technological equipment of RICAIP nodes and testbeds has been used. Besides the obligatory aspects of the acknowledgement, this will also contribute to the higher visibility of RICAIP and its infrastructure by the broader international scientific community.

- **PUBLIC RELATIONS**

Currently, RICAIP cooperates intensively on distribution of press releases in their respective countries and on their particular media contacts whenever appropriate to the character of the message and content. Such a cooperation has been implemented for example in case of joint presentation at Hannover Messe or the Doctor Honoris Causa degree to Prof. Wahlster. This approach can be also implemented in case of events with international speakers – the involvement of their home institutional PR departments can contribute to the outreach to media contacts in other countries.

Nevertheless, establishing international press contacts namely at international events such as trade fairs or conferences as well as high-ranking visits from European and international countries offer the opportunity to attract the interest of print or TV media beyond Germany and the Czech Republic.

In the future, we want to make greater use of these occasions to establish international press contacts and to build up and maintain an international press distribution list.

- **EVENTS**

Every event under the RICAIP brand is organized with the care and guaranteed quality of the experienced teams of each institution. Although we were used to online events before, due to the COVID-19 pandemic, organizers of the RICAIP events had to focus on online events, which in turn expanded the possibilities and reach of the event on an international level.

Thanks to the online environment (whether it is a lecture within the RICAIP Seminar Series, RICAIP Brain & Breakfast or conference, for example), the events can be easily joined by anyone from anywhere in the world.



Some of the events rely on a strictly physical concept, especially if accompanied by a guided tour in the RICAIP testbeds or in-person networking or hands-on workshops. Even though, the onsite events can create a valuable online footprint if the speeches are recorded and disseminated in a follow-up communication to participants or through thematical playlists to larger international audience. Mostly, events are conducted in English, with the invitation and presence of international guests (or speakers). Online events are held in English solely, because participants from different countries can join in. Some of the onsite events such as hands-on workshops, guided tours, visits or events for general public, might be held in the local language depending on the concept, topic and audience. The international aspect of any event can be multiplied in the preceding general promotion of the event in English on the website as well as on social media (apart of the direct marketing for acquisition of participants conducted in local language). Also, the follow-up communication about the event in English can create a positive impression on local and international levels.

- **ONLINE TOOLS**

Regular online communication is a must nowadays. RICAIP addresses all target groups through online tools and social media – currently through its Twitter and LinkedIn accounts - and pass on detailed information (both visual and audio). Online tools are a great helper in achieving international outreach. For example, Twitter is becoming increasingly popular in the scientific community and industry. In the posts, individual institutions and partners are always tagged so that an immediate connection is created to multiply the snowball effect and spread the message worldwide.

- **OFFLINE TOOLS**

By offline tools we mean mainly printed media, roll ups, flyers and so on. These communication materials are mostly in English to secure the universality of their use despite their otherwise local character of distribution. We pay attention to the quality processing and visual style of these materials in order to achieve international recognition of the RICAIP project also in terms of high professionalism and quality that is expected and respected. Moreover, some of the offline tools and printed materials have their online impact – either on photos (such as rollups, banners, and displays if visible on photos created during events and visits) or if distributed also in electronic versions (annual reports, flyers, conference materials).

4 Current Status and Overview

4.1 Online and Communication Tools

- **WEBSITE**

The website www.ricaip.eu has been the main communication hub since its creation. The structure of the website as well as content have developed in the run of the project implementation and flexibly reacted on the topics that are available and need to be communicated. As already mentioned, thanks to the content entirely created in English, it is possible to choose between 8 different languages that are automatically translated through installed plug-in. These include Czech, English, French, German, Italian, Portuguese, Spanish and Ukrainian.

On the website information about the project, the partners, events and all the activities in the project is available. The partners' testbeds are presented and there are descriptions of the use cases and technologies in the testbeds. The research being done in the project is accessible through the use cases. Demonstrators and technologies are supported by pictures and videos which give a good overview and insight. There are also reports on the last years, which illustrate what has already been created. See the overall layout of the website in the Annex No. 1.

The website creates an open space for adding new content flexibly in terms of other related topics as they arise. These can range from particular synergy and associated projects to complex information in case completely new nodes join the RICAIP network. All of these aspects are substantial for the implementation of the internationalisation approach.

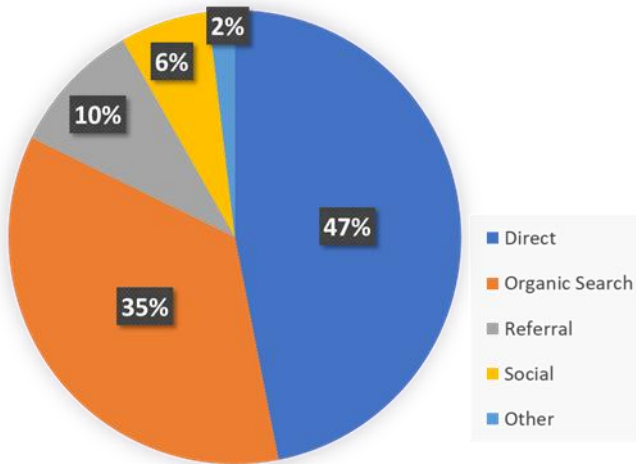
- **RICAIP WEBSITE ANALYTICS**

- Google Analytics is used for basic website statistics.
- Over the past year and a half, we have registered visitors mainly from the Czech Republic, followed by the USA and Germany. We have had visits from China and India.
- With the newly integrated tool on the website (May 2022), which allows the website to switch to up to eight world languages, we expect visits from other countries to increase as well.
- A significant part of visitors get to the website directly, the next most common way is organic reach.

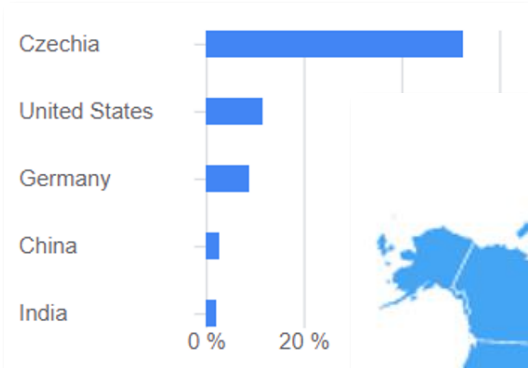
Data for January 2021 – July 2022

Unique users	3 100
Unique visits	5 200
Page views	9 982
Avrg. duration of relation	1:51

Acquisition of the Audience – Source Medium



Visits according to the countries of origin:



- **SOCIAL MEDIA**

As English is the central RICAIP language and most of the target groups can be reached with it, posts on Twitter and LinkedIn are published mainly in English even in case they just comment some third-party message originally published in local language.

This has several advantages:

- Any of the RICAIP partners can easily post and co-create the content on the social media profiles promptly.
- Due to the fact that the RICAIP partners are from Germany and the Czech Republic, it would be difficult to keep the flow of posts if every post were published either randomly or in all 3 languages.
- The English language enables wider sharing of the posts by RICAIP partners additionally to their institutional feeds on their profiles and accounts.
- With English comments, also the messages posted in in the local language can be shared on RICAIP profiles.

4.2 Marketing Materials

A similar strategy exists for the marketing materials. Displays and roll-ups are available in English. For example, there is an English roll-up in Germany. This means that the English-language roll-ups can be used anywhere. As an example, there are a few of our promotional materials in the Annex No. 2.

4.3 Selected Dissemination Activities

- **PUBLICATIONS**

Since the beginning of the RICAIP second phase, its researchers have published their works in several distinguished journals; in a form of international conferences/ workshops proceedings; and chapters in the books. Altogether, since September 2019, 20 publications have been published in some of the mentioned forms.

Selected journals: Sensors (published in 25 topical sections, with an impact factor of 3.847 in 2021, and a five-year impact factor (2021) of 4.050), Constraints (with an impact factor in 2021 of 0.583, and a five-year impact factor (2021) of 1.591); The IEEE Transactions on Vehicular Technology (impact factor of 6.239); International Journal of Computer Vision (impact factor of 13.369 in 2021).

At the same time, researchers published in international conferences proceedings such as: on 3D Vision, on Computer Vision, on Computer Vision and Pattern Recognition; or in the International Symposium on Inertial Sensors and Systems.

The publications and high visibility ensured by the journals and presence in the conferences and workshops ensure scientific and international collaboration.

- **EVENTS**

All events recently organised under RICAIP have been used for dissemination as well as awareness raising of RICAIP on both national and international levels. On the following set of examples of a wider variety of events, the overall multiplied effort for internationalisation will be demonstrated:

- **RICAIP SEMINAR SERIES**

Since launching the concept in October 2021, a total of 5 seminar series on various topics in areas such as smart city, open science, women in science, sustainability or ethics were organised. Regardless of the Czech nationality of the vast majority of speakers, all lectures are conducted in English and broadcasted online. Thanks to the foreign speakers featuring in the series and their engagement in promoting the events in their countries and their ecosystem, many of the seminars were attended also by participants from other European countries and thus reached the international environment. Part of the participants are coming from Czech institutions, still, they are of a foreign nationality. This also creates a potential for further internationalisation. The recordings have also a substantial outreach:

Registered participants of the RICAIP Seminar Series

Number of participants	255
Number of institutions	50
Number of countries of their origins	25

Time period: October 2021 – May 2022

Participants of the RICAIP Seminar Series according to their nationality/ country of origin:

- **STATE AND HIGH-LEVEL VISITS IN TESTBEDS**

- German Federal President – CIIRC CTU, August 2021
- Mexican delegation led by the Deputy Governor of the State of Jalisco – CIIRC CTU, CEITEC BUT, June 2022
- German Federal Vice-Chancellor – CIIRC CTU, July 2022
- EC High-Level Expert Group on Education – CIIRC CTU, July 2022
- European Cluster Conference 2022– September 2022 | <https://europeanclusterconference.eu/site-visits>

Since the grand opening of Prague testbed, the programme of the visits of the high-level representatives of both European and international countries to the RICAIP and CIIRC CTU have been enriched with a guided tour to the testbed facilities. In general, this creates a unique and impactful opportunity to present the testbeds and their home institutions in the context of the RICAIP Centre and inform about the objectives and results of RICAIP. This approach had been consistently followed in all above-listed high-level visits. We expect that the number of visit as well as the character of the visitors will increase also with the opening of the Brno testbed.

- **INTERNATIONAL EVENTS AND FORUMS**

- RICAIP Conference within RICAIP Days – Prague, April 2022 | <https://ricaip.eu/ricaip-days-2022/>
- 3rd Czech Israeli Forum on Innovation - CIFI 2022 – Prague, May 2022 | <https://cifi.cz/>
- US-EU Workshop – Prague, June 2022 | <https://ricaip.eu/event/us-eu-workshop-on-intelligent-manufacturing/>
- Czech-French Workshop on Artificial Intelligence – Prague, September 2022 | <https://czech-french-ai.eu/>
- IFAC WODES 2022 – Prague, September 2022 | <https://wodes2022.ciirc.cvut.cz/>

Recently, one of the key events that exposed RICAIP to higher visibility was the grand opening of Testbed for Industry 4.0 in April at CIIRC CTU, Prague. Within the events organised under „RICAIP Days“, RICAIP was presented to high-level representatives of academia, industry and policy.

Whenever thematically related, RICAIP uses opportunities to co-host conferences and large forums, often co-organised with high-level partners, such as embassies or Czech Ministry of Foreign Affairs. This effort contributes to strengthening the relations with the ministry and also creates new ties with embassies such as the Embassy of the State of Israel, French Embassy and, as a matter of fact, the German Embassy. These events also include guided tours in testbed, presentation of RICAIP delivered by the RICAIP management and formal or informal discussions on possible collaboration with the main invited speakers or co-chairs of the conferences and events.

- **EXAMPLES OF INTERNATIONAL VISITS OF SMES OR PUBLIC TO TESTBED**

- Moldavian SMEs in Prague, May 2022
- German teachers (Staatliche Berufsschule Lichtenfels) in Prague, May 2022
- Taiwanese Business Representatives in Prague, October 2021
- Tech transfer experts from V4 (Slovakia, Hungary, Poland, CZ), Georgia and Armenia, June 2022
- US Master and PhD students in Prague, May 2022 – University of Omaha and Nebraska
- Austrian Master and PhD students in Prague, May 2022
- Azerbaijan business delegation in Prague, January 2022
- Delegation of the Business Finland led by attaché in Prague, May 2022

Guided tours in testbeds create not only a significant part of the programme of other events and conferences as listed above, but also a self-contained part of the programme of international visits to cities of its locations (Prague, Brno, Saarbrücken). So far, the scope of visitors was broad and ranged from public administration to business delegations, tech experts, industrial representatives to teachers and students. These visits are very often organized in cooperation with the Czech Ministry of Industry and Trade and its subordinated business and investment agency CzechInvest that are using the services of the National Centre for Industry 4.0. Also, Embassies and foreign chamber of commerce are also partners in this endeavor.

4.4 Synergies between RICAIP and international projects and events

- **SYNERGIES WITH INTERNATIONAL PROJECTS AND INITIATIVES**

- EIT Manufacturing
- DIH Projects
- EDIH
- Horizon Projects
- International initiatives and networks: CLAIRE, ELLIS, GaiaX, IDSA etc.

As already proven, the engagement of RICAIP team members and the RICAIP infrastructure in the international initiatives and projects open multiple synergies and opportunities to the international acquaintance and dissemination. It can be seen on multi-year projects or even one-year projects such as those supported by EIT Manufacturing or Digital Innovation Hub application experiments and other sub-projects. Especially the EIT Manufacturing projects focusing the creation of the programmes for SMEs toward their digitalisation transformation often use testbeds as the core of learning and teaching factories. Within these projects, research institutions from mainly so-called RIS countries (e.g. the Regional Innovation Scheme – RIS – countries that are considered ‘modest and moderate’ innovators) intensively cooperate. Part of this cooperation is also the joint creation of digital learning content for European SMEs as well as on-site visits and consortium meetings. So far, RICAIP researchers cooperate within the testbed facilities with colleagues from countries such as Portugal, Italy, Greece or other CEE countries intensively. Moreover, thanks to the dissemination of the digital content created within EITM, the RICAIP testbed as the main learning factories will be introduced to international audience, namely European SMEs.

Another example of cross-synergies can be demonstrated on cooperation within the Theme Development Workshop organised by CLAIRE and the EU H2020 ICT-48 networks of excellence. Thanks to the involvement of RICAIP teams and the Industry 4.0 related topic, researchers and representatives of RICAIP were involved in the organizational Committee and presented RICAIP and the research focus to the expert European audience.

- **SYNERGIES WITH EVENTS**

Follow-up to the international events as stated in the previous text is important for creation of new business and scientific collaboration. As an example, in months after the 3rd Czech Israeli Forum on Innovation (May 25, 2022), serious meetings and discussions were organised to identify issues to be addressed in order to explore the full potential of Czech-Israeli RDI collaboration in areas of smart cities and digital technologies. RICAIP can leverage from the conclusion that concrete projects have been identified where specific Czech and Israeli HW and SW capabilities are crucial. At this point, RICAIP will use the synergy of getting involved through the testbed facilities offered by CIIRC CTU in collaboration with Bar Ilan University and consider the application for new projects. Future partnerships can be also encourage between Czech and Israeli entrepreneurs within testbed.

5 Strategy to Boost Internationalisation in Communication and Marketing

5.1 Overall Strategy and Plans

This chapter outlines RICAIP's strategy to boost internationalisation further. The central hub for all target groups is the website ricaip.eu with its content on services offered, education and training modules, best practices in the categories news, demonstrations, videos.

The website is the best instrument for further expanding internationalisation. All target groups can be addressed there. For this purpose, 3 essential points should be further developed and implemented.

- The first point that can be used is **education**. Besides scientific publications, online lectures, education and training modules and information materials should be made available for students and the scientific community in the long-run. Students and researchers would then have a one-stop shop to find all information related to lectures and ongoing research of RICAIP.
- The second point is the expansion of our offered **services**. The project offers many different points of contact. On the website, detailed services and benefits which RICAIP offers to the industry should be accessible. Public and industrial research can be distinguished and industrial companies should be able to get an impression on RICAIP focus, technologies, service and support / cooperation offers and services, so that companies can decide, if RICAIP is the best partner for them.
- The third point is about concrete **results**. When best practices are presented in detail, customers will better understand what our services actually look like. RICAIP aims to intensify the publication of customer testimonials from the companies we have already helped build additional trust. All technologies used in the testbeds can also be described and presented in detail to get a proper overview of what can be tested on site during the RICAIP project.

5.2 Strategy to attract potential (international) customers and stakeholders

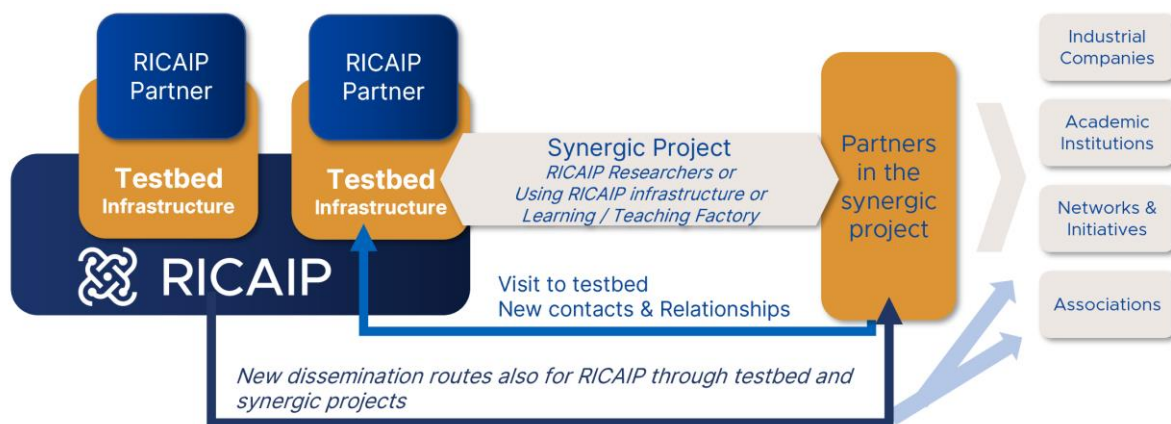
Part of the internationalisation strategy is to guide the main target groups to the right content (website), e.g. via social media channels, marketing campaigns, etc. The RICAIP project must establish itself as an international contact point. The participating universities could be promoted with the help of an advertising campaign at the universities. The possibility of an exchange to the respective partner country could be offered. Students are always looking for experience abroad. So you could combine research and abroad in RICAIP. With targeted communication on campus and a landing page on the website where all opportunities, such as accommodation, work and contact persons are listed, would simplify the access to this.

The setup of an appropriate social media campaign on Twitter and/or LinkedIn can be used to promote all these initiatives and at the same time to emphasise the international character of the RICAIP project. As social media users are more likely to interact with contents in their own language, we could use the onboard Twitter and/or LinkedIn translation tools to localise the posting texts. Media (short clips, pictures) with text messages should obviously be developed separately for each language, or be provided with captions. The Business (paid) toolkits of both social media platforms allow to select the

target audience (among others) by the Country they live in, which would allow us to make sure that the multilingual contents are distributed to the right user groups.

5.3 Synergies

As outlined in existing deliverables such as D7.1 “Dissemination strategy” and D7.2 “Communication strategy” and in this deliverable RICAIP as established a strong set of materials, rules, channels and other activities (events) to continuously expand its visibility and reach. With the increase in new nodes and partnerships (e.g. <https://ricaip.eu/mou-fraunhofer-iwu-vsbt-tuo/>) and an increase in synergistic projects, the dissemination and communication activities or existing strategies have to take these developments and relationships into account to utilize partnerships and synergistic projects not only in research but also in communication and dissemination to common target groups.



5.4 Monitoring activities & evaluation

As already highlighted in D7.1 “Dissemination strategy” and D7.2 “Communication strategy” RICAIP is monitoring and tracking different KPI regarding dissemination, communication activities, events, seminars and trainings. As discussed above RICAIP can also evaluate to some extent where its audience is located. RICAIP has to expand its European and international visibility and has to be able to track these efforts in line with data protection measure. As RICAIP expands these activities it has to use appropriate tools, as stated above (e.g. website analytics).

6 Conclusions

As detailed throughout the deliverable RICAIP as already established its communication and dissemination with an international focus. Materials, information and channels can be used internationally. International events organised by RICAIP highlight the importance of RICAIP but also attract new people or cooperation. New partnerships / nodes as well as synergistic project provide another upside to the international visibility of RICAIP and are well underway. Whereas RICAIP has established and continuously expands / take care of these activities, certain aspects are still lacking to attract researchers and industrial partners from other regions than Czech Republic and Germany. As

outlined before especially the topics education, services and results have to be processed and made available through the various channels of RICAIP, esp. the website in a target group appropriate way.

Annexes

Website – Current Layout

Testbed Brno

Brno testbed is located in an industrial hall within the Brno University of Technology campus and is being currently under the construction and is expected to start operation by the end of 2022.

- 2. An assembly center
- 3. An assembly line with collaborative robots
- 4. A teaching center
- 5. A production environment of aluminum
- 6. Robust machines
- 7. Laser applications
- 8. Training facilities



460 m²

About

The testbed is managed by the Central European Institute of Technology (CEITEC) and the activities of multiple teams within the EU are executed here. The testbed infrastructure will be suitable for research & development, teaching & training, effective demonstration and experimental production. It will be available to academic teams and industrial partners. During the start-up phase, the testbed will be used in many large-scale international projects in the field of Industry 4.0 and additive technologies. The Brno testbed is connected to the regional innovation ecosystem oriented toward machinery and production technologies.



Equipment

The hall is equipped with a precise optical localization system and provides ergonomic-based 3D localization for products and production line usage, simulation and operation, as well as a state-of-the-art automation network. Besides these production technologies, there is unique equipment for the development and testing of high-performance rotational drives (up to 250 kW power) for industrial and automotive applications and linear motor drives (up to 100 kW power).



Use Cases

The purpose of the testbed is to provide a training environment that is close to real industrial conditions. Many use-cases are considered:

- Data exchange in geographically distributed production systems
- Collaboration human-robot-machine and interfaces
- Combination of additive (3D printing) and subtractive (machining) processes
- Advanced diagnostics, fault prediction and fault mitigation for industrial drives, mechatronic systems and production machines, robot manipulators
- IoT, sensorization/actuators, sensors, networks
- High-performance and highly reliable rotational and linear drive systems in industrial and automotive applications

Testbed Prague

Part 1 Robotics and Flexible production:
The laboratory focuses on the automatic assembly, planning and virtualization of production - located on the ground floor 850 m².

- Automatic loading station
- Robotic cells for flexible production
- Multi-axis motion system - delta robot and conveyor
- Innovative materials
- Automatic warehouse with mobile robots
- Robotic 3D printing

to robotic line with:

- Brüel & Kjær
- Blue collaborative robotic workcells for assembly
- Specialized for machine vision
- Workpiece for geometry

Writing Centre - 130 m²
Grand Lab - 90 m²

Production technologies:
Laboratory focuses on production machines and lights - located in the basement 570 m².

- 3D laser cut
- Automatic/semi-automatic laser machine
- Paint and painting area
- High laboratory
- Paint and repair preparation area
- Setting area
- Industrial areas
- Optics
- Other related areas



1,840 m²



About

Prague testbed topic is from Brno of the CEITEC CTU used floor laboratory focuses on automatic planning and virtualization of production. The main part is focused on production machines & robots. That is where part research of CEITEC CTU and of Mechanical Engineering CTU takes place aims for unique industrial conditions. The testbed is used for research, development, teaching and light with industrial partners. It is also testing area for advanced and integrated industrial systems and processes for intelligent factories. Besides this, it is included in several international projects, mostly in the field of Industry 4.0. The unique combination of energy efficiency of test systems, ergonomics and productive science or data mining within the product life cycle.



Testbed Tour

Two parts of the Testbed - the part for robotics and production and the part for robotics and production technology, will be interconnected at the production coordination, data collection & processing to allow the creation of additional scenarios leading to production, for assembly and scenario design, automatic & manual production operations.



Research Focus

Flexible production systems	Human-machine-robot cooperation	Machines & mechatronic systems diagnostics	Advanced robotics
<ul style="list-style-type: none"> Autonomous/adaptive technologies: coordination Flexible transport systems AGVs, AMRs, mobile manipulators 	<ul style="list-style-type: none"> Precise 3D localization of robots, machines, tools, workcell Prediction of workcell responses VR/AR techniques, human-machine interfaces 	<ul style="list-style-type: none"> Vibro-diagnostics, AI based machine health estimation/prediction Accurate integrity, accurate emission analysis, sensors for diagnostics 	<ul style="list-style-type: none"> High-performance rotational and linear motor drives Full operational accuracy in production systems AI based control, optimization, fault detection and fault mitigation

Brno Testbed Gallery



Research Focus

Digital twin and digital shadow	Production processes and production machines	Distributed production
<ul style="list-style-type: none"> Processing of production data, process state analysis, production scenarios, manufacturing processes, metrology solutions, statistical process control 	<ul style="list-style-type: none"> Production machines Machining processes Laser technologies Active and hybrid processes Advanced robotics for industrial production 	<ul style="list-style-type: none"> Production as an interconnected ecosystem of production sites, logistics & customers, autonomous distributed decisions & production plans Production as a service - next stages of distributed production

Prague Testbed Gallery





The screenshot shows the RICAIP website layout. At the top, there is a navigation menu with links for About, Services, Research, Cooperation, News, and Language. Below the menu is a header section with logos for partner institutions: ZrMA, CEITEC BUT, and CEITEC CTU. The main content area is divided into several sections:

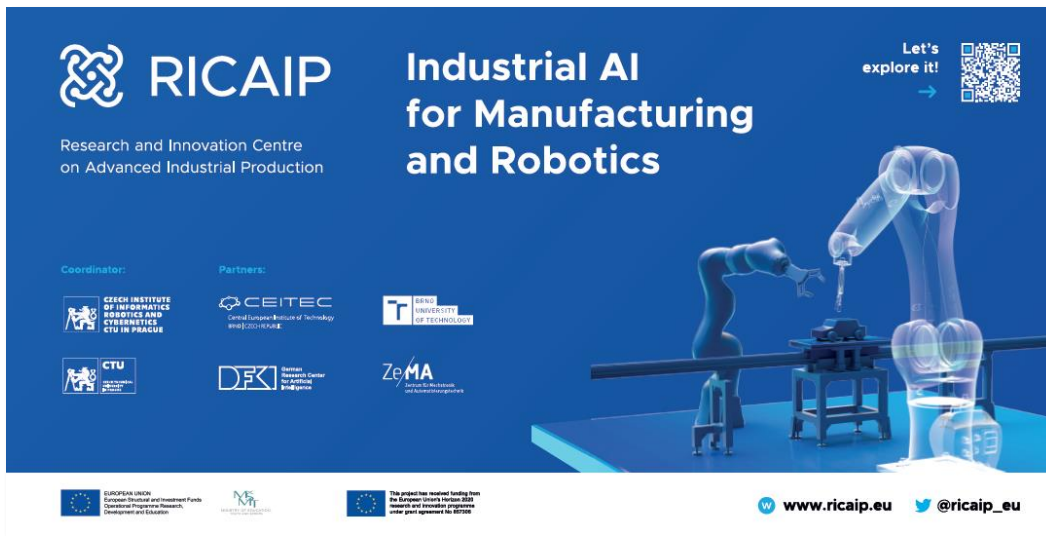
- Testbed Projects:** A row of three boxes highlighting Testbed Brno, Testbed Praha, and Testbed Banská Bystrica.
- News:** A section with several news articles, including:
 - Prof. Dr. Dr. h.c. mult. Wolfgang Wahlster
 - Prof. Dr. Dr. h.c. mult. Wolfgang Wahlster
 - Prof. Dr. Dr. h.c. mult. Wolfgang Wahlster
- Events:** A section listing upcoming events.
- Media:** A section featuring a video player and social media links.

At the bottom of the page, there is a footer with contact information, a map, and logos for partner organizations: CTU, BRNO UNIVERSITY OF TECHNOLOGY, CEITEC, DEKI, and ZeMA.

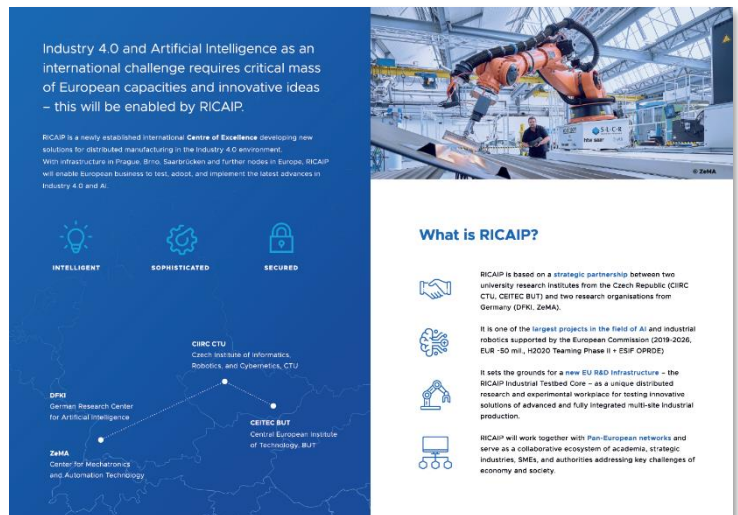
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Selected Marketing Materials



Banner for trade fairs



Flyer



Roll-up

Annual Reports - Printed



Promotional Material

