



# Fostering Opportunities Towards Slovak Excellence in Advanced Control for Smart Industries

## **D5.1. DEC (Dissemination, Exploitation and Communication) plan**

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Date by 28/02/2023

v.1



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## DELIVERABLE INFORMATION

<b>Work package</b>	WP5 – Project Management and DEC Activities
<b>Task</b>	T5.3: Exploitation; T5.4: Dissemination; T5.5: Communication
<b>Due date</b>	28/02/2023
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<b>Dissemination Level</b>	PUB

<b>Abstract</b>	<p>The project aims at increasing the research and academic prospects of Slovak University of Technology in Bratislava, Slovakia (STUBA) and at initiating the evolution of STUBA into a modern, reputed excellent institution that performs high-quality research in advanced automatic control, educates top-quality scholars and industrial practitioners, and is successful in active dissemination and exploitation of its research and innovation efforts. For this purpose, STUBA teams up with two renowned research groups in automatic control from RU Bochum, Germany (RUB) and Pisa University, Italy (UNIFI). The specific goals of the action are to reinforce the collaboration with the two research groups from Western Europe, to intensify research in advanced automatic control, to open up new collaboration channels through academic and industrial networking, to train excellent young/senior researchers and project managers, and to effectively disseminate and exploit the research results of STUBA. The unique features of the project are: - Adoption/amendment of internal research project-related</p>
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	rules and procedures and develop project management toolbox, - Research efforts aiming at the continued creation of high-quality research results and software tools, - Establishment of a series of guest scientific and academic lectures, - Exchanges and training of project managers and research (junior and senior) personnel, - Organisation of conferences and invited sessions, seminars with industry, and annual summer schools, - Preparation and implementation of a new PhD curriculum at STUBA, - Establishment of an academic-industrial research and innovation cluster.
<b>Keywords</b>	Control theory and optimization; Sensor networks, embedded systems, hardware platforms; Embedded systems; Monitoring and control systems; Embedded systems in automation and control.

### Document Revision History

Version	Date	Description of change	List of contributors

### Disclaimer

The FrontSeat project is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.



## PARTNERS

The consortium of FrontSeat consists of 3 partners, as presented here below.



**STUBA**

**Slovak University of Technology in Bratislava**



**RUB**

**Ruhr University Bochum**



**UNIFI**

**University of Pisa**



## ABBREVIATIONS

Abbreviation	Expanded Version
DEC plan	Dissemination, Exploitation, and Communication plan
EC	European Commission
STUBA	Slovak University of Technology in Bratislava
UNIPI	University of Pisa
RUB	Ruhr University Bochum



## EXECUTIVE SUMMARY

The dissemination, Exploitation, and Communication plan (D.5.1.) of the project “Fostering Opportunities Towards Slovak Excellence in Advanced Control for Smart Industries” (FrontSeat) shows the objectives, approach, and targets of the Dissemination, Exploitation, and Communication, as well as to demonstrate the strategy, to show already-reached results, and to present the visual identity of the project. FrontSeat started on the 1<sup>st</sup> of October 2022 and is planned to end on the 30<sup>th</sup> of September 2025.

This DEC plan is the first version out of 3, which will be submitted during the FrontSeat project. The first update is expected to be submitted at the end of September 2024 and the final version – by the 30<sup>th</sup> of September 2025.

DEC plan is an output of 3 tasks - T5.3: Exploitation; T5.4: Dissemination; T5.5: Communication of the WP5 Project Management and DEC Activities. Each partner is a leader of one task – RUB is the leader of T5.3. Exploitation, UNIPI is the leader of T5.4. Dissemination and STUBA is a leader of T5.5. Communication.

The document is divided into 3 main parts representing each activity (DEC).



# 1. WHAT IS DEC?

Before speaking about Dissemination, Exploitation and Communication of the project “FrontSeat” we need to understand what the differences between these 3 actions are. European Commission gives us a great illustration how to them all.

Through **dissemination**, research results are shared with the scientific community, commercial players, civil society, and policymakers. **Exploitation** – on the other hand, defines the usage of the project results for commercial purposes and shows how it can tackle societal problems (on the Dissemination and exploitation options see more - [https://rea.ec.europa.eu/horizon-europe-dissemination-and-exploitation\\_en](https://rea.ec.europa.eu/horizon-europe-dissemination-and-exploitation_en). And lastly, **Communication** is used to promote the project and the results, reaching the citizens, media, and stakeholders.

All three actions are clearly illustrated in the simplified definitions, which can be find on the EC website. ([https://ec.europa.eu/research/participants/docs/h2020-funding-guide/imgs/quick-guide\\_diss-expl\\_en.pdf](https://ec.europa.eu/research/participants/docs/h2020-funding-guide/imgs/quick-guide_diss-expl_en.pdf)). Not only the definitions are defined here, but also the platforms and tools that can be used.



Figure 1. Communication, Dissemination and Exploitation Why they all matter and what is the difference?



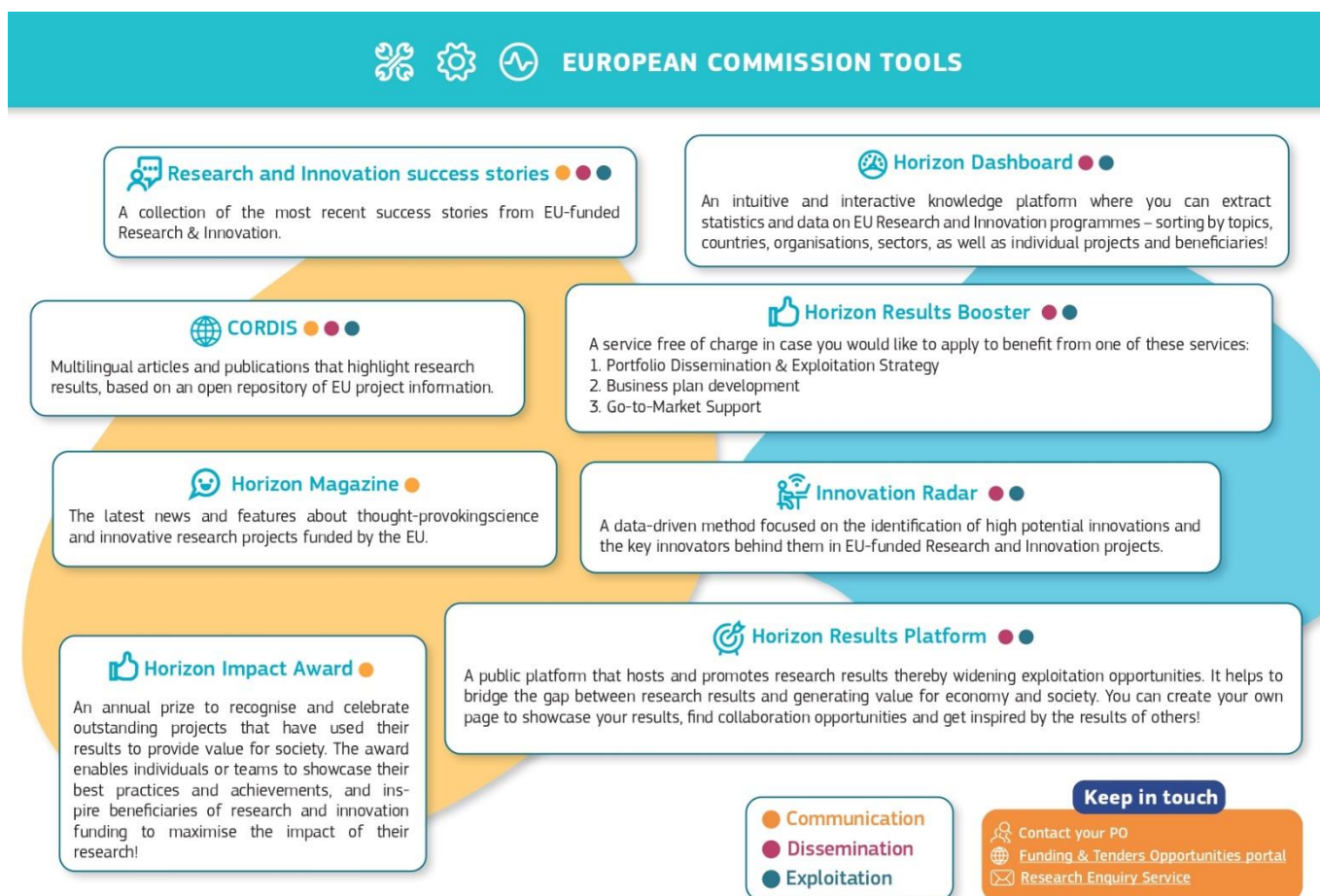


Figure 2. European Commission tools

While creating the DEC strategy FrontSeat paid attention to the guidelines and recommendations of the EC and tried to build the structure accordingly.

### Measures to maximize impact – Dissemination and exploitation of results

In the Table 1 you can see how the exploitation, dissemination and communication strategy of FrontSeat is built upon identification of target stakeholder groups:

**Table 1 exploitation, dissemination and communication strategy**

		Main target group
Exploitation	Capacity building	Administrative staff of other Slovak and Czech research institutions with long-term cooperations with STUBA, e.g., Comenius University in Bratislava, Technical University of Košice, Technical University of Žilina, T. Baťa University Zlín (CZ), Technical University of Pardubice

		(CZ), Czech Technical University in Prague (CZ)
	Scientific	Universities in Slovakia and Czechia (see above) Slovak (departments of) industrial companies in automation (Siemens, Schneider Electric, ProCS, Honeywell, etc.), automotive industry (KIA Motors Slovakia, Volkswagen Bratislava, PSA Peugeot Citroën Slovakia), and process industries (Slovnaft, Duslo Šaľa, Mondi SCP, Fortischem Nováky, Energochemica, etc.)
Dissemination	Capacity building	European Association of Research Managers and Administrators (EARMA) members
	Scientific	Research and research-coordination institutions, such as Slovak Academy of Sciences, Slovak Centre of Scientific and Technical Information (Slovak NCP for Horizon Europe projects), Slovak Research and Development Agency, Slovak Academic Information Agency EU industrial companies in automation, automotive industry, and process industries.
Communication	Project existence, rationale, expected results and impact and public interest	EU General public, undergraduate students

## 2. FRONTSEAT COMMUNICATION

The main objective of the task Communication is Strong social media presence through media/blog engagement (generalists and sectorial media, local and national TV, radio, newspapers and magazines); communication and promotional material (flyers, gadgets, promotional videos) to be diffused in the frame of public science communication events (e.g. the EU-funded Researches Night); 2 main communication campaigns at M6 and M34; establishing of a project web site acting as a sharing information platform for the consortium and beyond.

The goal of the project communication is to build up the project's identity, to inform, promote and communicate the results of FrontSeat. The communication of the project FrontSeat targets various groups of the audience, including the scientific audience, students, industrial partners, and the society. The considered communication channels aim to increase the engagement of the community in the long-term achieving the excellence of the research outcomes of the members of the consortium.

### 2.1. FrontSeat visual identity

First, and in our opinion, the most important goal of communication is a strong visual identity. To achieve that we created a logo and a colormap that would represent the project the best. Visual materials were designed to support the easy recognition of the project FrontSeat by various target groups of the audience.

#### FrontSeat logo

The FrontSeat logo is depicted in the dissemination, exploitation, and communication activities throughout the project's lifetime.

The logo merges two main ideas making it tailored especially for the project FrontSeat. Therefore, the logo has two layers. The first one is a clear monogram consisting of two letters: capital letters “F” and “S” corresponding to the project acronym “FrontSeat”. Simultaneously, the logo tries to carry out a deeper insight into the automation and process control community. Therefore, the second layer of the monogram simultaneously mimics the figure that all of us are familiar with – the closed-loop control performance.

Technically, the blue arrow represents the set-point variable – the increased step change of the reference in our excellence. The green arrow represents the controlled variable – the trajectory of our continuously increasing performance. The color map of the logo was chosen to express the project mission – the blue color depicts the horizon of goals worth following. Green color emphasizes that the path we use to follow our goals respects the environmentally and socially sustainable progress in our excellence.





Figure 3: Logo of the FrontSeat project

We have designed also a variant of the project FrontSeat logo in the form of a monogram. This variant of the logo is suitable as the profile picture for communication on social media channels.

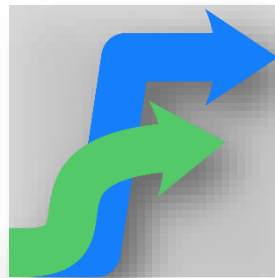


Figure 4: Monogram of the project FrontSeat – profile picture

We have designed the corresponding colormap and font style for the visual identity of the project FrontSeat.

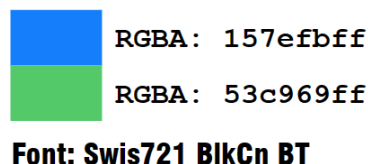


Figure 5: Colormap of the project FrontSeat visual materials

We have designed various variants of the project logo in both, bitmap and vector graphical formats, and the designed logo is freely available on the FrontSeat homepage:

<https://frontseat.stuba.sk/wp-content/uploads/2023/01/FrontSeatLogo.zip>

### FrontSeat QR codes

To increase the impact of the project communication, we have designed dedicated QR codes to provide easy access to the main communication channels.



Figure 6: QR code providing URL to the FrontSeat homepage



Figure 7: QR code providing URL to the FrontSeat Newsletter subscription system

## 2.2. FrontSeat templates

The project FrontSeat was and will be presented in various seminars, conferences, events, meetings, and other activities communicating the reached outcomes of the project. Therefore, we designed the set of templates fitting the FrontSeat visual identity to support the recognition of the project FrontSeat.

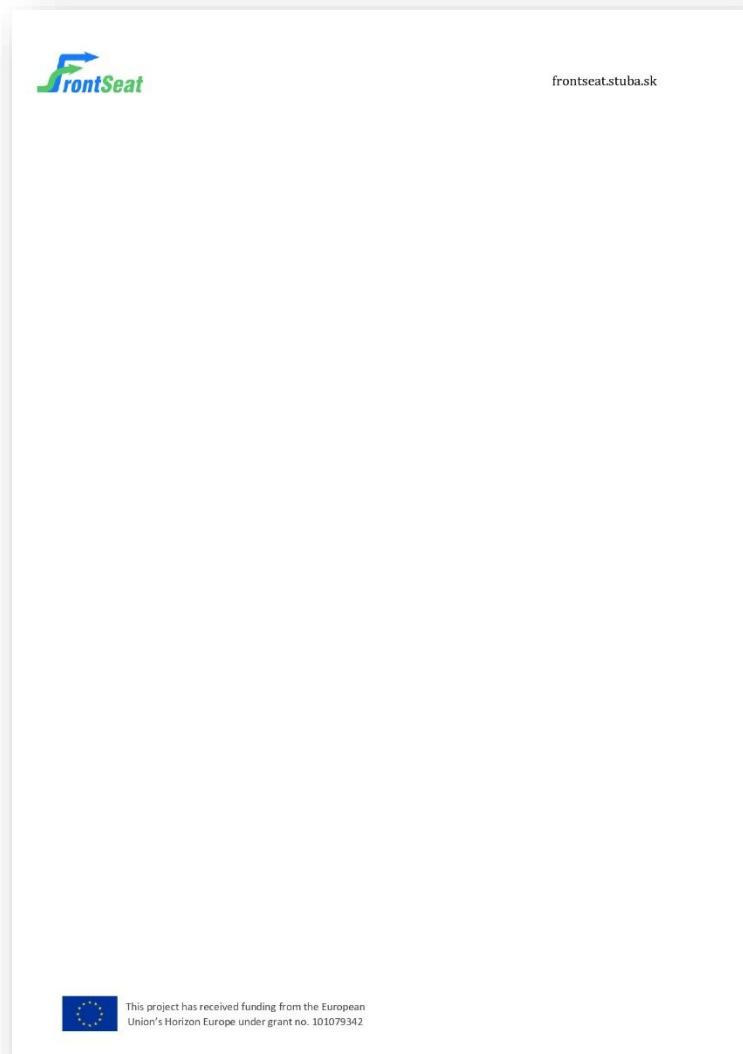


Figure 8: Template of the letterhead



Figure 9: Templates of the presentation



Fostering Opportunities Towards Slovak  
Excellence in Advanced Control for Smart  
Industries

**Dx.x. DELIVERABLE NAME**

\_\_\_\_\_

Date by xxx  
v.x



This project has received funding from the European  
Union's Horizon Europe under grant no. 101079342

Figure 10: Template of the deliverable





All material used for communication and dissemination purposes of FrontSeat, will demonstrate the EU emblem along with the statement that the project has received funding from the Horizon Europe:



This project has received funding from the European Union's Horizon Europe under grant no. 101079342

### FrontSeat roll-up

The project FrontSeat roll-up is under production to be later placed on many relevant in-person meetings, seminars, workshops, conferences, and other events for a wide audience.



Figure 11: Design of the FrontSeat roll-up.

### 2.3. FrontSeat online presence

We integrate many online activities utilizing various platforms to keep the wide audience informed about the up-to-date activities and outcomes of the project FrontSeat.

#### FrontSeat homepage

We have developed and launched an initial version of the homepage of the project FrontSeat. The developed website supports responsive design to be easily available for the wide range of devices handled by our audience. The website of project FrontSeat is available at the domain:

<http://front-seat.eu>

We selected this domain as it is very simple and easy to remember. Simultaneously, we have chosen this domain because we believe that the project FrontSeat meets some of the core pillars of the European Union that made the European Union attractive for the European countries – in our case, the borderless scientific research and education. In the project FrontSeat, the members of the consortium: the universities the Slovak University of Technology in Bratislava (STUBA, Slovakia), the Ruhr University Bochum (RUB, Germany), and the University of Pisa (UNIP, Italy), closely cooperate to meet the project goals. Therefore, the project homepage provides a platform to share ideas, goals, and reached outcomes with a wide audience.

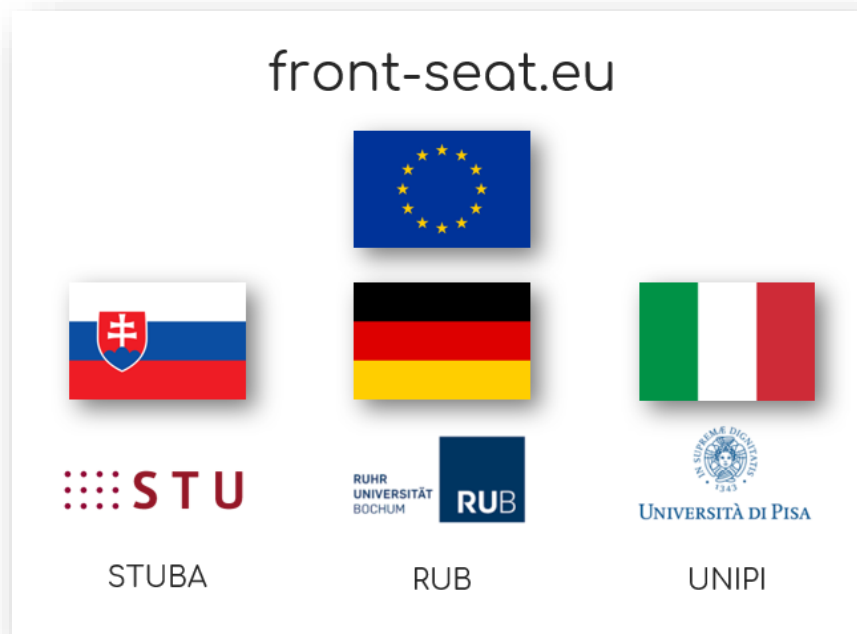


Figure 12: illustrative figure of the FrontSeat homepage link

Behind the scenes, there is a transmission into the server hosting the project homepage:

<https://frontseat.stuba.sk>

to make the administration of the project homepage more efficient. Therefore, if preferred, this link can be used equivalently to reach the project homepage.

The design of the initial version of the web is well-structured to provide all the necessary parts for worldwide visitors.

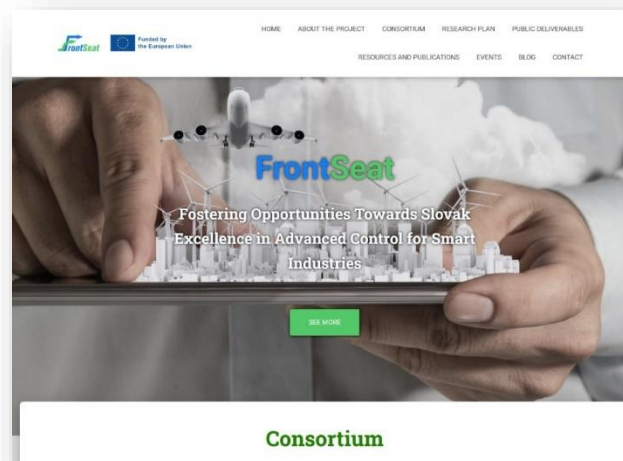


Figure 13: A sample view on the homepage of the project FrontSeat optimized for the desktop web-browser

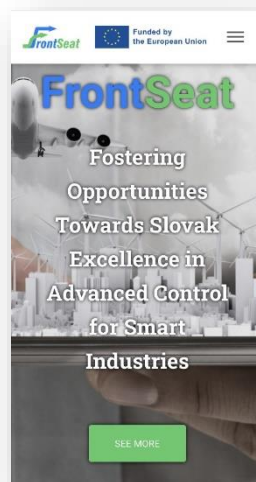


Figure 14: A sample view on the homepage of the project FrontSeat optimized for the mobile devices

The homepage provides information about the project at the glance (menu: About the project) and detailed information on the members of the consortium including information about the main coordinators for each member (menu: Consortium). The page publishes the expected research plan (<https://frontseat.stuba.sk/research-plan>) and makes freely available also the public deliverables (<https://frontseat.stuba.sk/public-deliverables>), together with the resources and publications (<https://frontseat.stuba.sk/resources-and-publications>), including the visual materials of the project FrontSeat communication.

The visitors find here also the information about upcoming and past events (menu: Events), where the website provides also pages dedicated to specific events, such as the series of the seminar “Research Seminar on Smart Cybernetics”:

<https://frontseat.stuba.sk/research-seminar-on-smart-cybernetics>

or the seminar “Academia Meets Industry”:

<https://frontseat.stuba.sk/academia-meets-industry>

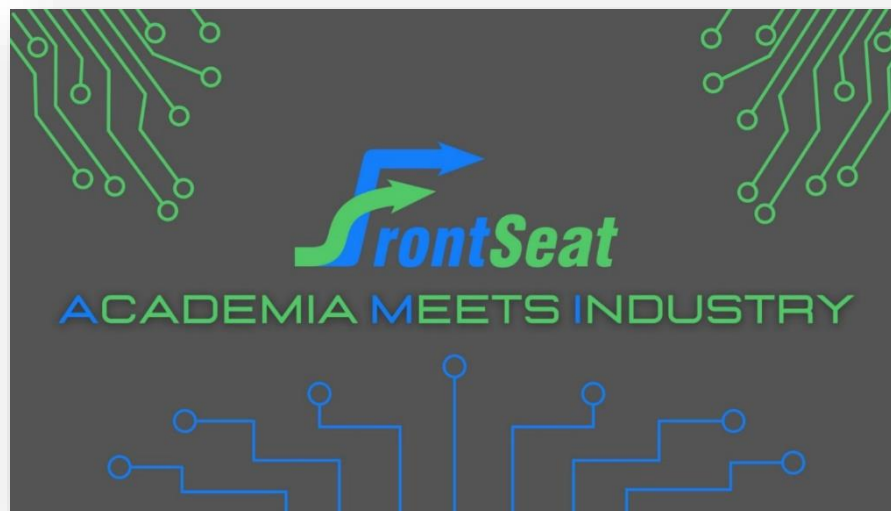


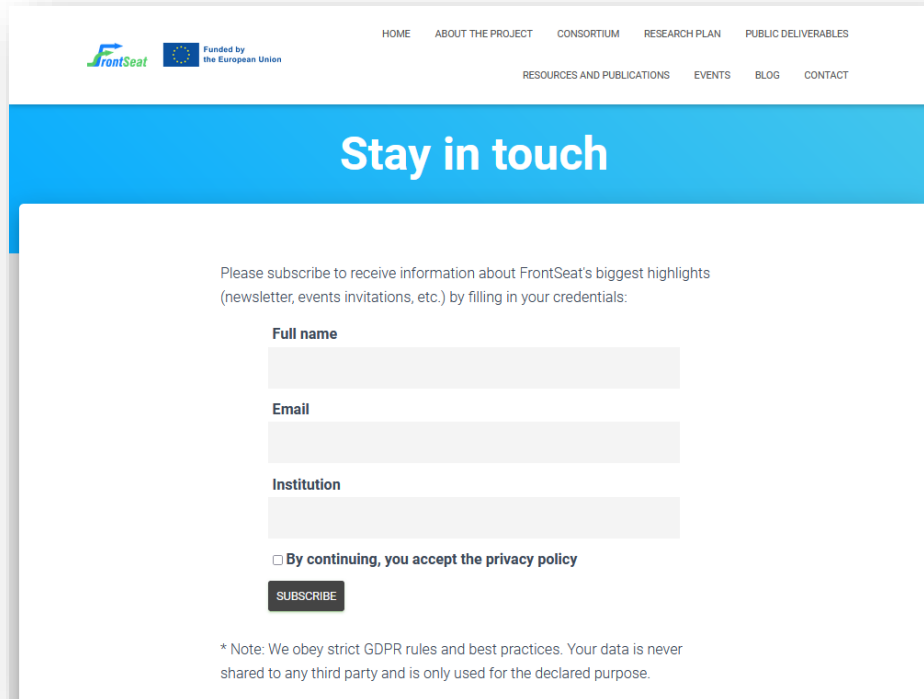
Figure 15: Communication of the FrontSeat seminar „Academia Meets Industry“

The page also provides a built-in platform to host the blogs related to the project FrontSeat:

<https://frontseat.stuba.sk/blog>

The website also integrates the subscribe system to share the project FrontSeat Newsletter. The system is built to respect the rules and the privacy of the subscribers. The new subscribers are welcome to register at:

<https://frontseat.stuba.sk/stay-in-touch>



The screenshot shows a web page titled "Stay in touch" with a blue header. Below the header, there is a form for newsletter subscription. The form includes fields for "Full name", "Email", and "Institution". Below these fields is a checkbox labeled "By continuing, you accept the privacy policy" and a "SUBSCRIBE" button. At the bottom of the form, there is a note: "\* Note: We obey strict GDPR rules and best practices. Your data is never shared to any third party and is only used for the declared purpose." The top navigation bar includes links: HOME, ABOUT THE PROJECT, CONSORTIUM, RESEARCH PLAN, PUBLIC DELIVERABLES, RESOURCES AND PUBLICATIONS, EVENTS, BLOG, and CONTACT. The FrontSeat logo and "Funded by the European Union" logo are also present in the top left corner.

Figure 16: Form to subscribe to the FrontSeat Newsletter

The page also provides much useful support information for the members of the consortium:

<https://frontseat.stuba.sk/support-for-consortium>

Finally, the page summarizes the contact information (<https://frontseat.stuba.sk/contact>). Please note, the page is still under construction and the upcoming updates may change the current structure.

### FrontSeat blog

The FrontSeat homepage also provides a built-in platform to host the blogs related to the project FrontSeat:

<https://frontseat.stuba.sk/blog>

Currently, the platform serves as the Newsboard to share brief information on many activities of the project FrontSeat. The blog posts are efficiently shared with a wide audience using the social media of the project FrontSeat and the members and partners of the consortium.

The blog posts share the outcomes in several categories, including the project communication (#communication), various scientific research seminars (#research seminars), and events either related to the project itself, or to the project communication to the wide audience as a part of other events (#events).

## FrontSeat social media

The project FrontSeat has strong communication on social media to reach the various target groups in a familiar and comfortable way for further interactions. The social media content is focused on scientists, young researchers, lecturers, students, industrial partners, and a wide audience. We use various hashtags to emphasize the impact of the project's social media activity on the wide audience, including:

#FrontSeat #HorizonEurope #STU #RUB #UNIPU

We have created a dedicated page on Facebook:

<https://www.facebook.com/frontseat.stuba>

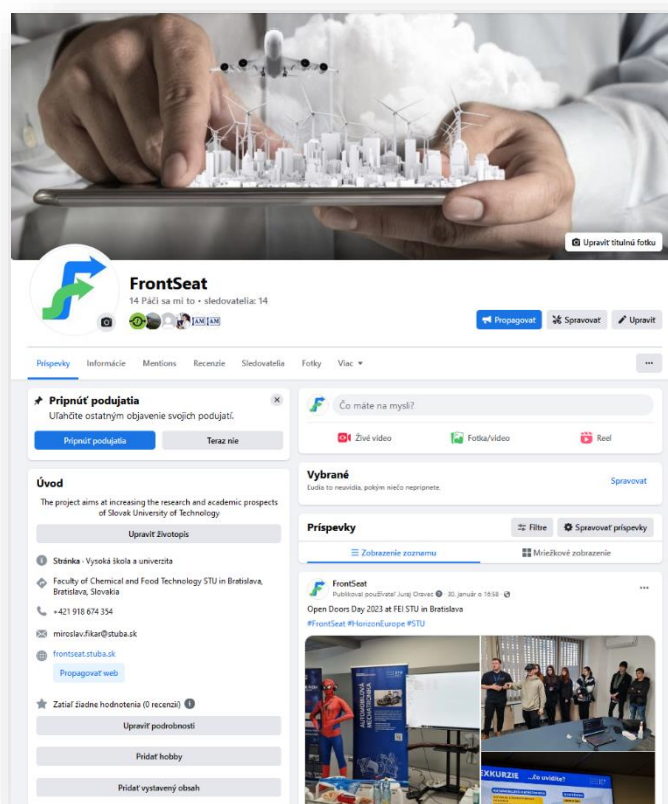


Figure 17: A sample view on the Facebook page of the project FrontSeat

The communication of the the project FrontSeat benefits also from the supported by the social media channels of the members and partners of the FrontSeat consortium including:

- STU - Slovenská technická univerzita v Bratislave: <https://www.facebook.com/univerzita>
- FCHPT - Fakulta chemickej a potravinárskej technológie STU: <https://www.facebook.com/FCHPTSTUBA>
- FEI STU BA: <https://www.facebook.com/FEI.STUBA>
- Strojnícka fakulta STU v Bratislave: <https://www.facebook.com/strojnicksafakultastuba>

- Materiálovotechnologická fakulta Trnava (MTF):  
<https://www.facebook.com/MTF.STU>
- Ústav informatizácie, automatizácie a matematiky:  
<https://www.facebook.com/fchpt.uiam>
- Institute of Information Engineering, Automation, and Mathematics:  
<https://www.facebook.com/uiam.sk>
- Ústav automobilovej mechatroniky FEI STU:  
<https://www.facebook.com/mechatronika.cool>
- Ústav robotiky a kybernetiky: <https://www.facebook.com/URKFEISTU>
- ÚAMAI SJF STU: <https://www.facebook.com/uamaisjf>

These social media channels also provide their own support communication of the project FrontSeat, mainly in the native language, to emphasize the synergic effects.

## 2.4. Early communication activities

Since its kick-off meeting, which took place on the 26-27<sup>th</sup> October, the project FrontSeat provides high communication activity. Following are some further realized FrontSeat communication activities:

- February 9, 2023  
FrontSeat presented at the Open Doors Day of FME STU by Anna Vargová (STUBA)
- February 7, 2023  
Presentations at the joint meeting at RUB by Martin Gulán and Ján Boldocký and members from Faculty of Electrical Engineering and Information Technology (STUBA)
- January 31 – February 3, 2023  
CHEMWEEK - Open Day at FCHPT STU:  
CHEMWEEK - Open Day at FCHPT STU, the member of the project FrontSeat consortium, primarily focused on high school students and a wide audience with an interest in science and technology.  
<https://www.facebook.com/mechatronika.cool/posts/pfbid0qRypkV5hjkrdaB16ZvBah7gYbVZh1sSaQWqnjb2qSozd61UkoSZcHRkzGCygUUtUI>
- January 29, 2023  
FrontSeat presented in aktuality.sk:  
The project FrontSeat has been presented in the article published in the public-oriented website “aktuality.sk” (in Slovak) within a rubric “Science, research – our chance”:  
<https://www.aktuality.sk/clanok/o9EiyxK/automatizacia-sluha-ci-pan>
- January 27, 2023  
Open Day at FEI STU:  
Open Day at FEI STU, a member of the project FrontSeat consortium, primarily focused on high school students and a wide audience with an interest in science and technology.
- January, 2023  
Interview with Martin Juhás (STUBA): „Digitization at your fingertips“ (in Slovak:



„Digitalizácia na dosah ruky“)

Published in the university magazine SPEKTRUM STU 2022/23, vol.03/04, p.40-45:

[https://www.stuba.sk/buxus/docs/stu/informacie\\_o/diani\\_na\\_stu/spektrum/2022-2023/03-04.pdf](https://www.stuba.sk/buxus/docs/stu/informacie_o/diani_na_stu/spektrum/2022-2023/03-04.pdf)

- December, 2022

FrontSeat in the podcast:

The project FrontSeat was briefly presented in the new part of the podcast series: “A Sense of Industry” (in Slovak: “Zmysel pre priemysel”) produced by ATP JOURNAL:

<https://youtu.be/ps18Nbj23vg>

The scope of the podcast was: “The Education and Labor Market”. As a part of his talk, Prof. Kvasnica presented also the project FrontSeat.

- December 22, 2022

Popular Science Lecture by Radoslav Paulen:

Dr. Radoslav Paulen, the associate professor in the Department of Information Engineering and Process Control, participated in the 4th conference of Slovak scientists – I Live Science Live 2022. Within the conference, he presented a popular science lecture “My research abroad or the way there and back”

- December 15, 2022

FrontSeat disseminated at EIT Manufacturing Info Day in Bratislava by Martin Juhás and Martin Gulán (STUBA)

- November 25, 2022

Research Talk by Radoslav Paulen:

Dr. Radoslav Paulen gave a talk at the International Online Seminar on Interval Methods in Control Engineering, see <https://www.interval-methods.de/seminars>. The seminar was organized jointly by Prof. Andreas Rauh (Carl von Ossietzky Universität Oldenburg, Germany), Prof. Tarek Raïssi (Conservatoire National des Arts et Métiers, Paris, France), and Dr. Zhenhua Wang (Harbin Institute of Technology, Harbin, P.R. of China). Dr. Paulen presented his research regarding optimization methods and parameter estimation. The full talk is available on YouTube, see <https://www.youtube.com/watch?v=hyyj7FvmesI>.

- November 14, 2022

Guest Lecture from the Industry:

A guest lecture from industry was held as part of the course “Modeling in Process Industry” for students in the 1st year of the IAM engineering study. The guest lecturers were FCHPT graduates, Ing. Réka Lőrincz (Eng. study at CHI) and Ing. Milan Horňák (Eng. studies at IAM) from Slovnaft, a.s. The topic of the lecture was the work at Slovnaft, a.s., examples of digitization, simulation models, and examples from practice.

- Kick-off Project Meeting

October 27-28, 2022

The FrontSeat project (Fostering Opportunities Towards Slovak Excellence in Advanced Control for Smart Industries), which received support under the Horizon Europe program, has completed its Kick-off Project Meeting. It is an important milestone within the project, in which STU acts as a coordinator.

[https://www.stuba.sk/sk/diani-na-stu/prehľad-aktualit/projekt-frontseat-ma-za-sebou-kick-off-project-meeting.html?page\\_id=15762](https://www.stuba.sk/sk/diani-na-stu/prehľad-aktualit/projekt-frontseat-ma-za-sebou-kick-off-project-meeting.html?page_id=15762)





Published also in the university magazine SPEKTRUM STU 2022/23, vol.03/04, p.7:  
[https://www.stuba.sk/buxus/docs/stu/informacie\\_o/diani\\_na\\_stu/spektrum/2022-2023/03-04.pdf](https://www.stuba.sk/buxus/docs/stu/informacie_o/diani_na_stu/spektrum/2022-2023/03-04.pdf)

- Partner Universities communicated the project as well. UNIPI included the project into their internal newsletter. (Figure 18)



Figure 18: UNIPI internal newsletter (September/October 2022)



## 2.5. KPI's of communication

A Communication plan of FrontSeat is created such that the project will approach all the relevant audiences. In order to ensure the as-big-as-possible impact of these activities, a website of the project will be created and updated on a weekly basis. It will inform about the project activities and upcoming events. Also, a database of the subscribers to the project news will be managed at the website so the target audience can be timely informed about the possibility of participation at any relevant event.

Flyers/posters presenting the progress of the project will also be prepared and distributed/displayed at the project events, premises of the partner institutions, and at the attended conferences.

Table 2 summarises the public communication in a measurable form and provides minimum expected numbers of the realised activities. These reflect the rich experience of the project's research-administrative collective with the management of various communication channels.

**Table 2: Key communication indicators over the project implementation.**

Indicator	Minimum expected quantity
Unique hits on the project website	2,000
Newsletter subscribers (distributions)	300 (6×2,000)
Followers/likes on social-media pages	1,500
Published blogs (hits on blogs)	40 (50×40)
Articles/interviews in public-oriented media	6
Open Days presentations	12

## 3. DISSEMINATION

### 3.1. Dissemination objective

Dissemination activities are intended to maximise the diffusion of the project results, contributing to the project SO3 "To enhance STUBA role in the knowledge triangle research-education-innovation".

In details the objectives of the dissemination activities are:

- Increase visibility of the partner institutions, with special refers to STUBA
- Support young researcher's career development;
- Support exploitation of project scientific results;
- Increase the international reputation of partner institutions.

### 3.2. Dissemination strategy



The FrontSeat dissemination strategy is based upon a set of activities contributing to the achievements of the objectives described above, as detailed.

- Publication of scientific papers on peer-reviewed journals. The publications will be open access. The project will offer the opportunity to train researchers to the use of Open Science tools such as open peer review platforms and to become familiar with services offered by Open Research Europe and other open repositories. The tentative list of targeted journals is reported in Table 3.
- Presentations in international scientific conferences (Task 3.1). Conferences participation allows for establishing collaborations, presenting results and discussing new scientific approaches. The list of FrontSeat targeted conferences is presented in Table 4, together with a short presentation of the targeted events and their relevance (taken from D3.1);
- Participation in relevant local, national and EU-level events. These opportunities will be mapped as soon as they materialize, and the participation will be decided on a single-case basis by the project General Assembly;
- Contributing to the Project newsletter. A specific section of the project newsletter is dedicated to FrontSeat scientific achievements and other dissemination activities;
- The guest lectures (Task 3.2) and the summer schools (Task 3.4) are opportunities to disseminate cutting-edge approaches to early-stage researchers. The Guest lectures plan for the first project year is reported in Table 5 (updated from D3.1). The planning of the 2023 (M12) summer school is ongoing.

Young researchers will be commitment in all activities, in order to complement their training with horizontal competences on scientific writing and presentation, networking, open science practices.

**Table 3: Tentative list of relevant journals for scientific publications**

#	Journal	Scope	Audience
1	Automatica	All areas in systems and control, with applications in communications, computers, biology, energy and economics.	Academics in automatic control systems
2	IEEE Transactions on Automatic Control	Theory, design, and applications of control engineering	Academics in automatic control systems
3	Journal of Process Control	Application of control theory, operations research, computer science and engineering principles to the solution of process control problems.	Academics and practitioners in process control systems
4	Control Engineering Practice	Direct application of control theory and its supporting tools in all possible areas of automation	Academics and practitioners in automatic control systems
5	IEEE Transactions on Control	State of the art in the design,	Academics and

	Systems Technology	realization, and operation of control systems	practitioners in automatic control systems
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Automatica and IEEE Transactions on Automatic Control (lines 1 and 2 of Table 3) are well-known to be the publication venues with highest impact for all new methodological and theoretical results. They cover all fields of advanced control systems, and publications in those journals can increase the visibility of young and experienced researchers significantly.

As the review process is very selective and these journals enforced rigid page restrictions, submissions to Automatica and IEEE Transactions on Automatic Control will be carefully reserved to the manuscripts with strong theoretical content. More application oriented research studies can find a suitable publication venue in the following journals, and the choice among them could be based on the specific field of application, as detailed.

Journal of Process Control (line 3 of Table 3) is the most relevant publication venue in the field of automatic process control systems. Its focus is on the application of new advanced control methods in chemical processing and manufacturing industries, as well as energy, biomedical, and pharmaceutical systems.

Control Engineering Practice (line 4 of Table 3) is devoted to publications aimed to meet the needs of industrial practitioners and application-oriented academics. It is clearly focused is on application papers, in particular to those studies that report significant contributions to the application of advanced control techniques. Compared to Journal of Process Control, this journal has a wider range of application fields, including mechatronics, robotics, autonomous vehicles.

IEEE Transactions on Control Systems Technology (line 5 of Table 3) is focused on advancing the state of the art in the design, realization, and operation of control systems. Submissions to this journal should report novel solutions of control and automatic problems in specific application areas, and therefore combine methodological rigor, practical relevance, and technological significance.

**Table 4: Planned conference participation**

#	Conference	Project Year	Sponsors/organizers	Location	Dates	Participation and goals
1	Process Control Conference 2023	1	IEEE	Štrbské Pleso, Slovak Republic	June 6-9, 2023	G. Pannocchia plenary speaker STUBA Organizer Joint publications (planned) Invited session organized by FrontSeat partners (planned)
2	European Control Conference 2023	1	EUCA	Bucharest, Romania	June 13-16, 2023	Publications by the partners (submitted)
3	IFAC World Congress 2023	1	IFAC	Yokohama, Japan	July 9-14, 2023	Joint publications (submitted)

4	Conference on Decision and Control 2023	2	IEEE	Marina Bay Sands, Singapore	Dec. 13-15, 2023	Joint publications (planned)
5	Adchem 2024	2	IFAC	Toronto, Canada	July 14-17, 2023	Joint publications (planned) Invited session organized by FrontSeat partners (planned) G. Pannocchia plenary speaker M. Mönnigmann International Program Chair
6	European Control Conference 2024	2	EUCA	Stockholm, Sweden	June 25-28, 2024	Joint publications (planned)
7	Conference on Decision and Control 2024	3	IEEE	Milan, Italy	Dec. 17-19, 2024	Joint publications (planned)
8	Dycops 2025	3	IFAC	TBD	TBD	Joint publications (planned)
9	Process Control Conference 2025	3	IEEE	Štrbské Pleso, Slovak Republic	June, 2025	Invited session organized by FrontSeat partners (planned)

The **International Conference on Process Control** (PC, lines 1 and 9 in Table 4) is a biannual international conference organized by STUBA and sponsored by the Institute of Electrical and Electronics Engineers (IEEE). PC brings together experts in control from academia and industry and, thus, is an ideal platform for increasing the visibility of STUBA as well as of the partners. Equally importantly, the PC conferences provide ideal opportunities for fostering joint work with industrial partners that may serve as project partners in future Horizon Europe projects. FrontSeat will contribute to PC in 2023 and in 2025.

The **IFAC World Congress** (line 3 in Table 4), which takes place every three years, is the flagship conference of IFAC, the international umbrella organization for all national organizations of control professionals in the fields of Aerospace, Mechanical, Process, and Chemical Engineering. Since the World Congress is the most important and largest event of IFAC, it provides a perfect opportunity for the FrontSeat team to keep in touch with the newest developments in their professional fields, and to present FrontSeat as a seed for future consortia in the field of automatic control.

The **European Control Conference** (ECC, lines 2 and 6 in Table 4) is an annual conference organized by the European Control Association (EUCA), which is sponsored by both worldwide professional organizations in the field of automatic control, the IEEE and IFAC. ECC is the largest European conference in the field and therefore provides similar opportunities as PC but with a wider scope of topics and a broader audience and participants. FrontSeat aims to contribute to ECC 2023 and ECC 2024.

Finally, the **IFAC Symposium on Advanced Control of Chemical Processes** (Adchem, line 5 in Table 4), the IFAC Symposium on Dynamics and Control of Process Systems (Dycops, line 8 in Table 4), and the IEEE Conference on Decision and Control (lines 4 and 7 in Table 4) are specialized conferences in the particular research fields of the partners. These specialized conferences provide an opportunity to both keep up with the current developments in the field, and to present the state of the art achieved in FrontSeat to specialists from all over the world.

**Table 5: Planned guest lectures**

Date	Place	Lecturer	Affiliation	Title
2022-10-18	STUBA	Fatima Matamoros	National Center for Scientific Research/U Lorraine, Nancy, France	Modeling and Optimization of Low-Pressure Gas-Carburizing Furnaces
2022-10-25	RUB + stream	Mikael Kurula	Abo Akademi University, Turku, Finland	Explicit Model Predictive Control for PDEs
2022-11-25	stream	Radoslav Paulen	STUBA	Convexification Techniques for Stationary/Dynamic Global Optimization and Set-Based Computing
2023-01-11	RUB + stream	Martin Gulan	STUBA	AutomationShield: an open-source hardware and software initiative for control engineering education
2023-03-09	STUBA + stream	Gabriele Pannocchia	UNIFI	Systems identification algorithms and software tools for the application of MPC in process control systems
2023-02-24	STUBA + stream	Martin Mönnigmann	RUB	TBA
2023-03-xx	UNIFI + stream	Radoslav Paulen	STUBA	TBA
2023-03-xx	UNIFI + stream	Rastislav Fáber	STUBA	TBA
2023-03-10	STUBA + stream	Raphael Dyrska	RUB	TBA
2023-04-03	STUBA + stream	Riccardo Bacci di Capaci	UNIFI	TBA
2023-04-14	UNIFI + stream	Lenka Galčíková	STUBA	TBA
2023-06-07	STUBA + stream	Gabriele Pannocchia	UNIFI	Control and Optimization in the Presence of Uncertainties: Theory and Practice



2023-06-09	STUBA + stream	Stefan Krämer	Bayer AG	AI or Process Control – Process Understanding and Good Dynamic Modelling Remains Key
2023-09-06	RUB + stream	Rudolf Pribiš	STUBA	TBA
2023-09-07	RUB + stream	Michal Balla	STUBA	TBA
2023-09-15	STUBA + stream	Marco Vaccari	UNIP	TBA
2023-09-22	STUBA + stream	Sebastian Leonow	RUB	TBA

## 4. EXPLOITATION

### 4.2. Exploitation plan

As mandatory part of every Horizon Europe project, the Exploitation plan has to ensure that the results generated during the project are exploited to its most.

As FrontSeat is in the field of “Twinning” projects, STUBA as widening country should exploit a main part of the project results to meet the goals of this funding program. Besides STUBA, also the partners RUB and UNIP are expected to profit from the large number of results expected from FrontSeat. While these are all project members directly affected by the actions taken during the three-year funding period, a large amount of the project results is expected to be exploited also outside the consortium. These target groups include the Slovak students and society, Slovak and Czech universities, Slovak R&D institutions as well as Slovak industry and policy maker, European R&I institutions, and the scientific community and the industry in general. Figure 1 visualizes the different target groups.



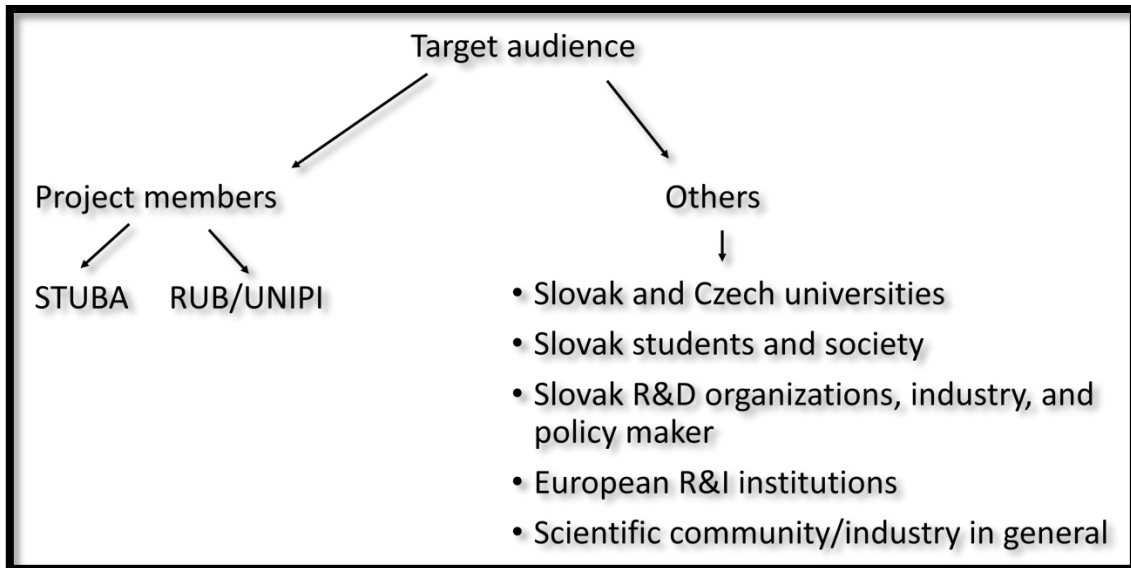


Figure 18: Target groups of Exploitation strategy.

To establish an adequate Exploitation plan, it is important to recall the main results expected from the project. According to the proposal, following results must be achieved within the three years:

- Upgrade of STUBA research management
- Development of a project management toolbox
- Establishment of a consortium for EU projects based on trainings
- Establishment of a new PhD curriculum at STUBA
- At least 2 jointly submitted Horizon Europe proposals, at least 1 approved for financing
- Creation of a virtual institute of cybernetics
- Expansion of STUBA's network
- Initiation of an academic-industrial research and innovation cluster
- Joint scientific and publicly available articles, conference contributions, and seminars
- Theoretical advances achieved within FrontSeat implemented as extension to MPT

In the following, we describe the exploitation expected from the different target groups corresponding to above results.

### Exploitation plan for STUBA

As the central partner in this project, a wide range of results is expected to be exploited by STUBA. One of the main benefits from the results should be the possibility to successfully apply for EU projects and other international fundings by exploiting new management structures and with the help of dedicated project officers. The management toolbox should be used for a successful project phase and will help in meeting all standards stated in EU projects.

Besides the application for new funding projects, the gained experience as well as the updated administration should be used to also reach out to other Slovak universities and even other



widening countries. In this way, STUBA will establish a position as mentor or supervisor and will be seen as a leading example for a successful project management.

Since several groups within STUBA are related to the field of cybernetics, one of the main exploitations should be to intensify the STUBA-internal collaboration within the virtual institute of cybernetics to act as strong community in public. In this way, STUBA will increase its attractiveness to both, academic and industrial partners. Similar effects are expected from the academic-industrial cluster. The inputs from this consortium as well as from the partners RUB and UNIPI should be used to expand to new research topics and widen the scope of STUBA's expertise. Using the extended network and the participation in conferences and trainings, STUBA is expected to increase the number of industrial collaborations drastically.

With the new PhD curriculum, STUBA will have the possibility to attract more students and researchers and to intensify the international exchange. Furthermore, the quality of PhD students in both, hard and soft skills, are expected to increase by exploiting the new curriculum.

Besides these internal benefits, the results of FrontSeat should be used to extend and intensify collaboration with RUB and UNIPI during the following EU projects. Furthermore, the new functionalities of MPT should be used to gain visibility and offer collaborations with users and developers.

### Exploitation plan for RUB and UNIPI

Besides STUBA, also RUB and UNIPI are expected to exploit the project results. With STUBA as strengthened partner, RUB and UNIPI should use experiences gained from FrontSeat and jointly apply for future funding programs.

After finishing the project, they are able to revise their own administrative structures based on the educational material used for trainings and job shadowing. Furthermore, RUB and UNIPI are expected to use the training material for future projects and internal trainings.

In a close exchange, the project partners should expand their internationality by sending PhD students to and receiving PhD students from STUBA within the newly established PhD curriculum.

A huge exploitation potential rises from the expected contribution of RUB and UNIPI to MPT. They are expected to gain scientific visibility, leading to new contacts in both, academia and industry. The project partners should reach out to those new contacts and strengthen their international networks. Furthermore, both, RUB and UNIPI, will also benefit from the early access to new functionalities of MPT exploitable for their own research.

### Exploitation plan for others

In the following, several examples will be given on how the expected results of FrontSeat should be exploited after the funding period by target groups outside the project consortium.

### Slovak research, innovation, and public

Using the gained visibility and the built network, it is expected to reinforce the "Slovak Control Network" and to attract international students and industrial partners from all over the



world. A strong presentation of the quality performed by Slovak academia and industry in the field of Cybernetics and Automatic Control should be used to strengthen the position within world-wide competitions and to contribute to an overall improvement of the Slovak economy. Furthermore, the results of FrontSeat are expected to be used as a positive case study for new innovation projects in various fields.

### **Slovak and Czech universities**

Especially universities are expected to benefit from the results of FrontSeat. Other Slovak, but also Czech universities, since there already exists a close collaboration between these countries, should build up similar management structures based on the training material and the reports generated during the project. They are also highly encouraged to participate to and benefit from the established academic-industrial cluster, and to cooperate with STUBA as a strong partner.

### **European R&I institutions**

On a European level, it is expected to exploit the advanced automatic control solutions for meeting the goals regarding sustainable growth, digital society, and circular economy within European institutions. These will be the central topics for the following decades, and advanced automatic control solutions have shown enormous potential for optimizing existing industrial processes and reducing, e.g., damages and failures.

Besides a direct exploitation of the consortia of, e.g., the industrial-academic cluster, the results of FrontSeat should be used as a blueprint for future proposals of countries in similar positions, as e.g. Czech Republic, Poland, and Hungary.

### **Scientific community and industry**

The most direct exploitation of the project results for academia and industry will be the use of the new functionalities within the open-source MPT and of the recent research results presented in articles and at conferences. A more collaborative exploitation is expected from using the academic-industrial cluster as platform for the close exchange between academia and industry to identify new technological challenges.

### **Activities related to the Exploitation plan**

For a successful exploitation, it is crucial to constantly monitor, review, and adjust the plan throughout the course of the project. It needs to be checked if, e.g., the Communication and Dissemination strategies prepare everything as needed for the exploitation, or if internal or external changes are affecting the exploitation plan. The updated and the final version of the DEC plan will take the insights of the monitoring into account. Also, stakeholders (e.g. from industry) may be included into the review process to adapt the DEC plan suitable for an exploitation whenever necessary. Furthermore, the definition of a consortium will be important to take care of documents and give help during DEC activities. To monitor the suitability of the exploitation plan, the measures as stated in the proposal should be considered, e.g., the number of granted EU or other international projects, the increase in scientific cooperations and conference contributions, the increase in the number of PhD students and students in general, and the number of downloads of MPT and citations of publications.

As required by the EU, all efforts for exploitation will apply up to 4 years after the end of action, and the key results are expected to be exploited within the first year after the project ends. In case of any problems with the exploitation, the Horizon Results Booster should be used as support.

## 5. CONCLUSIONS

The DEC plan presented consist of 3 main parts – Communication, Dissemination and Exploitation. In each part the objectives and strategies were presented. The most developed part of the plan is Communication, as it is seen the most to the public and the wider audience.

There will be 2 more updates of the DEC plan, where the results of the presented strategies will be discussed.

