



DELIVERABLE D1.1 – COLOSSE

Internationalization Strategy

Project Acronym	COLOSSE
Project Full Name	Central European Platform for Plasma-Enabled Surface Engineering
Grant Agreement No.	101158464
Call	HORIZON-WIDERA-2023-ACCESS-04
Type of action	HORIZON Coordination and Support Actions
Project starting date	1 April 2024
Project duration	36 months
Deliverable number	D1.1
Deliverable name	COLOSSE Internationalization Strategy
Work Package	WPI
Type	R – Document, report
Main author	Zuzana Lisoňová
Lead beneficiary	Comenius University Bratislava
Dissemination Level	PU – Public
Due Date	March 2025
Date	31.03.2025
Version	1.0



Funded by
the European Union

Funded by the European Union under Grant Agreement No. 101158464. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

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Abbreviations

CEPLANT – R&D centre for plasma and nanotechnology surface modifications

CU – Comenius University Bratislava

ERDF – European Regional Development Fund

EU – European Union

FAS – Faculty of Applied Sciences

FP – Framework programme

HE – Horizon Europe

HR – Human resources

KPIs – Key performance indicators

MU – Masaryk University

NTIS – New Technologies for the Information Society – European centre of excellence

OTM-R – Open, transparent and merit-based recruitment

R&D – Research and development

R&I – Research and innovation

UWB – University of West Bohemia

WP – Work package

Executive summary

COLOSSE connects Czech and Slovak research facilities in the area of plasma-enabled surface engineering at Masaryk University, Comenius University, and University of West Bohemia. The three research centres of COLOSSE have been supported by ERDF investment in several periods since 2010. They have been shaping and supporting their regional ecosystems over a decade, creating networks of interactions that facilitate knowledge transfer and exploitation of surface engineering technologies. They have also developed international connections – which, however, have led only to isolated cases of involvement in international R&I projects.

The goal of COLOSSE is to increase the participation of Czech and Slovak plasma-enabled surface engineering R&I centres in Horizon Europe and future EU Framework Programmes for R&I to achieve upstream synergy of ERDF funding with the Horizon Europe. Project has 4 specific objectives:

1. Strengthen the connections of COLOSSE centres to world-leading R&I centres.
2. Build conditions that will enable internationalization of human resources.
3. Develop skill set that enables interdisciplinary and intersectoral collaboration and facilitates creativity.
4. Enable sustainability of the COLOSSE partnership through synergic use ERDF and HE/FP resources.

To reinforce the existing links with strategic partners COLOSSE project presents Internationalization Strategy. Following document describes current internationalization at the COLOSSE centres and objectives and actions to be taken to improve the internationalization. Close R&I interactions with strategic partners is enhanced through mobility of researchers in all career stages to foster research collaborations. Academic collaborations are to be fostered for example by involvement in PhD programs, organisation of joint workshops and creation of plasma enabled surface engineering community in form of COST Action. Involvement of private sector partners in international collaborations especially in form of project applications is to be enforced. Dedicated action to improve skills of COLOSSE research staff complements the action plan.

Key words

Plasma-Enabled Surface Engineering
Internationalization
Mobility
R&I cooperation

1 Introduction

To reinforce the existing links with strategic partners COLOSSE project presents Internationalization Strategy. Following document describes current internationalization at the COLOSSE centres and objectives and actions to be taken to improve the internationalization.

1.1. Current state of internationalization

Each of the COLOSSE consortium members (Masaryk University, Comenius University, and University of West Bohemia) has already developed international connections with counterparts at the leading institutions represented for example in number of associated partners to COLOSSE project. Mapping of the most frequent publication partners, project partners, and frequent targets of inward and outward mobility confirmed fragmented different state of internationalization in all COLOSSE partners (see table 1).

Table 1: Overview of publication partners, project partners, and frequent targets of inward and outward mobility

	<i>Publication partners</i>	<i>Project partners</i>	<i>Frequent targets of inward and outward mobility</i>
	Masaryk University		
1	Eindhoven University of Technology Netherlands	Comenius University Bratislava Slovakia	Laboratory LAPLACE France
2	Maastricht University Netherlands	University of Belgrade, Institute for Philosophy and Social Theory Serbia	University of Gottingen Germany
3	RWTH Aachen University Germany	Montanuniversitaet Leoben Austria	TU Wien Austria
4	Comenius University Bratislava Slovakia	Slovak University of Technology Slovakia	RWTH Aachen University Germany
5	Ecole Polytechnique France	University of Ljubljana Slovenia	Montanuniversitaet Leoben Austria

	Comenius University		
1	Linköping University Sweden	European Space Agency, The Netherlands	Linköping University Sweden
2	University of Southampton United Kingdom	Institute of Materials and Machine Mechanics in Bratislava Slovak Academy of Sciences Slovakia	University in Limerick Ireland
3	Erich Schmid Institute in Leoben Austria	Institute of Material Research in Košice Slovak Academy of Sciences Slovakia	University in Sumy Ukraine
4	University in Limerick Ireland	Institute of Electrical Engineering in Bratislava Slovak Academy of Sciences Slovakia	
5	Uzhhorod National University in Ukraine		
	University of West Bohemia		
1	The University of Texas at Arlington USA	Comenius University Bratislava Slovakia	University of Sevilla Spain
2	Fraunhofer Institute for Electron Beam and Plasma Technology Germany	University of Sevilla Spain	Kiel University Germany
3	Montanuniversitaet Leoben	Fraunhofer Institute for Electron Beam and Plasma Technology Germany	TU Wien Austria
4	Ulm University Germany	Kiel University Germany	Montanuniversitaet Leoben Austria
5	Brescia University USA	Chosun University South Korea	

Current cooperations and partnerships have often been based in some cases long-term institutional cooperations but also on personal connections and/ or ad hoc opportunities that have led only to isolated cases of involvement especially in international R&I projects. To overcome these COLOSSE consortium strategically proceeded with the offer and initiation of the opportunity to establish cooperation

with selected group of strategic partners: **Linköpings Universitet (Sweden), Montanuniversität Leoben (Austria) and Rheinisch-Westfälische Technische Hochschule Aachen (Germany)**. During interactions with these ongoing research tasks and interest in COLOSSE offer were discussed and first actions were agreed. Other research partners were also identified and approached (for example from European Alliances) that serve as reserve list for future internationalization.

The last finding from current state was that missing stakeholder in internationalization matrix is the private sector. Especially for future collaborative HE/FP applications the industry or SMEs are important actors to be included as partners for both actions and for impact. Therefore, each institutions' network of companies has also added value and increases attractiveness of COLOSSE offer for international collaborations.

1.2. Methodology

Internationalization Strategy design was based on active communication with potential partners as well as desk analysis on mapping of other opportunities for networking. Project leaders of COLOSSE centres organized visits of the pre-identified partners based in Linköping and Uppsala (Sweden), Gent (Belgium), Leoben (Austria), Kiel (Germany) during October – December 2024. During these visits the opportunities for collaboration were introduced, mutual R&I priorities discussed, and a round of research visits was agreed. In parallel, most frequent publication partners, project partners, and frequent targets of inward and outward mobility were identified. Memberships in European Alliances and forms of possible networking within these was also discussed. The WP leader drafted the COLOSSE International Strategy, that was discussed among project members in dedicated work package sessions as well as Steering Committee meeting (Plzeň, March 2025).

Action plan represents type of activities that will also exploit and streamline the substance and topics identified in other COLOSSE outputs like organized staff exchanges with world leading R&I counterparts, training program but also Technology Offer, that highlights the skills and infrastructure available at COLOSSE centres. Therefore, strategy will be evaluated during COLOSSE project lifetime (expected end in March 2027) in connection to D3.1. COLOSSE R&I priorities and funding opportunities (M24 / March 2026) and finally planned deliverable D1.2. Report on strategic partnerships (M36 / March 2027).

2 Internationalization Strategy

2.1. Vision and goals

Cooperation with strategic and other international partners the COLOSSE consortium aim to achieve following vision:

COLOSSE consortium is the attractive partner and acquired excellent reputation in international research plasma enabled surface engineering community and private sector.

Cooperation with strategic partners and enhanced reputation results 50% of publications emerges from international collaboration.

COLOSSE researchers acquire advanced specialist and methodological knowledge and international and intercultural skills; they are ideally equipped to act responsibly in globally interconnected worlds of work and living environments and are making a fundamental contribution to the EU's competitiveness.

Specific goals to achieve above presented vision are:

Goal 1: Strengthened cooperation with strategic partners in plasma-enabled surface engineering community

Goal 2: Improved reputation in international plasma-enabled surface engineering community and private sector

Goal 3: Internationalization activities integrated in HR policies

Impact of the COLOSSE project and its internationalization strategy is to increase number of publications coming from joint international cooperation with strategic partners. Mutually beneficial cooperation for excellent research is a key principle and therefore the consortium designed actions addressed to strategic partners, private sector partners as well as its own team member responsible for cultivation of these partnerships.

2.2. Action plan

Goal 1: Strengthened cooperation with strategic partners in plasma-enabled surface engineering community

Action 1.1.: Promote mobility and exchanges with strategic partners

Description: Organisation of secondments for COLOSSE researchers (esp. PhDs. and post-docs) to strategic partners with aim to strengthen the research cooperation and preparation of future academic outputs.

Indicator: Number of individual secondments

Timeline: April 2025 – March 2027 (24 months)

Action 1.2.: Involve strategic partners in joint actions

Description: Invitations of strategic partners representatives to events organized by COLOSSE partners (workshops, invited lectures, summer schools, conferences, PhD. retreat etc.). Organisation and hosting of joint academic and training events (e.g. trainings on selected hard skills, workshops).

Indicator: Number of events

Timeline: April 2025 – March 2027 (24 months)

Action 1.3.: Involve strategic partners in academic programs

Description: Invitations of strategic partners representatives to participate on international advisory boards in PhD programs and other academic programs (e.g. mentoring schemes) and selection committees.

Indicator: Number of participations

Timeline: April 2025 – March 2027 (24 months)

Goal 2: Improved reputation in international plasma-enabled surface engineering community and private sector

Action 2.1.: Participate and coordinate the representation in high-profile events

Description: Regular identification of up-coming high-profile academic events/conferences. Planning and coordination of participation; especially using the secondments to plan future joint presentations papers. Proposing conference sections/panels in cooperation with strategic partners. Exploitation of non-academic type of events to explore international connections outside academia.

Indicator: Number of participations on events

Timeline: April 2025 – March 2027 (24 months)

Action 2.2.: Increase involvement of Czech and Slovak surface engineering research centres in Horizon Europe / EU Framework Programmes for R&I and other foreign schemes

Description: Preparation of joint applications in FP/HP with participation of strategic partners and other Czech and Slovak partners from academic sector.

Indicator: Number of submitted applications

Timeline: 2 years after COLOSSE completion

Action 2.3.: Establish plasma-enabled surface engineering community via COST Action

Description: Exploitation of strategic partnerships and list of other relevant partners identified in analysis for organizing research community in form of new COST Action. Preparation and submission of COST Action application.

Indicator: Submitted COST Action application

Timeline: 1 year after COLOSSE completion

Action 2.4.: Involve private sector partners in international cooperation

Description: Inclusion of business partners in FP/HP project applications (in position of consortium members or associated partners); exploitation of existing RMA support to simply SMEs participation in FP/HP applications.

Indicator: No of submitted applications with private sector participation

Timeline: 1 year after COLOSSE completion

Goal 3: Internationalization activities integrated in HR policies

Action 3.1.: Trainings on Internationalization for future groups leaders

Description: Focus on skills of future research groups leader how to plan and coordinate international collaborations in the team context. Trainings based on a) senior peers experience on how to cultivate existing collaborations for the team, be ready to take positions/tasks to return "Favors" to partners (committee/ advisory boards memberships, recommending other team members and cultivate their readiness to take active approach to such opportunities; b) tips and practices how to look out for new opportunities (esp. engaging private sector in R&I collaborative projects; finding impact partners). Trainings to be followed by mentoring sessions.

Indicator: Number of trainings, number of mentoring sessions

Timeline: April 2025 – March 2027 (24 months)

Action 3.2.: Trainings for international networking skills

Description: Focus on networking skills to build personal international profile. Trainings concentrated on planning participation on academic events, engagement with international stakeholders and use of academic social media

platforms for networking.

Indicator: Number of participants (R1 -R4)

Timeline: April 2025 – March 2027 (24 months)

3 Annexes

Annex 1: List of strategic partners

Linköpings Universitet (Sweden)

Montanuniversität Leoben (Austria)

Rheinisch-Westfälische Technische Hochschule Aachen (Germany)