

The Mobility Credit Transfer and Accumulation System (MCTS): SEA-EU Alliance framework for reframing academic mobility in Europe

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Aim: Mobility of students and staff in Europe is a cornerstone of the European Higher Education Area (EHEA) and one of the strategic priorities of the European Universities Initiative (EUI). However, while the European Credit Transfer and Accumulation System (ECTS) has successfully supported the recognition of formal academic learning, it does not fully capture the growing diversity of contemporary mobility experiences of different duration and type. Moreover, recognition remains a challenge for students at universities and is often lacking a comprehensive backbone recognition system even for academic and especially for administrative and technical staff.

Methods: To address this systemic gap, the European University of the Seas (SEA-EU) Alliance established a dedicated Task Force to develop the Mobility Credit Transfer and Accumulation System (MCTS), a complementary framework designed to recognise, quantify, accumulate, and incentivise diverse forms of mobility among students, teachers, and administrative and technical staff. This paper presents the framework, strategic benefits, conceptual design, scoring methodology and implementation potential of MCTS.

Results: The framework uses workload hours as a common denominator compatible with ECTS while applying greater granularity that enables recognition of smaller mobility units to include most of the internationalisation activities. It is a flexible framework that enables both differentiation of intensity of specific mobility activities by introducing the mobility specific weighting factors, similar to ECTS flexibility, but also enables recognition of extra mobility efforts for individual participants by introducing additional workload hours component to better reflect real engagement. MCTS may improve inclusivity, broaden participation, strengthen staff recognition, and provide more realistic institutional mobility analytics. Key challenges include standardised metrics, interoperability with institutional systems, stakeholder acceptance, and robust quality-assurance mechanisms that preserve academic standards and prevent credit inflation.

Conclusions: MCTS offers a scalable model for modernising mobility recognition across European university alliances and potentially across the wider European higher education landscape.

Keywords: mobility; Erasmus+; SEA-EU; European Higher Education Area (EHEA); academic recognition; internationalisation of higher education

Introduction

Credit mobility has become one of the defining dimensions of the European Higher Education Area (EHEA). Through the Bologna Process and the Erasmus+ programme, temporary study and traineeship periods abroad integrated into students' home degree programmes (1) have become a key instrument for promoting academic excellence, employability, intercultural understanding, and European integration (2, 3). As for staff mobility, high-quality and impactful mobility activities should be designed to support the professional development of staff while addressing their specific learning and personal development requirements (1). This strategic agenda has intensified through the European Universities Initiative (EUI), where transnational alliances are expected to create integrated educational ecosystems with ambitious mobility participation targets (4). In this context, mobility is no longer an optional enrichment activity but a structural component of this most-advanced cooperation model for higher education.

However, while mobility opportunities have diversified substantially, systems for recognising and measuring mobility have evolved more slowly. For students, the European Credit Transfer and Accumulation System (ECTS) (5, 6) remains highly effective for recognising formal curricular learning (5, 6). Yet, in case of teaching staff and especially administrative and technical staff, it was originally not designed to capture many emerging mobility formats such as short-term exchanges, virtual participation (e.g. webinars), blended programmes, staff development visits, or micro-mobility experiences (5, 6). To address this mismatch, the SEA-EU Alliance agreed to develop the comprehensive Mobility Credit Transfer and Accumulation System (MCTS) and appointed the SEA-EU Alliance Task Force to propose the operationalisation of the concept and its piloting.

MCTS: Seamless mobility evolving recognition framework

Institutional recognition practices within the EHEA for students are originally anchored in the principle of automatic recognition, whereby credits earned during approved mobility are fully recognised by the home institution based on learning outcomes and workload, in accordance with the Lisbon Recognition Convention (2) and the ECTS Users' Guide (5, 6). Building on this well-established framework, the newly proposed MCTS system extends ECTS principles to a broader range of mobility activities by introducing structured weighting and aggregation mechanisms, while preserving institutional responsibility for credit allocation and quality assurance (5). By embedding MCTS within existing ECTS-based recognition rules, higher education institutions can expand recognition practices without undermining academic standards or institutional trust (2).

On the other hand, recognition of staff engagement remained less systematically developed. Generally, staff mobility is supported through a complementary and coherent set of professional development and internationalisation activities that build competencies and foster inter-institutional and transnational collaboration. Evidence identifies mobility-based trainings as key mechanisms for strengthening collaborative capacity and professional networks (6).

Additionally, cultural and professional exchange activities within mobility contribute to institutional identity-building and the development of intercultural competences, aligning with European policy priorities that embed internationalisation into everyday professional practice beyond physical mobility alone (2). The mobility may further be reinforced through visibility and recognition mechanisms, including potential criteria for promotion and/or reward (e.g. based on number of accumulated MCTS credits per academic year) at home institution enabled by the implemented MCTS system. In return, this may facilitate staff engagement and motivation for professional development and career progression processes via increased participation in high quality and impactful mobility activities (5).

As academic mobility increasingly incorporates modular learning experiences, digital formats, interdisciplinary activities, and lifelong learning pathways, recognition frameworks must adapt accordingly. Failure to do so risks undervaluing these emerging forms of participation, despite their important contribution to broader policy goals related to inclusion, accessibility, and sustainability (7).

Beyond its technical design, MCTS therefore raises a broader strategic question for the EHEA: whether recognition systems originally developed for twentieth-century academic mobility remain adequate for the contemporary academic ecosystem of twenty-first-century universities. For this reason, the proposed MCTS framework should be piloted and iteratively refined prior to wider-scale adoption.

Strategic benefits

The implementation of the MCTS brings several strategic advantages to higher education institutions and European University Alliances, which were challenged by the European Commission to reach the 50% mobility objective. Its added value can be observed at the macro, meso, and micro levels, aligning with European policy recommendations that call for improved recognition of mobility outcomes, strengthened monitoring practices, increased inclusiveness, and greater valorisation of learning mobility (3, 8). At the macro level, MCTS could support the development of European mobility frameworks by improving the recognition, monitoring, and comparability of diverse mobility experiences (9), thereby strengthening evidence-based policymaking and benchmarking across institutions and alliances. At the meso (institutional) level, MCTS may enhance mobility management by providing a more comprehensive overview of mobility activities, including short-term, blended, and virtual formats. It can support transparent recognition practices, institutional reporting, and alignment with broader priorities related to internationalisation, inclusion, professional development, and digitalisation (10, 11).

At the micro level, MCTS offers benefits for all mobility participants. For students, it widens access by recognising a broader range of mobility formats. For staff, it provides a structured mechanism for recognising mobility-related learning and professional development. Its greatest added value may lie in addressing the persistent under-recognition of administrative and technical staff mobility by making training, job shadowing, staff weeks, and other professional mobility activities more visible, measurable, and transfer-

able, thereby strengthening their contribution to professional development and career progression (12, 13).

Overall, MCTS supports key European policy priorities related to recognition, inclusion, mobility monitoring, digital credentials, and the promotion of mobility as a valued component of academic and professional life (7, 9). In essence, MCTS combines three interconnected functions. As a mobility analytics tool, it facilitates the generation of institution-level evidence on mobility participation, trends, and patterns. As a recognition framework, it provides a common methodology for quantifying and acknowledging mobility effort and engagement across diverse mobility formats. As an incentive mechanism, it seeks to promote participation by increasing the visibility and perceived value of mobility activities among students, academic staff, and administrative and technical personnel. Through the integration of these functions, MCTS aims to strengthen the strategic management, recognition, and valorisation of mobility within higher education institutions.

It promotes improved inclusivity by recognising a broader spectrum of mobility formats, including short-term, blended, and virtual activities, thereby widening access for participants who may face barriers to long-term physical mobility. It also supports increased participation, as transparent and consistent recognition mechanisms incentivise students and staff to engage more actively in mobility opportunities. Furthermore, MCTS enhances staff valorisation by making teaching, training, and international engagement more visible and measurable within institutional frameworks.

The system contributes to enhanced analytics, enabling institutions to capture and analyse a more comprehensive picture of their mobility ecosystems, including non-traditional and hybrid forms of mobility. Finally, it facilitates alliance benchmarking, as shared metrics and recognition standards allow partner institutions to compare performance, align strategies, and strengthen collaboration within European university alliances and beyond.

Conceptual design of MCTS

Why is a complementary and comprehensive framework needed?

In recent years, mobility in higher education has undergone substantial diversification. Alongside traditional long-term physical mobility, students increasingly participate in short-term mobility schemes, Blended Intensive Programmes (BIPs), summer and winter schools, research placements, virtual exchanges, and other forms of technology-enhanced international learning. This evolution reflects policy developments within the European Education Area and Erasmus+ that seek to broaden participation and promote more flexible, accessible, and inclusive mobility opportunities (2, 6, 10-12).

Similarly, academic, administrative, and technical staff engage in a growing range of internationalisation activities, including staff training, job shadowing, staff weeks, conference participation, professional development programmes, technical training visits, and virtual collaboration initiatives. Contemporary European higher education policy increasingly recognises such activities as important instruments for strengthening institutional

capacity, fostering organisational learning, enhancing skills development, and promoting international cooperation (1, 4, 7, 14, 15).

Despite their increasing prevalence and recognised contribution to student learning, professional development, intercultural competence, institutional internationalisation, and organisational innovation, many of these activities continue to be only partially recognised within institutional frameworks. Existing monitoring and reporting systems remain predominantly focused on conventional mobility indicators, such as participant numbers and mobility duration, thereby providing limited capacity to capture the diversity, intensity, workload, and impact associated with emerging mobility formats (1, 14, 16, 17). Consequently, significant educational, professional, and institutional benefits generated through mobility activities may remain insufficiently documented, compared, and recognised within institutional performance frameworks and strategic planning processes.

The limitations of current recognition mechanisms have been identified in European projects and policy analyses. Findings from the REALISE project demonstrated that higher education institutions frequently lack systematic approaches for evaluating and recognising the outcomes of staff mobility and for evidencing their contribution to institutional internationalisation strategies, organisational development, and quality enhancement. Moreover, the project highlighted substantial inconsistencies across European institutions regarding the implementation, assessment, and recognition of staff mobility activities, limiting the capacity to demonstrate their full value and impact (18).

Comparable conclusions emerged from the Teach with Erasmus+ project, which identified a lack of common methodologies for assessing the quality, impact, and outcomes of teaching mobility. The project emphasised that, while mobility opportunities have expanded significantly across Europe, mechanisms for evaluating and recognising the resulting benefits have not developed at an equivalent pace, thereby constraining the strategic use of mobility as a tool for institutional transformation and academic development (10).

This challenge has become increasingly pronounced with the emergence of short-term, blended, and virtual mobility formats. The Council Recommendation on learning mobility explicitly calls for improved recognition frameworks capable of accommodating diverse forms of mobility and reducing barriers to participation (14). Likewise, the European Strategy for Universities and the European Education Area policy agenda stress the importance of recognising a broader range of international learning and professional-development experiences, including digitally enabled and blended forms of engagement, as essential components of the future European higher education landscape (4, 7, 19). Nevertheless, a common and transferable framework for quantifying and comparing the relative contribution of different mobility activities remains largely absent. As a result, valuable forms of international engagement may remain under-recognised, staff contributions may be insufficiently acknowledged, and institutional planning may lack comprehensive evidence regarding the full scope and impact of mobility-related activities (10, 16, 18).

The newly proposed MCTS framework was conceived as a complementary solution, which may help in addressing this gap. Rather than relying exclusively on participation counts or mobility duration, MCTS seeks to provide a structured and transferable framework for

quantifying and recognising the effort, engagement, and value associated with diverse mobility activities across students, academic staff, and administrative and technical personnel. In doing so, the system aims to enhance the visibility, comparability, and institutional recognition of mobility activities irrespective of their format, duration, or mode of delivery.

Main principles of MCTS

The framework of MCTS is based on six principles we are testing in the piloting phase to demonstrate the applicability: comprehensiveness, compatibility, higher sensitivity, workload logic, cross-target group use, and inclusivity.

Comprehensiveness of MCTS

MCTS was proposed to aim at all three groups in academia: students, teaching staff, as well as administrative and technical staff.

Erasmus+ mobility activities encompass a wide range of structured learning, teaching, and training formats designed to support the internationalisation of higher education and professional development across different target groups (20). Beyond these activities, MCTS also captures the ones not eligible under Erasmus+ schemes. The crucial contribution of MCTS lies in the fact that it is fully aligned with the Erasmus+ Programme Guide (1) and applicable to all three target groups relevant for mobility activities: students, teaching, and administrative and technical staff. Therefore, it is important to map which mobility categories or activity types are relevant for which of the three groups.

Students

For students, a semester (long-term) exchange refers to a study period and/or traineeship abroad, typically lasting from 2 to 12 months at any cycle, during which learners follow courses at a host institution with full recognition of ECTS credits upon return and/or carry out a traineeship in a company, research institute, laboratory, organization, or another relevant professional setting. Short-term exchange introduces blended format of shorter physical mobility (e.g. in Erasmus+ 5-30 days) combined with virtual (online) component. A clear example of this blended mobility is represented by Blended Intensive Programmes (BIPs) (6), which integrate short-term physical mobility with a compulsory virtual component to foster collaborative, transnational learning. Summer schools and conferences provide thematic, short-duration learning experiences and opportunities for knowledge exchange and networking, while virtual exchange and virtual mobility enable participation in international learning activities entirely online, complementing or substituting physical mobility.

For students, MCTS complements ECTS. Smaller measurement units allow recognition of short or hybrid activities that would otherwise remain below conventional credit thresholds. Like ECTS, workload hours serve as the common denominator. Recognition becomes

more accessible to participants unable to undertake long-term physical mobility due to financial, family, employment, or health constraints (5, 6).

Teaching staff

For teaching staff, mobility includes teaching visits (teaching assignments abroad aimed at delivering lectures and exchanging pedagogical practices), training opportunities at a partner higher education institution, enterprise, or other relevant workplace, research stays (periods dedicated to collaborative research and academic networking), and conference participation as a form of dissemination and professional exchange. BIP lecturing is an example of a teaching assignment which involves contributing to the blended intensive programmes, while broader staff mobility (under Erasmus+ Key Action 1) encompasses participation in staff training weeks, BIPs as participant, but also observation periods abroad to enhance competencies, foster cooperation, and share good practices (21). Virtual exchange/mobility could include all the above-mentioned examples of international exposure, designed to fit the online format.

Administrative and technical staff

For administrative and technical staff, mobility focuses primarily on professional and personal development, skills development and institutional capacity building. Training visits and job shadowing offer practical learning experience in which participants observe colleagues in a host organisation to acquire knowledge, exchange practices, and build partnerships. It may also include structured courses, seminars, or workshops aimed at improving skills and organisational practices, e.g. staff weeks or BIPs focused on a specific topic facilitating skills development, international collaboration, and the dissemination of innovative practices across education systems (21). Similar to academic staff mobility, virtual exchange/mobility of administrative and technical staff can encompass all the above-mentioned forms of international exposure, adapted for delivery in an online format.

Table 1 lists the key mobility activities for all three target groups at European higher education institutions.

Table 1. Overview of mobility activities grouped by target groups in Higher Education Institutions (HEIs)

Academia target group	Mobility activity
Students	• Long-term mobility (study and traineeship) • Short-term blended mobility (study and traineeship) • Blended Intensive Programmes (BIP) • Summer schools • Conferences • Virtual exchange/mobility
Teachers	• Teaching and training mobility • Research mobility (staff mobility for training) • Blended Intensive Programmes (BIP) (teaching/lecturing) • Staff weeks • Conferences • Virtual exchange/mobility
Administrative and technical staff	• Staff mobility for training (training visits/job shadowing) • Staff weeks • Blended Intensive Programmes (BIP) (attending/sharing practices) • Virtual exchange/mobility

Scoring methodology

Workload hours and compatibility with ECTS

Under the current framework, we proposed the MCTS credit value to be a rounded number and based on 10 times greater the value of ECTS (10 MCTS = 1 ECTS).

Since 1 ECTS corresponds to approximately 25 – 30 workload hours, 1 MCTS corresponds to approximately 2.5 – 3 workload hours. Therefore, the sensitivity of the MCTS system is 10 times greater than ECTS. This means that even a short mobility activity of only 2.5 – 3 workload hours may already be captured with 1 MCTS credit.

This higher sensitivity enables recognition of shorter mobility experiences that would otherwise remain invisible in traditional systems as follows:

1 ECTS $\approx$ 10 MCTS,

1 ECTS $\approx$ 25 – 30 workload hours,

1 MCTS $\approx$ 2.5 – 3 workload hours.

Baseline calculations generally follow an 8-hour day and 5-day week principle for relevant activities.

MCTS system needs to avoid over-quantification. On the other hand, it has to include flexibility to recognize a) additional workload affecting individual participants with extra workload within the activity and b) different levels of intensity for specific mobility activities affecting all participants, by using different weighting factors.

The MCTS system also differentiates in-person mobility vs. virtual exchange/mobility. Virtual Exchange is defined as technology-enabled people-to-people educational programming, facilitated and sustained over a period of time (22). While virtual mobility is valuable for intercultural dialogue and skills development, it does not fully replicate the benefits of physical mobility (1). Hence, initial proposal for the piloting phase within the SEA-EU Alliance was that virtual exchange/mobility would be accounted for 80% of physical (in person) mobility reflecting a set of discussions across committees of the SEA-EU Alliance with the conclusion that physical and virtual mobilities should be slightly differentiated. This approach is consistent with the growing body of evidence that recognises virtual mobility as an effective mechanism for developing intercultural competence, digital collaboration skills, international awareness, and access to internationalisation opportunities for students and staff who may not be able to participate in physical mobility programmes (23). It should be noted that these values are preliminary and subject to refinement during the piloting phase. Evidence-informed values will be defined later to improve the credibility of the model.

Additional workload recognition

Mobility value frequently extends beyond attendance alone. The flexibility of the model enables recognition of specific efforts of every individual participating in the mobility, which may (or may not) be rewarded by additional workload hours with pre-defined limits (see examples in [Table 1](#), [Table 2](#), [Table 3](#), [Table 4](#) and [Table 5](#))

Table 2. Mobility Credit Transfer and Accumulation System (MCTS) overall credits calculation

Group / Category	Students / Teaching staff / Administrative and technical staff	Mobility activity‡
Duration	Baseline hours (months, weeks, days)	
Additional workload (max 90%)*	Physical workload (max 50% of baseline hours)	
	Virtual workload (max 50% of hours, weighted to max 40% of baseline hours)	
Total workload	Total hours	
Ponder	Weighting factor	
MCTS credits	Total number	
ECTS (derived from MCTS)†	Total number	
ECTS final	Rounded number	

*Additional workload is limited to a maximum of 90% of baseline hours (additional physical workload may be up to 50% of baseline workload hours, virtual workload may be up to 40% of baseline workload hours since it is proposed to be 80% of physical workload).

†ECTS credits for students are calculated from MCTS credits using the rounded values to 0.5 or 1.0 ECTS credits).

‡Mobility activity reflects the activity type, which refers to the type of mobility, e.g. long-term study mobility (semester exchange), BIP, staff week, conference, training visit, etc.

Accordingly, MCTS includes supplementary workload components such as:

- preparation tasks,
- virtual collaboration,
- language preparation,
- presentation delivery,
- reporting obligations,
- dissemination activities,
- cultural immersion tasks.

The current framework proposal allows for a maximum of double the baseline workload hours for individuals with significant extra efforts put into a specific mobility activity, which is split in two components, physical and virtual:

- additional physical workload (from 0% up to 50% hours of the baseline workload hours),
- additional virtual workload (from 0% up to 50% hours; which is then multiplied by 0.8 to the max value of 40%, using the previously explained proportion of 80% of physical activity for the virtual one).

Therefore, the combined maximum of additional workload hours is 90% of baseline workload hours based on 8-hour day principle, max 50% for the physical and max 40% for the virtual component.

The standardisation, including the evaluation of the 80% proportion for the virtual activity and exact additional workload hours range for each supplementary component, will

be one of the major challenges for the SEA-EU Alliance in the piloting phase of MCTS implementation to achieve seamless allocation and automatic recognition of MCTS credits among universities.

Weighting factors

To enable the conversion from MCTS to ECTS in the ratio 10 MCTS=1 ECTS, we need the factor of conversion which follows the same logic as ECTS where 25 – 30 workload hours is 1 ECTS credit, meaning that 1 workload hour equals to 0.033-0.04 of ECTS credits. In the MCTS system, this number is multiplied by 10 which gives us weighting factors range between 0.33 and 0.4.

For simplified mobility measurements, the weighting factor may be the same across all mobilities, however, we strongly believe that, similar to different teaching formats in education (e.g., lecture hour vs. practical hour), we also need to recognize differences in intensity across mobility activity types. Therefore, we proposed that the different weighting factors are applied in the range between 0.33 and 0.4. Flexible weighting factor range 0.33 to 0.4 is essential to maintain the logical relation to ECTS, which is also flexible: 25 – 30 workload hours for 1 ECTS.

For instance, long-term (e.g. semester student study) mobility uses a slightly lower coefficient to preserve compatibility with semester ECTS structures (e.g., around 30 ECTS credits for 1 semester), while more intensive mobilities, e.g. Erasmus+ Blended Intensive Programmes (BIPs) use the highest coefficient 0.4. This is one example of several mechanisms included in MCTS to ensure proportionality and prevent distortion.

The standardisation of weighting factors for specific mobility activity type will be another major challenge for the SEA-EU Alliance during the piloting phase of MCTS implementation. Alongside the issue of additional workload outlined above, this will be essential to ensure consistent allocation and automatic recognition of MCTS credits across partner universities.

Examples of calculation of MCTS credits

The calculation of MCTS credits is based on the pre-defined baseline workload hours (5-day week, 8-hour day calculation), estimation of additional workload, defined as the learning effort exceeding the regular activity workload (**Figure 1**). In line with the MCTS methodology, additional workload may account for up to 90% of the total baseline workload hours, ensuring that it remains supplementary and does not replace core mobility obligations.

Additional workload is divided into physical and virtual components. Additional physical workload includes in-person academic activities (e.g. laboratory work, field activities), while additional virtual workload comprises online learning, virtual collaboration, and other remote academic activities. Additional physical workload may be from 0% up to 50% of baseline workload hours. Additional virtual workload may be from 0% up to 40% of baseline workload hours, since the virtual component is proposed to be 80% of physical workload, reflecting differences in activity intensity.

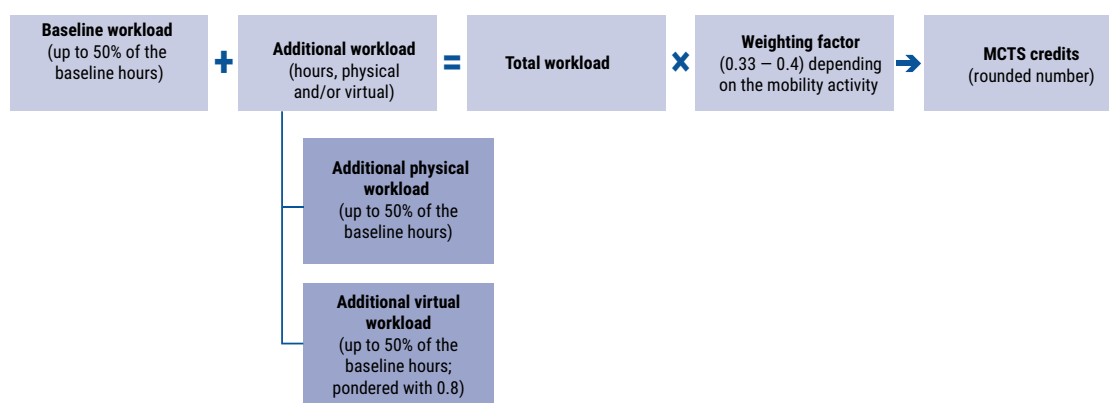


Figure 1. Mobility Credit Transfer and Accumulation System (MCTS) credit calculation. The additional workload is added to the baseline workload in a way explained above to calculate the total workload which is then multiplied by the ponder (weighting factor) to obtain the final value of MCTS credits.

Finally, the total number of workload hours (sum of baseline workload hours and additional workload hours) is multiplied by a weighting factor, resulting in the calculation of final MCTS credits.

These may be then subsequently converted into ECTS credits for students using the 10:1 ratio, ensuring full compatibility with the ECTS system. The final ECTS value is obtained through rounding, facilitating transparent recognition and institutional implementation ([Table 3](#)).

Table 3. Example of Mobility Credit Transfer and Accumulation System (MCTS) calculation for students

Students	Duration	Additional workload (max 90%)		Total workload	Ponder	MCTS credits	European Credit Transfer and Accumulation System (ECTS) (derived from MCTS)	ECTS final
Mobility activity*	Baseline hours (weeks)	Physical workload	Virtual workload	Total hours	Weighting factor	Total number	Total number	Rounded number
Blended Intensive Programmes (BIP)†	40 (1)	9	21	70	0.4	28	2.8	3.0
Summer school‡	40 (1)	14	10	64	0.33	21.0	2.1	2.0
Semester study mobility§	880 (22)	0	0	880	0.34	299	29.9	30.0

*Mobility activity reflects the activity type, which refers to the type of mobility. The three specific activities (BIP, summer school and semester long study mobility) are presented.

†Student BIP (with additional workload, 9 hours physical and 21 hours or 30% online component). Note the rounding from 28 MCTS credits to 3.0 ECTS credits.

‡Student Summer school (with additional workload, 14 hours physical and 10 hours online). Note the rounding from 19 MCTS credits to 2.0 ECTS credits.

§Student long-term study mobility in duration of 22 weeks (5 months) (without additional workload).

We proposed the final MCTS value to be a rounded number, to simplify the institutional policies and mobility credit accumulation system practices ([Table 3](#), [Table 4](#), [Table 5](#)).

Table 4. Example of Mobility Credit Transfer and Accumulation System (MCTS) calculation for teaching staff

Teaching staff	Duration	Additional workload (max 90%)		Total workload	Ponder	MCTS credits
Mobility activity*	Baseline hours (days)	Physical workload	Virtual workload	Total hours	Weighting factor	Total number
Scientific conference	24 (3)	0	0	24	0.4	10
Scientific conference (with presentation)	24 (3)	6	0	30	0.4	12

*Mobility activity reflects the activity type, which refers to the existing classification of mobilities. Two examples of scientific conference mobility without or with the presentation (additional 6 hours of workload) are presented, which reflects two additional MCTS credits.

Table 5. Example of Mobility Credit Transfer and Accumulation System (MCTS) calculation for administrative and technical staff

Administrative / technical staff	Duration	Additional workload (max 90%)		Total workload	Ponder	MCTS credits
Mobility activity*	Baseline hours (days)	Physical workload	Virtual workload	Total hours	Weighting factor	Total number
Job shadowing	16 (2)	0	0	16	0.33	5
Staff week	24 (3)	4	0	28	0.35	10

*Mobility activity reflects the activity type, which refers to the existing classification of mobilities. Two examples of mobilities are presented, job shadowing (with no additional workload) and staff week with presentation (additional 4 hours of workload).

Implementation potential

SEA-EU pilot opportunity

The concept of MCTS was formally accepted by the main governing body of the SEA-EU Alliance, the Rectors' Council and approved by the Governing Board of the Alliance in November 2024, together with the decision to pilot the system across all nine member universities. Following this decision, a dedicated SEA-EU MCTS Task Force was established, bringing together institutional leadership, alliance vice-rectors, coordination offices, and local project management, with the mandate to design all necessary steps for implementation. The Task Force worked intensively on the development of common guidelines and a harmonised calculation methodology, ensuring applicability across diverse institutional, disciplinary, and national contexts. These methodological foundations were endorsed during the Governing Board meeting in Kiel in May 2025, marking the formal transition to the piloting phase of MCTS implementation. The SEA-EU Alliance provided a particularly suitable pilot environment due to its multinational composition, established mobility culture, and strategic commitment to innovation.

The pilot implementation followed a phased approach, enabling the assessment of both quantitative and qualitative indicators. Quantitative indicators include participation growth, diversity of mobility formats, staff uptake, and disciplinary reach. Qualitative indicators focus on perceived fairness, participant satisfaction, motivation, and administrative feasibility, providing a comprehensive evaluation of the system's effectiveness and scalability.

During the Governing Board meeting in Naples in November 2025, it was decided to continue the MCTS implementation plan within the next phase of the SEA-EU extension project, with the aim of disseminating the concept to other European University Alliances, national agencies, and ultimately to the whole EHEA.

Implementation challenges

To ensure the credibility and long-term sustainability of the proposed MCTS framework implementation, several challenges must be carefully addressed. First, the MCTS framework has to be robustly designed and sufficiently standardised to facilitate consistent implementation across institutions. During the pilot phase, particular attention was devoted to defining appropriate weighting factors for different types of mobility activities, as well as to developing clear standards for additional workload metrics for both physical mobility or virtual exchange/mobility covering the activities and dimensions mentioned above.

Once common implementation rules are established, host institutions would be responsible for allocating MCTS credits and issuing certificates, while home institutions would apply the principle of automatic recognition, making university alliances such as SEA-EU an especially suitable environment for testing and refining the model. However, successful implementation depends not only on agreement regarding credit allocation but also on the interoperability of institutional policies, procedures, and digital systems. Ensuring seamless integration with existing credit recognition frameworks and student information systems is essential for reducing administrative burden and enabling efficient cross-institutional cooperation.

Administrative feasibility represents an additional challenge. The introduction of new recognition mechanisms may at first increase workload for academic and administrative staff responsible for evaluating, validating, and documenting mobility-related activities. Consequently, implementation processes must remain transparent, proportionate, and practical, balancing the need for quality assurance with the objective of avoiding excessive bureaucracy that could discourage participation.

At the same time, safeguards are needed to prevent credit inflation and to preserve trust in academic standards. Recognition should not be reduced to a purely quantitative exercise based on numerical indicators or accumulated credits. Rather, institutional frameworks must ensure that the educational, intercultural, and transformative value of mobility experiences remains central to the recognition process. This requires evaluation criteria that capture learning outcomes, personal development, civic engagement, and intercultural competences alongside workload measures.

To achieve these objectives, higher education institutions should establish clear approval procedures, transparent evidentiary requirements, periodic review mechanisms, and comprehensive quality-assurance processes. Such measures can support consistent and accountable decision-making, strengthen institutional acceptance of the framework, enhance interoperability across participating institutions, and ensure that the qualitative educational value of mobility is preserved alongside the quantitative recognition of student achievement.

Conclusion

International mobility of students and staff in Europe evolved beyond the systems originally designed to recognise it. Today's higher education mobility is increasingly more diverse, more digital, aiming at a more inclusive schemes than previous models, therefore, many valuable forms may remain insufficiently recognised.

The newly proposed comprehensive Mobility Credit Transfer and Accumulation System (MCTS) offered a practical framework for all three target groups in academia: students, teachers and administrative and technical staff, which may help modernise how mobility is measured, valued, and incentivised across Europe.

Widely adopted and implemented MCTS system may facilitate and increase mobility of students and staff within the European Higher Education Area and enable seamless recognition in contemporary higher education mobility.

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References

1. European Commission. Erasmus+ Programme Guide 2025 [Internet]. 2025. Available from: https://erasmus-plus.ec.europa.eu/sites/default/files/2025-11/programme-guide-2026_en.pdf
2. European Education and Culture Executive Agency. Eurydice. The European higher education area in 2024: Bologna process implementation report. [Internet]. LU: Publications Office; 2024 [cited 2026 Jul 18]. Available from: <https://data.europa.eu/doi/10.2797/483185>
3. Bologna Declaration. (1999) [Internet]. Available from: https://pjp-eu.coe.int/bih-higher-education/images/1999_bologna_declaration_eng.pdf
4. European Commission. Directorate-General for Education, Youth, Sport and Culture mission. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a European Strategy for Universities [Internet]. Brussels; 2022 [cited 2026 May 4]. Available from: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2022:16:FIN>
5. European Commission. Directorate General for Education and Culture. ECTS users' guide 2015. [Internet]. LU: Publications Office; 2015 [cited 2026 May 6]. Available from: <https://data.europa.eu/doi/10.2766/87192>
6. Bologna Follow-up group. ECTS users' guide 2027 – draft [Internet]. 2025. Available from: https://eha.info/wp-content/uploads/2026/04/BFUG_DK_LI_97_10_1_Draft_2_ECTS_Guide_01.12.2025.pdf
7. European Commission, Directorate-General for Education, Youth, Sport and Culture. Digital Education Action Plan 2021-2027 [Internet]. 2020. Available from: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52020DC0624>
8. Rome Ministerial Communiqué [Internet]. Rome; 2020. Available from: <https://rm.coe.int/rome-ministerial-communique-19-11-20/1680a07857>
9. European Commission. Directorate General for Education, Youth, Sport and Culture., PPMI. Study on learning mobility: progress, obstacles and way forward: final report. [Internet]. LU: Publications Office; 2023 [cited 2026 Jul 12]. Available from: <https://data.europa.eu/doi/10.2766/74249>
10. Horváth L, Hangyál Zs, Kasza G, Czirfusz D. Teach with Erasmus+ Research Report [Internet]. Budapest: ELTE Eötvös Loránd University Department of Erasmus+ and International Programmes.; 2020. Available from: <https://teachwitherasmus.eu/sites/default/files/2020-04/TWEResearchReport.pdf>
11. Van Vugt SJH, Gallagher SE. Staff development in higher education interinstitutional collaborations: An exploratory literature review. *Innov Educ Teach Int*. 2026 January 2;63:270–87. <https://doi.org/10.1080/14703297.2025.2461159>
12. Eötvös Loránd University. Understanding and Addressing the Mobility Gap in Higher Education – Insights from the Erasmus+ GAP Survey 2024 [Internet]. 2025 Jan 7. <https://doi.org/10.5281/ZENODO.14608892>
13. Eötvös Loránd University. Understanding and Addressing the Mobility Gap in Higher Education – Desk Research Report [Internet]. 2025 Jan 7. <https://doi.org/10.5281/ZENODO.14827470>

14. European Commission, Directorate-General for Education, Youth, Sport and Culture. Proposal for a Council recommendation 'Europe on the Move' – learning mobility opportunities for everyone [Internet]. 2023. Available from: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:52023DC0719>
15. Academic Cooperation Association (ACA). Veronika Kupriyanova, Angeliki Psychogyiou. Driving Impact of Erasmus+ Outgoing Academic Staff Mobility: Current Landscape and Pathways for the Future [document] [Internet]. Brussels, Belgium; 2023. Available from: https://www.ampeu.hr/files/ACA-Report_Driving-Impact-of-Erasmus-outgoing-academic-staff-mobility.pdf
16. European Commission. Directorate General for Education, Youth, Sport and Culture., Public Policy and Management Institute (PPMI)., Austrian Institute of Technology (AIT). Study on the impact of Erasmus+ higher education partnerships and knowledge alliances at local, national and European levels on key higher education policy priorities: final report. [Internet]. LU: Publications Office; 2018 [cited 2026 Jul 18]. Available from: <https://data.europa.eu/doi/10.2766/8779>
17. European University Association. Use and impact of the Erasmus+ programme (2021-27) at higher education institutions [Internet]. Brussels, Belgium; 2025. Available from: https://www.eua.eu/images/publications/Publication_PDFs/Erasmus_MidTerm_Report.pdf
18. REALISE project report: Erasmus+ Staff mobility handbook of good practices [Internet]. 2019. Available from: https://ec.europa.eu/programmes/erasmus-plus/project-result-content/21ef740a-6eea-4665-a553-9a65207c1380/REALISE-Handbook_DIGITAL-VERSION-FULL.pdf
19. European Commission, Directorate-General for Education, Youth, Sport and Culture. Communication from the Commission European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on achieving the European Education Area by 2025 [Internet]. Brussels, Belgium; 2020. Available from: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:52020DC0625>
20. European Commission. Erasmus Charter for Higher Education 2021-2027 Guidelines [Internet]. 2020. Available from: https://erasmus-plus.ec.europa.eu/sites/default/files/charter-annotated-guidelines-feb2020_en.pdf
21. Zwolińska-Gładys K, Lorenc S, Kowalska N, Pomykała R. Higher education staff development: a need-oriented approach based on survey research. Sci Rep. 2024 December 28;14:31455. <https://doi.org/10.1038/s41598-024-83053-8>
22. Education, Audiovisual and Culture Executive Agency. Erasmus+ virtual exchange: intercultural learning experiences: 2020 impact report. [Internet]. LU: Publications Office; 2021 [cited 2026 Jul 18]. Available from: <https://data.europa.eu/doi/10.2797/870428>
23. Soulé MV, Parmaxi A, Nicolaou A. Internationalization at home in higher education: a systematic review of teaching and learning practices. J Appl Res High Educ. 2025 December 15;17:29–60. <https://doi.org/10.1108/JARHE-10-2023-0484>