

Skills for an innovative EU space ecosystem

Workshop

18/10/2023

Venue: Brussels & Online

Summary of findings from the brainstorming on “The way forward – future priorities for a thriving EU space ecosystem”

Gaps and challenges

- **Complementary expertise:** The space industry requires professionals with complementary backgrounds, with skills and expertise ranging from STEM, legal, policy and business.
- **Soft skills:** transversal skills like communication, teamwork, and problem-solving are vital for success in the space industry.
- **Reskilling/upskilling:** There is a need to establish ways to continuously adapt the workforce to the evolving capability requirements of the space sector through ongoing learning and development.
- **Collaboration among stakeholders:** Greater collaboration is necessary between academia, industry, and policymakers to address the skills gap.
- **Training for educators:** Teachers at all levels (preschool, primary, and secondary education) need proper training to effectively integrate space and STEM topics into the curricula. With space topics ranging from upstream to downstream.
- **Lack of material for bringing space/STEM into the classroom:** The cost of materials to teach space-related subjects often falls on schools upon teachers' initiative, hindering their efforts.
- **Space education and training in the EU:** the EU lags behind other regions in adapting to ensure a skilled space workforce. More investment and flexibility are needed in this regard.
- **Mobility of talents from third countries into the EU:** Challenges exist regarding the working visa/ entry of skilled individuals from outside the EU into the EU (space) industry.
- **Space education:** The European academic landscape for space education exhibits significant differences in the management and provision of academic programmes, as well as variations in specialisation titles, certifications, and degrees. This results into lack of standardisation at different levels of knowledge, skills, quality, and reputation among European institutions.
- **Space education offer:** The lack of standardisation in space-specific courses offered by various educational institutions often leads to confusion among students, parents, and children. The absence of clear, uniform pathways hinders their ability to make informed, transparent, and timely decisions regarding education for careers in space-related fields. This lack of standardisation and fragmentation of information also affects the effectiveness of any type of awareness raising campaign.

Opportunities/ potential future actions:

- **Conference on space education and workforce development:** Organise a conference to share best practices and strategies to address the skills & education gaps in the space sector.
- **Space education centres throughout the EU:** Establish state-of-the-art centres that provide hands-on experiences, interactive exhibitions, and highlight Europe's space legacy. These centres can serve as learning hubs for students and educators and promote collaboration with industry associations. Activities can be tailored to different age groups to inspire kids and attract young adults into the space industry.
- **Provide free training to teachers:** Offer free training to teachers (preschool to secondary education) in their mother tongue and recognised by local Ministries of Education. This can be supported by a specific budget dedicated to the schools of teachers who have followed such training. This budget would be allocated for acquiring the necessary equipment for teachers to bring new space-related activities into the classroom.
- **New/ enhanced pathways/courses at universities:** Develop new courses at universities, ensuring they are properly accredited and later recognised for public service competitions. Avoid creating obstacles for students seeking employment after graduation. The Commission could establish a collaborative partnership with local ministries of education to achieve two vital objectives:
 - Firstly, to secure recognition for the newly developed courses and certifications in the field of space-related education.
 - Secondly, to create an equivalency system for these courses and diplomas. This equivalency system is designed to streamline the process of equating the value of these new certifications and diplomas to the more established and traditional ones.
- **Leverage existing networks:** Build on established networks such as Copernicus Academy and Copernicus Relays to identify best practices and to enhance skills, education, and reskilling efforts for the space sector. Contribute to setting a new path for these networks as they evolve to expand beyond Copernicus/ Earth Observation and into all of EU Space.
- **EO4GEO and other EU-funded Body of Knowledge:** centralise resources in a single platform to cross-fertilise and leverage developed contents, avoid duplication and promote cooperation and communication.
- **Promote knowledge transfer from industry to academia:** Facilitate knowledge and experience sharing from industry professionals directly to students through, inter alia, the creation of "Guest Lecturer" positions at universities.
- **Run a campaign for attracting talent and enhancing collaboration:** This campaign should focus on making the space industry more attractive to potential professionals, students, and enthusiasts. By leveraging the campaign to highlight exciting opportunities and emphasise the importance of collaboration, the space community can be further strengthened. This campaign could also include a strategy for avoiding duplication and enhancing existing resources to maximise their impact. Such an initiative can significantly contribute to the development of a dynamic and innovative space education and skills sector within the EU. It could play a crucial role in ensuring the availability of a well-prepared workforce for the European space ecosystem.

Further considerations on lessons learnt and best practices:

- **Harmonisation and standardisation of curricula:** There is a need to align educational curricula with current topics like GIS, climate, and digital transformation to better prepare students for the space sector. The Commission can play a pivotal role in initiating and supporting cooperative task forces or Coordination and Support Actions (CSA – Horizon Europe) with a view to streamline and standardise space-specific courses and certifications offered by universities and independent academies. This standardisation is expected to provide clarity and simplicity in educational choices, thus supporting motivation and recruiting campaigns, ultimately contributing to the establishment of an innovative global EU Space ecosystem.
- **Learning from rapidly changing regions:** Study regions outside the EU that are quickly adapting to the evolving space sector, workforce, and educational needs. Learn from their best practices and actions.





DG DEFIS B.2

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Agenda

- 09:30** Registration (in-person only)
- 10:00** Welcome, agenda & housekeeping [10 mins]
- 10:10** Skills landscape and identified gaps [30 mins]
- Background and context on skills gaps
 - Pre-determined brief interventions and short Q&A
- 10:40** Past and existing activities to close the gap [40 mins]
- Mapping of past and existing activities targeting education and skills
 - Pre-determined brief interventions
 - Discussion
- 11:20** Coffee break [10 mins]
- 11:30** The way forward – future priorities for a thriving EU space ecosystem [80 mins]
- Pre-determined brief interventions
 - Brainstorming & open discussion “How do we all want to contribute & collaborate?”
- 12:50** Conclusion and next steps

Annex II: Introductory presentations



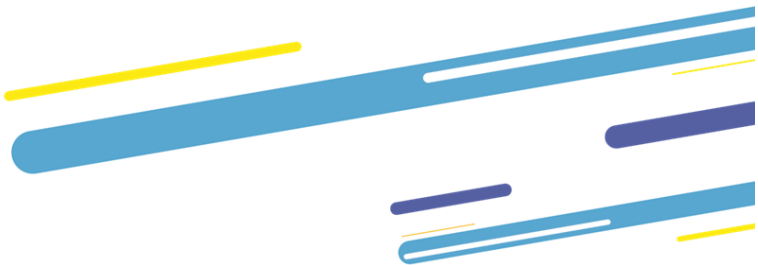
Analysis of the EU space ecosystem

Workshop: Skills for an innovative EU space ecosystem
18 October 2023

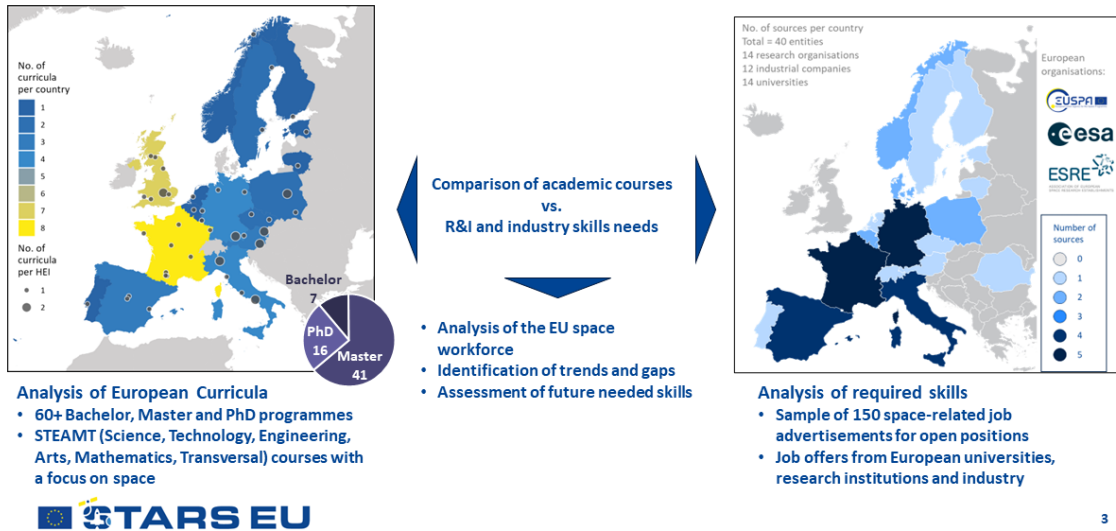
Service Contract with the EC, DG DERS No. DFER/2020/OP/0004



Skills needs, course offers & gaps

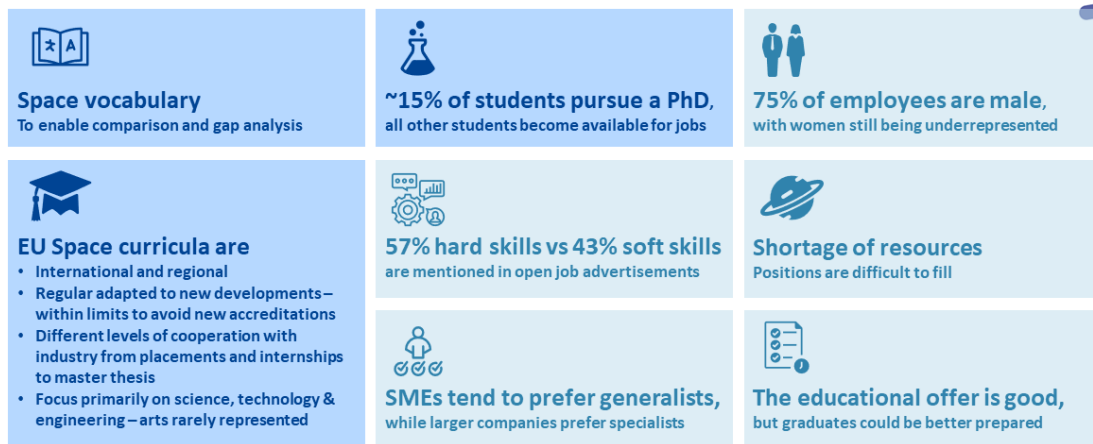


We have analysed the EU educational landscape and the R&I and industry job market to identify gaps and future needs



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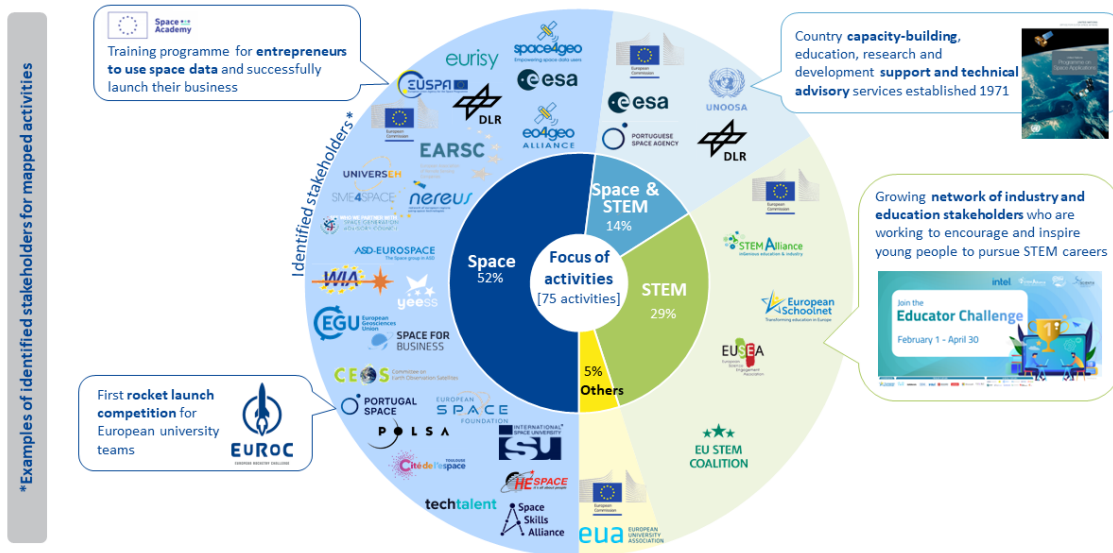
The analysis of the educational offer, the skill needs of the space sector (R&I and industry), and the workforce composition resulted in these key findings



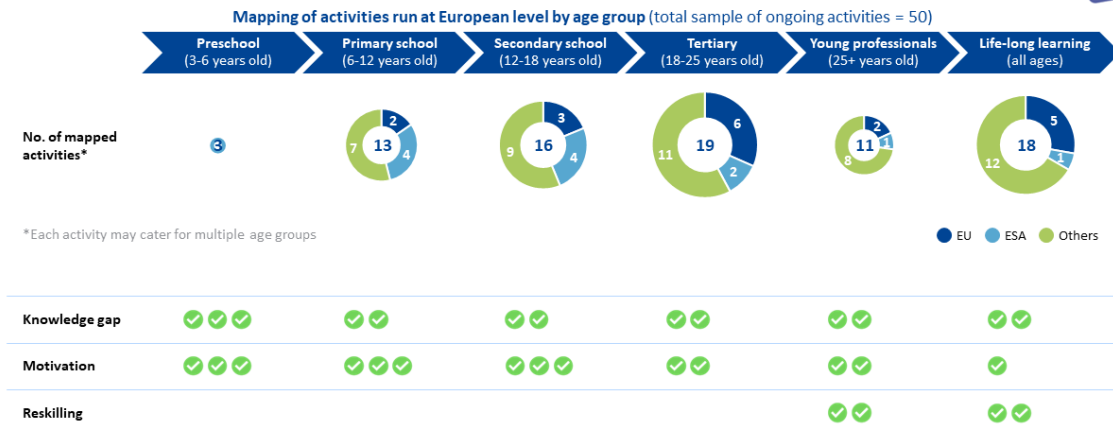


Skills & educational initiatives

We have undertaken a mapping of the 75 most visible STEM/space education and skills activities, with a focus on actions implemented at EU level



The number of ongoing actions targeting each age group at European level is very inhomogeneous, with a particular gap among young professionals



The number of ticks (on a scale from 0 to 3) indicates the share of actions targeting each of the three listed goals

Key findings include the need for improved accessibility and to attract new talent to space, with a focus on diversity and inclusivity

