Empowering space data users

EO4GEO Newsletter Special Issue

Space/Geoinformation Sector Skills Strategy

SPACE/GEOINFORMATION SECTOR SKILLS STRATEGY (IN ACTION)

The strategy for skills development in the EO*GI sector goes public now !

Imagine you are a (young) professional active in the ICT sector or working for a local or regional public authority.
You heard about the potential of Earth Observation and Geoinformation to help answering complex problems such as climate change and the management of our future cities in a smart way.
Where can you find personalised education and training offers that would allow you to reskill and upskill and become active in the sector?
What is the learning path you need to go through to make this true?

Or you and your organisation are curious about the recent technological trends such as Artificial Intelligence and Machine Learning. You might want to understand these better and explore some of these new technologies by using an experimental environment in which you can play around using gaming and other advanced visualisation techniques.
The organisation you work for might also need to attract new colleagues, so they need to prepare a job offer description and compare the CVs of candidates with the requirements described in that job offer.

This and much more is already (partially) possible and will certainly become possible through the implementation of EO*GI Sector Skills Strategy.

Download now the Sector Skills Strategy document and learn how to support skills development in the EO*GI sector.

Download the Sector Skills Strategy

Sector Skills Strategy in Action

Over the past years, EO4GEO has prepared a Sector Skills Strategy (SSS) for the Earth Observation and Geoinformation (EO*GI) sector defining a vision and mission, but also a set of goals and strategic objectives for skills development in the sector. The Strategy is **not** a **theoretical** document, on the contrary, it provides practical guidance to translate the vision and mission into concrete actions, which is why we call it a **'SSS in Action'**. The document goes **public now**, and the EO4GEO partners are currently translating the Strategic and Operational Objectives into more detailed actions and activities that will be implemented over the next 3, 5 to 10 years. These will be bundled in the so called Long-Term Action Plan (LTAP) which will be ready by March 2022. The EO4GEO Alliance realises that the SSS and LTAP must **evolve over time**. Indeed, the EO*GI sector does not exist and evolve in isolation. The sector is by default linked to and intertwined with many other domains that influence each other: engineering, mathematics, physics, information science and many other fields, technologies, and businesses (vertical sectorial activities such as maritime transport, insurance, agriculture, etc.) are very relevant and influence what happens in the sector. Because the world is continuously changing, the sector is changing too, and so do the knowledge, skills and competencies that are required to help answering the problems and challenges we face today.

The SSS in Action describes the key **drivers and trends** that influence the EO*GI domain. The United Nations Global Geographic Information Management (**UN-GGIM**) initiative, which brought together representatives of the geospatial and statistical communities from all countries across the world, identified five major drivers and 31 related trends that impact the EO*GI sector, hence also influence the skills required. The five major trends relate to: 1) the **rise of new data sources and new analytical methods** such as Artificial Intelligence and Machine Learning for processing huge amounts of geospatial and other data; 2) the **development of new technologies and integration of existing technologies** such as High Performance Computing (HPC); 3) the **continuous evolving user needs** and the high user expectations that want to have instant access to information that is relevant for them; 4) the emerging **structural shift of industry and businesses** which are becoming more and more automated and location-enabled and 5) the changing **legislative and governance environment** including issues related to data privacy and ethics.

These trends have of course a huge impact on the skills required by all the stakeholders involved: the EO*GI private sector providers in the first place, but also e.g. public sector bodies that use EO*GI data, and academia conducting research. Based on those developments and skills needs a set of five Strategic Objectives have been defined as well as a series of 15 Operational Objectives that provide an idea of what EO4GEO will do after the project ends. These are the **five Strategic Objectives**:

1. Set up **a skills intelligence mechanism** to identify the skills and competences required and provide feedback on the evolving sector needs;
2. **Reinforce cooperation** among stakeholders from the academic, private and public sectors on skills development and requirements;
3. Develop a system to help and **guide candidate learners** in their skilling, upskilling and reskilling efforts;
4. Facilitate and stimulate a more integrated approach on **skills development across different value chains**;
5. Encourage **citizens' engagement**, citizens' science practices and hands on activities enhancing the inclusion/ recognition of EO*GI applications value in everyday aspects of life.

Some examples of planned actions and activities

The previous newsletter provided a summary of the Strategic and Operational Objectives. In this newsletter we will not repeat those, but we want to stimulate the reader to have a look at the full 'SSS in Action', a document of 50 pages which contains more details. In this newsletter we want to highlight only a few examples of actions and activities we want to develop in the (near) future.

Source: OGC

A first example relates to the development and operationalisation of a non-technology and technology trends watch system. During the EO4GEO project a study was conducted about these trends, but that happened back in 2018 and is thus outdated to a certain degree. The idea is to have in the future a kind of permanent monitoring of the trends. Private companies, and even some public sector bodies active in the sector, already do this (at least partially) . One of the EO4GEO Associated Partners, i.e., the Open Geospatial Consortium (OGC), has developed a coherent approach to monitor Technology Trends to allow them to define a road map for their standardisation

process. Therefore, the SSS in Action foresees a long-term strategic collaboration with the OGC on this. EO4GEO partners can contribute to these efforts and the other way around, EO4GEO can build further upon this Technology Trends Watch approach to develop a dashboard of trends and to decide which new technologies, methods, etc. should be described in our ontology-based Body of Knowledge. From there, new training modules could be developed and offered as part of an online education and training portfolio.

Another example of an action to be developed relates to the development of an intelligent guidance mechanism for candidate learners. In the context of EO4GEO, more than 1.100 training modules and courses were identified and described by means of metadata. Thus, a rich educational and training offer exists already. However, it became clear that it remains very difficult for people to find their way throughout this offer. The offer is scattered and usually accessible via different portals, or even not accessible at all. Even more so, it is very difficult for people to understand which are relevant offerings and how they can assemble a suitable programme considering their personal objectives and their current knowledge and skills. Therefore, the LTAP foresees in the development and deployment of an intelligent guidance mechanism. Such a mechanism would allow candidate learners to go to a one-stop portal where they can define a personalised learning path based on their CV, their interests and for example, their available time. The system would then suggest possible pathways not only indicating which training modules to follow, but also suggesting an order and timeline and the results that will be achieved. The system could also suggest available offers of internships or even open job calls related to the topics of interest.

Source: brussels.virtual-room.com

The last example of a planned action refers to the set-up of an experimental platform supported by some innovative learning techniques such as gaming and advanced

visualisation techniques (e.g., using virtual and augmented reality). The idea behind is that innovative learning processes nowadays require new learning methods where teachers and learners meet, and where learners meet other learners through many interactions, group work including 'learning while doing' techniques and experiments. The EO*GI sector provides an excellent opportunity to do so since downstream applications are based on access to existing data, web services, API's and much more. Learners can experiment, document their work, keep it in the learning platform and share it with their peers. Other learners can start from what others have been doing and continue experiments throughout their own learning paths. This platform, also called sandbox, brings together the learners and tutors, but also the learning tools, data, and services (and other tools to process them), and much more. In fact, such a platform is very close to what are called nowadays collaborative data spaces where co-creation of knowledge and skills is at its heart.

Call to collaborate

The three examples are just a snapshot of some actions and activities that will be organised to implement the SSS in Action and the LTAP. Other activities include the bi-annual organisation of surveys on the demand for education and training, the set-up of a repository of existing courses offered by academic and vocational training suppliers, the analysis of developments on the EO*GI job market, the development of a rich training portfolio, the further development of the Body of Knowledge on EO*GI, the development of new tools and improvement of existing educational and skills development tools, the organization of job fairs, the development of MOOC's, etc.

All these actions and activities need a lot of helping hands. We also need fresh ideas on how to reach the objectives, how new projects can be defined, how innovative methods can lead to results in a more efficient and effective way. Therefore, EO4GEO follows an inclusive approach, not only involving current partners of the Alliance, but also Associated Members, Members of the Copernicus Academy and Relays networks, etc. We invite interested parties to become Associated Partner if they are not partner yet, and all to show interest and to contact the EO4GEO coordinator or any other partner of the Alliance to indicate their interests and possible contributions to the actions and activities described in the SSS in Action and the upcoming LTAP. The Strategy and LTAP may be very ambitious, but together we can achieve the vision, mission and objectives through own initiatives, the definition of new projects (under different programmes and calls) and by looking for sponsorship from private, public and academic sectors.

Download now the Sector Skills Strategy document and learn how to support skills development in the EO*GI sector.

Download here the Sector Skills Strategy

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