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Contribution of thematic networks to the global geospatial information agenda

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Note by the Secretariat

Summary

The present paper contains the report of the contributions of the four thematic groups to the global geospatial information agenda for consideration by the Committee.

At its eleventh session, held virtually on 23, 24 and 27 August 2021, the Committee of Experts adopted decision 11/102, in which it congratulated the four thematic groups (networks) on their work and achievements during the intersessional period, including their response to the coronavirus disease (COVID-19) pandemic, recognised that their outputs, including technical background documents, provided vital knowledge for the development and strengthening of geospatial information capabilities and decision-making for Member States, and that strong and relevant thematic networks were significant contributors to the realisation of the overall vision and work programme of the Committee. The Committee also welcomed the continued support of the thematic networks, including in research, education, the use of innovative technologies and capacity development, in advancing the Sustainable Development Goals with geospatial products or services, in promoting the Integrated Geospatial Information Framework, and for considering collaborative and joint initiatives among the networks to advance the mission and work programme of the Committee.

This report provides the Committee of Experts with an update on the contributions and achievements during the intersessional period of the four thematic networks, namely the United Nations Global Geospatial Information Management Geospatial Societies; the United Nations Global Geospatial Information Management Academic Network; the United Nations Global Geospatial Information Management Private Sector Network; and the United Nations Geospatial Network. The report is accompanied by detailed technical background documents containing an in-depth analysis and overview of the work of the thematic networks.

The report contains information on the capacity-building and knowledge sharing activities conducted by the United Nations Global Geospatial Information Management Academic Network. A technical background document provides further detail on the current progress and operational practices of the Academic Network, including the drafting of a white paper on education and capacity-building, the development of an education catalogue and collaboration with the United Nations

* E/C.20/2022/1

Global Geospatial Information Management Private Sector Network on an “AI for Good” event on the intersection between geospatial information, artificial intelligence and education.

The report includes an update on the activities of the member organisations of the United Nations Global Geospatial Information Management Geospatial Societies. The network is a coalition of presidents, secretaries-general or equivalent office bearers or their nominees who lead recognised international organisations involved in the coordination, development, management, standardisation or regulation of geospatial information and related matters. The Geospatial Societies aim to meet formally once a year, usually in alignment with the annual session of the Committee of Experts, and informally when schedules permit. The accompanying technical background document provides further information on the intersessional activities of the Geospatial Societies.

The report contains a summary of the activities and accomplishments of the United Nations Global Geospatial Information Management Private Sector Network, including its board meetings and information on how its members have supported the regional committees and thematic networks of the Committee of Experts. A technical background document provides an overview of the work of the Private Sector Network in the following areas: (a) global recognition of the geospatial industry and its importance to the economy and society; (b) the transformation of the geospatial industry into knowledge platforms that provide analytics as a service; (c) the strengthened engagement of the geospatial industry and its partnerships with national geospatial agencies; and (d) the role of the private sector in transforming geospatial agencies into the foundation for digital knowledge infrastructure, while supporting sustainable development at the national, regional and global levels.

The report provides an account of the progress made by the United Nations Geospatial Network during the intersessional period. In the accompanying technical background document, the implementation of the guiding strategy document entitled “Blueprint: geospatial for a better world – transforming the lives of people, places and planet”, which is aimed at strengthening geospatial information within and between entities of the United Nations system, is examined. Furthermore, the steps to be taken to implement a United Nations Geospatial Network data hub are outlined. The hub is intended to serve as a practical mechanism to help the United Nations system to coordinate the management and dissemination of geospatial information, guided by the concept of a One United Nations geospatial situation room. Grounded in and informed by the frameworks, practices, norms and standards developed by the Committee of Experts, the hub is aimed at helping the United Nations system to advance its prevailing policies, including the Data Strategy of the Secretary-General for Action by Everyone, Everywhere; the Secretary-General’s strategy on new technologies; and the Road Map for Digital Cooperation.

I. Introduction

1. At its eleventh session, held virtually on 23, 24 and 27 August 2021, the Committee of Experts adopted decision 11/102, in which it welcomed the continued support of the four United Nations Global Geospatial Information Management (UN-GGIM) thematic groups, namely, the Academic Network, Geospatial Societies, Private Sector Network, and the United Nations Geospatial Network. The Committee welcomed the continued support of the thematic groups (networks) in advancing its work, including in the domains of research, education, the use of innovative technologies and capacity development, advancing the Sustainable Development Goals (SDGs) with geospatial products or services, in promoting the Integrated Geospatial Information Framework (IGIF), and for considering collaborative and joint initiatives among the groups to advance the mission and work programme of the Committee of Experts.

2. In the intersessional period, collectively and individually, the thematic networks have diligently worked to deepen their relationships and coordination. This present report summarises the main activities and achievements of the four thematic networks of the Committee of Experts, including their meetings, accomplishments, capacity-building initiatives, and actions taken over this intersessional period. The reports of each of the four thematic networks are provided as background documents to this present report. Points for discussion and decision are provided in paragraph 0.

II. Thematic Networks of UN-GGIM

UN-GGIM Academic Network

3. On the margins of the eleventh session of the Committee of Experts, the Academic Network convened two virtual side events. The first side event on ‘Education and Capacity Building to Support Global Geospatial Information Management¹’ was held on 18 August 2021 as a seminar and panel discussion, which brought together over forty attendees. Gaps, challenges, and opportunities faced by education and through capacity development were discussed in the global context of advancements and rapidly changing technologies. Key takeaways from the event included the need for a repository of educational resources and a catalogue of online courses, teaching materials, whitepapers on current best practices in education to achieve the SDGs, and the involvement of students in the Network’s activities. The second side event on ‘Effective Geospatial Information Management and Services through Public-Private-Partnerships²’ was held on 19 August 2021 in the form of a webinar, and was co-organized with the UN-GGIM Private Sector Network (PSN) and the World Geospatial Industry Council (WGIC). The Chair of the Academic Network shared views on education and research for informed policy formulation for innovation in the geospatial ecosystem.

4. During the inter-sessional period, the Academic Network held a successful online ‘mapathon’ event³ on 30 March 2022 in collaboration with the UN Mappers. The aim of this mapathon was to raise awareness of the United Nations’ peace operations and their use of open data sources and to inspire students to contribute to these efforts. The mapathon gathered 110 young people and mapped 13,700 buildings. Additionally, the assigned Network members continued participating in activities and contributing to the UN-GGIM regional committees and other networks.

¹ https://ggim.un.org/meetings/GGIM-committee/11th-Session/side_events/UNGGIM-AcademicNetwork_InnovativeEducation.pdf

² https://ggim.un.org/meetings/GGIM-committee/11th-Session/side_events/02-Slides-WGIC-PSN-Academic-UNGGIM-11-Side-Event-2021-08-19.pdf

³ <http://unggim.academicnetwork.org/un-mappers-mapathon-invitation/>

5. The Academic Network continues to be led by its Executive Committee, consisting of the Chair, Deputy Chair, and Secretary, respectively, from Politecnico di Milano, Italy, Toronto Metropolitan University, Canada, and Curtin University, Australia. Guided by its Advisory Board, composed of representatives of academic institutions from Australia, Austria, Canada, China, Netherlands, and the United States of America, the Executive Committee is responsible for the operation and coordination of the Network.

6. During the inter-sessional period, the Network has also continued its focus on organising virtual seminars and workshops to continue engagement with and between its members. Regular board meetings were held to discuss and plan the Network's activities. The Network currently has 58 members from 34 different countries. The details of the membership are available on the Network's website⁴. Since September 2021, the Network has welcomed three new members: Lund University, University of Winnipeg, Polytechnic University of Valencia, and an associate member, Esri. The approval of two applications for joining the Network is currently pending. The Network members regularly promote the Network and its activities via other events and fora, such as the AfricaGIS2021 Conference and the Ninth Plenary (Virtual) Meeting of the Committee of Experts Regional Committee for the Arab States.

7. The Network will continue its efforts toward advancing a white paper on 'Education and capacity building to support the Global Geospatial Information Management' and developing a conceptual framework for an Educational Catalogue. A virtual seminar with a panel discussion on GeoAI and Education is planned to be held in September 2022. A detailed update of the Network's progress is contained within the relevant background document to this present report.

UN-GGIM Geospatial Societies

8. The Geospatial Societies, formerly named Joint Board of Geospatial Information Societies⁵, is a coalition of the Presidents, General Secretaries or equivalent office bearers or their nominees that lead recognised international organisations involved in the coordination, development, management, standardisation or regulation of geospatial information and related matters. These organisations include the IEEE Geoscience and Remote Sensing Society (GRSS), International Association of Geodesy (IAG), International Cartographic Association (ICA), International Federation of Surveyors (FIG), International Geographical Union (IGU), International Map Industry Association (IMIA), International Society for Digital Earth (ISDE), International Society of Photogrammetry and Remote Sensing (ISPRS) and International Union of Geodesy and Geophysics (IUGG).

9. On the margins of the eleventh session of the Committee of Experts, the Geospatial Societies convened two virtual side events. The first on 'Mapping for A Sustainable World⁶' on 10 August 2021 and the second on 'Geospatial Societies and the Pandemic⁷' on 17 August 2021.

10. During the intersessional period, the COVID-19 pandemic continued to affect planned activities, meetings, symposia, and workshops, which were either cancelled, postponed or arranged virtually. Hybrid conferences were successfully organised by ICA in December 2021, in Florence, Italy, and by ISPRS in June 2022, in Nice, France. ISDE will organise the Ninth Digital Earth Summit in September 2022 in Chennai, India, with the theme 'Digital Earth to

⁴ <http://unggim.academicnetwork.org/members/>

⁵ <http://www.fig.net/jbgis/>

⁶ https://ggim.un.org/meetings/GGIM-committee/11th-Session/side_events/2021-UNGGIM_side_event_geospatial_societies.pdf

⁷ https://ggim.un.org/meetings/GGIM-committee/11th-Session/side_events/2021-UNGGIM_side-event-geospatial_societies_Aug_17.pdf

Bridge Digital Divide for Attainment of [the] SDGs'. FIG is planning its next Congress in September 2022 in Warsaw, Poland, which is facing an enhanced challenges due to the ongoing neighbouring humanitarian and refugee crisis affecting the region.

11. In regional and international collaboration, the Geospatial Societies are closely working together, with additional partnerships with other organisations such as the International Standards Organization (ISO) Technical Committee 211 and the UN System (such as the United Nations Office for Outer Space Affairs - UNOOSA). Further, most of the constituent members of the Geospatial Societies are also members of the International Science Council (ISC).

12. All members of the Geospatial Societies are hoping activities can resume and will return "back to normal" as soon as possible so they can focus and address preparations for the next events, such as the next FIG Congress in September 2022 or IUGG General Assembly, in July 2023, in Berlin, Germany. In parallel, the Geospatial Societies are reactivating their technical commissions, working groups and task forces to fulfil the SDGs' requirements. Geospatial information plays a key role in achieving the SDGs, as more than 70% of the formulated targets are directly linked to georeferenced data. Implementing the Integrated Geospatial Information Framework (IGIF) at the national level will also be a critical area to support. Another priority is to recover and re-establish the opportunities lost during the COVID-19 pandemic.

13. Finally, as the Geospatial Societies activities are generally run by volunteers, the recruitment of the next generation of volunteers is both a priority and an increasing challenge in the coming years. Further information on the activities of the Geospatial Societies is provided in detail in the relevant background document to this present report.

UN-GGIM Private Sector Network (PSN)

14. At its eleventh session, the Committee of Experts welcomed the Private Sector Network's background report entitled 'Geospatial Industry Advancing SDGs⁸', which highlighted for Member States the role of geospatial infrastructure in the fourth industrial revolution and how geospatial technology and innovation could increase productivity, transform working methods, and enable governments.

15. During the intersessional period, the Private Sector Network contributed to the Committee of Expert's Expert Group on Land Administration and Management meetings held virtually in January 2022 and in person in Singapore from 16 to 20 May 2022. The drafts of the two Pilot Projects in Khartoum, Sudan and New Cairo, Egypt, have been refined, potential partners notified, and further information and discussions will be held on the margins of this twelfth session.

16. Further, the UN-GGIM PSN participated in meetings and webinars, including to the Executive Board of the Committee of Expert's Regional Committee of Asia-Pacific (UN-GGIM-AP) on 18 May 2021; the Tenth Plenary Meeting of UN-GGIM-AP on 2-4 November 2021; the Geospatial Capacity Development Conference on Global Navigation Satellite System (GNSS) applications and Disaster Risk Reduction (DRR), organized by Japan as the co-Chair of the Committee's Working Group on Geospatial Information and Disasters and UN-GGIM-AP on 17-20 January 2022; and, providing two presentations on "Future geospatial trends" and "An overview of UN-GGIM PSN activities worldwide" with the private sector network of the Committee's Regional Committee for the Arab States (UN-GGIM Arab States) on 29 March 2022.

⁸ https://ggim.un.org/meetings/GGIM-committee/11th-Session/documents/Geospatial_Industry_Advancing_the_SDGs.pdf

17. In parallel, the regional members of the Private Sector Network contributed to the work of the UN-GGIM Regional Committee for the Americas (UN-GGIM Americas), promoting the use of geospatial data to address regional priorities with the Caribbean Geospatial Development Initiative (CARIGEO), as a member of the steering committee and organizer of the Student Competition ‘Your Caribbean Story⁹’. The regional private sector network also serves as co-chair of the Communication, Cooperation, and Coordination Working Group with the Aguascalientes Declaration. The regional Private Sector Network also co-hosted webinars and events with various members of the private sector, including Trimble, Riegl USA, and Esri; and gave presentations on its work and positive impact to several conferences, including two in-person events, the Cambridge Conference in Oxford, United Kingdom and Semana Geomatica in Bogota, Colombia.

18. The Private Sector Network also co-hosted the National Mapping Symposium at the Geospatial World Forum (GWF), held in Amsterdam, the Netherlands, from 9-12 May 2022. The GWF brought together representatives from the Committee of Experts, national mapping agencies, and private organisations to discuss the benefits of an integrated geospatial value chain toward a digital economy, geospatial knowledge, and technology integration for national development. Further, the Network participated in the session ‘Determining the Future Geospatial Information Ecosystem,’ hosted by the UN-GGIM Secretariat on 11 May at GWF 2022. Global geospatial leaders and senior executives shared their ideas and perspectives on the future geospatial ecosystem to "provide thoughts and ideas that can help the global geospatial community better prepare for the rapidly emerging geospatial ecosystem and environment of the future." The Network also co-hosted a ‘Roundtable on Public-Private Partnership (PPP)’ on 12 May 2022, organized by the UN-GGIM Regional Committee for Europe (UN-GGIM Europe) and Geospatial World, with fifteen leaders from government and industry to discuss innovation, deliver next-generation infrastructure and services, and discuss financing, merits, and business models for PPP. The Private Sector Network Board also met on the margins of GWF 2022 in Amsterdam, where collaboration with the World Geospatial Industry Council was discussed in depth.

19. The Private Sector Network aims to participate actively and contribute to the Committee’s regional, functional, and thematic groups and will further co-organise webinars with the Secretariat and the United Nations Geospatial Network. The Network plans to promote the Integrated Geospatial Information Framework (IGIF) and SDGs Geospatial Roadmap. Furthermore, the Network will advocate for an Economic Benefits Study on the Value of Spatial Information in the Asia-Pacific region and work closely with the Space–Spatial Industry sector. Furthermore, the Network will encourage the participation of new companies from all regions and domains, and in this regard, diversify companies’ expertise involved. Further information on the activities of the Private Sector Network is provided in detail in the relevant background document to this present report.

United Nations Geospatial Network

20. At the eleventh session of the Committee of Experts, the United Nations Geospatial Network promoted its activities through the release of its website¹⁰ and two publications entitled ‘Geospatial in Action – Data and Insights for the Sustainable Development Goals¹¹’ and ‘Geospatial for Humanity: Prevention, Response and Recovery on the World COVID-19

⁹ <https://yourcaribbeanstory.caribeangeoportal.com/>

¹⁰ <https://www.un.org/geospatialnetwork/>

¹¹ https://www.un.org/geospatialnetwork/sites/www.un.org.geospatialnetwork/files/2021_ungeospatialnetwork_geospatialinaction.pdf

Pandemic¹². Further, the Network prepared geospatial generic job profiles¹³ to promote and advance a consolidated approach to human resource management of geospatial professions in the United Nations system and beyond.

21. During the inter-sessional period, the Network elected one of its Steering Group Members, Mr Douglas Muchoney from the United Nations Food and Agriculture Organization (FAO), as Vice Chair, to address the departure of its Mr. Toby Wicks, United Nations Children’s Fund (UNICEF). Substantively, the Network has continued to raise awareness on the use and benefits of geospatial information within the United Nations system. This included contributing to the ‘Girls and Women Talking Tech, Geospatial Edition’, and supporting the organisation of three events¹⁴:

- (i) ‘GIS Day’ on 17 November 2021;
- (ii) ‘A Mapathon for Humanitarian operations in Libya’ on 30 March 2022¹⁵; and,
- (iii) ‘Geospatial Data for Good’ on 12 May 2022.

22. The UN Geospatial Network continues to meet monthly and work toward the implementation of the ‘Blueprint: Geospatial for a better world – transforming the lives of people, places and planet¹⁶’, its strategy document for strengthening the coherence and coordination of geospatial information within and between entities of the United Nations system. A detailed update of the Network’s progress is contained within the relevant background document to this present report.

23. The Network has identified the need for a practical mechanism that helps coordinate the management, dissemination and sharing of geospatial information. This is directly informed by the transformation called for by its Blueprint, realising the vision of ‘Our Common Agenda¹⁷’ along with attaining the ambition of the Secretary-General’s Data Strategy¹⁸, the Secretary-General’s Strategy on New Technologies¹⁹ and the Secretary-General’s Roadmap for Digital Cooperation²⁰, and the overall mandates of the United Nations system and its constituent members. Thus, in the background document to this present report, ‘The One United Nations Geospatial Situation Room’, the Network examines how to bridge the existing gaps in geospatial capacity within and across the entities of the United Nations system. In this regard, the Network proposes to develop the ‘United Nations Geospatial Network Data Hub’ to be established and sustained within existing resources by Network members.

24. This implementation will be guided by the Blueprint’s activities 9, 17 and 18, advancing a model of data custodianship to strengthen the governance of geospatial information management across the United Nations system, in accordance with existing mandates and responsibilities of the Networks’ members. In developing this concept, the Network deliberated how this approach can address global priorities, data availability, privacy and security concerns, data maintenance and capacity development programmes.

¹² https://www.un.org/geospatialnetwork/sites/www.un.org.geospatialnetwork/files/2021_ungeospatialnetwork_geospatialforhumanity.pdf

¹³ https://www.un.org/geospatialnetwork/sites/www.un.org.geospatialnetwork/files/2021_ungeospatialnetwork_genericejobprofilesgeospatial.pdf

¹⁴ <https://www.un.org/geospatialnetwork/events/>

¹⁵ [A Mapathon for Humanitarian operations in Libya](https://www.un.org/geospatialnetwork/sites/www.un.org.geospatialnetwork/files/2022_a_mapathon_for_humanitarian_operations_in_libya.pdf)

¹⁶ https://ggim.un.org/meetings/GGIM-committee/10th-Session/documents/2020_UN-Geospatial-Network-Blueprint.pdf

¹⁷ <https://www.un.org/en/un75/common-agenda>

¹⁸ <https://www.un.org/en/content/datastrategy/index.shtml>

¹⁹ <https://www.un.org/en/newtechnologies/>

²⁰ <https://www.un.org/en/content/digital-cooperation-roadmap/>

25. Importantly, the development of the United Nations Geospatial Network Data Hub is directly grounded and informed by the frameworks, practices, norms, and standards of the Committee of Experts, in particular the IGIF. The Network recognises the transformational potential of the work of the Committee of Experts. While its primary focus is on strengthening geospatial information management within Member States, the applicability and benefits can extend to entities of the United Nations system, including the Network's members.

26. The principles for the implementation of the One United Nations Geospatial Situation Room include:

- (i) Recognise the geospatial component of the United Nations Geospatial Network Data Hub for the nexus of the United Nations;
- (ii) Build on implementation frameworks focused on the nexus of pillars of the United Nations (Peace and Security, Sustainable development, Human rights, International Law and Humanitarian aid);
- (iii) Build on synergies of existing data ecosystems and platforms across the United Nations system (integrating geospatial, statistics, other data and documents);
- (iv) Implement a federated data system approach, with clearly identified Data Hubs and Spokes;
- (v) Contribute directly to the use cases of the implementation of the Secretary General's Data Strategy (e.g., the United Nations Data Hub, Peace and Security, Operations and Crisis Centre platforms); and
- (vi) Use a scalable and phased approach for the implementation plan.

27. In this regard, the United Nations Geospatial Network seeks the Committee of Expert's guidance and endorsement on the 'One United Nations Geospatial Network Data Hub' concept, as detailed in the accompanying background document.

III. Points for discussion

28. The Committee of Experts is invited to:

- (a) Take note of the present report and express its views on the contributions and activities of the four thematic groups to the global geospatial information agenda;**
- (b) Provide guidance on the United Nations Geospatial Network's implementation of the geospatial component of the Secretary-General's Data Strategy;**
- (c) Endorse the concept of a 'One United Nations Geospatial Situation Room' as a component of the United Nations Geospatial Network Data Hub.**