

Third expert meeting of the working group on Policy and Legal frameworks for geospatial information management including addressing issues related to authoritative and reliable geospatial data and emergent technologies

Summary Report

07-09 October 2025

Riyadh, Saudi Arabia

1. The third expert meeting of the working group (WG) on Policy and Legal Frameworks on Geospatial Information Management was hosted by the General Authority for Survey and Geospatial Information (GEOSA) of Saudi Arabia. Thirty-one experts including from fifteen Member States, and representatives from five partner organizations, gathered and worked together over three days, from 07 – 09 October 2025, at the headquarters of GEOSA in Riyadh, Saudi Arabia.

Opening remarks were provided by the President of GEOSA, hosting the meeting. The President welcomed participants (see List of Participants) to Riyadh, and recalled the working group was established in 2017 in recognition of the critical importance of the need for coherent and legal frameworks as an enabler for open, transparent, trusted access to geospatial information and solutions to real world challenges. The President of GEOSA also noted the high value of discussion and expressed keen interest in developing geospatial information management at regional and international levels and towards the development of frameworks for enhancing national geospatial capacities. The President of GEOSA concluded with the importance of leveraging experiences from across the world and encouraged participation and the exchange of creative ideas.

The Co-Chair (Canada) expressed its deep appreciation for the generosity and hosting by GEOSA and highlighted the importance of policy and legal frameworks for supporting decision-making processes in the government. The Co-Chair also noted the growing interest of the working group to address new and emerging technologies and their governance, and recalled the distinction between “legal,” which refers to binding instruments and regulatory measures and “policy,” which encompasses non-binding instruments, strategies and guidance. The Co-Chair presented the proposed agenda which was adopted as follows:

- 1) Opening of the third expert meeting, welcome and introductions
- 2) Agenda, organization of the meeting and setting the scene
- 3) Policy and legal developments – national and regional
- 4) Workplan and deliverables for 2025 – 2027
- 5) Awareness, communication, engagement, and developing and sustaining legal-policy capacity
- 6) Evolving geospatial and technological landscape, artificial intelligence, and its regulation
- 7) UN-IGIF strategic pathway on Policy and Legal frameworks
- 8) Collaboration with partnering international organizations and other functional groups
- 9) Sixteenth session of the Committee of Experts
- 10) World Geospatial Information Congress 2026
- 11) Summary, next meeting and close

2. As part of the setting the scene for the meeting, the Secretariat provided a brief overview of the outcomes of the fifteenth session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM). This included: the election of Bureau members (with Co-Chairs Saudi Arabia, South Africa, United States of America, and rapporteur Fiji), noting two of the Co-Chairs of the Committee were present at the meeting of the working group (Saudi Arabia and South Africa); the request to the Bureau and Secretariat to review the programme of work and priorities of the Committee; the concerns about resources in the Secretariat for the needed coordination and internal oversight for the global centres and support to the functional groups; the support for a World Geospatial Day as an international observance day to raise awareness of geospatial contributions to socio-economic and environmental outcomes; the hosting of the Third United Nations World Geospatial Information Congress in November 2026; the endorsement of the Strategic Framework (2025–2031) to guide the programme of work; and, the endorsement of background papers submitted by the working group on authoritative data for crises, data for public good in the digital world, a rallying statement on AI implications for the geospatial sector, and related documents regarding AI and digital applications.

The Secretariat concluded on the closing of the two task teams: the Future Geospatial Information Ecosystem and Geospatial Information for Climate Resilience.

3. Participants introduced themselves; see [List of participants](#).
4. The Co-Chair (Canada) invited participants to share the latest regional and national policy and legal developments as follows:

Canada: reported on the federal context with distributed authorities (federal, provincial, and territorial), and noted several key developments, including: updates to relevant policies from central agencies and to the federal standard on geospatial data; the renewal of an intergovernmental Pan-Canadian accord on geomatics ('the Accord'), which guides cross-jurisdictional collaboration;; joint work on a collaborative geospatial strategy including governance, policy and legal authorities; and, ongoing work on AI applications in geomatics with attention to standards, ethics, privacy and data governance.

China: outlined the role of the National Data Bureau in: improving the national data governance system, including the development of data property-rights rules, security frameworks, and a unified registration platform for public data; the current piloting of data governance across several provinces; the establishment of a trusted data space for secured data sharing and transactions; and, a three-year programme to unify foundational (including 3D) datasets and enable integrated resource planning.

South Africa (Co-Chair): described a three-sphere constitutional system (national–provincial–local). The Spatial Data Infrastructure Act (2003) is being modernized and aligned to the United Nations Integrated Geospatial Information Framework (UN-IGIF), beginning with a new national geospatial information management strategy (international tender). Amendments to the Survey Act, Deeds Registry Act and SPLUMA (2015) seek alignment across statutes. An Inter-Ministerial Committee on Spatial Governance has been established to break siloes and drive “collect once, use many” principles. From 2025, South Africa is initiating a National Spatial Data Observatory, envisaged as a core registries platform developed through a 15-year public–private partnership (BOT model) to sustain currency and innovation. The Observatory will support the National Spatial Development Framework 2050, including Monitoring and Evaluation (M&E) on climate risk, population dynamics and investment.

United States: reported on ongoing work to implement and complete a national Integrated Geospatial Information Framework and on efforts to re-assess and endorse standards (with periodic review cycles) to facilitate interoperability and data sharing.

United Arab Emirates: reported on a 2019 federal decree establishing the Federal Geospatial Information Center (FGIC) and subsequent cabinet decisions organizing the geospatial sector. The country developed security/specification guards, a national geospatial feature catalogue, and is drafting plain-language guidelines to accelerate data sharing under a clear governance framework.

Malaysia: reported on amendments to national laws to regulate mapping applications and methodologies, the mandate on data registration through a unified platform, and on strengthened methodological control and certification (referencing ISO/TC 211).

Kuwait: outlined a whole-of-government GIS programme formally established since 2011 to drive authoritative, available and accessible datasets using a series of policy and process frameworks, while noting the need for applied guidance on data security, classification and sharing.

Saudi Arabia: presented their national policy extensively under agenda item 6.

UN-GGIM Geospatial Societies (Chair): noted the importance of the data supply chain and sourcing given the rise in of Large-Language Models and ‘ChatGPT-like’ tools that aggregate indiscernibly reliable data and other data sources and further highlighted the critical importance of the governance of data in the future geospatial information ecosystem.

Geospatial World (observer): stressed the growing commercialization and commoditization of geospatial services and the need for trusted and certified sourcing of data, authenticity and standards in a rapidly growing digital economy, and noted practical difficulties on the ground (e.g. mapping constraints, security sensitivities) that require legal and regulatory maturity.

In discussion, members underscored: (a) the value of sector-specific legal input (aviation, hydrography, boundaries, AI); (b) the need to clarify ownership and custodianship of data when consolidating multisource maps and solutions; (c) managing requests for open data versus national security requirements; (d) the importance of authenticity, licensing, liability and privacy; (e) the need for an continuous iterative process for standards (not as an end point); and (e) aligning Private-public-partnership models with public mandates.

5. Canada presented the previous achievements of the working group during the workplan 2023-2025, including the 2025 endorsement of the papers on [Data for public good in the digital world](#), [Authoritative Data for Crises](#), [Rallying Statement to the Geospatial Sector of the Developing Legal and Regulatory Framework on AI](#), [Report on International Regulations on AI in Geospatial Applications](#), and [the Implications of the Developing Legal and Regulatory Framework on AI for the Geospatial Sector](#). The presenter also noted the critical importance of continuing to socialise guidance, maintaining country resources and case studies, aligning and contributing to the updates on the UN-IGIF, and remaining attentive to requirements and potential collaboration with other functional groups (e.g. land administration, marine/land interface).

Canada further presented the planned activities for 2025–2027, including: (a) keeping policy/legal issues “live” with targeted updates on emerging technologies and artificial intelligence; (b) completing and refreshing foundational guidance such as the paper on ‘Authoritative data’ (Part I) with plain-

language outputs and simplified communication materials; updating UN-IGIF Strategic Pathway 2: Policy and Legal; (c) piloting a synthesis project to address barriers to policy and legal implementation; and, (d) exploring stronger cross-group cooperation to amplify impact. These items are further elaborated below.

Following the presentation by the Co-Chair (Canada), participants discussed the challenges related to the development of ‘fit-for-purpose’ frameworks in a rapidly evolving landscape and called for practical communication products, potentially leveraging AI tools and design support from volunteer administrations, to target user groups such as: ministries, lawyers, and geospatial practitioners.

6. Participants reiterated the need for simple communication outputs (simple decks, summaries, use cases briefs, slide decks, templates, exemplars) and discussed potential support from participants/Member States to contribute to the design and editorial capacity to assist the Bureau and Secretariat. Participants also discussed more broadly on awareness, communication and capacity development, and on the need to ensure continuity within institutions on knowledge transfer on the topic of policy and legal issues related to geospatial information management.

The working group agreed to explore further joint sessions with the legal community (e.g., bar associations), inviting law students and early-career lawyers to build geospatial legal literacy and suggested outreach to national missions and AI/digital councils to integrate geospatial considerations into broader digital governance processes.

7. Regarding the evolving geospatial and technological landscape, AI, and its regulation, South Africa (in its capacity as Co-Convenor of the former task team on the Future Geospatial Information Ecosystem) delivered a presentation on their work including the paper on “Positioning the Future Geospatial Information Ecosystem” (July 2025). The presentation introduced the process that led to the paper including the webinar on “Exploring the wider digital ecosystem” and global survey on the same topic.

The presenter outlined the paper on “Positioning the Future Geospatial Information Ecosystem,” including its core concept elements, including: knowledge; data as foundational infrastructure; ecosystem thinking rather than standalone geospatial systems; community engagement; system reciprocity; data values and ethics; inclusive innovation; semantic and institutional interoperability; resilience/adaptability; machine-readable and actionable by design; and human-centric governance. The presentation then underscored the implications for the policy and legal working group, particularly on the need to link and adapt law, ethics, and trust in data and innovation. The presentation also further indicated the need to shift governance from access control to knowledge stewardship, ensure legal frameworks and safeguards for the use of data and emerging technologies such as AI, enable cross-border interoperability and shared stewardship (treaties, agreements), preserve privacy laws, information technology security, and indigenous data rights, and embed geospatial governance into wider national digital ecosystems. The presentation concluded on the latest decision of the Committee of Experts on the upcoming series of policy and research papers that could address AI and geospatial, governance, data sovereignty and interoperability or legal perspectives for digital public infrastructure, and suggested that the series of papers could be showcased at the Third World Geospatial Information Congress (to be held in Riyadh, Saudi Arabia from 16-19 November 2026).

Participants discussed considerations from the presentation and noted both challenges and opportunities related to the trust-control continuum and its application in a variety of contexts.

Participants highlighted the need for practical frameworks for automation, sourcing of data, intellectual property, liability concerns around algorithmic opacity and noted the key role of the working group in this regard. Participants also noted the distinction between policy instruments and binding legal requirements and how to enforce controls and transparency along a continuum. Participants appreciated the perspectives offered in the paper, particularly on the policy and legal considerations, and noted that specific applications such as maritime charting, aviation or high-definition navigation data, would require specific policy and legal considerations.

Another expert, from the USA, presented an overview of a proposed paper on Automated Vehicles and High-Definition (HD) Maps. This proposal aims to bridge the knowledge /awareness gap between automated vehicles and geospatial information. It combines several areas of expertise, including HD mapping concepts, guidance from UN-GGIM, existing legal concepts, and navigation data frameworks. Based on the six levels (0-5) of automation, as recognized by the Society of Automotive Engineers (SAE), the expert applied the trust-control continuum from the working group to demonstrate that, among other things, the need for authoritative data, positional accuracy and geospatial features increases according to the levels of automation. The challenge is to ensure available road data layers are reliable, relevant, accurate and timely, especially when they originate from multiple sources including from all levels of governments, private data providers and non-governmental organizations. Noting that framing HD maps as navigation charts clarifies their purpose, promotes safe navigation and facilitates commerce, the presenter proposes to leverage existing Geographic Information Management frameworks such as navigation charts used for marine and sometimes aerial navigation. The proposed paper would explore roles and responsibilities within automated vehicles and navigation ecosystems at all levels of government, subnational jurisdictions, private industry and non-governmental organizations.

Participants discussed considerations on policy and legal implications and regulatory requirements of seamless navigation from sea to land. It was unanimously agreed on the need to deepen the debate on the subject and to explore ways and means to raise awareness and get the legal community more involved. As next step, it was suggested to develop papers on liability, rights and risks for navigation. These papers will provide approaches and requirements on the mandatory use of specific data for navigation.

An invited expert (Centre for Spatial Law and Policy) delivered a presentation on “Identifying and addressing legal issues in emerging technologies” which opened on the legal, ethical, and policy opportunities and challenges of emerging technologies. The presentation noted the different risk-based frameworks for regulating AI, assigned obligations according to risk class (unacceptable, high, limited, minimal), and identified the needed transparency and documentation obligations to facilitate AI use, datasets for modelling, human oversight mechanisms, change logs, and impact/risk assessments for high-risk systems. The presentation also noted the increasing concerns on liability and insurability. The presenter highlighted the cross-border data restrictions, regulations and digital sovereignty rules that complicate transnational data-sharing essential for disaster response, climate action and sustainable development. The presenter advocated for an increased role of the geospatial community in the legal, policy and regulatory activities on AI, recognizing that the geospatial community can effectively shape legal and policy environments by providing expert input and advocacy to guide their development.

Participants proposed establishing a legal community of practice (CoP) and further engaging the legal community to contribute to the working group, including sector-specific experts around ‘use cases’, and requested template clauses and model agreements (licensing, IP, privacy, liability, provenance, cross-border transfers) aligned to UN-IGIF principles. Participants also noted and considered regulatory sandboxes that could be co-led by legal and technical experts to test AI use cases under documented controls. The participants also underscored the need for plain language for both communities to enhance respective understanding between lawyers/policymakers and geospatial experts.

Saudi Arabia presented an overview of their current achievements in the implementation and alignment to the strategic pathways of the UN-IGIF in particular: on Policy and Legal, the classification, licensing and pricing framework, promoting openness by default, one-stop data-sharing protocols and alignment with national cybersecurity and data protection laws; on Data, the creation of a bilingual National Geospatial Dictionary and Feature Catalogue covering foundation themes; on Standards, the metadata profile aligned to ISO 19115 with embedded governance and quality documentation, and a National Geospatial Data Model adopting OGC best practices; on Capacity and Partnerships, the establishment of the National Geospatial Academy, engagement with universities, and participation in global fora (UN-GGIM, OGC, IHO, ISO/TC 211); on Innovation, the development of a National Geospatial Ecosystem vision and a Centre of Excellence in Riyadh focusing on visualisation, analytics and integration with national digital programmes on AI, digital twins, and machine-to-machine data exchange, and finally; on Finance, with the development of a pricing policy enabling cost recovery, a professional licensing scheme, and a legal framework incentivising private-sector participation.

Members discussed the implementation of the UN-IGIF and considerations for a phased approach versus “big bang” implementation, topics around cloud, IP management, official map designation, catalogue governance, and transferability of the GEOSA model to other national contexts.

8. Regarding the UN-IGIF strategic pathway on Policy and Legal frameworks, a consultant invited to the meeting presented initial considerations, views and next steps to ensure the UN-IGIF suite of documents remained current, up-to-date and relevant for the geospatial community. The presentation presented the importance of ‘inclusive expertise’ to ensure lawyers and other relevant domain expert could participate in the updates to the policy and legal guidance, the need to centralize the proposed changes to the strategic pathway on policy and legal, and noted that the strategic pathway was developed before the method on the Country-level Action Plans (CAP), and therefore that the policy and legal pathway updates should also draw from content related to the CAP. The presentation also highlighted the importance of incorporating new emerging technologies in the strategic pathway including AI, machine learning, cloud computing, Internet-of-things, augmented reality, blockchain, quantum computing, and others as appropriate. Finally, the presentation noted the importance of making reference to other policy document prepared by the working group, such as the Paper on Data for Public Good in the Digital World, Rallying Statement to the Geospatial Sector on the Development of a Legal and Regulatory Framework for AI, Report on International Regulations on AI in Geospatial Applications, Concept Paper To Address the Potential Implications to the Geospatial Sector of the Developing Legal and Regulatory Framework on AI, and the papers on Authoritative Data and Authoritative Data for Crises.

The Co-Chair, noting the general agreement amongst participants, decided to organize working meetings and discussions on the updates to the UN-IGIF strategic pathway on Policy and Legal frameworks during 2026. The Co-Chair also requested expressions of interest to be sent to the Secretariat to have contributors to the upcoming review and updates.

9. The participants discussed a variety of opportunities to work collaboratively, in particular with the thematic networks who can provide perspectives and insights on relevant policy and legal frameworks, and with other functional groups on topics such as land, sea and on the future geospatial information ecosystem.
10. The Secretariat provided an overview of the objectives, current architecture, Bureau, and functional groups of the Committee of Experts. The presentation included an overview of the current agenda and arrangements for the upcoming sixteenth session and noted the dates of the sixteenth session are 5-7 August 2026 at the UN Headquarters, New York, USA.
11. The President of the International Advisory Committee of the Third United Nations World Geospatial Information Congress (3UNWGIC) presented the current progress on the arrangements of the Congress. The presentation noted the three organizational groups of the Congress as: the Congress Coordinating Committee (CCC) with high-level oversight, the International Advisory Committee (IAC) in charge of the development of a substantive forward-looking programme, and the Local Organizing Committee (LoC) as the primary facilitator of all on-the-ground arrangements, logistics and operations. The presentation also included the composition and theme of the Congress “Navigating the Next Frontier: Embracing Digital Renaissance and a New Geospatial Paradigm”. Finally, the Chair of the IAC requested participants to the working group meeting to contribute and attend to the 3UNWGIC.
12. The Co-Chairs were reaffirmed for another term with the prospect of several activities and need for sustainably carrying out the activities of the working group, particularly given the rapidly evolving digital and geospatial landscape affected by emerging technologies such as AI.

The Co-Chair (Canada) summarized the next steps as:

- **Update UN-IGIF Strategic Pathway 2 on Policy and Legal** to give the geospatial community the perspectives and tools it needs to understand and address concerns in AI and other emerging technologies, and in this context decided to assemble a team with experience in implementing UN-IGIF (Policy and Legal) with Canada (Kristine Hirshkorn, Madeleine Martin, Ignace Kabayiza, Cindy Mitchell), Saudi Arabia (Asim AlGhamdi, Ali AlAwaji, Wejdan Asiri), South Africa (Clinton Heimann), and the United Kingdom (James Norris, Melanie Hutchinson), with possible input and review by Ms. Lesley Arnolds and Mr. Tim Trainor.
- **Address geospatial emerging technologies**, such as AI, that present significant opportunities in geospatial information management and raise several legal issues and concerns, and in this context maintain an open agenda on policy/legal issues in emerging technologies and how to address them (AI, automation, digital twins, data spaces, regulatory sandboxes).
- **Consider policy and legal implications and regulatory requirements of seamless navigation from sea to land**, and develop papers on considerations on liability, rights and risks for navigation approaches and requirement to the mandatory use of specific data for navigation.

- **Strategize the approach to bring along the legal community** including on how to bring legal experts, how to communicate on the relevant topics on geospatial information management, and how to facilitate participation and expertise. It was noted that further engagement with the legal marine community through the Advisory Board on the Law of the Sea / Division for Ocean Affairs and the Law of the Sea Marine should be considered for geospatial information management, policy and legal considerations
- **Consider how to bridge the land and marine domains** through effective laws and policies, as a strong and enabling policy and legal environment is essential for effective geospatial information integration.
- **Improve communication and impact of working group resources**, including development of plain language resources. Develop documentation and shared outreach materials to facilitate the dissemination and understanding of key papers developed by the working group, including in plain language presentations, one pagers, document designs, and FAQs.
- **Develop concise policy and research papers on policy and legal topics** (as part of wider initiative) on AI and implication of its regulation for geospatial sector, ethics, accountability, and trust, high-definition mapping for autonomous navigation, licensing, accuracy, regulations, data sovereignty and interoperability or rights-based data sharing.

The Co-Chair (Canada) acknowledged the host (Saudi Arabia) for their leadership and innovation, including with respect to the geospatial ecosystem and operationalizing the UN-IGIF, and thanked the host for welcoming the working group, presenters, and participants for their substantive contributions across policy, legal and operational domains, the interpreters, and the Secretariat for its support throughout the working group meeting. The meeting closed with agreement to pursue the actions above and to maintain momentum during the intersessional on proposed actions, documents, and webinars in preparation for the sixteenth session of the Committee of Experts.