AI Artificial Intelligence generated image on the future of People, Places and Planet. One Map. One Humanity

One UN Geospatial Situation Room

Concept 3.0 and Implementation Plan

One Map of Humanity
For People, Places and Planet

UN GEOSPATIAL NETWORK
UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

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Foreword

Geospatial information and maps: knowledge and insights for people, places and Planet

The United Nations (UN) has played a crucial role in promoting global peace and security, human rights and development in a global partnership since its founding in 1945. As humanity faces unprecedented challenges, the integration of geospatial data, technologies and visualization through maps has become indispensable for achieving these goals. Maps are no longer just tools for navigation; they are vital for understanding and addressing the complex issues that affect people, places, and the planet.

Geospatial data and technologies are essential for various aspects of human life, from disaster response to urban planning, environmental conservation, monitoring climate, societies resilience, biodiversity, preserving peace, or public health. They provide a visual representation of data, enabling better decision-making and resource allocation.

In the context of sustainable development, geospatial information and technologies assist in tracking progress toward and achieving the United Nations Sustainable Development Goals (SDGs). Geospatial data and insights help monitor deforestation, water usage, and urban growth, ensuring that development is both equitable and environmentally sustainable.

'One Map' of Humanity: A global vision unity

If maps are able to present the world as it is today, it can also help to define a vision for tomorrow. "One Map of Humanity" is a concept that envisions a single, comprehensive view of people, places, and planet, as world of 8 billion People, 194 countries, and One planet. This map would serve as a powerful tool for connecting civilizations and fostering a sense of global unity. By visualizing the interconnectedness of all human societies, it can support efforts in peace and security, humanitarian actions, sustainable development, and the international rule of law and human rights.

Geospatial data, supporting the pillars of the Organization

Geospatial data can enhance global peace and security by providing accurate and timely information on conflict zones, migration patterns, and border disputes. By sharing this data, countries can work together to prevent conflicts and build trust. The UN can use these maps to monitor ceasefire agreements, plan peacekeeping missions, and support diplomatic efforts.

In times of crisis, such as natural disasters or armed conflicts, geospatial technologies enable rapid and effective humanitarian

response. Maps help in identifying affected areas, planning logistics, and coordinating efforts among various organizations. They ensure that aid reaches those in need promptly and efficiently, minimizing suffering and saving lives.

Achieving sustainable development requires a deep understanding of the planet's resources and how they are used. Geospatial technologies provide critical insights into environmental changes, helping policymakers create strategies to protect ecosystems and promote sustainable practices. By integrating data from various sources, the "One Map of Humanity" can highlight areas that need urgent attention and track progress toward sustainability goals.

Maps are powerful tools for promoting the rule of law and human rights. They can document human rights violations, track the movement of refugees, and monitor compliance with international treaties. By providing a clear visual representation of these issues, maps help hold governments and organizations accountable, ensuring that human rights are respected and protected.

The integration of geospatial data and technologies is crucial for addressing the complex challenges facing humanity today. The concept of a "One Map of Humanity" offers a vision of global unity and cooperation, where all people, places, and the planet are interconnected. By leveraging these tools, the United Nations and the global community can work together to achieve peace and security, support humanitarian actions, promote sustainable development, and uphold the international rule of law and human rights. This vision not only connects civilizations, it also empowers communities to build a more just, equitable, and sustainable world.

Alexandre Caldas
Chair of the UN Geospatial Network

Director of the United Nations (UNEP)
Chief, Early Warning and Data Analytics Branch | Early Warning and Assessment Division

SECTION I: Vision and Strategy

One UN Geospatial Situation Room

CONCEPT 3.0

1. Background

In 2023, in making decision 13/103, the Committee noted the accomplishment of the network in strengthening the coherence of geospatial activities within the UN System and ongoing consultations on the One UN Geospatial Situation Room, and also noted that this capability should provide a means to share data with Member States, build upon the UN Integrated Geospatial Information Framework and the global networks of the Committee of Experts, and, in this regard, could benefit from use cases that include a closer relationship with Member States.

On 13 to 15 June 2023, the UN Geospatial Network met for a conference on the theme "Building the One UN Geospatial Situation Room for People, Places and Planet" in Nairobi, Kenya. The Network issued the Masai-Nairobi Declaration on One UN Geospatial for People, Places and Planet, towards the Future We Want, the imperative to Leave No One Behind, and the 2030 Agenda for sustainable development. The Declaration also recognized the three priorities of the Network on One Map, One UN, One Humanity respectively to collaborate toward a One Geospatial unifying map service, to deliver as One for our world and for the benefits of Member States, and to develop One global partnership for impact for everyone, everywhere.

In 2022, in making decision 12/104, the Committee of Experts noted the One UN Geospatial Situation Room initiative as a component of the United Nations Geospatial Network Data Hub and acknowledged the Geospatial Network's intent to undertake a consultative process on the management and use of its Data Hub in order for the Hub to be informed by the frameworks, norms, practices and standards developed by the Committee of Experts in its programme of work, including the Integrated Geospatial Information Framework.

In 2021, in making decision 11/102, the Committee of Experts noted the accomplishments of the United Nations Geospatial Network over the intersessional period, recognized its renewed steering group, the strengthened partnerships and communication among stakeholders and the three background reports prepared, including those entitled "Generic geospatial job profiles for the United Nations system", "Geospatial for humanity", and "Geospatial in action", which reflected the breadth of geospatial activities performed within the United Nations system.

In 2020, in making decision 10/102, the Committee of Experts commended the United Nations Geospatial Network for its extensive work on the preparation and completion of the document entitled "Blueprint: geospatial for a better world – transforming the lives of people, places and planet" and its companion document, entitled "Blueprint: geospatial landscape of the United Nations system", developed in close consultation with the United Nations system, and which presented a review of the current status of the geospatial landscape in the United Nations and the strategic design and activities that will guide the future work and activities of the UN Geospatial Network.

2. Purpose

Data, including geospatial data, is the foundation for monitoring, understanding, and developing insights that can support the mandates of the United Nations and accelerate the achievement of the goals of the 2030 Agenda for Sustainable Development.

The One UN Geospatial Situation Room fulfills one of the key mandates of the UN Geospatial Network to "ensure the availability and accessibility of coordinated geospatial information and related systems to create quality, timely and reliable products and effective services to support Member States and United Nations mandates on local, national, regional and global issues, including the Sustainable Development Goals."

The One UN Geospatial Situation Room aims to build the geospatial component of the UN Secretary-General's Data Strategy, as welcomed by UN-GGIM in 2022 (decisions 12/104). The Network will continue its consultations with the geospatial community to further develop the concept and related content of the One UN Geospatial Situation Room.

3. The Masai-Nairobi Declaration

In accordance with the Masai-Nairobi Declaration on the One UN Geospatial Situation Room and Valencia Declaration on UN Maps, the implementation the One UN Geospatial Situation Room is the delivery mechanism to bring coherence on data governance and federated data services in the United Nations Secretariat, Specialized agencies, Funds and Programmes. The Declaration states general principles for the implementation of the One UN Geospatial Situation Room:

One United Nations Geospatial for People, Places, and Planet

We, the participants of the coordination conference on "Building the One UN (United Nations) Geospatial Situation Room for People, Places and Planet" held by the United Nations Geospatial Network, coordinating geospatial information management across 40 entities of the United Nations system, in Nairobi, Kenya, from 13 to 15 June 2023 hereby issue this *Masai-Nairobi Declaration on One UN Geospatial for People, Places and Planet*, and serves, has being held in Africa, as a voice of empowerment of the global south, the least developed countries, the developing countries and the most vulnerable people and nations of our world, as well as indigenous and local communities, towards *The Future We Want* [1] and *Leave No One Behind* [2].

Recalling the Secretary General's words that we face a triple planetary emergency — a climate crisis, a nature crisis and a pollution crisis which are causing profound suffering: lost lives, lost jobs, rising hunger, declining health and widening damage from disasters.

Considering the world and our nations are facing unprecedented challenges and change, the near future until the end of 21st Century is likely to bring more complexity, instability, and uncertainty. Humanity is likely to face increasing challenges ranging from violence and conflicts, stunted sustainable development, water scarcity, air pollution, digital divides, climate change adaptation and mitigation, pandemics and epidemics, population dynamics and displacement, and several other humanitarian challenges.

[1] A/RES/66/288 - The Future We Want
[2] UNSDG | Leave No One Behind

Recalling General Assembly resolution 70/1 of 25 September 2015[3], in which it adopted "Transforming our world: the 2030 Agenda for Sustainable Development", which recognizes the need for new data acquisition and integration approaches, to improve the availability, quality, timeliness and disaggregation of data to support the implementation of the new development agenda at all levels, benefiting from the contribution to be made by a wide range of data, including Earth observations and geospatial information, while ensuring national ownership in supporting and tracking progress;

Recalling the Secretary-General's Data Strategy[4], the report on ´Our Common Agenda´[5], the Secretary-General's Strategy on New Technologies[6] and the ´Roadmap for Digital Cooperation´[7], which call to make better use of data, grounded in the United Nations Charter, and recognizes the importance of the need for long-term transformation so everyone, everywhere nurtures data as a strategic asset for insight, impact and integrity to better deliver on our mandates for people, places and planet;

Considering the enabling power of Geospatial data, analytics, technologies and services toward the 2030 Agenda for Sustainable Development and for transforming, and improving the interconnectedness between *People, Places and Planet*;

Recalling the United Nations Geospatial Network continued implementation of its five-year strategy document "*Blueprint: Geospatial for a better world – transforming the lives of people, places and planet.*" and its mission to strengthen the coordination and coherence of geospatial information management within the United Nations system, including its overarching trends, technology, practices, data, needs, capacity building, and partnerships, ultimately to promote synergies and enable the United Nations system to "Deliver as One"; and

Recalling the Decision 12/104 of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) which "welcomed […] the initiative of the United Nations Geospatial Network to build [the] geospatial component" of the SG Data Strategy, and "noted the One United Nations Geospatial Situation Room initiative as a component of the United Nations Geospatial Network DataHub";

We resolve to implement the following strategic priorities:

One Map

- Launch and maintain collectively the *One UN Geospatial Situation Room*, our collective Geospatial data hub platform for humanity.
- Leverage the power of Geolocated data for supporting decision-making and action, and further bring to bear its Priority Themes for added value services.
- Use *One Map* (powered by UN Maps service) as the enabling power of one geospatial unifying map services, of our world geographies and places for impact at global, regional, national, and local levels.
- Agree to pool resources, activities, and initiatives from across the 40 UN entities to identify how the One UN Geospatial Situation Room can be implemented.

[3] General Assembly resolution 70/1, of 25 September 2015
[4] Secretary-General's Data Strategy
[5] Our Common Agenda
[6] Secretary-General's Strategy on New Technologies
[7] Secretary-General's Roadmap for Digital Cooperation

One UN

- Contribute to Global Agendas, as the Agenda 2030 and the Sustainable Development Goals[8], the Paris Agreement on Climate Change[9], and the Sendai Framework for Disaster Risk Reduction 2015-2030[10].
- Establish synergies across the UN Geospatial Network leveraging the guidance of UN- GGIM and contribute to the implementation of the Integrated Geospatial Information Framework.
- "Deliver as One", in accordance with the mandates of the 40 entities across the whole UN system, its Secretariat, Funds Agencies and Programmes, and Specialized Agencies which compose the United Nations Geospatial Network for the benefit of Members States,
- Use a forward-looking *Future's* approach, leveraging the enabling power of Data, Digital and Communication, Strategic Foresight and Behavioural transformation as essential drivers for "Our Common Agenda" and aligning with the Summit of the Future of the UN to be held in 2024.

One Humanity

- Organize ourselves around the *Nexus* approach to ensure cross-cuting and added value approach across the five pillars of the United Nations (Peace and Security, Sustainable Development, Humanitarian Action, International Rule of Law and Human Rights).
- A common agreement for action is to pool resources, activities, and initiatives from across the 40 UN entities of the UN Geospatial Network to identify how these synergies can be exponentiated.
- The *Nexus* approach will allow for cross fertilisation of synergies across the different areas of the United Nations. But more importantly, it is focused on the impact on the ground, directly impacting of the lives of People, Places and Planet.
- To collaborate with the private sector, the academic world, geospatial societies, the other international organizations and non-governamental organizations, as well as civil society to deliver geospatial for a better world, transforming the lives of People, Places and Planet and serve Humanity.

The UN Geospatial Network
Nairobi, Kenya, Africa
15 June 2023

One UN Geospatial Situation Room: One Map. One Humanity

One Map. One UN. One Humanity (depicts current International Displaced People, IOM and UNHCR)

[8] Agenda 2030 and the Sustainable Development Goals
[9] Paris Agreement on Climate Change
[10] Sendai Framework for Disaster Risk Management 2015-2030

4. Guidance from Overarching UN Agendas

In operationalizing the One UN Geospatial Situation Room, the UN Geospatial Network is guided by:

- Global agendas agreed by Members States, including the 2030 Agenda for Sustainable Development, and imperatives for a better world for people, places and planet
- Global frameworks agreed by the Committee of Experts on Global Geospatial Information Management, including its decisions, proceedings, and functional groups, and the UN-IGIF and its strategic pathways
- Strategic directions set by the Secretary General's Data Strategy
- Mandates of respective entities of the United Nations system, and aim to organizes data services based on these mandates and responsibilities, as data spokes
- Globally agreed standards for interoperability, accessibility and availability of data, insights and knowledge
- Benefits and a continued partnerships with and for Member States and its people
- Building and strengthening partnerships with private sector, geospatial societies, academia, and the civil society for public good

SECTION II: Concept and Approach

One UN Geospatial Situation Room

CONCEPT 3.0

1. High-level Concept

The One UN Geospatial Situation Room resides at the intersection of the global agendas, priorities of the United Nations on data and the UN-GGIM guidance and frameworks. The One UN Geospatial Situation Room are guided by the priorities of the 17 Sustainable Development Goals (no poverty, zero hunger, good heath, education for all, gender equality, economic growth, clean water, infrastructure, reduced inequalities, peace and justice, climate, life on land and below water) which guide the Priority geospatial data themes requirements. The overall intersections of these wider priorities, data needs and guidance of UN-GGIM are summarized in Figure 1 – One UN Geospatial Situation Room: High-level Architecture and Priorities.

High-level Concept

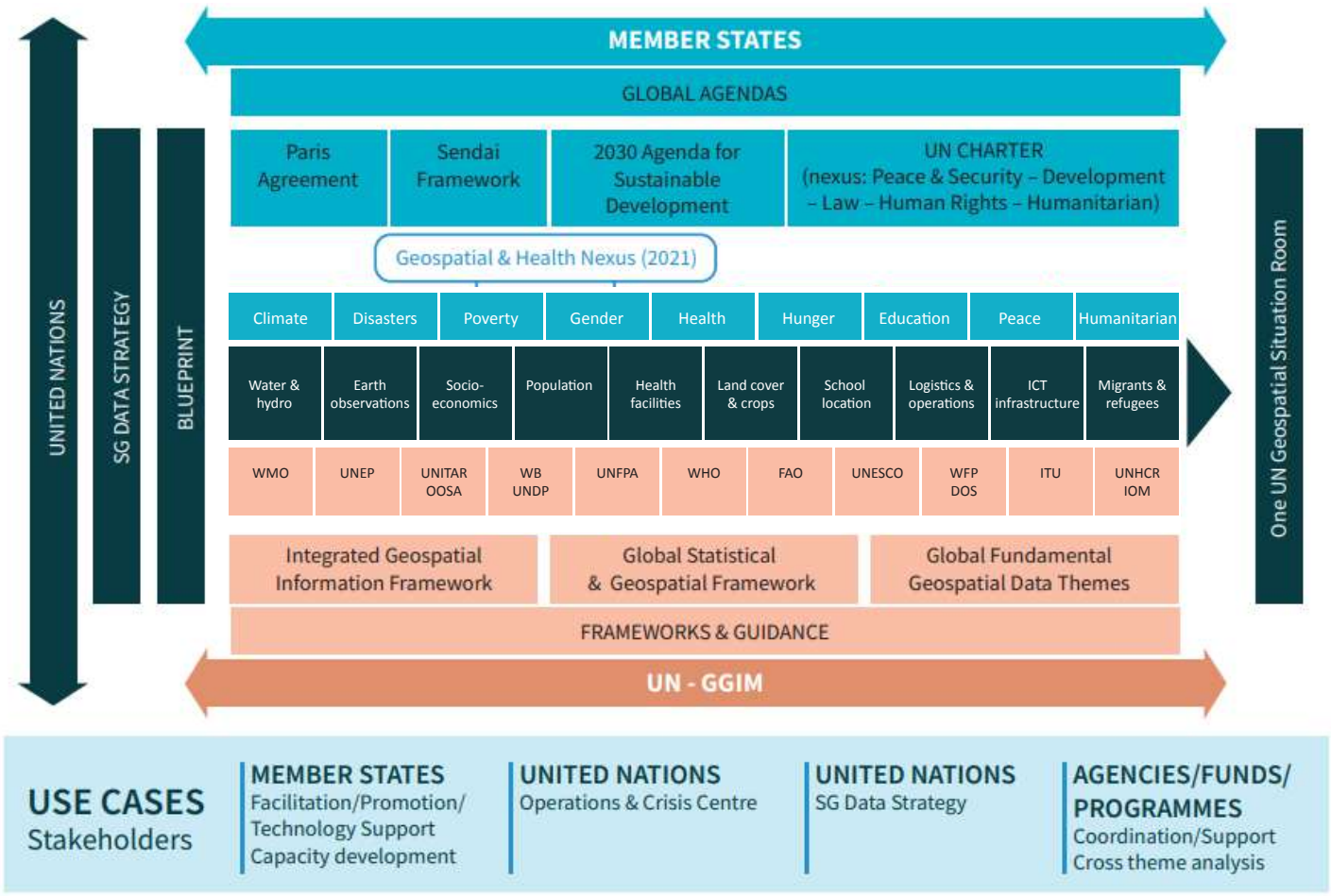


Figure 1 - One UN Geospatial Situation Room: High-level Architecture and Priorities

2. Federated Architecture

The One UN Geospatial Situation Room is implemented through a federated data architecture based on a governance of Data spokes from the Section II, Data themes.

The "One UN Geospatial Situation Room" is a leveraging the web-services delivered through the responsible UN entities which use their own technology stack in based on available standards and services protocols. The services emanating from UN entities can be indistinctly using open source or proprietary solutions.
The different Agencies web services (features and mapping services are integrated into the One UN Geospatial Situation Room, built on proprietary software.

The One UN Geospatial Situation Room, in accordance with its maturation, can incorporate data services from reputable organizations (EXT) or Member States (CTY), see Figure 2 – Federated architecture approach.

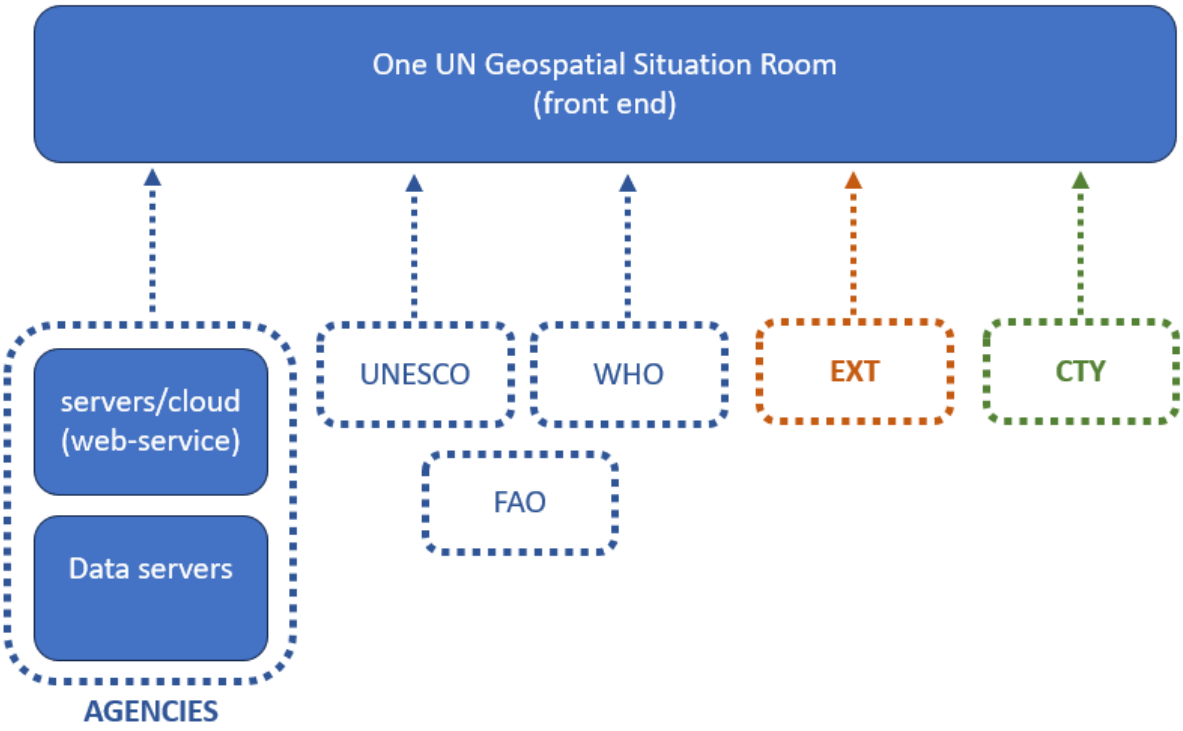


Figure 2 - Federated architecture approach.

A more detailed proposed federated architecture for the One UN Geospatial Situation Room is discussed in Section VI. Implementation, Operationalization and Financing, Point Number 5.

3. Strategic Pathway Approach

In agreement with its strategic document "Blueprint: Geospatial for a Better World, Transforming the Lives of People, Places and Planet" the UN Geospatial Network the implementation is leveraging the strategic pathways:

- **Governance**, with data spokes responsible from United Nations entities for specific data services as detailed in the subsequent section on Data Themes.
- **Policies**, guided by UN-GGIM frameworks and relevant United Nations strategies and policies including on the principle that the "the work of the United Nations should be open and transparent, except insofar as the nature of information concerned is deemed confidential" in accordance with the guidelines on Information sensitivity, classification and handling.
- **Data & standards**, fostering close collaboration with international standards organizations to ensure interoperable and accessible services, and contributing to the development of standards.
- **Innovation & technology** implemented through a federated data architecture approach leveraging respective United Nations entities infrastructure and web-services.
- **Capacity development** activities are conducted in agreement with governance for the benefit of countries in particular developing countries.
- **Partnership** the One UN Geospatial Situation Room aims to be a collective endeavour, in collaboration with the overall geospatial community of UN-GGIM including Member States, regional committees, thematic networks and other international organizations.

Finally, the implementation of the One UN Geospatial Situation Room is rooted in an integrated approach as the combined value of respective geospatial data and services from United Nations allow for better understanding for decision making.

SECTION III: Data Themes

One UN Geospatial Situation Room

CONCEPT 3.0

The One UN Geospatial Situation Room is guided by the 14 Fundamental Geospatial Data Themes developed by UNGGIM in 2019 (see Figure 3 – 14 Global Fundamental Geospatial Data Themes) to organize its contributions for data spokes governance and standards contributions. The One UN Geospatial Situation Room aims to facilitate the promotion and publication of data services form its entities, and promote efforts and contributions to the standardizations of data and services as entities providing valuable perspectives on global requirements and use.

Figure 3 - Global Fundamental Geospatial Data Themes

Given available data services and mandates of the United Nations Geospatial Network entities, the One UN Geospatial Situation Room will be organized with data spokes and themes as follows:

The list of Priority geospatial data themes is not exhaustive and only includes current priorities that will be expanded upon in the near future, as part of the scalable and phased approach implementation plan.

1. Global geodetic reference frame

The United Nations Global Geodetic Centre of Excellence (UN-GGCE) overarching goal is to assist Member States and geodetic organizations to coordinate and collaborate to sustain, enhance, access and utilize an accurate, accessible and sustainable GGRF to support science, society and global development. The objective is to support, within available resources, the implementation of General Assembly resolution 69/266 through strengthening and advancing: global geodetic cooperation and coordination; worldwide geodetic infrastructure; standards and policies; education, training and capacity development; and communication and awareness.

2. Addresses

The Universal Postal Union addresses is the primary forum for cooperation between postal sector players and helps to ensure a truly universal network of up-to-date products and services. Addresses are the underlying threads connecting all different actors and their activities, effectively functioning as a network of networks. Mindful of the fact that many countries still lack a countrywide address infrastructure, the UPU's "Addressing the world—An address for everyone" initiative aims to enlighten major addressing players of the importance of address infrastructure while helping them to better understand the challenges associated with addressing. The "Addressing the world" white paper summarizes major findings in these areas. The UPU collaborates with ISO to jointly develop multi-part ISO 19160, Addressing, provides the standards required for a country's addressing infrastructure, such as a conceptual data model; terminology; good practices for assigning and maintaining addresses; how to measure the quality of address data; and international postal addressing.

3. Buildings and settlements on Internally Displaced People, Returnees and Missing Migrants and Refugees

Internally displaced persons (IDPs): Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border [Guiding Principles on Internal Displacement, UN Doc E/CN.4/1998/53/Add.2.] (IOM, 2016). Returnee: any person who was displaced internally or across an international border, but has since returned to his/her place of habitual residence (IOM, 2004).

Refugees are people fleeing conflict, persecution and human rights abuses who have crossed a border into another country. Asylum-seekers are individuals who have sought international protection and whose claims for refugee status have not yet been determined. Internally displaced people (IDPs) have been forced to flee their homes, however, unlike refugees, they remain in their own country.

Internally displaced people, returnees and missing migrants

Quality, accessible, reliable, and timely geospatial data are essential to inform policies and actions in a humanitarian crisis. In today's complex and fast-changing world on the move, harnessing the power of geospatial data is key for sound policy and decision-making in the field of migration.

Geospatial Data is completely linked to the field of migration and internal displacement, which are entirely location-based. For this reason, the Displacement Tracking Matrix[11] (DTM) under the Global Data Institute (GDI) of the International Organization for Migration (IOM) is a producer and consumer of geospatial data and services to systematically collect, manage, analyze, and disseminate geospatial information on human mobility patterns across the globe.

The Displacement Tracking Matrix (DTM) is a comprehensive set of tools used to gather and analyse data to disseminate critical multi-layered information on mobility, vulnerabilities and needs of displaced populations. DTM provides IOM and other stakeholders with evidence-based data so they can make informed decisions about aid and recovery planning in affected communities. Additionally, DTM systematically manages geospatial information on human mobility patterns across the globe. With more than 11,000 IOM and partners' data collectors and over 500 technical experts serving in 95 countries as of December 2022.

[11] Displacement Tracking Matrix (DTM) https://displacement.iom.int/

Geospatial tools have a broad range of applications for IOM and in particular DTM, including improving operational efficiency through more informed programmatic planning and implementation using geospatial analytics. This is most evident in humanitarian responses within IOM in which accurate, reliable, and up-to-date data on displacement dynamics have lifesaving consequences. For external partners and audiences, GIS online visualizations often help display key results and indicators on easy-to-read map products.

The Missing Migrants Project is an initiative implemented since 2014 by IOM to document disappearances of people during their migratory journeys towards international destinations worldwide. The geo-locations are key to showcasing the impact on vulnerable people who left their homes in search of a better life. The project recently reached the grim milestone of 50,000 deaths during migration, but the many data challenges of documenting deaths during irregular movements means many more remain unrecorded. Each location represents an incident, each number represents a person, as well as the families and communities that they leave behind.

Missing Migrants Project data are used as Sustainable Development Goal (SDG) Indicator 10.7.3 on the "[n]umber of people who died or disappeared in the process of migration towards an international destination" and Global Compact for Safe, Orderly and Regular Migration (GCM) Objective 8.

Priorities are ruled by what we see happening but special attention for IOM's geospatial teams will go to 1) Enhance the availability and use of geospatial data to achieve positive impacts for migrants and societies 2) Provide live feeds of migration trends and other relevant data into the UN Network Geospatial Data Hub 3) Strengthen evidence-base geospatial data on migration and displacement globally 4) Coordinate and share IOM efforts on geospatial analytics and methods with all UN agencies. A key IOM goal is to improve the evidence base for good migration governance in support of sustainable development, effective humanitarian action and peaceful societies, and to support implementation, monitoring and reporting by relevant stakeholders on their actions in support of relevant international frameworks.

Refugees

UNHCR protects people forced to flee their homes as well as stateless persons. We deliver life-saving assistance in emergencies, safeguard fundamental human rights, and help find long-term solutions so they can find a safe place to call home. The UN Refugee Agency, UNHCR, collects and collates data relating to persons who are forcibly displaced, returnees or stateless:

UNHCR understands the importance of the Geographic Information Systems (GIS) and mapping and started investing resources on its further in-house democratization from the early 90s. The GIS team, part of the UNHCR Global Data Service maintains the GIS infrastructure and global geodatabase. We understand that sharing adds values to data. Therefore, we offer access to a variety of geoservices of data pertaining to refugees and other people of concern to UNHCR mostly accessible through https://data.unhcr.org/en/geoservices/

4. Elevation and depth

This theme describes the surface of the Earth both on land and under a body of water, relative to a vertical datum. This theme recognises the importance of integrated models describing a continuous surface for land and submerged areas (e.g. an integrated land-sea model). All human activities and natural processes are influenced by the elevation or the depth of the location where they happen. Elevation is essential to help determine appropriate places for human developments and activities, to map relief in 2D maps and to build 3D models, to delimitate drainage basins in hydrology, to map

floodplain areas, to support national forest inventories, to forecast the propagation of physical phenomena (such as pollution, flooding, landslide risks, etc.) to understand ecosystems, and to understand climate change. Depth plays a key role in the effective governance, management, and safe and sustainable use of the oceans, seas and marine resources

5. Functional areas on common geographies

The SALB programme, in close collaboration with National Geospatial Information Authorities aims to make available a global repository of authoritative information and geospatial data about common geographies (functional areas) and administrative units structure of countries down to the second subnational level, and through time. The programme, managed by the Geospatial Information Section, objective is to promote accessible, interoperable and global data and information on subnational units and boundaries, or common geographies, for better decisions, stronger support to people and planet and to monitor the Sustainable Development Goals.

6. Geographical names on geo-enabled names

Geographic names provide a basis from which to integrate data at a specific geographic location and at a specific geographic scale (i.e., a region, country, city, or other types of geography) and are one of the 14 Global Fundamental Geospatial Data Themes. The United Group of Experts on Geographical Names (UNGEGN) World Geographical Names Database is a repository of the short and full names of countries (193 UN member states and two non-Member States observers), their capitals, and major cities (with population over 100,000) in a multilingual, multi-scriptural and geo-referenced format. Authoritative city endonyms are provided mainly by national name authorities and sound files are being added to assist users with pronunciation.

The need for an authoritative depository of geographic names under the purview of the Group of Experts is a topic with a long and storied history within UNGEGN. For example, at its 22nd session in July 2004, the Group of Experts recommended the development of an authoritative database on country and major city names .

As the Group of Experts implements its strategic plan and programme of work for the period 2021-2029, the WGN Database offers the technological foundation with which to manage an authoritative depository of geographic names, not just for cities and countries, but also to help the Group to demonstrate how geographical names connect people to geographic location and why geographical names matter as part of the broader recognition of culture, heritage and language.

At its 2023 session, the Group of Experts adopted Decision 3/2023/17 and formally launched the redeveloped World Geographic Names Database. To date, the Database contains toponyms, endonyms, and exonyms of features detailing over 2,700 country names, some 6,100 names for 3,362 cities, with more than 970 audio files. The future for the WGN Database is to incorporating semantic web technologies to link the database to a broader data ecosystem provided by the One Geospatial Situation Room.

7. Geology and soils

Soil is a complex mixture of minerals, organic matter, water, air and living organisms, playing a crucial role in sustaining plant life and supporting terrestrial ecosystem services. The FAO works closely with countries to address global soil-related challenges and achieve the SDGs. FAO's Global Soil Partnership is developing GloSIS, a global soil information system, along with country-driven (bottom-up) data products including like global maps of soil properties global soil property maps. Additionally, FAO has

been actively involved in the development of the Harmonized World Soil Database (HWSD), which provides essential soil information at a global scale. SoilSTAT, an innovative platform, is also being developed to monitor soil health worldwide, using soil health indicators and a global soil health index. These initiatives are backed by a comprehensive global capacity development program, ensuring effective soil information management and sustainable land use planning.

8. Land cover and land use on land cover including vegetation and crops

Land cover and land use

With land and water resources for food and agriculture at breaking point, and critical global challenges for sustainable development, monitoring land cover/land use faces many challenges. Timely, robust, and reliable information on land and water resources is critical for every nations. There has been significant advancement in the field of remote sensing, information technology and data analysis. However, using the data for sustainable development action has been hindered by lack of integration, interoperability, connectivity, and consistency between land monitoring programs. Land cover and land use is one of the 14th fundamental data theme layers in United Nations. FAO and ISO have been working together for the last two decades in developing and updating international standards. In 2020, Land Cover and Land Use Advisory Group 13 (ISO TC211/AG13) has been established to advice ISO TC211 for standard development and implementation in UN and other agencies. With thousands of land cover legends around the world, integrating and using local and global land cover and land use information are challenging. A UNFAO international Land Cover Legend Registry has been created to provide access to legends developed using recognized international standards i.e., ISO 19144-2. Relying on existing monitoring programs, strengthening partnerships, contributing to common reference systems, developing capacities for international standard-based quality data, and benefiting from technological innovations, can accelerate the achievement of the SDGs.

Vegetation

Vegetation is a sub-category of land cover and land use. It refers to the study and/or mapping of the plant growth forms covering the Earth's surface. It can include natural/seminatural and/or cultivated vegetation. Natural vegetation is defined as an area where the vegetation is not planted by humans but influenced by human actions. Cultivated vegetation is defined as an area where the natural vegetation has been removed or modified and replaced by other types of vegetative cover of anthropogenic origin. This vegetation is artificial and requires human activities to maintain it in the long term.

Crops

Crops are the sub-category of cultivated vegetation. Crops refer to cultivated plants that are grown on a large/small scale for human or animal consumption, industrial use, or other commercial purposes. These plants are intentionally planted, managed, and harvested to produce food, fiber, or other products. The phenological appearance of crops can be regularly modified by humans, for example tillage, harvest, and irrigation. All vegetation that is planted or cultivated with an intent to harvest is included in this class, for example wheat fields, orchards, rubber, and teak plantations.

9. Land parcels

ISO TC/211 is running an extensive revision of ISO 19152:2012 "Land Administration Domain Model (LADM)" in collaboration with the United Nations Office of Legal Affairs' Division for Ocean Affairs and Laws of the Sea (DOALOS), the World Bank, the Food and Agriculture Organization (FAO), and UN-Habitat, towards addressing respective organizational requirements.

10. Physical infrastructure on schools, health centres, and ICT infrastructure

School location

School location data and other geospatial information help ministries of education around the world to plan, manage, and improve their education systems. Educational planning approaches draw on geospatial data to enable governments to achieve national objectives and Sustainable Development Goals, and ensuring that the delivery of educational services through educational facilities meet the demand and expectations of communities.

Different initiatives aim at collecting school location data, with or without the involvement of ministries of education, and too many of these initiatives do not rely on clear processes for compiling, managing, disseminating, and governing this information. Moreover, when school location data is collected through ad hoc activities or by multiple stakeholders, the data becomes hardly interoperable with other national education datasets and sustain the illusion that the availability of school location data is an end in itself, and not an integer component of the education data architecture for system management.

Focus areas include: standards for collecting school location data; data validation and quality assurance; ownership and governance; dissemination and maintenance of the dataset. The UN-GGIM invites all UN Member States and agencies to collaborate in co-designing standards in school location data, from improving its collection, management, dissemination, and governance.

Health centres

From delivering primary care in rural communities and urban centres to addressing health crises like pandemics, each country needs accurate and reliable data to plan and deliver quality health services. Ministries of Health can benefit from leveraging geospatial data to better plan, monitor and implement timely health interventions, inform decision-making, and collaborate across sectors and regions to better serve communities. However, many countries currently miss these benefits because they lack a single source of standardized and regularly updated health facility data. The Geolocated Health Facilities Data (GHFD) initiative supports countries that need assistance updating, geolocating, digitizing, and/or openly sharing the health facility master list (HFML) for their country. As a global public good, the final product will be the world's first central and accessible public database of health facility names, locations and types. https://www.who.int/data/gis/ghfd

ICT infrastructure

Two main challenges persist to advance the world's digital transformation, including connecting the 2.7 billion offline people: universal and meaningful connectivity. ICT infrastructure mapping is key to identify where digital connectivity is not available to develop public policies and investments decisions towards achieving universal access. GIS tools (e.g. ITU Broadband Maps) assist to achieve this goal. Promoting ICT infrastructure open data (e.g. mobile coverage, fibre networks) helps unlocking the potential of geospatial activities for social good and advanced connectivity through innovative solutions. This can only be achieved through closer partnerships to increase awareness, capacity in producing and sharing data, and international harmonization. The ITU develops recommendations, the equivalent of international standards, on radio wave propagation prediction methods for the planning of radio communication services and elimination of harmful interference. These predictions use digital terrain elevation models and features on the surface of the Earth to ensure optimum and efficient use of the radio spectrum and administrations should produce and regularly update (in cooperation with relevant organizations) those datasets, making them freely available to the ITU as

resolved by Resolution ITU-R 40-4. The ITU hopes to have available open and quality geospatial data on ICT infrastructure, worldwide DEM and ground cover for its analysis and responding to its mandate.

11. Population on population, drugs and crime, poverty and socio-economics

Population

UNFPA is the United Nations sexual and reproductive health agency. Our mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled. UNFPA lead support to census, a census involves the complete enumeration of the population in a country, territory or area, and should be conducted at least once every 10 years. It generates a wealth of data, including numbers of people, their spatial distribution, age and sex structure, as well as their living conditions and other key socioeconomic characteristics. These data are critical for good governance, policy formulation, development planning, crisis prevention, mitigation and response, social welfare programmes and business market analyses. UNFPA provides technical and financial support to ensure that censuses are of high quality, uphold international principles and standards, and produce data that are widely disseminated and utilized for development.

UNFPA Population data portal is the ultimate data source and tracker for population and development data. It combines the newest population data on topics like sexual and reproductive health and reproductive rights, family planning, maternal health, or gender-based violence gathered from a multiple sources.

Drugs and crime

High quality statistics on drugs, crime and criminal justice constitutes essential evidence to inform policy-making and valuable sources of knowledge in drugs and crime domains, including to inform the Sustainable Development Agenda, especially on SDG16 Peace, justice and strong institutions.

UNODC, jointly with national authorities, collects data through specific data collection systems like illicit crop and mining monitoring surveys, victimization, corruption and drug use surveys as well as the Drug Monitoring Platform (https://dmp.unodc.org/) which is a multi-source system for collecting, visualizing, and sharing drug data aimed at providing access to near real-time data on drug trafficking trends.

The statistical data that UNODC collects, analyses and shares is available in its data portal (https://dataunodc.un.org/)

- Drug use and treatment
- Drug trafficking and cultivation
- Intentional homicide
- Violent and sexual crime
- Corruption and economic crime
- Prisons and prisoners
- Access and functioning of justice
- Firearms trafficking
- Trafficking in persons
- Wildlife trafficking
- SDGs

UNODC uses GIS and geospatial analysis, satellite imagery and field surveys to monitor trafficking flows and organized crime threats, including on drugs, firearms, smuggling of migrants, trafficking in persons, illegal mining, wildlife crime and other crimes that affect the environment. The reports about these monitoring activities are available online and increasingly through web maps:

- https://www.unodc.org/unodc/en/crop-monitoring/index.html
- https://www.biesimci.org/index.php?id=84
- https://www.unodc.org/res/som/index.html
- https://dmp.unodc.org/

The increase in available geospatial data will greatly improve crime convergence analysis, as done for the Amazon in the World Drug Report 2023: https://www.unodc.org/res/WDR-2023/WDR23_B3_CH4_Amazon.pdf

Socio-economics

The global poverty rate has declined in recent years—a testament to the success of development efforts by the international community to end extreme poverty and promote shared prosperity. However, recent gains are also threatened by global challenges: tightening macroeconomic prospects, fiscal strains on governments, natural disasters, slow income growth for the poorest, record levels of displacement, and ongoing conflict and fragility. The World Bank Group works closely with partners to support inclusive and sustainable economic growth, promote more and better investments in people, and build resilience. The World Bank Group has unique assets in financing and knowledge, which can be leveraged to further progress toward sustainable development goals and address global challenges. Recent advancements in geospatial data collection, data access and discoverability on the Development Data Hub, data integration, and analysis provide new opportunities and insights using timely and high-quality socio-economic information, strengthening the portfolio across organizational sectors. Geo-spatial activities comprise five key areas: (i) operations with financial products and services, (ii) policy advice and innovative knowledge (iii) strategic partnerships, (iv) global research and standards and (v) training, capacity building and dissemination of geospatial knowledge product activities. The UN GGIM invites for collaboration and coordination between the UN entities and other stakeholders to provide open, high-quality geospatial data related to socio-economic information.

12. **Orthoimagery** on satellite imagery

Not many datasets are global in nature, collected in a homogenous manner and dates back over 40 years. Satellite imagery is one of a very few such datasets. Now, with the 2030 Agenda for Sustainable Development such data are needed like never before: global data for global goals.

In addition, the data are objective and can now be provided almost in real time. Application areas are highly diverse including food security, climate change adaptation, environmental studies, ship monitoring, health, humanitarian assistance, disaster risk reduction, protection of human rights, peace and security, education, protection of cultural heritage, project monitoring and much more.

More and more satellite data are becoming free open-source witch facilities easy access to numerous application areas. Artificial intelligence and machine learning are widely used for satellite imagery analyses. However, care much be taken to ensure good training dataset to make sure end products are of good quality. Application areas are agriculture, deforestation, refugee camp mapping, mapping of city and flooding to mention a few.

In addition, comes and increased use of drones. Which can often be complementary to satellite imagery. Drones need permission to fly, while satellite do not, however once permission to fly is granted, drones can capture geospatial information at much higher resolution than satellites.

13. Transport networks on logistics and operations

Transportation data is key for the fleet management, routing, journey planning, and related transport information systems. The Logistics Cluster is part of the cluster system established by the Inter-Agency Standing Committee (IASC). Due to its expertise in humanitarian logistics, the IASC designated the World Food Programme (WFP) as the Logistics Cluster's global lead agency. It is a community of partners, whose purpose is to support global, regional and local actors in overcoming logistics constraints to the delivery of global humanitarian assistance. The delivery of humanitarian assistance and end-to-end planning requires the knowledge and ability to assess, understand routes and supply chain. The Department of Operational Support of the Secretariat support the deployment of peace operations and likewise ensures supply chain management for its operations.

The geospatial information related to the logistics and road networks is critical for the safe conduct of operations and delivery of humanitarian. The initiative of the Humanitarian Topographic Atlas or UN Maps both aimed at ensuring detailed topographic mapping and routing abilities are available in these challenging environments for supporting people in peace or humanitarian operations.

14. Water (& the environment) on climate, water reservoirs and the environment

The environment

We are now living in a time of unprecedented climate emergency and environmental crisis, facing critical consequences of rising temperatures, climate change, environmental pollution, species extinction and natural resources destruction. The climate crisis has already become one of the biggest humanitarian challenges. The solutions needed to address the climate challenge require strong science-based decision-making and powerful action towards transformational change for the lives and health of people, places and planet. At the same time, there has never been an epoch in human history with such digital capacity, where and when the use of emerging technologies such as information and communication technologies; human computer interfaces; big data; internet of things; machine intelligence and Geospatial can empower humans towards transformational change.

The United Nations Secretary-General has asserted that climate change and the environment represent one of the biggest challenges for humanity and consequently the availability of quality, timely and disaggregated data is fundamental to support nations in the achievement of Agenda 2030 and the Sustainable Development Goals.

The United Nations Environmental Assembly, in March 2019, through its Ministerial Declaration and Resolutions provided a clear and strong mandate to work with the UN system entities, and for the United Nations Environment Programme (UNEP) to have a global environmental data strategy by 2025, with progress reports to Member States by 2021 and 2023 and 2025. This can be achieved by harnessing big data on the environment for sustainable development, peace and security and humanitarian action, and by providing a digital transformation platform, the World Environment Situation Room (UNEP´s Data, to support decision-making and action for tackling environmental challenges.

We aim to integrate our operational big data platform, available on https://data.unep.org interoperating with the One UN Geospatial Situation Room and providing transparent access and use of environmental data for accelerating the implementation of Agenda 2030 and the SDGs. The platform´s environmental data architecture is categorized into SDG´s and Statistics, Multilateral Environmental Agreements (Conventions) indicators, Assessments, Geospatial, Publications, Global Environmental Monitoring (Air, Water, Oceans, Land and Biota) and Foresight. UNEPs data action priorities are focused on Disaster Risk Management (particularly for climate resilience and anticipatory action) as well as environment and security.

Water management, resources and availability

Water management aims to enhance sustainable water resource use in agriculture and rural areas, focusing on food security and mitigating water-related disasters. FAO employs geospatial data to assess water use efficiency, monitoring consumption patterns and irrigation effectiveness at different scales (AQUASTAT, AQUAMAPS, WaPOR). They develop drought monitoring systems to identify vulnerable regions and enable timely interventions. Geospatial analysis maps water productivity in agro-ecological zones, empowering policymakers and farmers to make informed decisions. Integrated watershed management is supported using geospatial tools to identify erosion-prone areas and propose conservation measures. FAO conducts groundwater mapping to understand aquifer characteristics and risks. They also analyze flood-prone areas for disaster preparedness. Geographic Information System (GIS) based decision support systems help in water management and agricultural planning. Remote sensing data, like satellite imagery, aids in monitoring water bodies and land use changes. FAO's geospatial work is crucial for evidence-based policymaking, improving water management, agricultural productivity, and achieving SDGs, notably SDG 2 and SDG 6.

SECTION IV: Use Cases and Nexus

One UN Geospatial Situation Room

CONCEPT 3.0

As supported in an overarching Architecture and following implementation by Priority geospatial data themes, the One UN Geospatial Situation Room is focused on a delivery model with Use Cases which demonstrate its relevance. The One UN Geospatial Situation Room purpose is to provide added value data and inter-disciplinary analysis for strategic foresight, use cases and decision-making. As such, each service delivery should be a nexus, a connection, linking two pillars or more of the United Nations Charter pillars as Peace and Security, Sustainable development, Human rights, International Law and Humanitarian aid.

The overarching delivery model will provide nexus analysis and visualization on specific scenario to the One UN Geospatial Situation Room with delivery approach and stakeholders summarized in Figure 2 –One UN Geospatial Situation Room: Service Delivery and Use Cases through Nexus, on the following page.

The One UN Situation Room will focus its services according to several Priority geospatial data themes in the Hub (as described in the previous diagram) and using a delivery modality of strategic analysis and scenarios or Use Cases.

In a first phase of implementation, there will be 2 Core Services and a set of Use Cases:

Core Services are to (1) support and enable the UN Data Hub, described in the SG Data Strategy, with geospatial services and backbone across the UN system; and (2) provide thematic data, analytics, and dashboards to the UN Operational Crisis Control Centre across the nexus, using the synergies across UN system from the UN Geospatial Network.

Use Cases are to (1) develop and facilitate geospatial capacity development activities for Member States, in particular, for low-and-middle incomes countries, as they relate to the Priority geospatial data themes; and (2) ensure the availability of cross-pillar analytics and contribute to the wider data ecosystem for the benefit of lead Offices, Departments, Specialized agencies, Funds and Programmes of the UN System.

The different use cases will use a Nexus approach, intending to deliver their services not for one, but a combination of various UN pillars as peace, humanitarian aid, sustainable development, international rule of law, and human rights.

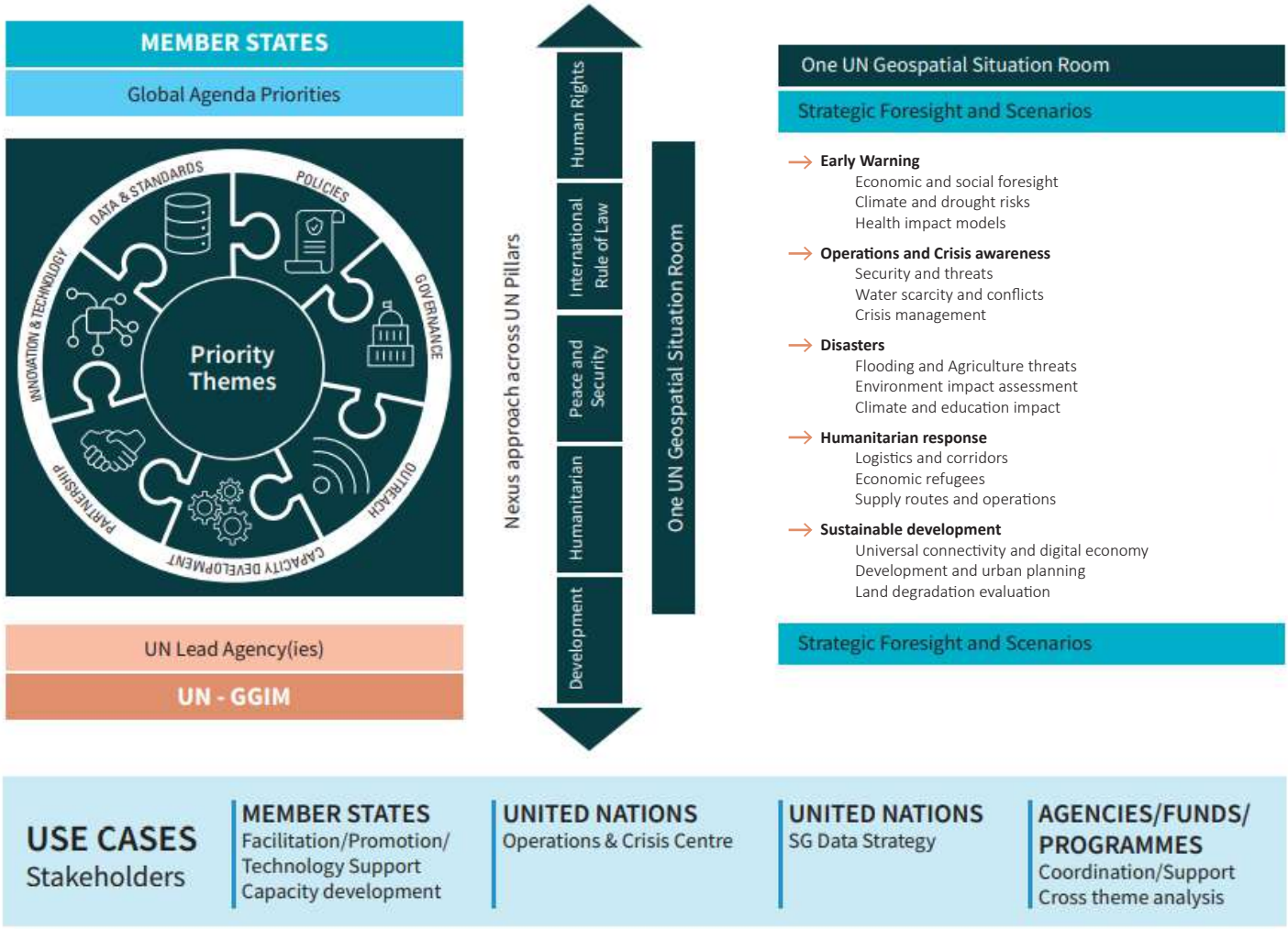


Figure 4 - One UN Geospatial Situation Room: Service Delivery and Use Cases

Nexus Areas

The Nexus are intersections of priorities and data The following nexus are to be:

1. Early Warning
2. Operations and Crisis
3. Disaster and Resilience
4. Humanitarian Services
5. Development Services

The nexus are meant to transform priority data themes into actionable geospatial knowledge for people, places and planet:

1. Early Warning

Early Warning is the most effective and efficient way of saving lives and properties of vulnerable communities to natural and human created disasters, climate, and environmental disasters but also more generally disaster risk management. A global initiative to ensure that everyone on Earth is protected by early warnings by 2027 is being fast-tracked into action on the ground. A recent record-breaking tropical cyclone in Southeast Africa once again shows the paramount importance of these services to save lives and livelihoods from increasingly extreme weather and climate events. To aid this work, UN Secretary-General António Guterres has convened an Advisory Panel of leaders of UN agencies, multilateral development banks, humanitarian organizations, civil society, insurance, and

IT companies on 21 March. The aim is to inject more political, technological, and financial clout to ensure that Early Warnings for All becomes a reality for everyone, everywhere.

The months ahead will see stepped up coordinated action, initially in 30 particularly at-risk countries, including Small Island Developing States and Least Developed Countries. Additional countries are expected to be added as this vital work with partners gathers pace, scale and resourcing. At the same time, the UN's existing actions and initiatives to save lives and livelihoods and build resilience across a wide range of other countries will continue and be reinforced, ensuring the Early Warnings for All campaign turns its pledges into life-saving reality on the ground for millions of the most vulnerable people.

At this thirteenth session, UN-GGIM is considering a report on 'geospatial information for sustainable development and climate resilience that highlights the many dimensions, opportunities and challenges arising in the area of geospatial information for climate resilience, proposing recommendations for the Committee to consider so that the role of geospatial information in national and global efforts for climate resilience is strengthened. The establishment of this early warning Nexus aims to bring coordination and coherence to the UN's existing actions and initiatives to save lives and livelihoods and build resilience across a wide range of countries. This will help enhance existing programmes, ensuring the Early Warnings for All campaign turns its pledges into life-saving reality on the ground for millions of the most vulnerable people.

Nexus applications of early warning systems could include Economic and social foresight, climate and drought risks, or health impact models.

2. Operations and Crisis

When a situation arises, or a crisis hits, collecting data, analysing it and supporting the decision-making process on the adoption of measure can be life saving. Geospatial information and spatial planning is key in the context of crisis management and emergency responses or operations can play an important role in preventing or mitigating the consequences of crisis situations, in responding to a crisis situation, and also alleviating devastating consequence to affected area. Indeed, one of the primary aim of the One UN Geospatial Situation Room is to provide cross-cutting and contextual information for decision-makers in the Organization. The One UN Geospatial Situation Room also aims at addressing the need for a common operational understanding across all United Nations entities in situation when coordinated decisions and actions can saves lives, protect places, and safeguard our planet.

Coordinated and curated geospatial information services that provide a common understanding of a situation using standardized services and knowledge across the sectors, from health to agriculture, from security to the environment, or from human rights to climate change, and across organizations are key for better support to people in moments that matter most.

Nexus applications of operations and crisis management could include security and threats, water scarcity and conflicts, or crisis management and situation awareness.

3. Disaster and Resilience

The frequency of natural hazards has been on the rise globally in the last several decades. Whether it's the devastating floods that struck India with increasing intensity in 1993, 2007, 2012, 2013, 2015 and 2018 or the 10% increase in the drought frequency in the North Bengal of Bangladesh over the periods of 1979–2018. The increasingly frequent natural disasters are a reminder of the urgency of building and maintaining resilience against future catastrophes.

Geospatial information and satellite imagery has been successfully used by the spacefaring nations globally to continuously monitor areas with high disaster risk and frequency of disasters to generate enhanced risk analytics like monitoring, forecasting and disaster early warning, surveillance, and impact assessment. This frequent and targeted monitoring using geospatial information and satellite imagery is transforming disaster risk reduction and thus addresses some of the deep uncertainties in managing systemic risk.

However, the high disaster risk and low-capacity countries remain highly vulnerable to disaster risks mainly due to their inability to continuously monitor and maintain vast national territories with high disaster risks. Access to satellite imagery could help improve their ability to generate the necessary risk analytics for disaster risk management.

To address this data gap, United Nations entities in collaboration with Member States are building a bridging mechanism to enable the flow of critical satellite imagery within the Asia and the Pacific region from spacefaring countries to the high disaster risk and low-capacity countries which lack the resources to procure the satellite imagery for continuous monitoring of high-risk areas..

The bridging mechanism follows the UN Secretary Generals' Data Strategy by ensuring greater data accessibility and sharing internally and externally and contributes to implementing the Plan of Action and Regional Roadmap by enabling research and knowledge sharing and capacity-building and technical support and the Sendai Framework for Disaster Risk Reduction 2015-2030 by promoting the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, taking into account the needs of different categories of users, as appropriate. The focus on disaster response will also endeavor to coordinate its activities with the WG on Disasters of UNGGIM and leverage its frameworks.

Nexus applications of operations and crisis management could include flooding and Agriculture threats, environment impact assessment, and climate and education vulnerability.

4. Humanitarian Services

One of the purposes of the United Nations, as stated in its Charter, is "to achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character." Humanitarian problems can be mutli-facetted, coordinated, system-wide approach to humanitarian relief is essential in providing assistance quickly and efficiently to those in need, targeted population can include children, women, the sick, the hungry, refugees or others. Geospatial information can provide the ability to respond effectively to humanitarian crisis across the world. Efficient management and rapid analysis of geospatial data is crucial for humanitarian agencies performing field operations on a global scale. For example, the UN World Food Programme has developed an automated system for collecting, analysing and mapping geospatial and socio-economic data related to natural hazard events. This application is called ADAM (Automated Disaster Analysis and Mapping). By leveraging geospatial information, the United Nations and humanitarian organizations can enhance their ability to address crises effectively, allocate resources efficiently, and make data-driven decisions to alleviate suffering and ensure no one is left behind.

Nexus applications for humanitarian response could include evaluating logistics and corridors for aid delivery, assessing economic impacts on refugees and migrants, and ensuring optimal coverage of services for the sick and the hungry.

5. Development Services

Geospatial information can support the implementation of the Sustainable Development Goals in monitoring and facilitating decisions on development initiatives. Supporting national capacity development remains critical in delivering better, more reliable, accessible and interoperable data and analytics. Respective entities of the United Nations are conducting geospatial capacity development across ministries such as agriculture, health, education, space, mapping, census, the environment, or disasters, the coordination of integrated capacity development for the benefit of countries, in particular developing countries can be a key for the implementation of the United Nations Integrated Geospatial Framework and therefore the advancement of the Sustainable Development Goals.

Nexus applications for sustainable development could include universal connectivity and digital economy, development and urban planning, or land degradation and food system threats.

SECTION V: Implementation, Operationalization and Financing

One UN Geospatial Situation Room

CONCEPT 3.0

1. Overview

Governments, and communities alike face immediate problems around the world and in particular in developing regions and countries where the race to identify root causes and deploy solutions are further compounded by information asymmetry or lack of relevant data. As one of the largest gatekeepers of development data, the United Nations Geospatial Network[12] can facilitate and avail information and knowledge divided across its 42+ entities and bring further global and national partners to contribute to a global Geospatial Situation Room in a global partnership. Currently data is siloed within each individual entity, sometimes inaccessible across platforms, or inconsistent across geographies.

The operationalization of the One UN Geospatial Situation Room, in accordance to the principles and data spokes and themes presented, aims to facilitate making available data, services and standardization efforts to the forefront and unlock values across themes .

The operationalization of the One UN Geospatial Situation is proposed through an open partnership proposal with the UN Geospatial Network and its composing 42 entities, donors (Shanzhai City, financial mechanism set under the auspices of the United Nations UN Foundations[13] (with the oversight of programme and administration by United Nations Statistics Division (UNSD), and with the oversight of the technical and operative implementation by the United Nations Geospatial Information Section. The primary and initial goal to establish "One UN Geospatial Situation Room", as an open data platform serving as a digital hub of the 42+ UN entities to share intersectoral and inter-agency data that provides comprehensive data, services and standards, with the further aim to serve requirements of Member States and avail further and promote national data. The overarching purpose is to provide an accessible and unified geospatial services and intelligence infrastructure that enables the proliferation of data-driven solutions and services that foster development investments at regional, national and local levels, in particular developing regions and countries such as Africa, Middle East, Latin America, Caribbean area, Asia and Pacific.

Enabling both public and private sectors to leverage geospatial intelligence tools and services for precise deployment of resources supporting development investment projects that accelerate contributions towards the United Nations' Sustainable Development Goals (SDGs) with local, regional, and global impacts.

- **Priority 1:** Establish environmental early warning systems for preparedness and readiness for livelihood in conflict and natural disaster areas, strengthening environmental resilience.
- **Priority 2:** Peace Keeping and its workstreams related with geospatial and development investments are humanitarian priorities.

[12] The UN Geospatial Network is a coalition of entities within the United Nations System that engage in geospatial information management. The Network's mission is to strengthen the coordination and coherence of geospatial information management within the United Nations system, including its overarching trends, technology, practices, data, needs, capacity building, and partnerships, ultimately to promote synergies and enable the United Nations system to "Deliver as One." The Network is represented by the senior-most professionals working in the field of geospatial information management, led by a Chair, two Vice-Chairs and a Steering Group.

[13] The UN Foundation is an independent charitable organization created to work closely with the United Nations to drive global progress and tackle urgent problems. The representative from UNF are Ms. Rania Ashraf (Director, UN Relations and Financial Management, UN Foundation) and Ms. McKenzie Hanlon (Officer, Grants & Relations, UN Foundation).

2. Responsibilities and Partnership

In accordance to the governance set out by the UN Geospatial Network, the responsibilities of the partners will be as follows:

The **Chair of the UN Geospatial Network** (currently UNEP)
- Provide strategic orientations for the One UN Geospatial Situation Room priorities and functionalities
- Foster dialogue and agreement around priorities amongst the UN Geospatial Network entities for the operationalization of functions and data services
- Promote the availability and accessibility of coordinated geospatial support to Member States and United Nations mandates
- Facilitate exchange of views with Member States to ensure the use and functions of the One UN geospatial Situation Room fulfill expectations and in particular sharing of data and use cases
- Promote the use and relevance of the One UN Geospatial Situation Room for better decision-making in the organization and in close cooperation with other data initiatives such as UN Data

The **UN Geospatial Network Secretariat:**

- UN Statistics Division:
  - to provide the programmatic and administrative oversight[14] for the One UN Geospatial Situation Room
  - to foster dialogue and cooperation amongst the contributing UN entities and partners.
  - to administer funds and disbursements against milestones

- UN Geospatial Information Section:
  - to provide the technical and operative oversight of the One UN Geospatial Situation Room
  - to implement its front end development
  - to deliver the background One Map service

- The **UN Geospatial Network** entities:
  - To provide respective thematic and fundamental geospatial data themes datasets, services, or recommended methods related to their respective mandates

- The **UN Foundation**:
  - **To provide the sustainable financial mechanism for receiving funds from member States, donors and foundations**

- **Donors** (currently Shanzhai City):
  - To provide guidance, priority areas and financial means for incubating the One UN Geospatial Situation Room

The partnership, implementation, operationalization and financing aims to forge a sustainable, with long term partnership and sustainable funding facility that can ensure ongoing updates, maintenance, and upgrades to the One UN Geospatial Situation Room.

[14] United Nations Environmental Program (UNEP) will provide operational support, currently the Chair of UNGN is located at UNEP.

Management and Operation Structure 2023 - 2030

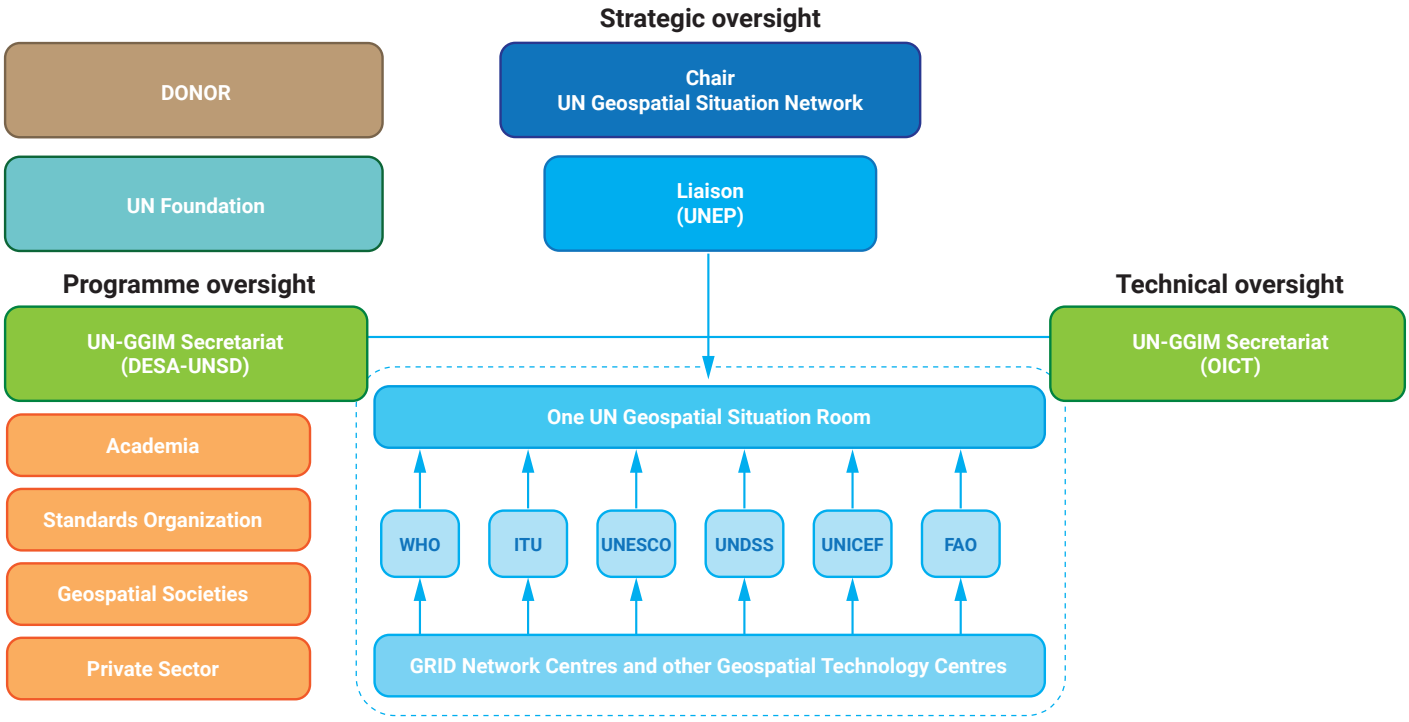


Figure 5 - Management and operation structure

3. Rolling Out and Scale Priorities

The operationalization of the One UN Geospatial Situation Room roll out is sequence starts with the availability of global scale services before providing further zoom levels. As the roll out occurs the availability of data through partners should deliver a wide array of geospatial data and knowledge at finer level of details. Regionally, should address regional trends and support monitoring Sustainable Development Goals. Nationally, the One UN Geospatial Situatiuon can provide an entry door to general trends across countries and resources available through national geospatial authorites and offices.. Nationally, the One UN Geospatial Situation can provide an entry door to general trends across countries and resources available through national geospatial authorites and offices.. Nationally, the emphasis lies in harmonizing national data strategies with a focus on technical-level management. Locally, the primary objective is to foster the development of targeted applications and infrastructure projects that yield socioeconomic advantages.

a. At global level, deliver the One map service providing overview of global coverage overlain with the thematic themes provided by respective UN entities, further augmented through partners.

b. At the regional level, regional committee, transnational commission and regional bodies institutes, are provided with the opportunity to contribute through the One UN Geospatial Situation Roomsingle entry door to specific thematic analysis, regional knowledge, stories and insights.

c. At the country level, develop geospatial resources emanating from national institutes, agencies, or relevant observatories on the Early Warning on the Environment, Livelihood network, and infrastructure. Provide an interoperable and credible geospatial infrastructure, and Geospatial Readiness Assessment in 10 Countries from 2 Regions, focusing on Africa and the Middle East.

d. At the local level, geospatial solutions which provide an entry to empower local communities. Empower local communities to use geospatial data to develop tools and participate in local decentralized livelihood development.

4. Implementation Processes

The One UN Geospatial Situation Room will be further co-designed with the UN Geospatial Network entities, the processes to be further discussed with members will include:

- Planning and design
- Gap analysis
- Technical compliance and interoperability of services
- Functionality requirements
- Analytics and interactive tools
- Front end design (see for initial platform design Section VI: Platform and interface)

Objectives of Technical Implementation

Following the guidance of the UN Nexus approach[15], goal setting encompasses a spectrum from macro-level strategies to specific community projects implemented locally. Operationally, goals can be categorized into four types: firstly, tactical goals primarily focus on projects that can yield quick wins; secondly, connectivity goals are used to bridge the transition between partner allocation and funding operations for kick-start and long-term objectives; next, long-term goals concentrate on ensuring the vision of collaborative strategies; and finally, safeguarding goals are used to ensure there is enough room for course correction in projects. At the same time, goal allocation is also divided across spatial scales, spanning from regional governance and legislation to local community project implementation and operation.

a. *Interoperable geospatial infrastructure* - Activate and deliver two pillars work among the five in the geospatial situation room, support SZC designated areas in Africa and Middle east, connect with the existing digital infrastructure systems at the local, national and regional level.

b. *Decentralized operation strategy and framework* - Develop and employ across scale governance group at selected regions to implement federated and adaptive geospatial intelligence management strategy and incubate local autonomous data supply.

c. *Regional Livelihood and Peace & Security (LPS) Center* - Support to establish an Institution that dedicated to deliver on site implementation, research and technical operation to keep people's livelihood situation under review.

d. *Sustainable funding facility* - Establish finance mechanism to stabilize the funding channel with private sector and create the funding pool that can be easily locate to relevant agencies.

e. *Demand driven livelihood seed project* - Deploy geospatial intelligence solutions to create conditions for SZC on the ground project.

f. *Call for action billboard* - Hotspot billboard for partnership and deliver open call for ground action.

g. *Contribute and align with Peace keeping resolution* - Provide environmental early warning system support in conflict areas.

[15] The UN Nexus Approach, promoted by the United Nations, offers a holistic response to interconnected challenges involving sustainable development, humanitarian assistance, and peace building. Recognizing the interplay of issues like poverty, conflict, and environmental degradation, it emphasizes coordinated action within the UN system. By fostering collaboration between humanitarian, development, and peace building efforts, the approach aims to reduce duplication, maximize resources, and enhance long-term resilience and stability in crisis-affected regions. In essence, it bridges traditional divides, addressing root causes of crises, and supporting sustainable development and peace through an interconnected and collaborative approach.

Operation Plan of Technical Implementation

The strategic plan aims to forge a sustainable, long-term partnership with SZC. This partnership will begin with a three-year agreement from 2024 to 2027, followed by a second term extending from 2027 to 2030. Under this arrangement, SZC will collaborate with the UNF, acting as the designated trust agency. The UN Foundation will operate in accordance with directives from the chairs of UNGN and UNSD, subsequently disbursing funds to UNSD and affiliated agencies for service provision.

a. *From 2024 to 2027*
   UNSD and the UNGN Chair will take prominent roles in the UN Geospatial Network for the first two years (2023-2026), with the programme manager from UNEP leading efforts to establish collaboration with SZC. While the UNSD, serving as the network's permanent secretariat, will hold long-term responsibility. The collaboration will follow a seven years plan with implementing the five UN pillars[15], the overarching vision entails UNSD to support the Chair to stewarding the collaboration program with SZC.

b. *From 2027 - 2030*
   The new UNGN Chair will continue managing tasks according to the finalized UNGN strategy, while UNSD remains the secretariat supporting the Chair. Other agencies like UNHCR, UNICEF, and WFP (determined as implementation progresses) will provide services under the guidance of the UNGN Chair and UNSD.

5. Proposed Architecture of the Federated Geospatial Platform

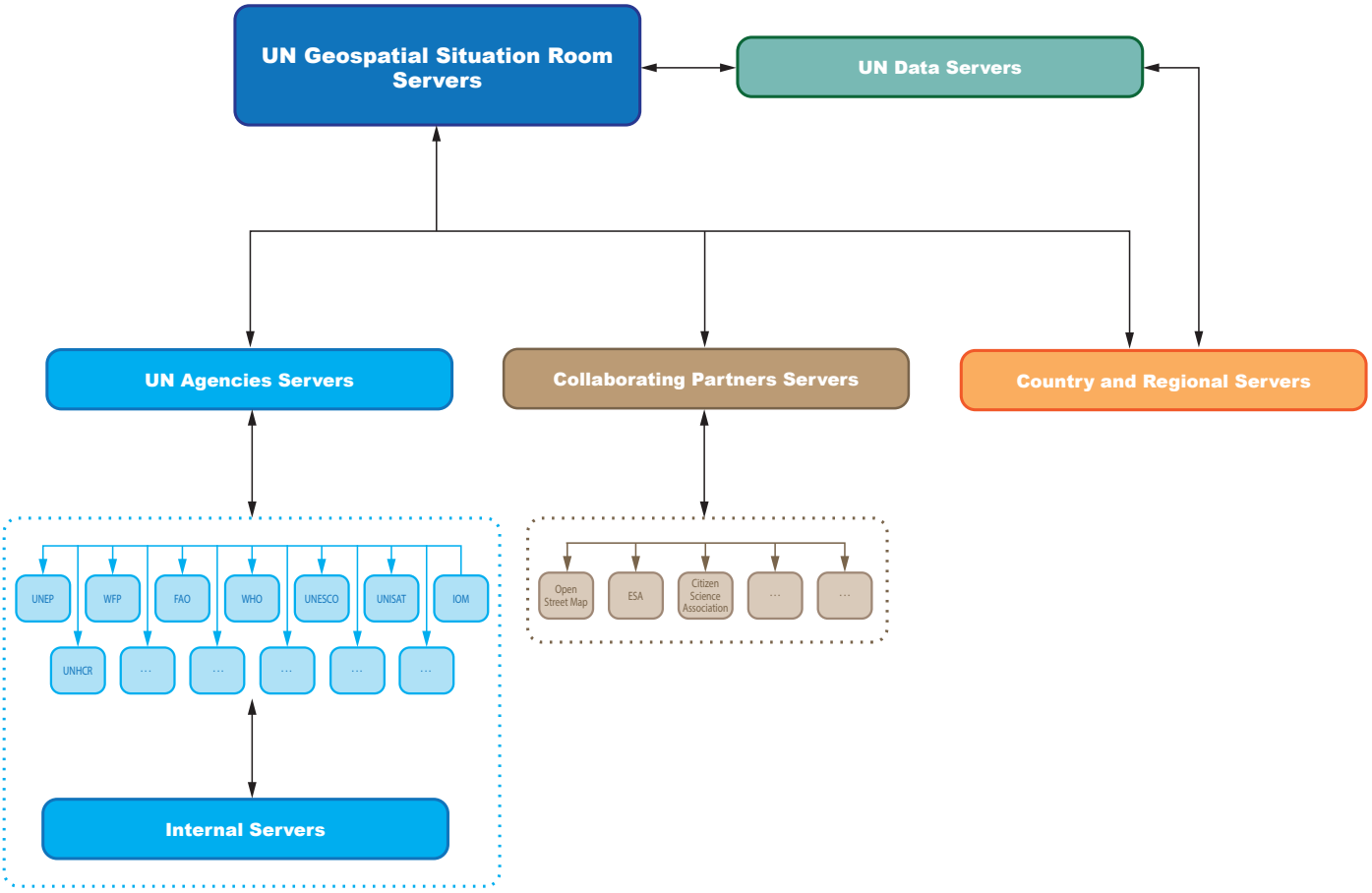


Figure 6 - Architecture of the Federated One UN Geospatial Situation Room

The One UN Geospatial Situation Room is implemented through a federated data architecture (Hub and Spokes) needs to be fully aligned with the UN Data architectures and the overall SG Data Strategy.

SECTION VI: Platform and Impact

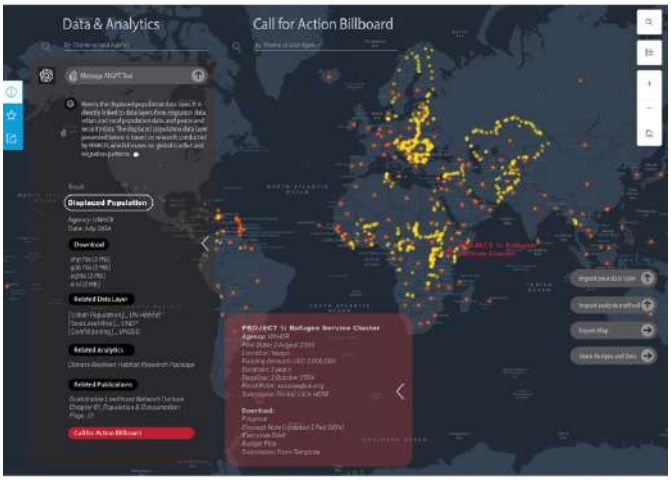
One UN Geospatial Situation Room

CONCEPT 3.0

Navigating the Platform for People, Places and Planet

1. One Map Platform

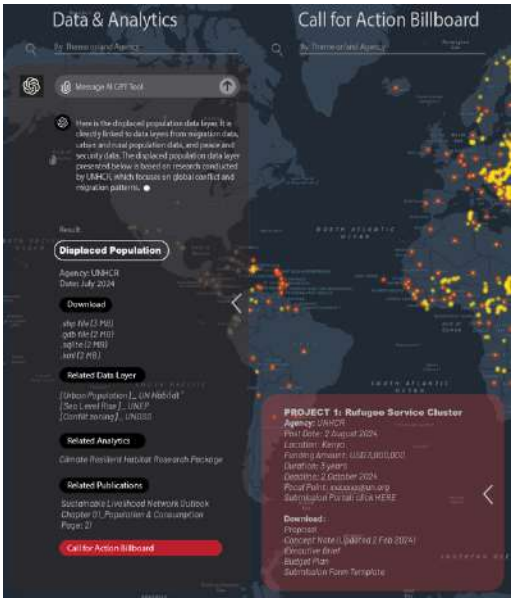
One Map. One Humanity



One Map One Humanity supports open data, full interoperability, and Open Geospatial Standards (OGS)

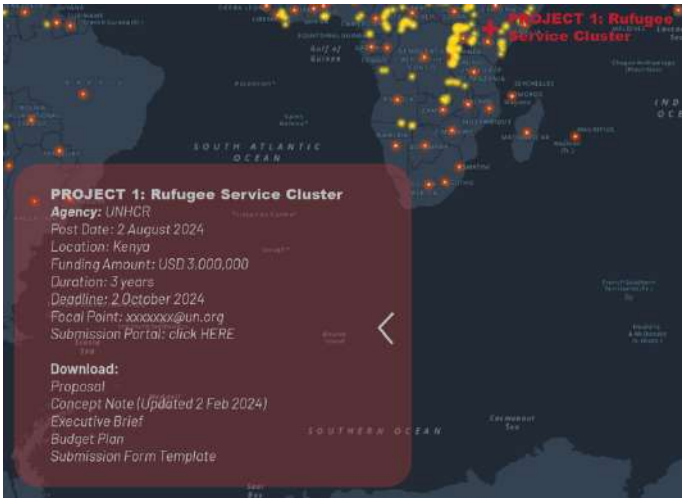
One Map serves as a unified gateway to geospatial data and information from 42 UN system agencies. It consists of two main components: the federated data storage and cloud computing, which allows users to perform data analytics using its provided analytical capabilities and data pool; the call for action billboard, which highlights project areas within the searched themes that are open for calls with proposed funding, providing a sustainable finance mechanism to maintain One Map as the project's supply chain.

1.1 Interactive search and storage function of One Map



The AI search engine integrates with Web 3 storage architecture, facilitating interaction with data for both geospatial and non-geospatial professionals. It offers related data layer components that either compose, contribute to, or are analogous to the searched layer. Additionally, it provides a comprehensive analytics package that generated the searched layer, encompassing the methodology, approach, and formulas employed. At the bottom, alongside the analytics package, it includes publications predominantly sourced from UN Reports, national agendas, and similar authoritative documents.

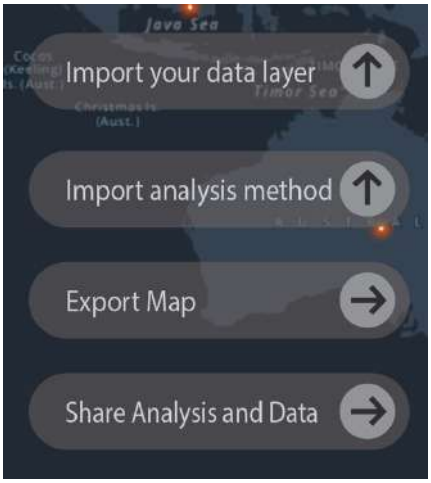
1.2 Call for Action Billboard



The call for action billboard is designed to serve as a project finance mechanism to mobilize resources across the UN. It will feature hotspots requiring actions and projects. By inviting project proposals and utilizing the One Map's hotspot layer to identify areas needing spatial intervention, it provides essential information such as location, theme, and funding details. Local communities can partner with international consultants to compete for projects.

Selected groups will receive specific amounts of project funding from donors for initiatives in disaster risk and conflict areas, along with in-kind contributions like free facilities and university lab support. The goal is to collaborate on 100 projects involving 100 local groups across 100 countries.

1.3 Collective Analytics Function

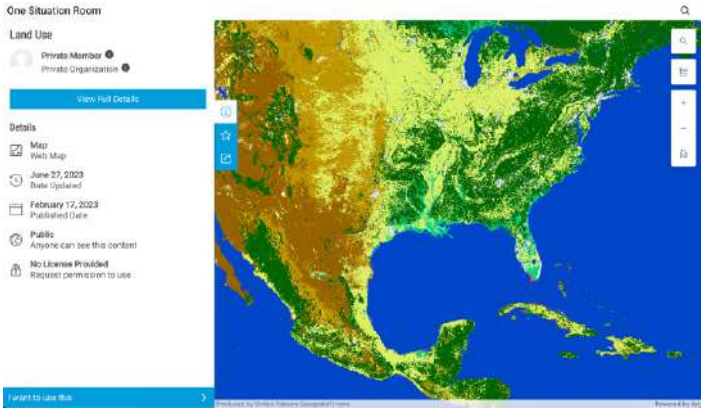


The One Map engine also offers an import channel for mobilizing citizen science and fostering collective intelligence. This allows individuals to import customized data and methodologies for visualizing and sharing their data globally.

2. Nexus Apps

The Nexus app encompasses five key cross-cutting themes: universal connectivity and the digital economy, GDP estimates in agriculture, humanitarian aid and logistics, land use, and the environment. Each theme offers an integrated analysis based on thematic data layers sourced from partners, relevant agencies, and national authorities, ensuring comprehensive global monitoring.

2.1 Land use layer demo



The network and Priority Data Themes encompass over 360 global members across 42 UN agencies, united in their pursuit of leveraging geospatial data to transform people, places, and the planet. Priority Data Themes identify key thematic areas that facilitate easier utilization and real-time decision-making for public sector, private sector, scientific, and governance entities.

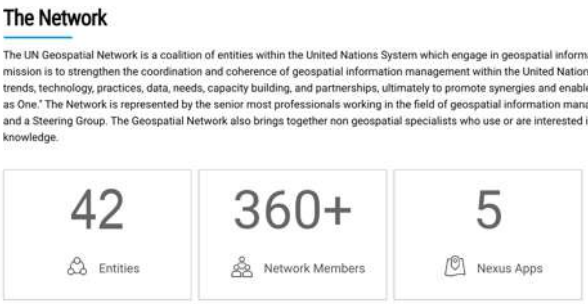
3. Impacting in Countries and Accelerating SDGs

The One Map platform is created to implement the Integrated Geospatial Information Framework (IGIF) and foster data innovation. Data innovation serves as the conduit for testing citizen science, driving technologies like web 3-based data supply, and nurturing a decentralized data ecosystem to stay at the forefront of technological applications. The capacity-building function offers structured training programs that make resources accessible to the public for active involvement in data initiatives. These three components concentrate on grassroots action at the community level, aiming to achieve tangible impacts on localities, individuals, and the environment, thereby accelerating the localization of Sustainable Development Goals (SDGs).

4. The Network and the 14 Fundamental Geospatial Data Themes

The One UN Geospatial Situation Room intends to make available global data themes and thematic analytical datasets and analysis, in accordance to UN entities responsibilities and mandates. The goal is to facilitate the utilization and real-time decisions on a wide array of topics.

1. **Global geodetic reference frame**
2. **Addresses**
3. **Buildings and settlements** on Internally Displaced People, Returnees and Missing Migrants and Refugees
4. **Elevation and depth**
5. **Functional areas** on common geographies
6. **Geographical names** on geo-enabled names
7. **Geology and soils**
8. **Land cover and land use on land cover** including vegetation and crops
9. **Land parcels**
10. **Physical infrastructure** on schools, health centres, and ICT infrastructure
11. **Population** on population, drugs and crime, poverty and socio-economics
12. **Orthoimagery** on satellite imagery
13. **Transport networks** on logistics and operations
14. **Water (& the environment)** on climate, water reservoirs and the environment



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Summary

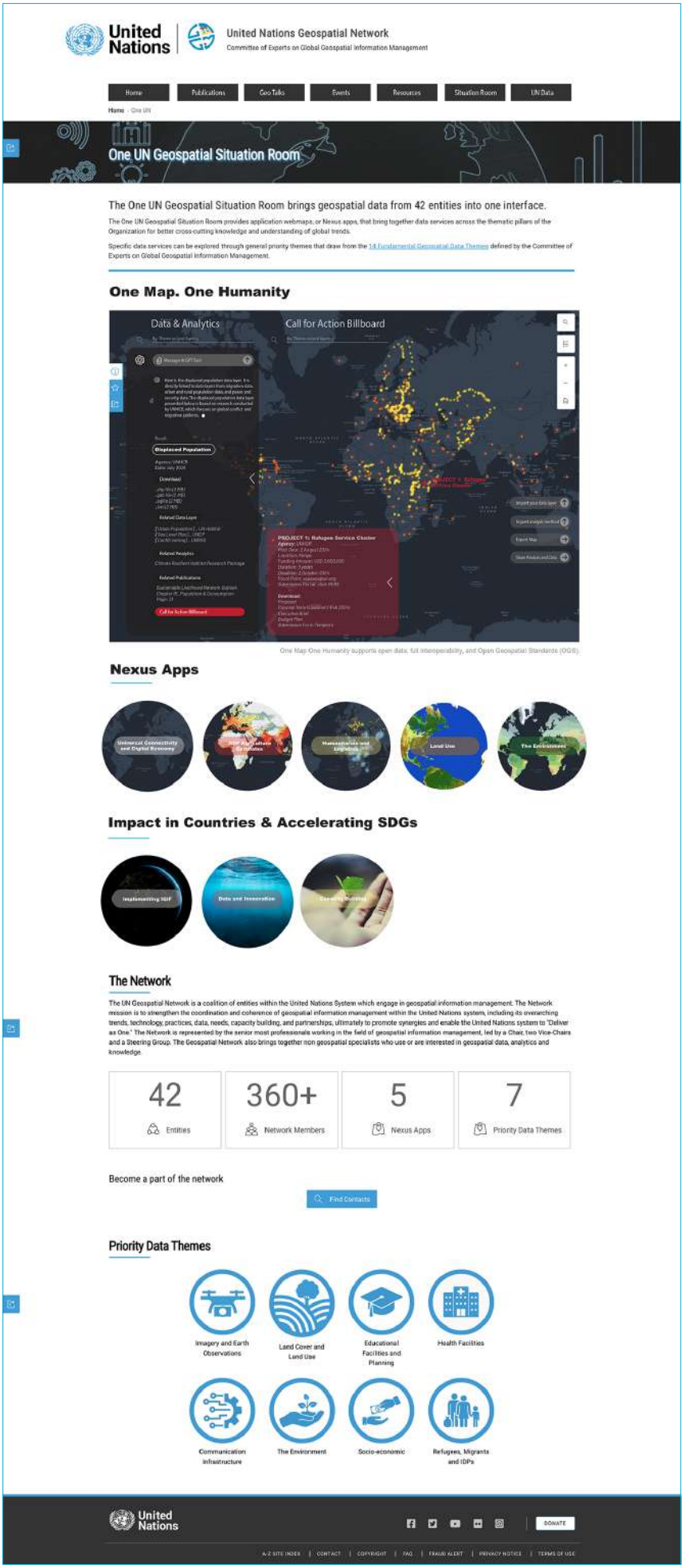
The One UN Geospatial Situation Room is strategically designed to make a significant for programmatic and analytical overview of the operations of the Organization and facilitate the impact in countries and accelerating SDG localization.

Following on the decision 12/104 (d) of the Committee of Experts which "welcomed the Data Strategy of the Secretary-General for Action by Everyone, Everywhere and the initiative of the United Nations Geospatial Network to build its geospatial component," the Network brought to the attention of the Deputies' committee meeting of the United Nations the importance of the geospatial information, held on 5th of March 2024, its contribution within the wider UN data system, further highlighted the need for data integration into UN Data for monitoring peace and security, human rights, and climate (environment) and development, and, in this context, the contribution of the One UN Geospatial Situation Room for the implementation of the UN Data Strategy, as the Geospatial component of the UN Data.

Situation Room: a **single entry door** for accessing and using **Geospatial information** across **42 UN Agencies**.

Impacting in **Countries** and **Accelerating** the **SDGs**.

For People, Places and Planet.



Implementing the **IGIF** in **countries** through **Data** and **Innovation**.

Doing **Capacity Building** in **countries** at Local and Community levels.

Tackling **Climate** and **Resilience** through **early warning** and **geospatial information systems**.

Future Pathways

The Future of Geospatial for Humanity Beyond 2030

Brief Summary

As we move towards 2030 and beyond, geospatial data and technologies are poised to play an increasingly critical role in shaping the future of humanity. From global to local scales, the integration of geospatial applications and services promises profound impacts on various aspects of life. The One UN Geospatial Situation Room aims to explore the contributions of geospatial innovations to global, regional, national, local, and community levels, focusing on their effects on people, places, and the planet. It further delves into the intersection of these technologies with peace and security, humanitarian action, sustainable development, international rule of law, and human rights.

1. Impact Across Different Scales

Global Impact

Climate Change Mitigation and Adaptation: Geospatial technologies enable precise monitoring of climate patterns, deforestation, and carbon emissions. Satellite imagery and remote sensing can track environmental changes in real-time, facilitating global efforts to combat climate change.

Disaster Management: Advanced geospatial data helps in predicting, preparing for, and responding to natural disasters. Global coordination of disaster response efforts becomes more efficient with accurate mapping and real-time data sharing.

Biodiversity Conservation: Geospatial tools aid in mapping and monitoring biodiversity hotspots, enabling international conservation initiatives to protect endangered species and ecosystems.

Regional Impact

Transboundary Resource Management: Geospatial data supports the management of shared resources like rivers, forests, and migratory wildlife, fostering regional cooperation and sustainable utilization.

Regional Infrastructure Development: Coordinated regional infrastructure projects benefit from geospatial planning, ensuring that development is sustainable and equitable.

National Impact

Urban Planning and Smart Cities: National governments leverage geospatial data for urban planning, creating smart cities that are more livable, sustainable, and resilient to environmental changes.

Agricultural Optimization: Precision agriculture, powered by geospatial technologies, enhances crop yields and food security by enabling better resource management and reducing environmental impact.

Local Impact

Community Resilience: Local governments use geospatial tools to improve resilience against natural disasters and environmental changes, ensuring safer communities.

Public Health: Geospatial data helps in tracking disease outbreaks, planning healthcare infrastructure, and improving public health responses at the local level.

2. Impact on People, Places, and the Planet

People

Enhanced Quality of Life: Geospatial technologies contribute to better urban planning, disaster response, and public services, directly enhancing the quality of life for individuals.

Inclusive Growth: By providing data-driven insights, geospatial tools ensure that development projects are inclusive and address the needs of marginalized communities.

Places

Sustainable Land Use: Geospatial data supports sustainable land use planning, balancing development with environmental conservation.

Cultural Heritage Preservation: Mapping and monitoring cultural heritage sites protect them from degradation and destruction, preserving history and identity.

Planet

Environmental Conservation: Geospatial technologies enable detailed monitoring and management of natural resources, aiding in global conservation efforts.

Climate Action: By providing critical data on environmental changes, geospatial tools are integral to global climate action initiatives.

3. Nexus of Peace and Security, Humanitarian Action, Sustainable Development, International Rule of Law, and Human Rights

Peace and Security

Conflict Prevention: Geospatial data identifies potential conflict zones by monitoring resource distribution and environmental stress, aiding in proactive conflict prevention.

Security Operations: Military and security agencies use geospatial intelligence for planning and executing operations, ensuring national and international security.

Humanitarian Action

Disaster Response: Geospatial technologies facilitate rapid assessment and response to humanitarian crises, improving the effectiveness of aid delivery.

Refugee Management: Geospatial data helps in managing refugee movements and planning settlements, ensuring safety and dignity for displaced populations.

Sustainable Development

Achieving SDGs: Geospatial technologies are critical in monitoring progress towards the United Nations Sustainable Development Goals (SDGs), providing data-driven insights for policy-making.

Resource Management: Sustainable management of natural resources is enhanced through geospatial monitoring and planning tools.

International Rule of Law

Border Management: Geospatial data aids in the precise demarcation and management of international borders, reducing disputes and promoting stability.

Law Enforcement: Geospatial tools support law enforcement agencies in crime mapping, investigation, and resource allocation.

Human Rights

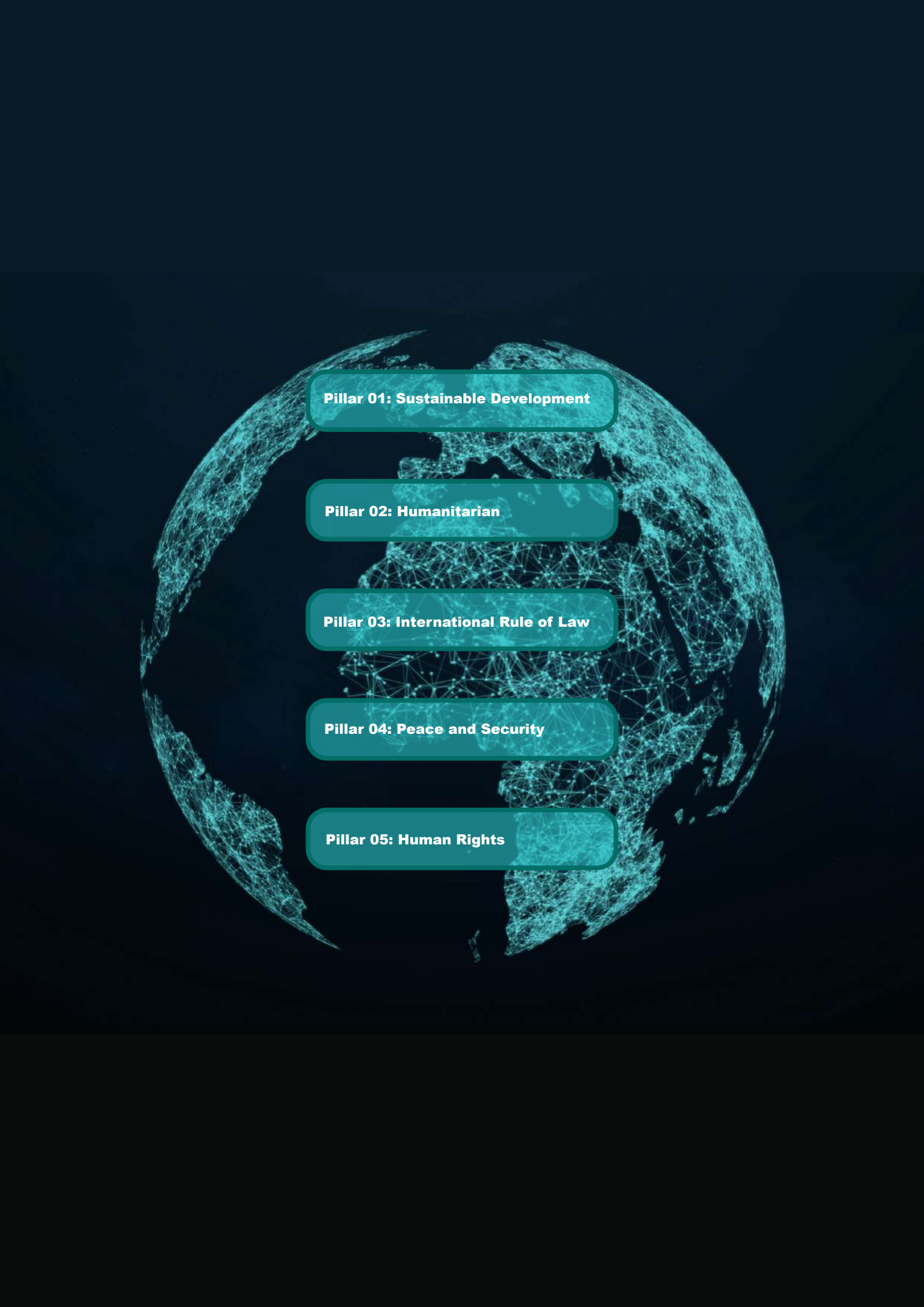
Transparency and Accountability: Geospatial data promotes transparency in governance and accountability in resource allocation, ensuring human rights are upheld.

Empowerment and Participation: Geospatial technologies empower communities by providing them with the tools to participate in decision-making processes affecting their lives.

Conclusion

The future of geospatial technologies is bright, with immense potential to transform various facets of human life and the planet. Beyond 2030, the integration of geospatial data and applications will be pivotal in addressing global challenges, promoting sustainable development, and ensuring a better future for all. Policymakers must prioritize investment in geospatial technologies and foster international cooperation to harness their full potential for the benefit of humanity.

The One UN Geospatial Situation Room intends to showcase the use of geospatial information management and demonstrate geospatial technologies as an entry to more informed decisions and provide ready to use knowledge of global challenges.


Pillar 01: Sustainable Development
Pillar 02: Humanitarian
Pillar 03: International Rule of Law
Pillar 04: Peace and Security
Pillar 05: Human Rights

SECRETARIAT

DESA
STATISTICS DIVISION

OICT
GEOSPATIAL INFORMATION SECTION

UN GEOSPATIAL NETWORK

UNITED NATIONS COMMITTEE OF EXPERTS ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT