1. Introductory about GEOSA

2. Aligning the National Geospatial Strategy with IGIF
General Authority for Survey And Geospatial Information
Objective and roles based on the Council of Ministers' resolution No. 90 in 2021

The Authority aims to regulate, develop, supervise, and monitor the Sector in the Kingdom, in a manner that achieves quality, enhances performance, and maintains security, in coordination with relevant agencies, and to do everything necessary to achieve its objectives.
Aligning the National Geospatial Strategy with IGIF
Phase 1: Contracting with a strategic partner and working according to the following key inputs to formulate The National Geospatial Strategy

**Benchmark comparison of pilot countries**
Assessing the national geospatial strategies of the pilot States and benefit from the latter’s experience in establishment, development and management of geospatial data

**Current Status assessment**
Conduct of questionnaire workshops, meetings with stakeholders with participation of experts in geospatial sector

  *To collect and analyse information about the current status of the Geospatial Sector in the Kingdom*

**Integrated Geospatial Information Framework (IGIF)**
to act in accordance with the Integrated Geospatial Information Framework “GIF”

Approved by the United Nations to enable States to collect and manage the geospatial data
Methodology to evaluate the current status of geospatial sector in KSA

Participation of international experts
- Experts committee
- Experts
  - Geospatial Strategic Planning Experts
  - Experts in Geospatial Curricula for Decision-Making
  - Experts in Geospatial Data Management and Infrastructure
  - Experts in Strategy/operations Development
  - Experts in GIS applications and technologies

Meeting with Key stakeholders in the sector
- Meetings
  - 150+ Representatives
  - 30+ Entities

Sending questionnaires for gathering opinions from employees in the sector
- Questionnaire details
  - Contents
    - 9 Pillars
    - 93 questions
  - Participations
    - 70+ Agencies
    - 27% Private sector

Key Outcomes
- Outcomes
  - Major challenges and areas of improvement
  - Key strengths
  - Major initiatives

Explorations and Challenges in the areas of:
- Service delivery
- Policy
- Governance and Control
- Communication and Engagement
- Capacity and Education
- Legal Affairs
- Partnerships
- Data
- Innovation

Questionnaires were collected and meetings conducted in the fourth quarter of the year 2021.
Strategic Pathway 2: Policy and Legal

Key Actions for Strengthening Geospatial Information Management

- Providing Leadership
  - Review Group

- Assessing Needs
  - Review and Assessment
  - Gaps and Opportunities Analysis

- Future-Proofing
  - Future-Proofing

Guiding Principles

- Legislation
  - Available and Compatible
  - Accessible and Equitable

- Policies, Norms and Guides
  - Stewardship and Trust
  - Strategic and Responsible
  - Optimize Value and Resources
  - Secure and Safeguarded

- Data Protection, Licensing and Sharing
  - Future Proof and Responsive
  - Policy Coherence and Legal Interoperability

- Governance and Accountability
  - Intellectual Property Rights
  - Privacy and Data Protection
  - Liability Concerns
  - Sensitive Information

Tools to Assist in Completing the Actions

- Common Legal Terms
- Review and Assessment
- Considerations
- Review and Assessment Questions

- Use Case Example
- Gaps and Opportunities Analysis
- Gap Analysis Matrix
- Policy and Legal Instruments

- Accessing Fitness for Purpose for a Policy
- Managing Intellectual Property Rights
- Addressing Sensitive Information

- Governing Board (SP1)
- Geospatial Coordination Unit (SP1)

- Geospatial Information Management Strategy (SP1)
- Specialist Working Groups (SP1)

- Identify Key Stakeholders (SP9)
- Stakeholder Analysis (SP9)

Interrelated and/or Prerequisite Actions

Outcomes

- Sound and Enabling Policy and Legal Environment
- Maximizes Utility of Geospatial Information with Safeguards

- Mandates and Responsibilities Clarified
- Strengthened Governance and Accountability

- Effective, Secure Management and Applications
- Responsive to Changes and Progress
# Legal and Policy

Please answer the following questions regarding the Legal and Policy of your organisation:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have clear laws and policies for geospatial services and products?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To gain understanding on geospatial laws that govern the organisation/sector</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>2. Do you have privacy, security and intellectual property rights?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To gain understanding on matters related to geospatial rights and IP in the sector</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>3. Are you complying with internationally recognized laws and guidelines?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes, state law(s) To cause the level of maturity of these laws and rights</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>4. Do you think the KSA use of geospatial information achieves the most strategic use of resources and avoids duplication of effort?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If no, suggest alternative uses To capture interest around geospatial data usage</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>5. Do you think the geospatial data sharing policies and processes are secure and safe?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If no, please elaborate or provide suggestions To cause the level of trust the sector has in data sharing</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>6. Are you complying with internationally recognized standards defined by ISO/TC 211?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To measure level of compliance with ISO/TC 211 standards in the sector</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>7. Are you complying with relevant local standards for geospatial / data to ensure technical and semantic interoperability?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If no, state why To measure level of compliance and completeness of current local standards</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
<tr>
<td>8. How do you ensure compliance with the defined data and technology standards?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To gain an understanding on the methods used in the industry to ensure compliance with defined data technology standards</td>
<td>![Yes]</td>
<td>![No]</td>
</tr>
</tbody>
</table>
Phase 2: Emphasis was placed on the following inputs to ensure the integration of the geospatial sector in the Kingdom with Saudi Vision 2030 and approved national strategies objectives.

- **GEOSA organization No.90 and the related regulations**
  - Reviewing the evaluation results of the new GEOSA statute, bylaws and the national tasks and responsibilities assigned to it.

- **The integration of the geospatial sector with Saudi Vision 2030 objectives and identification of the national geospatial strategy hubs that support Vision Realization Programs (VRPs) of the Saudi Vision 2030**

- **National Strategies in the Kingdom**
  - Interdependence between Geospatial objectives and National strategies for key sectors and the Kingdom’s strategy.
**Phase 3: Reviewing the "National Geospatial Strategy" Initial Version**

<table>
<thead>
<tr>
<th><strong>Methodology &amp; Background</strong></th>
<th><strong>Sector integration</strong></th>
<th><strong>National Strategy</strong></th>
<th><strong>Strategy Steering Committee</strong></th>
</tr>
</thead>
</table>

**Holding workshops inside GEOSA for its employees**

**Workshops with the public, private, academia, third sectors and international companies**

**Including highlights from national workshops**

**National Geospatial Strategy**

- **Reviewing the first version of the national geospatial strategy by GEOSA’s employees through internal workshops**
- **Presenting the newly developed geospatial strategy to representatives from several ministries and official bodies, private companies operating in the sector, and specialized academics.**
  - Discussing the strategy with a number of relevant international companies

- **All opinions and recommendations submitted by participants were collected for integration with initiatives and performance indicators of the national geospatial strategy.**

**Finalization of the national geospatial strategy**
Summary of national workshops and highlights of outcomes

Involving national agencies from the public, private sectors and academia to review and discuss the national geospatial strategy through workshops to present the national strategic goals and initiatives.

Emphasizing the proposed vision, mission, hubs and strategic objectives of the National Geospatial Strategy, as well as initiatives and KPIs that will contribute in achieving an integrated geospatial national strategy.

The workshop was followed by a questionnaire to know the participants’ opinions and to evaluate the workshop in order to enhance and develop some aspects in the upcoming workshops.
Key Outcomes: Major challenges (1/2)

**Governance**
- Duplication of strategic planning and implementation
- Duplication in terms of permits and licenses for some geospatial services between the Authority and other agencies
- Lack of national governance of geospatial controls and regulations among stakeholders of common interest
- 45% of participants have their own geospatial strategy or plan to develop it
- Need for a detailed data governance framework (3 hubs for population distribution data are not available in Saudi Arabia compared to UN standards)

**Legal Affairs**
- Non-alignment of policies and standards
- More than 50% of stakeholders consider that current standards and policies are not suitable for the intended purpose
- Data-sharing policies are unclear and lead to an unattractive environment for investments in the geospatial market
- Challenges in data sharing and integration due to lack of commitment to standards adopted by agencies
- Lack of international standards "digital geospatial metadata" issued by International Organization for Standardization for Geospatial location Identification

**Data**
- Weak regulation and limited data sharing
- Multiple sources of geospatial data production and digital maps resulting in weak technical integration, incompatibility and interfere with the Kingdom’s maps as a whole
- Lack of easily accessible and free open data sources
- No automated central link to real-time data collection with data owners
- Ambiguity between jobs levels and description of names and qualifications making this type of jobs less attractive to the workforce

**Capacity & Education**
- The need to develop national capacity building in the sector
- Out of 13,700 jobs in the private sector, only 8% are held by Saudis
- The market need is incompatible with the graduates’ specialization as there are 41,246 job seekers, while there are 2,300 jobs available in the sector
- Limited specialist practitioners and professional skills development. (There are only 90 geospatial practitioners in the Kingdom)
- Ambiguity between jobs levels and description of names and qualifications making this type of jobs less attractive to the workforce

**Sources:** Geospatial market Assessment Report
Key Outcomes: Major challenges (2/2)

**Partnerships and Collaboration**
- Limited mechanisms and frameworks for collaboration and partnerships
- Limited public-private partnerships, lack of policies and frameworks to manage such models of partnerships in the geospatial information sector
- Limited international cooperation in the geospatial sector. Only 8% of agencies participate in international cooperation
- Limited local and international workshops for Geospatial sector where only 37% of stakeholders meet at least once a year

**Delivery of Services**
- Shortage of local service providers
- Lack of qualified local suppliers to providing hydrographic survey services and other services
- Limitation of using latest geospatial technologies such as drones, remote sensing technologies and LiDAR systems
- Absence of business models for data investment like Platform or Data Services

**Innovation**
- The need to activate and motivate innovation elements
- Lack of Geospatial innovation programs targeting start-ups and SMEs
- Limited of R&D specialized experts, Only 15% of enterprises have dedicated R&D and innovation departments.
- Lack of dealing with modern technologies, such as artificial intelligence, which impedes progress in delivery Geospatial services to beneficiaries

Sources: Geospatial market Assessment Report
8 priorities identified for formulating the Kingdom's national geospatial strategy

<table>
<thead>
<tr>
<th>Investment &amp; funding</th>
<th>Practitioners Qualification</th>
<th>Infrastructure and Data</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage and attract investments, support and finance start-ups, research and innovation</td>
<td>Qualification of local suppliers and practitioners and promoting the use of art-of-the-state technologies in accordance with the best international practices</td>
<td>Set methodology for developing and improving the quality of geospatial infrastructure in terms of products and services and facilitating access to high-quality data</td>
<td>Develop governance frameworks and commitment for the sector, update policies and ensure adherence by relevant stakeholders (e.g. Geospatial Data Sharing Policies)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partnerships</th>
<th>Users</th>
<th>Capacity building</th>
<th>Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building partnerships between the public-private to collaborate in geospatial issues and sector development</td>
<td>Continuous support to increase users’ adoption of geospatial information</td>
<td>Collaborate with different sectors to build national capacities to meet the sector’s future needs</td>
<td>Periodically develop introductory programmes about the sector and organize conferences to raise awareness about the importance of the geospatial sector</td>
</tr>
</tbody>
</table>

Sources: Geospatial market Assessment Report
National Geospatial Strategy: "strategy house"

A dynamic and sustainable sector that establishes effective geospatial infrastructure and contributes to the Kingdom’s leadership in economic, social, and environmental sectors.

Provide an organized and effective national geospatial infrastructure and data, supported by an innovative and attractive environment for investment and enhanced with qualified human capabilities, that activates the participation of stakeholders and strategic partners and supports them in decision-making.

**Strategic Themes**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Data and Services Theme</td>
<td>Improve the quality of geospatial products and services and enhance beneficiary satisfaction.</td>
</tr>
<tr>
<td>3. Development Theme</td>
<td>Attract investments and grow the contribution of the private sector in the geospatial field, support business opportunities.</td>
</tr>
<tr>
<td>4. Capacity Building Theme</td>
<td>Build national geospatial capabilities and provide them with the necessary skills and techniques to meet the needs of the geospatial sector.</td>
</tr>
<tr>
<td>5. Communication and Partnerships Theme</td>
<td>Raise awareness of Geospatial value and clarify its contribution and role in the development of the economy and society.</td>
</tr>
</tbody>
</table>

**Strategic Objectives**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Governance</td>
<td>Organize and govern the geospatial sector.</td>
</tr>
<tr>
<td>2.1 Ensure the quality, accessibility and use of geospatial data in the sector</td>
<td></td>
</tr>
<tr>
<td>2.2 Improve the quality of geospatial products and services and enhance beneficiary satisfaction</td>
<td></td>
</tr>
<tr>
<td>3.1 Attract investments and grow the contribution of the private sector in the geospatial field</td>
<td></td>
</tr>
<tr>
<td>3.2 Promote Geo-Innovation and entrepreneurship and leverage of latest technologies to expand markets and create new opportunities</td>
<td></td>
</tr>
<tr>
<td>4.1 Build national geospatial capabilities and provide them with the necessary skills and techniques to meet the needs of the geospatial sector</td>
<td></td>
</tr>
<tr>
<td>4.2 Qualify and enable Geospatial Entities in the sector to build competitiveness at the local, regional and global levels</td>
<td></td>
</tr>
</tbody>
</table>

Methodology and background 
sector integrity 
National Strategy 
Internal workshop 
National Workshops 
Highlights of workshop discussions 
Final National Strategy 
Strategy Steering Committee
Analysis of the final national geospatial strategy and its alignment with the core pillars of the Integrated Geospatial Information Framework (IGIF)

- Governance and Institutions: 61%
- Policy and Legal: 37%
- Finance: 24%
- Data: 42%
- Innovation: 32%
- Standards: 21%
- Partnerships: 47%
- Capacity and Education: 46%
- Communication and Engagement: 42%

The core Pillars

National Geospatial Strategy in Numbers

- Number of Performance Indicators: 38
- Number of Initiatives: 27
- Number of Goals: 9
- Number of the Main Areas: 5

*Calculating strategic initiatives and their targeted core pillars in the sector
<table>
<thead>
<tr>
<th></th>
<th>The initial Concept of the Surveying and Geospatial information law has been prepared based on international best practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Launching the National Geospatial Center</td>
</tr>
<tr>
<td>3</td>
<td>The National geospatial policies (which concern geospatial data governance and the policy for classifying, licensing, pricing, sharing and protecting geospatial data)</td>
</tr>
<tr>
<td>4</td>
<td>A national geospatial data governance framework has been prepared</td>
</tr>
<tr>
<td>5</td>
<td>The National Geospatial Security Initiative is being prepared</td>
</tr>
<tr>
<td>6</td>
<td>National geospatial strategy</td>
</tr>
<tr>
<td>7</td>
<td>Approval of the Saudi Arabia National Spatial Reference System (SANSRS)</td>
</tr>
<tr>
<td>8</td>
<td>The Terms &amp; Conditions set by GEOSA for issuing licenses allowing the practice of Survey and Geospatial Information has been approved</td>
</tr>
<tr>
<td>9</td>
<td>Licenses for the approved geospatial activities have been set by coordination with the General Authority for Statistics, 18 economic activities in the surveying and geospatial information sector were approved</td>
</tr>
<tr>
<td>10</td>
<td>Control and compliance rules &amp; procedures have been set for the surveying and geospatial information sector.</td>
</tr>
<tr>
<td>11</td>
<td>A specialized department has been created in the GEOSA’s organizational structure concerned with protecting the interests of beneficiaries</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>The National Geospatial Data Model.</td>
</tr>
<tr>
<td>2</td>
<td>The National Geospatial Metadata Directory</td>
</tr>
<tr>
<td>3</td>
<td>The National Geospatial Data Dictionary</td>
</tr>
<tr>
<td>4</td>
<td>Production and updating of the National Topographic coverage Maps</td>
</tr>
<tr>
<td>5</td>
<td>Starting a project of developing KSA Geo Names Databases</td>
</tr>
<tr>
<td>6</td>
<td>Production of Aeronautical Chart</td>
</tr>
<tr>
<td>7</td>
<td>Updating the technical infrastructure for the Continuously Operating Reference Station (CORS).</td>
</tr>
<tr>
<td>8</td>
<td>The Hydrographic Survey</td>
</tr>
<tr>
<td>9</td>
<td>Updating the technical structure of National Tidal Gauge Stations</td>
</tr>
</tbody>
</table>
Standards

Prepared National Geospatial Standards

Standards cover managing and evaluating the quality of geospatial data, specifications for national geospatial data, and the national registry of geospatial standards, Approval of the Saudi Arabia National Spatial Reference System (SANSRS)

Finance

1. A feasibility study is carried out by GEOSA to establish the National Geospatial Company

2. Estimating of Economic Value of Geospatial Information and Technology to the Economy of Saudi Arabia - with the World Bank
1

The geospatial knowledge and innovation sector roadmap has been approved

2

GEOSA Launched the knowledge sector strategy project

3

GEOSA Establishing a center for geospatial innovation
1

GEOSA has commenced feasibility study for establishing the National Geospatial Academy.

2

GEOSA is carry out training programs to develop human capabilities in GEOSA and the sector.
GEOSA held more than 23 workshops in the field of the geospatial sector in the Kingdom in regard to raise the awareness about the importance of geospatial information for all sectors, as well as to raise awareness about GEOSA activities for regulating and developing the surveying and geospatial information sector in the Kingdom.

GEOSA Participates in international organizations e.g UNGGIM, OGC, IHO, ISPRS, UNGEGN ...
Together towards a sustainable geospatial sector to lead the Kingdom economically, socially and environmentally

Thank You