

TRAINING REPORT

Geospatial Knowledge Infrastructure and Transformation of National Geospatial Agencies

17-19 October 2021

Intel Hotels Amsterdam Zaandam, The Netherlands



Jointly Organized by



Strategic Partners



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Introduction

We live in an age where the human and machine worlds are coalescing, characterized by knowledge brought about by data, networks, and powerful tools. The value of geospatial technology has been established and is evident in the IT and engineering sectors - whether advanced medicine, automated vehicles, or online dating – with a combination of sensors, data, and analytics supporting human decision-making.

The geospatial ecosystem is complex and valuable, with Governments playing an enabling role, as part of the wider integrated digital ecosystem. In a world of uncertainty there is an absolute need for authoritative foundation data from the government to support and anchor a trusted digital twin. Partnerships are essential, with knowledge being created through collaboration in the real and digital worlds. The industry is taking the lead in knowledge creation and should partner with the government to deliver a geospatial knowledge infrastructure for the benefit of all. The big data analytics, Artificial Intelligence, and modelling communities are vital to the creation of knowledge, and are no longer just customers but have the same standing as data providers in the ecosystem. The geospatial ecosystem is thus growing and evolving, and is more expansive than ever, encompassing digital ecosystem's modelling and applications communities, and most industry sectors. Ultimately, geospatial is part of the wider digital infrastructure, and it is imperative that the infrastructures coalesce for delivering actionable knowledge to the users for efficient decision-making.

With a vision to place 'geospatial Knowledge at the heart of tomorrow's global digital society' the training program on "Advancing role of Geospatial Knowledge Infrastructure in World, Economy and Environment" is being organized.

Objective

- The key objective of the training program is to help participants understand the:
- Developing concept of Geospatial Knowledge Infrastructure
- Evolving role of national geospatial agencies in the 4th Industrial Age
- Technology trends and what it means for national geospatial agencies
- Need for, and components of, Integrated Geospatial Strategies and Policies
- Importance of Standards for a Geospatial Knowledge Infrastructure
- Innovative partnership and business models
- Relationship between Geospatial Knowledge Infrastructure and the United Nations Integrated Geospatial Information Framework (IGIF)
- Relevance of Geospatial Knowledge Infrastructure to geospatial agencies and national development priorities

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Agenda and Lesson Plan

Day 1 - 17th October 2021

0930 – 1000

Welcome Coffee

1000 - 1030

Ice breaker and Expectation setting

Conducted by: Anamika Das, Vice President – Partnerships & Dr Shivangi Somvanshi, Director – GKI, Geospatial World

1030 – 1200

Lesson 1: Introduction to Geospatial Knowledge Infrastructure (GKI)

Geospatial Knowledge Infrastructure leverages many new opportunities enabled by the 4th Industrial Revolution. It accelerates automation and knowledge-on-demand. It is as relevant for all nation. It supports the United Nations Vision 2030 agenda and its Sustainable Development Goals. Integrated Geospatial Information Framework is the framework of choice to implement the Geospatial Knowledge Infrastructure.

Objectives:

- To understand the GKI concept and key elements
- How 4th Industrial Revolution technologies can improve geospatial in the virtual world?

Key Topics:

- What is Geospatial Knowledge Infrastructure (GKI): the concept
- Key elements
- Relevance of Geospatial Knowledge Infrastructure
- GKI complimenting other initiatives
- Fundamental data themes, geospatial technologies, integration, value-applications to give knowledge

Trainer: John Kedar CGeog (GIS), FlnstRE, FRGS, Strategic Advisor – Geospatial Infrastructure, Geospatial World

1200 – 1300

Lunch

1300 – 1430

Lesson 2: Geospatial Knowledge Infrastructure: Benefits and Transformation

Objectives:

- To understand the value proposition and relevance of GKI in today's context

Key Topics:

- Value proposition and relevance of GKI in today's context
- How GKI will benefit National Mapping Agencies

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- Changing role and transformation required

Trainer: John Kedar CGeog (GIS), FInstRE, FRGS, Strategic Advisor – Geospatial Infrastructure, Geospatial World

1430 – 1500

Coffee Break

1500 – 1630

Lesson 3: Integrated Geospatial Information Framework (IGIF) and Geospatial Knowledge Infrastructure (GKI)

The Geospatial Knowledge Infrastructure (GKI) is a new concept to help harness the maximum value of geospatial knowledge, but with the UN GGIM Integrated Geospatial Information Framework (IGIF) an essential building block and enabler to success. The IGIF is nearing the end of its initial development, with the implementation guide. Whilst some nations are using the IGIF, some are not, and others are not aware how to use it.

Objectives:

- To understand the IGIF and its relationship with GKI.
- To understand how to use the IGIF in a national context.

Key Topics:

- What is the need for IGIF?
- The key components and pathways of the IGIF
- Overview of how the IGIF is being used globally, including practical IGIF national use/implementation, and the partners working on its delivery
- Relationship between GKI and IGIF

Trainer: Greg Scott, Inter-Regional Advisor, UN-GGIM, Environment Statistics and Geospatial Information Branch, United Nations Statistics Division, Department of Economic and Social Affairs and Tim Trainor, President, International Cartographic Association.

Case Study : Rosamond C. Bing, Chief Executive Officer, Ministry of Lands and Natural Resources, Government of Tonga, Nuku'alofa, Tonga.

1630 – 1800

Welcome Reception

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Day 2 - 18th October 2021

0930 - 1100

Lesson 4: Standards for Geospatial Knowledge Infrastructure

The need for standards is well understood, and to an extent so is the source of standards through IHO, ISO, OGC and others. But how a nation or agency should select and implement standards in an integrated fashion is often not understood. Further, within the geospatial knowledge infrastructure we seek to deliver knowledge services as well as data services.

Objectives:

- To understand the Tier approach to standards, the groups of standards and the key standards for delivering data and services
- To understand the key standards in delivering knowledge from geospatial data
- To understand how to select and implement geospatial standards in a national context

Key Topics:

- Key types of geospatial standards
- Geospatial standards for a geospatial knowledge infrastructure
- How to use select and implement standards, both from an agency and from a national perspective

Deep Dive: Paul Janssen, Geo-standardisation expert, Geonovum

Deep Dive: Rolando Ocampo Alcántar, Chair, ECLAC

1100 – 1130

Coffee Break

1130 - 1300

Lesson 5: Positioning Infrastructure

GNSS has opened up Geospatial Knowledge across society and demand for increased precision continues to rise and new uses found, enabling new knowledge services. However, effective geodetic networks, CORS networks and indoor navigation technologies are not uniformly available, or their use can be improved.

Objectives:

- To understand the elements of national positioning infrastructures.
- To understand the full range of uses and benefits derived from the infrastructure.
- To understand how to plan, deliver and improve a national positioning infrastructure, including through partnership.
- For trainees to consider the state of positioning infrastructure in the nation

Key Topics:

- 4IR creating new opportunity and future of Positioning Infrastructure

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- Planning and rolling out of modern positioning infrastructure
- Getting more value from positioning infrastructures through partnerships

Trainer: Albert H. Anoubon Momo, Vice President & Executive Director, Emerging Market and Funded Projects, Trimble, USA and Christopher Daub, World Wide Support Manager, Trimble, USA

Case Study: Anamika Das, Vice President – GKI Partnerships, Geospatial World

1300 - 1400

Lunch

1400 - 1530

Lesson 6: Integrated Geospatial Policy Framework

Government Policy often develops in isolation, with sector policies and cross-cutting policies such as data often disjointed, eg transport policies may consider specific data issues in isolation or national data, geospatial and EO policies may be incoherent. There are also often major policy geospatial data policy gaps as technology changes the geospatial environment. Need is to encourage and build an integrated policy framework that incorporates geospatial knowledge needs.

Objectives:

- Understand how sectoral policies are impacting geospatial agencies and national geospatial frameworks and the need to engage with policy makers.
- Understand the links between different policies including automation, AI, EO, geospatial and data policies
- Understand the key elements of geospatial policy
- Understand licensing policy options

Key Topics:

- Policy challenge facing nations
- Sectoral policies impacting geospatial domain
- Integrated approach to all national geospatial policies
- Development and Impact of Data Privacy policy
- Policy on Licensing of geospatial data; options and issues

Trainer: Dr Derek Clarke, Advisor, World Geospatial Industry Council

Case Study: Alexander Kotsev, Lead, Data ecosystems and enablers, Joint Research Centre

1530 - 1600

Coffee Break

1600 – 1730

Lesson 7: Managing Transformation

Many national mapping agencies attending the course will be losing relevance in the digital age, transformation is the only choice although that could take a number of forms, including partnership. Governance,

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technologies, and people all have to be considered, and single agency transformation needs to take place amidst a potential need to change external influences on the organisation. As government agencies, some of the levers available to industry transformation are not available for government agencies.

Objectives:

- Overview of why organisational transformation is challenging but necessary.
- Understand how to effectively plan and implement successful transformation initiatives.
- Understand the role of leadership.

Key Topics:

- Why transform and the inherent risks and challenges
- Techniques to effectively plan and implement successful transformation initiatives.
- Leadership of transformation

Trainer: Murray Cowan, Digital Transformation Consultant, AARC Projects

Deep Dive: Lt Gen Girish Kumar, Former Surveyor General of India

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Day 3 - 19th October 2021

0930 - 1100

Lesson 8: Geospatial Knowledge Infrastructure – Integrating New Technologies with National Priorities

We live in a rapidly changing World, in all respects. New partnerships, technologies and approaches can enable all nations to harness the value of geospatial knowledge in new ways, potentially bypassing old ways. The “future” we talked about 5 years ago is here today. But it is difficult to assess what trends most impact geospatial knowledge infrastructures, and these changes regularly.

Objectives:

- Understand better some of the key trends impacting geospatial agencies.
- Understand how these might offer benefit across all nations.

Key Topics:

- Beyond Geospatial; technology trend and what that means for national geospatial agencies
- Digital twins: Demonstrating how national geospatial agency fundamental data is core to this
- AI and ML –how they give opportunities for rapid feature collection and data maintenance
- Lidar/UAS for 3D world

Trainer: Dean Angelides, Corporate Director – International, Esri

Trainer: Andries Botha, Remote Sensing Manager, Woolpert

1100 - 1115

Coffee Break

1115 - 1245

Lesson 9: Partnerships and Business Models

Mapping/Geospatial agencies have traditionally worked in house or through specific project contracts to deliver mapping, data and data services. Increasingly geospatial data and its derived geospatial knowledge are core to many aspects of digital society, and single agencies cannot deliver efficiently or effectively on their own. Indeed, they may not survive on their own and need to find new business models and partnerships, including those that allow transformation in outputs in resource constrained environments.

Objectives:

- Understand a range of current business models being employed by mapping and geospatial agencies and their applicability to individual nations.

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- Understand a continuum of public-private partnership models applicable to this sector and the potential benefits and risks of these models.
- Awareness of opportunities for co-creation of geospatial data and knowledge services.

Key Topics:

- Definitions with a proposed continuum of PPP models that can be populated with Global examples
- Context (SWOT) with respect to the models or examples
- Scope and Opportunities to co-create within existing models and emerging opportunities based on what the community knows

Trainer: Dr. Simon Musäus, D.B.A., VP Business Development, Geospatial Content Solutions (GCS), Hexagon

Case Study: Ruban Jacob, Project Manager – Geospatial Knowledge Infrastructure, Geospatial World

1245 - 1345

Lunch

1345 - 1445

Lesson 10: Developing a National Geospatial Strategy and Action Plan

Delivering geospatial knowledge infrastructure requires national geospatial strategy and/or a geospatial element of a broader national strategy. This sets the national geospatial agenda and will grow from direct use of the IGIF or consideration of elements of the IGIF, appropriate to national needs. The rapid transformation of the sector and of national needs is such that strategies continually need refreshing.

Objectives:

- To understand the elements of a national geospatial strategy.
- To understand a process for developing a national geospatial strategy.
- To understand the UN IGIF Action Plan and how it relates to national strategy.
- To consider the existence and relevance of individual trainee national strategies.

Key Topics:

- Inter-relationship between policy, strategy and IGIF Action Plan
- The steps in creating strategy:
 - Institutional Arrangements for Strategy Development
 - Current State
 - Stakeholders need assessment and future state
 - Developing the Vision and Strategic Options
 - Gap analysis
 - Identify strategic priority areas and develop the plan

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- Elements to be considered for building a national geospatial strategy and action plan
- Implementing strategy

Trainer: Dr Zaffar Sadiq Mohamed-Ghouse, HonFSSSI FRGS FIEAust, Executive Director - Strategic Consulting & International Relations

1445 – 1545

Wrap-up

Aaron Addison, Vice President – Americas, Geospatial World

1545 – 1600

Certificate Distribution Ceremony

1600 – 1615

Coffee Break

1615 – 1635:

Frank Tierolff, Chair Executive Board, Kadaster, The Netherlands
Transformation of Dutch Kadaster

1635 – 1700:

Stefan Schweinfest, Director, United Nations Statistics Division
National Mapping and Sustainable Development

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Presenters

Presenters were drawn from across the World. They have personal experience of the issues being discussed.

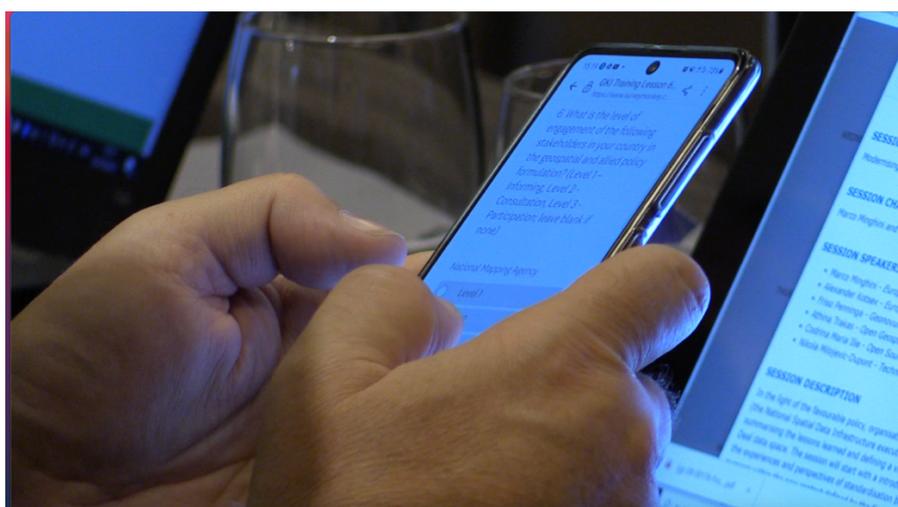
Format of Session

Each session was divided into 4 segments:

- Presentation: It was taken up by the trainers via ppt to present the concept/topic. A case study was presented by an expert
- Q&A: During the Q&A the floor was open for trainees to ask questions and doubts to the trainers.
- Individual Exercise: In this timeframe 5-6 questions (objective + subjective) questions were asked to the trainees based on the lesson plan aligning it to the national perspective. The answers were captured via an online platform.

Training Evaluation

- At the end of each session an individual exercise was undertaken to understand whether the participants have learned what they were supposed to learn. This provided an understanding whether the learning objectives were achieved or not.
- During the closing session a brief feedback exercise was conducted to see if the overall expectation highlighted were met.

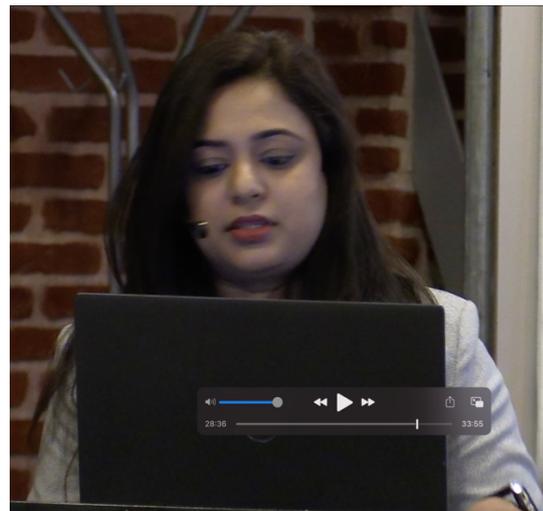


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DAY - 1 (17th October 2021)

Ice breaker and expectation setting

Day 1 of the training started with the Ice breaker & Expectation setting by Anamika Das, Vice President – GKI Partnerships. Followed by Dr Shivangi Somvanshi, Director – GKI, Geospatial World, who set the ball rolling by introducing the partner alliance project on ‘Advancing Role of Geospatial Knowledge Infrastructure in World Economy, Society and Environment’, the different elements for the transition to a Geospatial Knowledge Infrastructure, and its impact on the journey from data to knowledge services.

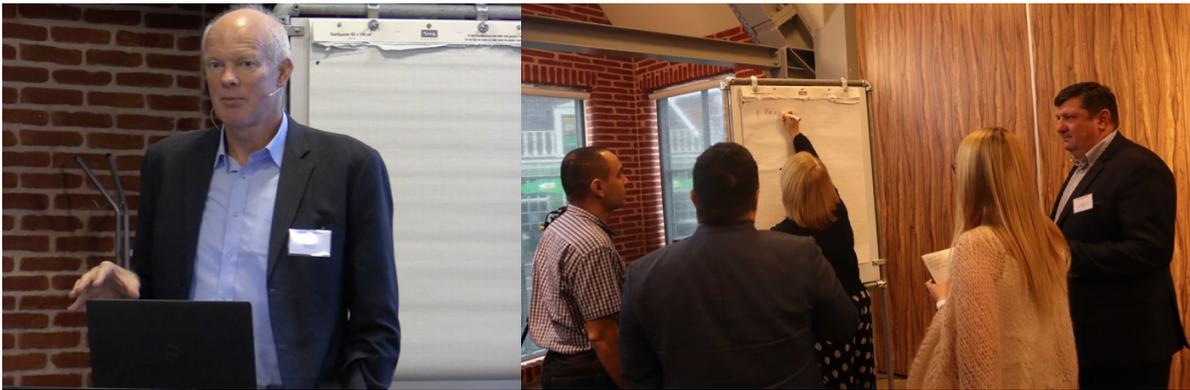


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Lesson 1: Introduction to Geospatial Knowledge Infrastructure (GKI)

Trainer: John Kedar CGeog (GIS), FlinstRE, FRGS, Strategic Advisor – Geospatial Infrastructure, Geospatial World

The lesson engaged with the reasoning behind the need for a new concept of GKI – global challenges, changing expectations, 4IR, Technology, evolving users, omnipresence of location, and went on to define the vision, goals, principles, and explained in detail each of the 6 elements for transition to a GKI. The lesson also briefly touched upon the relationship between United Nations Integrated Geospatial Information Framework (UN IGIF) and GKI, and how it enables the transition from the existing Spatial Data Infrastructure to a Geospatial Knowledge Infrastructure.



1300 – 1430

Lesson 2: Geospatial Knowledge Infrastructure: Benefits and Transformation

Trainer: John Kedar CGeog (GIS), FlinstRE, FRGS, Strategic Advisor – Geospatial Infrastructure, Geospatial World

The lesson delved upon the relationship and differences between UN IGIF and GKI, and how GKI and the UN IGIF aided the development of National Geospatial Agencies and users. The lesson explained in detail how GKI benefits the National Mapping Agencies (through automated data processing, sensors, automation, and new collection sources, partnership co-creation, open positioning infrastructure, integrated web and geo standards etc.), and how National Mapping Agencies will in turn benefit the users (through trusted fundamental geospatial information for all, open national positioning framework, understanding customer challenges, user, and use cases, value added applications, providing data ready for knowledge applications etc.)

Lesson 3: Integrated Geospatial Information Framework (IGIF) and Geospatial Knowledge Infrastructure (GKI)

Trainer: Greg Scott, Inter-Regional Advisor, UN-GGIM, Environment Statistics and Geospatial Information Branch, United Nations Statistics Division, Department of Economic and Social Affairs

Trainer: Tim Trainor, President, International Cartographic Association

Case Study: Rosamond C. Bing, Chief Executive Officer, Ministry of Lands and Natural Resources, Government of Tonga, Nuku'alofa, Tonga.

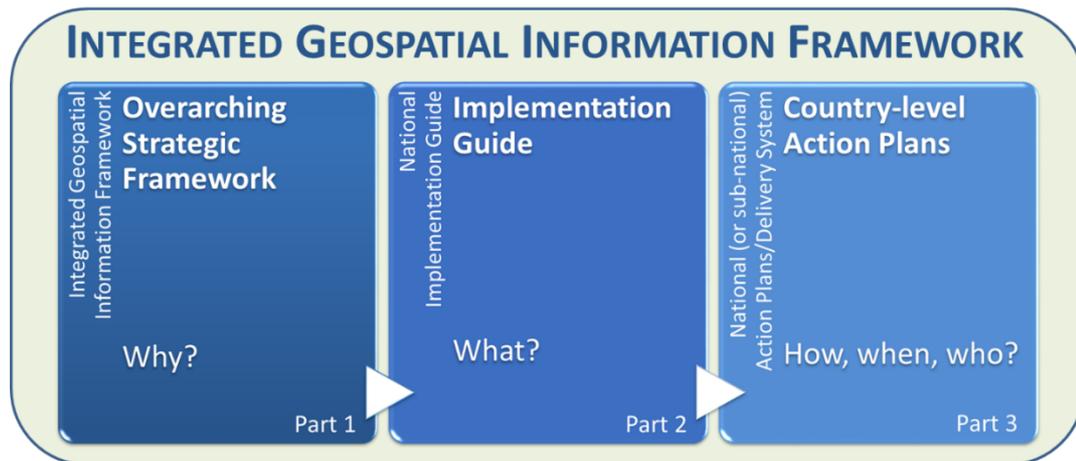
The aim of this lesson was to improve the understanding and knowledge of the IGIF for participants, and how it connects to the GKI.

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The lesson dealt with:

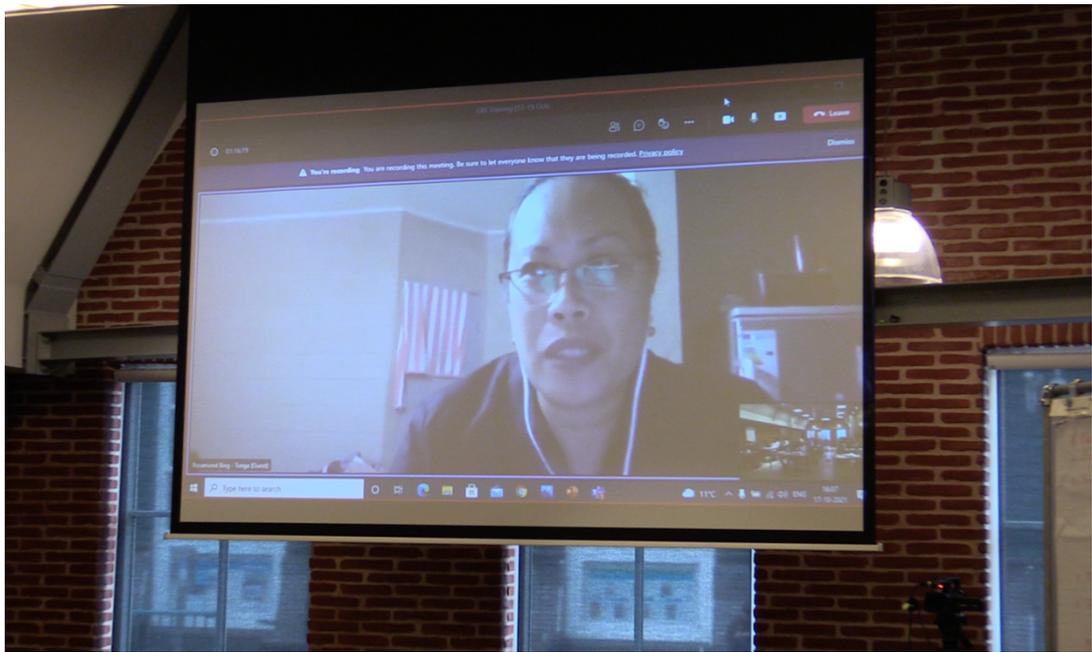
- Need for IGIF
- Overarching strategic framework of IGIF – including vision, mission, goals, strategic drivers, benefits
- IGIF implementation guide
- Relationship between IGIF and GKI, and need for integration
- IGIF country level action plan and associated activities

The case study explored the different facets of implementation of IGIF in Tonga including the various activities involved, the benefits, and the challenges.



VISION						
The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind						
MISSION						
To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social, economic and environmental development.						
STRATEGIC DRIVERS						
National Development Agenda • National Strategic Priorities • National Transformation Programme • Community Expectations • Multilateral trade agreements • Transforming our World: 2030 Agenda for Sustainable Development • New Urban Agenda • Sendai Framework for Disaster Risk Reduction 2015–2030 • Addis Ababa Action Agenda • Small Island Developing States Accelerated Modalities of Action (SAMOA Pathway) • United Nations Framework Convention on Climate Change (Paris Agreement) • United Nations Ocean Conference: Call for Action						
UNDERPINNING PRINCIPLES						
Strategic Enablement	Transparent and Accountable	Reliable, Accessible and Easily Used	Collaboration and Cooperation	Integrative Solution	Sustainable and Valued	Leadership and Commitment
GOALS						
Effective Geospatial Information Management	Increased Capacity, Capability and Knowledge Transfer	Integrated Geospatial Information Systems and Services		Economic Return on Investment		
Sustainable Education and Training Programs	International Cooperation and Partnerships Leveraged	Enhanced National Engagement and Communication		Enriched Societal Value and Benefits		

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DAY - 2 (18th October 2021)

Opening remarks of Day 2 of the training program was given by Anamika Das, Vice President, GKI partnership, Geospatial World.



Lesson 4: Standards for Geospatial Knowledge Infrastructure

Deep Dive: Paul Janssen, Geo-standardisation expert, Geonovum

Deep Dive: Rolando Ocampo Alcántar, Chair, ECLAC

The lesson highlighted the scope of geoinformation and the need for interoperability in technology and semantics for an effective spatial data infrastructure or knowledge infrastructure. The lesson further demonstrated the Geonovum process chain from standard exploration to standard development and maintenance to standard implementation, and the increasing need for developing standards for the future which is being addressed through a white paper on the upgrade of Dutch SDI. It also delved deep into the different semantic web technologies and encodings, and the standards for the development of the national digital twin infrastructure. The case study demonstrated the integration of statistical and geospatial information and the standards and technology used on CEPALSTAT geoportal which is the gateway to statistical information of Latin American and Caribbean countries.



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Lesson 5: Positioning Infrastructure

Trainer: Albert H. Anoubon Momo, Vice President & Executive Director, Emerging Market and Funded Projects, Trimble, USA and Christopher Daub, World Wide Support Manager, Trimble, USA

Trainer: Christopher Daub, Global Support Manager, Trimble

Case Study: Anamika Das, Vice President – GKI Partnerships, Geospatial World

The lesson highlighted the following:

- An introduction to GPS, GNSS, RTK, CORS, VRS, etc.
- Accurate, reliable, high quality GNSS data around the clock, and the need for Real-Time Networks and their technical realization
- Global reach, local services and support: behind the scenes of Positioning Services
- Enabling automated movement detection supporting informed decision making about infrastructures
- Financing Positioning Infrastructure through different funding sources like local government funds, multilateral development banks, public private partnerships, export credit financing, private funds etc.

The case study on the positioning infrastructure in India demonstrated the CORS network and the geodetic capabilities, and the various positioning infrastructure applications across domains.



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Lesson 6: Integrated Geospatial Policy Framework

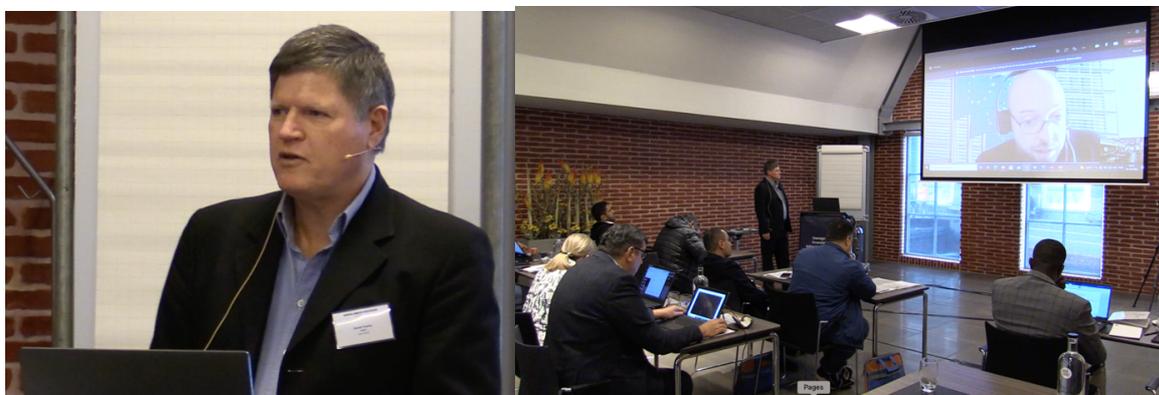
Trainer: Dr Derek Clarke, Advisor, World Geospatial Industry Council

Case Study: Alexander Kotsev, Lead, Data ecosystems and enablers, Joint Research Centre

The lesson elaborated on the policy challenges facing nations, the need for an integrated geospatial policy environment, and the approaches associated with the policy formulation. It delved deep into the different components of the integrated geospatial policy framework including:

- Core geospatial policies
- Global policy alignment
- Open data
- Knowledge legislation
- Government research, development, and innovation
- Digital education
- Data protection etc.

The case study demonstrated the ongoing activities for modernising geospatial data sharing in INSPIRE within the broader context of the European Strategy for Data, and the envisioned Green Deal Data Space. It defined the legal and policy and technological context, which delineated the bounding conditions for improving the ways in which geospatial data is shared and used, and also summarized the lessons learned from the past 14 years of implementation of the INSPIRE Directive as well as a vision for the future and a roadmap that would ensure that the approaches for geospatial data sharing remain fit for purpose, and that INSPIRE blends within a broader ecosystem of data and policies.



Lesson 7: Managing Transformation

Trainer: Murray Cowan, Digital Transformation Consultant, AARC Projects

Deep Dive: Lt Gen Girish Kumar, Former Surveyor General of India

The lesson focused on the need to transform, the inherent risks and challenges, techniques to effectively plan and implement successful transformation initiatives and leadership of transformation.

It covered the following topics:

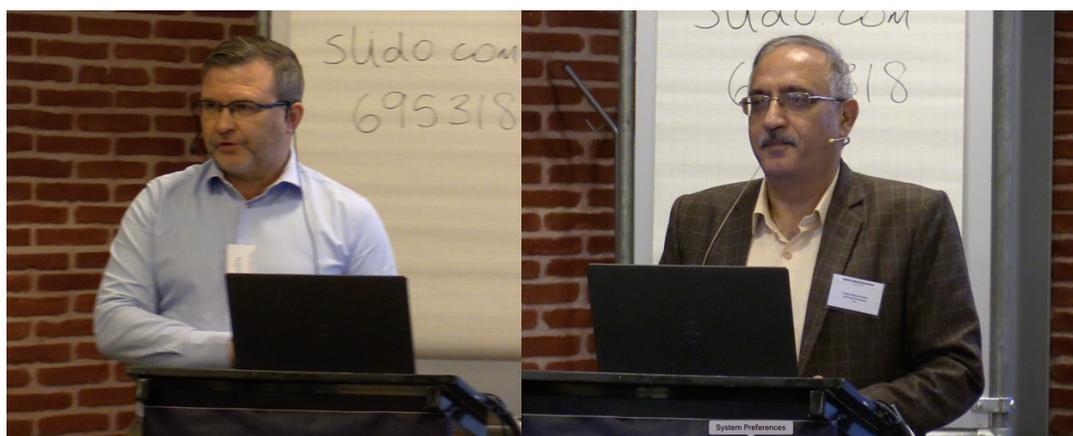
- Why transformation is necessary and what is to be transformed (the institution)

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- What is the transformation and the key techniques to succeed (the changes to be implemented and methods and practices to be used)
- The role of leaders during transformation (the decisive difference).

The lesson drew on leading practices from the public sector as well as corporate and non-government organisations including key practices from business start-up methods. The lesson also focused on the decisive difference leaders make in successful transformation and change.

The case study demonstrated the transformation journey of Survey of India including the transformation objectives, the 3-stage organizational transformation, and its alignment with the national development strategy.



Post this session, the closing remark for the second day of the training program was given by Dr. Shivangi Somvanshi, Director – Geospatial Knowledge Infrastructure, Geospatial World.



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DAY - 3 (19th October 2021)

Opening remarks of Day 3 of the training program was given by Dr. Shivangi Somvanshi, Director, Geospatial Knowledge Infrastructure, Geospatial World.



Lesson 8: Geospatial Knowledge Infrastructure – Integrating New Technologies with National Priorities

Trainer: Dean Angelides, Corporate Director – International, Esri

Trainer: Andries Botha, Remote Sensing Manager, Woolpert

The lesson elaborated on the adoption of technology like Artificial Intelligence, Machine Learning, and Deep Learning in geospatial workflows along with the associated tools and lifecycle, and also the workflows that it enables like:

- Predictive analysis
- Pattern mining and clustering
- Anomaly detection
- Object detection, pixel classification, object classification, tracking etc.

It demonstrated the success stories of integration of frontier and geospatial technology, and also the national and international priorities achieved through it.

The lesson also shed light on latest advancements in Lidar technologies and applications including Unmanned Aircraft System (UAS) positioned to be valuable in mapping small projects that considered too small for manned aircraft mobilization.

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Lesson 9: Partnerships and Business Models

Trainer: Dr. Simon Musäus, D.B.A., VP Business Development, Geospatial Content Solutions (GCS), Hexagon

Case Study: Ruban Jacob, Project Manager – Geospatial Knowledge Infrastructure, Geospatial World

The lesson dealt with the fundamentals elements and pillars of Public Private Partnerships (PPPs), the challenges PPPs can help solve, and the associated success factors. It also demonstrated the following business models for geospatial knowledge co-creation and innovations:

- Governmental
- Traditional transaction – services
- Traditional transaction – products
- Concession – through back-licensing
- License and resales – IPR with company

The case study elaborated on Alberta Data Partnerships – the information hub for all geospatial data in the Alberta province of Canada. It demonstrated the features of the PPP, the business model, products generated and shared, outcomes, success factors, and lessons learned and to be carried forward into future geospatial PPPs.

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Lesson 10: Developing a National Geospatial Strategy and Action Plan

Trainer: Dr Zaffar Sadiq Mohamed-Ghouse, HonFSSSI FRGS FIEAust, Executive Director - Strategic Consulting & International Relations

The lesson demonstrated the following stages of strategy development:

- As-is: Interviews, workshops, desktop assessment, surveys
- Best practice: Local, national, international
- Analysis: MoSCoW, CMM level maturity, blue ocean strategy
- Findings: Visuals, short statements, reports
- To-be: Vision, objectives, road map, implementation/ operational plan

It also elaborated the three options (do nothing, interim solution, complete business integration solution), the phases of masterplan (stability & growth, implement & integrate, build & establish), and the components of roadmap for transformation.



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Wrap-up

Conducted by: Aaron Addison, Vice President – Americas, Geospatial World

Session 10 was followed by wrap up session by Aaron Addison, Vice President – Americas, Geospatial World.



1530 – 1600

Certificate Distribution

Certificates were awarded to all the participants of the training by *Stefan Schweinfest, Director, United Nations Statistics Division.*



Post certificate distribution there were few guest addresses, moderated by Sanjay Kumar, CEO, Geospatial World.

Rob van de Velde, Director, Geonovum

During his deliberations, he elaborated the value of geospatial data and geospatial knowledge to the society. He also talked about the methods that can be adopted as public servant to enhance this value in terms of economics, society and environment. He also focused on the Footprints of Netherlands in Global Market.

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Speaker: Frank Tierloff, Chair Executive Board, Kadaster, The Netherlands (Transformation of Dutch Kadaster)

The session elaborated the components of transformation of key process at Kadaster through fully automated processing, electronic delivery & indexing etc., and transformation of organization through integration, organizational change, and data oriented leading principles.



Stefan Schweinfest, Director, United Nations Statistics Division wended up the training as the co-host by delivering a talk on 'National Mapping and Sustainable Development'.

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QUESTIONS ASKED BY THE PARTICIPANTS:

1. Is it necessary to have the implementation and action plan of integrated framework at country level or it is applicable at regional level as well?
2. If people don't have 'National Spatial Data Infrastructure', shall they jump to 'Geospatial Knowledge Infrastructure'?
3. Where you would place Global Statistical Geospatial Framework in this evolution pathway of Geospatial frameworks?
4. How do you confine the user request and the data producer constrains, because at the end they have to accept the standards. How do you put them together (data users and data producers)?
5. How often you can update the geo-information standards.
6. How do you tackle the data protection issue?
7. Using one vendor over another for installing CORS network, costs lot of money for integrating multi CORS network. Alternative to this is to use independent vendor. Could you please tell us from your experience, what are the expected challenges we might face, if we go forward from this approach?
8. Is there any technology which can help to get indoor positioning accuracy?
9. If you make your data available, what rewards associated with that and if you don't, what risk that goes with that and if you charge what risk or liabilities that goes with that?
10. Most of the national mapping agencies (NMAs) are currently into transformation phase and being challenged by enormous availability of technology on one side and ever increasing demand on high resolution content on the other side from variety of customers. So in that process of transformation, what is your advice to NMAs in terms of moving up the value chain from data to knowledge to digital twin?
11. There are challenges for developing public private partnership (PPP) with some governments and the safety and security of data is always a big concern. How do you create value proposition for PPP?

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LIST OF PARTICIPANTS:

1. *Sandra Liliana Moreno Mayorga*, Technical Director of Geostatistics, Departamento Administrativo Nacional de Estadística, Colombia.
2. *Gwendolin Seidner-Schotz*, Coordinator for international projects and initiatives, Federal Agency for Cartography and Geodesy, Germany.
3. *Bakhita AlRemeithi*, Senior Government Communication Specialist, Federal Geographic Information Center, United Arab Emirates.
4. *Hamad Al Mutawa*, Engineer, Federal Geographic Information Center, United Arab Emirates.
5. *Anwaar Al Shimmari*, General Manager Consultant, Federal Geographic Information Center, United Arab Emirates.
6. *Alwasaidi Ahmed Saleh N*, General Authority for Survey and Geospatial Information, Saudi Arabia.
7. *Alqahtani Abdullah Theeb H*, General Authority for Survey and Geospatial Information, Saudi Arabia.
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