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Contribution of regional committees and thematic groups to the global geospatial information agenda

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Note by the Secretariat

Summary

The present paper contains the report of the Secretariat on the contribution of regional committees and thematic groups to the global geospatial information agenda for consideration by the Committee of Experts on Global Geospatial Information Management.

The report provides information on the contribution and achievements of the following eight regional committees and thematic groups: the Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific; the Regional Committee of United Nations Global Geospatial Information Management for the Americas; the Regional Committee of United Nations Global Geospatial Information Management for Africa; the Regional Committee of United Nations Global Geospatial Information Management for Europe; the Regional Committee of United Nations Global Geospatial Information Management for the Arab States; the Joint Board of Geospatial Information Societies; the United Nations Global Geospatial Information Management Academic Network; and the United Nations Global Geospatial Information Management Private Sector Network. The reports of the regional committees and thematic groups contain information on their activities and achievements since the fifth session of the Committee of Experts, held in New York from 5 to 7 August 2015, inclusive of the fourth High-level Forum on United Nations Global Geospatial Information Management, held in Addis Ababa from 20 to 22 April 2016. The reports also provide an overview of the work of the regional committees, their working groups and thematic groups in the following areas: (a) sustainable development; (b) land administration and management; (c) disaster risk reduction; (d) fundamental geospatial data themes; (e) the integration of statistical and geospatial information; (f) regional and international collaboration and capacity development, including the Caribbean Project led by Mexico; (g) the global geodetic reference frame; (h) the creation of the United Nations Global Geospatial Information

* E/C.20/2016/1

Management Academic and Private Sector Networks; (i) priority issues and challenges; and (j) future plans and events.

I. Report of the Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific

1. Summary

1. This report highlights the activities carried out by the Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP) since the last report submitted to the Fifth Session of the United Nations Committee of Experts on Global Geospatial Information Management held from 3-7 August 2015 at the United Nations Headquarters in New York. The report also proposes the key priority issues of the Asia and the Pacific Region for consideration by the Committee of Experts.

2. Background

2. UN-GGIM-AP was established on 1 November 2012 on the basis of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP), in accordance with the Resolution adopted at the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP).

3. Objectives

3. UN-GGIM-AP inherits exactly the same missions and membership as those of PCGIAP, and aims to prompt globally the unique needs and interests of the region as the representing body of the National Geospatial Information Authorities of 56 countries and regions in Asia and the Pacific while cooperating with other regional and global entities.

4. Activities

4.1 Contribution to UN-GGIM Activities

4. UN-GGIM-AP has operated effectively and in line with the mandate given by UN-GGIM, contributing to its activities and producing tangible outputs.

5. UN-GGIM-AP substantively supported the 4th High Level Forum on UN-GGIM held in Addis Ababa, Ethiopia.

6. UN-GGIM-AP in collaboration with UN-GGIM and the National Geographic Information Institute of Korea (NGII), held the Twentieth United Nations Regional Cartographic Conference for Asia and the Pacific (20th UNRCC-AP) in Jeju, Republic of Korea, 6 - 9 October 2015. One of the resolutions of the 20th UNRCC-AP recommends that ECOSOC consider removing the UNRCC-AP from the UN calendar of conferences and meetings, with its mandates and obligations assumed by UN-GGIM at the global level, and its technical and substantive activities at the regional and national level assumed by UN-GGIM-AP. This recommendation has been incorporated in the “Programme Review of the Work of the Committee of Experts on Global Geospatial Information Management” to be presented to the ECOSOC.

7. UN-GGIM-AP actively participated in the work of the expanded UN-GGIM Bureau, and supported UN-GGIM capacity building efforts and knowledge base development.

8. At the Fourth Plenary of UN-GGIM-AP, new Bureau members were elected as follows: President: Japan; Vice Presidents: Republic of Korea and Mongolia; and Secretary: China. Under this new Bureau, UN-GGIM-AP continues its efforts to identify and report regional issues to annual UN-GGIM sessions.

4.2 Working Group Activities

9. At the Fourth Plenary Meeting of UN-GGIM-AP, held in Jeju Island, Republic of Korea, on 9 October 2015, the four Working Groups of (1) Geodetic reference framework, (2) Disaster risk management, (3) Regional SDI, (4) Cadastre and land management were established. In accordance with the resolutions adopted at the Twentieth United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP), the four Working Groups developed their 2016-2018 work plans and carried out their activities accordingly.

10. **Working Group 1 on Geodetic Reference Frame** aims to support Asia and Pacific countries to respond to the General Assembly Resolution on A Global Geodetic Reference Frame (GGRF) for Sustainable Development, and to facilitate regional geodetic cooperation.

11. WG1 has actively participated in and contributed to the development of the UN-GGIM Global Geodetic Reference Frame (GGRF) Roadmap document for the Sixth Session of the United Nations Committee of Experts on Global Geospatial Information Management, to encourage a strong input from the Asia Pacific region and ensure that key elements relating to the development and sustainability of the GGRF meet the needs of the Asia and the Pacific region.

12. To support regional geodetic cooperation within the Asia and the Pacific region, WG1 continues its activities on Asia Pacific Reference Frame (APREF) Project. The project is now incorporating Global Navigation Satellite System (GNSS) data from a Continuously Operating Reference Stations (CORS) network of approximately 420 stations contributed by 28 countries and 16 national agencies in the Asia Pacific. Data of 600 stations are routinely processed by four Analysis Centres and made available publicly.

13. Asia Pacific Regional Geodetic Project (APRGP) Annual GNSS campaign is continually conducted to ensure countries without CORS can connect their national geodetic infrastructure to the regional/global network. The last campaign was carried out from 6-12 September 2015. Data were contributed from eleven countries. The analysis of this campaign as well as the report is being completed.

14. **Working Group 2 on Disaster Risk Management** aims to investigate roles of disaster management authorities and NGIAs, and to explore potential collaboration areas based on geospatial information.

15. Working Group 2 conducted a survey to all UN-GGIM-AP member states with the major items of general issues on disaster risk reduction, organization activities, geospatial information management for disaster risk reduction, challenges, solutions and future prospects, best practices as well as further plans. Currently, the answers have been analysed and the summary report has been completed.

16. WG2 collected and produced a series of best practices on the use of geospatial information for disaster risk reduction.

17. **Working Group 3 on Regional SDI** aims to investigate and assess the current status of NSDI development of the member countries of Asia and the Pacific region, and to identify common data and service standards.

18. A draft questionnaire on the status of NSDI development of the member countries, with focus on access, management, update, web-based services and sharing of data/service has been designed by WG3.

19. Besides, the data specification catalogue of INSPIRE and FGDC has been investigated, and a draft plan for common data themes and services for regional SDI has been proposed.

20. With the efforts to promote cross-country geospatial information sharing by defining rules of on-line service interoperation, WG3 cooperated with ESRI on free access to online geoinformation services for public use. Currently, the data level sharing plan is under preparation.

21. **Working Group 4 on Cadastre and Land Management** aims to promote land administration framework and good practices for Asia and the Pacific region. Main work steps are to identify land issues in Asia and the Pacific region, propose affordable framework and good practices for Asia and the Pacific region, and disseminate good practices and enhance training and capacity development.

22. The 1st survey for investigating the cultural, social, administrative and technical environments of several countries in Asia and the Pacific region has been carried out, and the analysis report has been completed. Besides, a case analysis of Korean land information systems has also been started. The result will be considered as basic analysis materials for developing framework and good practices for Asia and the Pacific region.

4.3 Publicity and Outreach

23. In October 2015, the new version of UN-GGIM-AP website1 was launched with updated information on the current Executive Board, Working Groups and the amended statutes.

24. The Fourth UN-GGIM-AP Plenary Meeting was held in conjunction with the 20th UNRCC-AP. The meeting documents and technical reports were released on the UN-GGIM website2.

25. UN-GGIM-AP submitted its liaison report to ISO/TC 211 plenary to introduce the Committee's activities of 2015. The report was released through ISO/TC 211 Global Directory data.

4.4 Capacity Development

26. UN-GGIM-AP has continued to be involved in regional workshops aimed at geodetic capacity building in Asia and the Pacific region.

[1] http://www.un-ggim-ap.org/
[2] http://unstats.un.org/unsd/geoinfo/RCC/unrccap20.html

27. UN-GGIM-AP in collaboration with International Federation of Surveyors (FIG), International Association of Geodesy (IAG), International Committee on Global Navigation Satellite Systems (ICG) and New Zealand Institute of Surveyors (NZIS), held Seminar on Reference Frame in Practice: Reference Frames, Datum Unification and Kinematics at the 78th FIG Working Week 2016 in Christchurch, New Zealand, 1-2 May 2016.

28. UN-GGIM-AP supported the International Seminar on Geodetic Reference Frame and Location Based Services, held in Nanning, China, 24-27 November 2015. The Seminar was jointly organized by UN-GGIM and the National Administration of Surveying, Mapping and Geoinformation of China (NASG), as an activity for implementation of the United Nations General Assembly Resolution on A Global Geodetic Reference Frame for Sustainable Development. The seminar shared technologies, knowledge and experience on geodetic capacity development and location-based services to facilitate international cooperation in geodesy.

29. Also, UN-GGIM-AP supports the 1st ISPRS/UN-GGIM National Mapping and Cadastre Agency (NMCAF) Forum to be held in Prague, Czech, on July 14, 2016. The Forum will highlight the important role of NMCA in the geospatial domain, and discuss scientific and technical issues in cadastral and topographic mapping.

30. Besides, UN-GGIM-AP continues to promote the establishment of the Pacific Geospatial and Surveying Council (PGSC) which represents the Pacific Island Countries.

5. Partnership, Regional and International Collaboration

31. UN-GGIM-AP continues to work to build partnership with regional and international organizations through participation to the various forums at regional and global levels and exchange of views and best practices.

32. UN-GGIM-AP actively participated in and contributed to the call for Participation in GNSS Augmentation to the Tsunami Early Warning System, a project of the Global Geodetic Observing System (GGOS) in support of the United Nations General Assembly and International Union of Geodesy and Geophysics resolutions for the sharing and implementation of geodetic data for the mitigation of disasters associated with mega-thrust earthquakes and associated tsunamis.

33. UN-GGIM-AP attended the 17th Annual World Bank Conference on Land and Poverty and presented in the session of Roundtable on Geodetic Reference Frames.

34. UN-GGIM-AP continues to maintain close relationship with other liaison organizations including FIG, ISO/TC 211, ISPRS, IAG and ICG through jointly organizing workshops and forums, participation in the meetings and submission of the liaison reports.

6. Regional Priority Issues

35. The Committee of Experts has been discussing a number of topics on GGIM, all of which are relevant to the work of UN-GGIM-AP. However, during

the current three-year term of activities until 2018, UN-GGIM-AP is focusing its work on four topics as the priority issues in the AP region, i.e. (1) Geodetic reference framework, (2) Disaster risk management, (3) Regional SDI, and (4) Cadastre and land management. Working Groups have been set up for these topics to share data and best practices as well as to facilitate the capacity building. The Working Groups have also been liaising with the relevant working groups of the Committee of Experts in order to make synergistic outcomes.

36. In addition to these four topics, UN-GGIM-AP is conscious of the fundamental need of capacity building in the region, which has been repeatedly addressed in the past UN-GGIM-AP meetings. Meeting such need is particularly important in the Asia Pacific region due to the inhomogeneity in the stage of geospatial infrastructure development among the member countries, nearly 70% of which are developing countries and small island states. UN-GGIM-AP, therefore, seeks every opportunity of providing quality seminars and training programmes that are available to the member countries.

37. While the Committee of Experts continues its discussions on the latest issues of the geospatial information community, successfully providing visible outcomes including resolutions and reports, regional committees, especially UN-GGIM-AP, will growingly need to meet the expectation of developing countries and small island states for tangible outcomes and benefits including capacity building and upgrade of their geospatial infrastructures, in order to keep the regional activities sustainable and growing for the future. This is a daunting challenge for UN-GGIM-AP that has few available resources in itself. It will be important for UN-GGIM-AP to meet such outstanding needs in cooperation with the member countries in the region and relevant regional and international organizations.

7. Future Plans

38. The following meetings of UN-GGIM-AP are scheduled:

i. The Fifth Plenary Meeting of UN-GGIM-AP & UN-GGIM International Forum on Policy and Legal Framework for Geospatial Information Management (Kuala Lumpur, Malaysia, 17-20 October 2016)

ii. The Sixth Plenary Meeting of UN-GGIM-AP (Japan, 2017)

39. UN-GGIM-AP will continue to actively contribute to the work of the UN-GGIM and take necessary actions upon requests by the Committee of Experts.

II. Report of the of the Regional Committee of United Nations Global Geospatial Information Management for the Americas

1. Summary

40. The Regional Committee of Experts of the United Nations on Global Geospatial Information Management for the Americas (UN-GGIM: Americas) was created in August 2013, replacing the Permanent Committee for Geospatial Data Infrastructure of the Americas (CP-IDEA). During its first three years of existence, the Committee has worked in the activities of its five working groups, in the incorporation of the Caribbean Region to UN-GGIM activities, while strengthening their national and regional spatial data infrastructures; in the consolidation of cooperation between the institutions of the Joint Action Plan, and in reinforcing new regional and international relations.

2. Introduction, Background

41. In August 2013, the United Nations Committee of Experts on Global Geospatial Information Management for the Americas (UN-GGIM: Americas) was created. This regional body replaced the Permanent Committee for Geospatial Data Infrastructure of the Americas (CP-IDEA). This significant action was taken in accordance with the new mandate of the regional committee to enhance cooperation and coordination with the Committee of Experts of the United Nations on Global Geospatial Information Management (UN-GGIM).

42. Stefan Schweinfest, Director of the United Nations Statistics Division, in his opening remarks at the 10th United Nations Regional Cartographic Conference for the Americas (UNRCCA), said: "The new Regional Committee will be aligned to a global architecture, which will better address regional and global challenges especially in the context of sustainable development and humanitarian assistance."

3. Objective

43. The Committee shall determine the relevant regional issues on geospatial information management, wherein it will take the necessary action to maximize the economic, social and environmental benefits derived from its use. This, based on the knowledge and exchange of experiences and technologies by Member States, thereby advancing the establishment of the Geospatial Data Infrastructure in the Americas initiative, and other national initiatives, in addition to their contributions to UN-GGIM.

4. Activities, Areas of Work –Achievements

4.1 Contribution to UN-GGIM Activities

44. During the fifth session of the Committee of Experts on UN-GGIM, Mr. Rolando Ocampo, President of UN-GGIM: Americas, was elected Co-chair of the Committee of Experts, along with Mr. Timothy Trainor from the United States of America and Mr. Li Pengde from China. This election contributes to the regional Committee having a global vision of the agenda on geospatial information

management, as well as regional contributions and visions enriching the global UN-GGIM agenda.

45. The main contributions of the Regional Committee to the Committee of Experts of UN-GGIM are related to the work of its five working groups, aligned with the global agenda of the Committee of Experts.

46. The main areas of the regional committee´s Working Groups (WG) are: Integration of Statistical and Geospatial Information; Access and use of geospatial information for disaster risk reduction and climate change; Standards and Technical Specifications; Promotion and Evaluation of Spatial Data Infrastructure, and International Coordination and Cooperation.

47. The Second Session of the Regional Committee was held in November 11 and 12, 2015 in Mexico City, under the framework of the Latin America Geospatial Forum (LAGF); 77 participants from 32 Members States attended the meeting, together with the following national, regional and international organizations: UN-GGIM Secretariat; United Nations Economic Commission for Latin America and the Caribbean (ECLAC); Mexico's National Institute of Geography and Statistics (INEGI) and Ministry of Foreign Affairs (SRE); Centro Geo (Mexico); SIRGAS; the Pan American Institute of Geography and History (PAIGH); GeoSUR; the Open Geospatial Consortium (OGC); the National Space Organization of Taiwan; the Caribbean Disaster Emergency Management Agency (CDEMA); the Association of Caribbean States (ACS); the Urban and Regional Information Systems Association (URISA), Caribbean Chapter; The University of West Indies (UWI), what3words, among others.

48. During its second session, the Regional Committee agreed that the formal UN Regional Cartographic Conference format was no longer a necessary requirement. UN-GGIM: Americas recommended that ECOSOC consider removing the UN-RCCA from the UN calendar of conferences and meetings, with its mandates and obligations assimilated by UN-GGIM at the global level, and its technical and substantive activities at the regional and national level assimilated by UN-GGIM: Americas

49. Another important resolution of the Second Session of the Regional Committee, which contributes to UN-GGIM activities, is the new roles and responsibilities taken on by Caribbean countries. For instance, Saint Maarten took over as coordinator of the Working Group on access and use of geospatial information in disaster risk reduction and climate change. As in the global Committee of Experts, the regional working group is now led by a Caribbean country, which contributes to the incorporation and active participation of the Caribbean region to UN-GGIM activities. This Working Group held its first ad hoc meeting in March 2016, during a Course on Metadata for Caribbean Countries, under the frame of the IX International Geomatics Congress in Havana, Cuba.

50. Currently, UN-GGIM: Americas, the United Nations Statistics Division (UNSD) and the United Nations Geospatial Information Section (UNGIS), as the joint Secretariat of UN-GGIM, are organizing a UN-GGIM International Forum on Geospatial Information and Services for Disasters, along with URISA Caribbean Chapter, and in cooperation with the Government of Mexico. The Forum will be held September 4 to 5, 2016 in Bridgetown, Barbados.

51. Taking into account the importance of the integration of Geospatial and Statistical information, UN-GGIM: Americas, through its working group on this matter, have been working on the Statistical and Geospatial Framework for the Americas (MEGA for its acronym in Spanish), aligned with the proposal for a Global Statistical Geospatial Framework (GSGF). This project will enable the linking of statistical information of various types, and its geospatial location, trough recognized geocoding methods. MEGA has been shared with the Statistics Conference for the Americas of the Economic Commission for Latin America and the Caribbean (CEA-CEPAL, for its Spanish acronym), to explore future collaboration through this project, with the aim of integrating the Statistical and Geospatial Communities, both nationally and regionally.

52. At the global level, the President of the Regional Committee, Mr. Rolando Ocampo has continued its active participation in UN-GGIM activities. As Co-Chair of the Expert Group on the Integration of Statistical and Geospatial Information (EG-ISGI) together with the Australian Bureau of Statistics. The co-chairs and UNGGIM secretariat have been holding regular conference calls, along with various members of the Group. The Third Meeting of the Expert Group on the Integration of Statistical and Geospatial Information was held in Paris, April 25 and 26, 2016, under the framework of the Sixty-fourth plenary session of the Conference of European Statisticians (EuroStat).

53. This past year, the Statistical and Geospatial Community has been focused on the 2030 Agenda for Sustainable Development, which specifically demands for "new data acquisition and integration approaches to improve the availability, quality, timeliness and disaggregation of data to support implementation at all levels, including to exploit the contribution to be made by a wide range of data, including Earth observations and geospatial information". In this regard, the President of UN-GGIM: Americas jointly with the Group on Earth Observations, the Permanent Mission of Mexico and the Permanent Mission of Denmark, organized a side event during the 47th Session of the United Nations Statistical Commission titled: "Geospatial Information and Earth Observations: Supporting Official Statistics in Monitoring the SDGs". The aim is to establish this event as a regular integration forum, bringing together geospatial and statistical experts during the yearly session of the UN Statistical Commission.

54. In the context of the monitoring and measuring of the 2030 Agenda and its Sustainable Development Goals, the Inter-Agency and Expert Group on the Sustainable Development Goal Indicators (IAEG-SDG) recently agreed to create a Geospatial Information Working Group (GIWG). Rolando Ocampo, representing Mexico, serves as co-chair of this Working Group, along with Marie Haldorson from Statistics Sweden. This constitutes a unique opportunity to bring the experiences from UN-GGIM to the group, and provides a general vision to UN-GGIM: Americas of the contributions that the geospatial community can make to the monitoring and implementation of the SDGs.

4.2 Legal and Policy

55. The website http://www.un-ggim-americas.org/, hitherto ran by the National System of Territorial Information (SNIT), Chile, underwent a migration process, and is now administered by INEGI, Mexico. This process has streamlined

the work of maintaining and updating the site by the Executive Secretary, who is also based at INEGI.

4.3 Administrative Arrangements

i. Project PAIGH 2016: The PAIGH supported the UN-GGIM: Americas project with $8,000 USD for 2016 which were partly used to finance the participation of 4 Member States to the Joint Meeting between the Executive Committee of the Statistical Commission for the Americas and the Executive Board of UN-GGIM: Americas, held on June 17 at the headquarters of the UN Economic Commission for Latin America and the Caribbean (ECLAC), in Santiago, Chile. The other part of the budget will be used for funding the participation of Member States to the Third Session of the Regional Committee in October 2016 in Mexico City.
ii. Support from the Ministry of Foreign Affairs of Mexico, through its Agency for International Development Cooperation (AMEXCID)- from August 2015 to June 2016, the project activities aimed at strengthening the Geodetic Network and Building Capacity, added an investment of $1.04 million USD in Geodetic Equipment, Capacity Building, Human Resources, and travel expenses.
iii. Chile-Mexico Joint Development Cooperation Fund- from August 2015 to June 2016, the project activities aimed at Building Capacity, added an investment of $50,000 USD
iv. Geospatial Media & Communications: For the third year in a row, agreed with The National Institute of Statistics and Geography of Mexico (INEGI) and UN-GGIM: Americas to host the third session of the Committee during the Latin America Geospatial Forum 2016 in Mexico City in October, financing the attendance of 20 Member States of the Regional Committee.

4.4 Capacity Development

56. As part of the Capacity Building component of the Project for Strengthening of the Spatial Data Infrastructure in the Caribbean (Caribbean Project, for short), the third training course, on Cartography, was held at INEGI Headquarters, in Mexico City in November 2015, with the participation of representatives from 14 participating countries. The course was imparted by Bheshem Ramlal, Senior Lecturer and Head Department of Geomatics Engineering and Land Management of the Faculty of Engineering from The University of the West Indies (UWI); and Valrie Grant, President of The URISA Caribbean Chapter.

57. The fourth course, on Geographic Information Metadata, was held from March 14th to 18th in Havana, Cuba, under the frame of the IX International Congress of Geomatics. The course instructors were José Luis Mondragón from INEGI, México, and Pablo Morales from SNIT, Chile. The course and the Congress were attended by 15 country representatives, through financing from Caribbean Project partners (Mexico-Chile Joint Cooperation Fund).

58. The fifth course, on Spatial Data Infrastructures, will be held on July 31 and August 1st, at the UN Headquarters in New York, on the margins of the Sixth Session of the Committee of Experts. Course instructors will be Jorge Prado from the Institute of Geography, National Autonomous University of Mexico, and Áaron Villar from INEGI.

4.5 Publicity and Outreach

59. The Regional Committee has been represented in the following international forums, through the participation of the President of the Committee:

i. International Seminar on the use of Geospatial Information, organized by SNIT, Chile and the European-Latin American Forum on Climate Change of ECLAC. Santiago, Chile. 07 and 08 September, 2015.
ii. 20th United Nations Regional Cartographic Conference for Asia and the Pacific. Jeju, Island, Republic of Korea. 6-9 October, 2015. Represented by the Executive Secretary, Monica Aguayo.
iii. 8th Meeting of the Statistics Conference for the Americas (SCA) and the 14th Conference of Ministers and Heads of Planning of Latin America and the Caribbean. Quito and Yachai, Ecuador. 17 to 19 November, 2015.
iv. UN-GGIM Bureau Meeting. UNHQ, New York. 07 to 09 December, 2015.
v. 47th Session of the United Nations Statistical Commission. UNHQ, New York, 04-09 March 2016, and the following side events:
   - "Towards Better Information Systems for the 2030 Agenda – use of administrative records, Big Data and geospatial information"
   - Geospatial Information and Earth Observations: Supporting Official Statistics in Monitoring the SDGs (GEO-UN-GGIM);
   - Briefing on the Project to Strengthen Geospatial Data Infrastructures in the Caribbean with representatives of the permanent missions from the Caribbean Countries at the UN.
vi. Course on Geographic Information Metadata on March 14th to 18th in La Habana, Cuba and participation at the IX Congress of Geomatics.
vii. 4th. High Level Forum on UN Global Geospatial Information Management. Addis Ababa, Ethiopia. 18-22 de abril de 2016
viii. 3rd meeting of the United Nations Expert Group on the Integration of Statistical and Geospatial Information and the Sixty-fourth plenary session of the Economic Commission for Europe. 25-29 April, 2016.
ix. Presentation of the report of the Committee of Experts of UN-GGIM during the Economic and Social Council´s Coordination and Management Meeting and briefings promoting the strengthening of the Committee of Experts. UNHQ, New York, May 31 to June 01, 2016.
x. Meeting with the Minister of National Assets of Chile, Joint Action Plan Meeting and Joint Meeting of Executive Committees of the SCA ECLAC and UN-GGIM: Americas. Santiago, Chile. 15-17 June, 2016.
xi. 6th Session of UN-GGIM, UNHQ, New York. August 1st to 5th 2015.

4.6 Technical

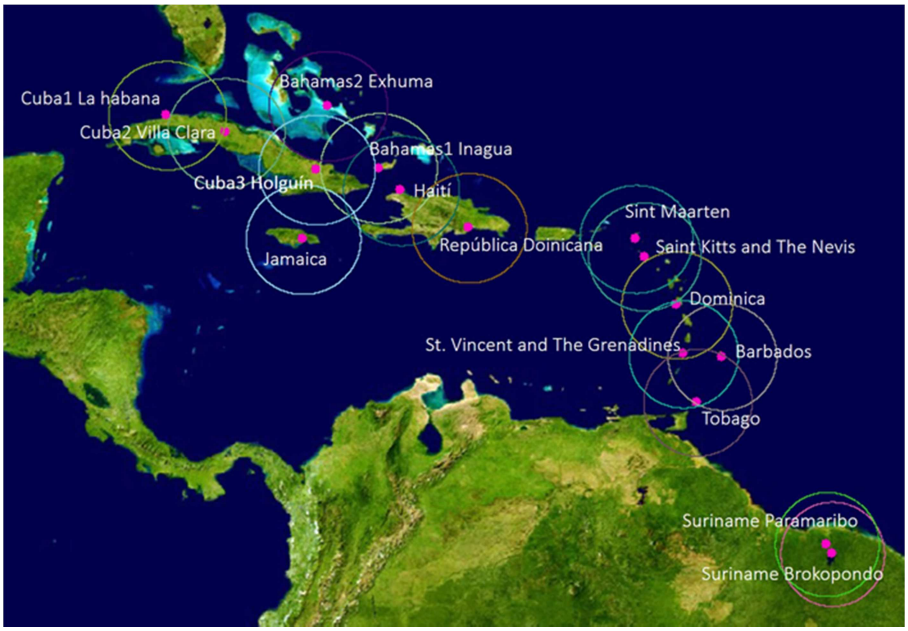
60. The regional Committee, at its second session held in Mexico City in November 2015, approved the resolution proposed by the Working Group on the Integration of Geospatial and Statistical information regarding the use of the KML format as an OGC standard, so that it may be used as the standard by member countries of the Americas.

61. The coordinators of the working groups prepared a final report of the questionnaires for the diagnosis made to the countries, which was responded by 29

Member States from the Americas. This report will be presented at the third meeting of the regional committee in October, 2016 in Mexico City.

62. The Caribbean Project is divided into three main components: Diagnosis, Capacity Building and Infrastructure Acquisition. For the third stage of the project regarding Infrastructure Acquisition, 43 GNSS receivers and 16 GNSS Stations were acquired and installed, for the strengthening of the geodetic network in the region. These stations were distributed as follows:

Location of GNSS Stations



Country	Station GNSS	Equipment GNSS
Antigua and Barbuda	0	2
Bahamas	2	4
Barbados	1	2
Belize	0	2
Cuba	3	4
Dominica	1	2
Grenada	0	2
Guyana	0	4
Haïti	1	4
Jamaica	1	3
República Dominicana	1	4
St. Kitts and Nevis	1	2
St. Lucia	0	2
St. Maarten	1	2
St. Vincent and the Grenadines	1	2
Suriname	2	0
Trinidad and Tobago	1	2
TOTAL	16	43

63. In addition, satellite imagery of the countries and territories in the region, for the construction of a Land Cover Map and the updating of national cartographies, were delivered during a side event for The Caribbean Project in August 2015, during the Fifth Session of UN-GGIM.

64. Another item of the infrastructure strengthening component of the project, includes the development of a computer application/geomatics solution, designed to serve as a means to integrate, support and disseminate geographic or geo-referenced statistical information of the countries and the region. This computational tool is currently being developed by INEGI, and is based on a platform called MxSIG—an open source platform created to facilitate interaction between providers and users of geographic information, referenced through web services, and which can hold and cross-reference dozens of information layers on an interactive map. To support these activities, a competitive bidding process will be implemented this year to acquire servers and computer equipment, intended as hardware for the geomatics solution to be installed and operated. The functionality to be achieved is that each country can locally promote the use of their geographic information through a concentrated, single national service; likewise, the availability of a central server that offers the service throughout the region.

5. Partnerships and Regional and International Collaboration.

65. Collaboration Agreement between the Ministry of Foreign Affairs of Mexico (SRE) through its International Development Cooperation Agency AMEXCID and INEGI: This agreement has been the framework for collaboration between the two institutions to develop the Project for Strengthening the Spatial Data Infrastructure in the Caribbean under the UN-GGIM: Americas Regional Committee.

66. Under the Caribbean Project framework, a Technical Committee was constituted, formed by specialized, academic and intergovernmental institutions from the region: the Association of Caribbean States (ACS); INEGI; the Mexican Agency for International Development Cooperation (AMEXCID); the Caribbean Disaster Emergency Management (CDEMA); URISA, Caribbean Chapter; The University of Guyana and The University of the West Indies. Decisions are taken jointly at this committee for the benefit of the project, taking into account their knowledge and expertise, geospatial information, regional intergovernmental relations and international cooperation, as well as of the Caribbean region. On May 2016, The Institute of Geography of the National Autonomous University of Mexico (IG-UNAM) was incorporated to the Technical Committee.

67. To continue the efforts of integrating the Caribbean Region to UN-GGIM, and strengthening their SDIs, another important contribution for capacity building in the region, is being made by the Governments of Chile and Mexico through the Chile-Mexico Joint Development Cooperation Fund, formed by the International Development Cooperation Agency of Chile (AGCID) and the Mexican Agency for International Development Cooperation (AMEXCID), and with the technical collaboration of INEGI and the Chilean National System for the Coordination of Territorial Information (SNIT), part of Chile's Ministry of National Assets.

68. In August 2016, under the frame of the Sixth Session of UN-GGIM in New York, the new Joint Action Plan 2016-2020 will be signed by representatives of the PAIGH, SIRGAS, GeoSUR and UN-GGIM: Americas, whereby the main purpose is to accelerate, in a coordinated and effective way, the development of SDIs in the Americas.

69. Geospatial Media & Communications (GM&C), an international company serving the geospatial community, has been another important partner for UN-GGIM: Americas, alongside INEGI, to carry out the Third Latin America Geospatial Forum in Mexico City in October 2016. During this important Forum, the third session of UN-GGIM: Americas will be held and, with the joint support of the Caribbean Project, GM&S and INEGI, 38 member countries from the Americas will be supported to participate.

70. An important collaboration project between the Statistical and Geospatial Communities in the Americas has been framed in resolution 712 (XXXVI) approved in the 36th session of ECLAC, held in Mexico City in May 2016. This resolution, on the Regional Integration of Statistical and Geospatial Information, recommends the establishment of a forum for substantive dialogue between the Statistical Conference of the Americas of ECLAC (SCA-ECLAC) and UN-GGIM: Americas, in order to coordinate efforts and define a joint agenda for the integration of statistical and geospatial information at the regional level, through

cooperation between these two entities. The resolution recognizes that the immediate overarching goal of the regional agenda on geostatistical integration is its use in the measurement, monitoring and achievement of the Sustainable Development Goals, and in conducting and analysing the 2020 round of censuses. It also recommends the exploration of joint mechanisms for projects such as the Integrated Map of the Americas of the Pan American Institute of Geography and History, containing statistical information on population; and an atlas of information on gender-related matters for the Americas. The resolution calls for the holding of regular joint meetings between UN-GGIM: Americas and SCA-ECLAC, deciding to carry out the first joint meeting on June 17 in Santiago, Chile.

71. This meeting was as a first approach to explore future collaboration in projects such as the Integrated Map for the Americas with Statistical information (MEGA) and the Regional Gender Atlas, which will serve as an exercise of integration of communities at national and regional level.

6. Priority Issues and Challenges

72. For UN-GGIM: Americas, one of the priority issues is to continue the integration of the Caribbean Region to the activities of UN-GGIM and UN-GGIM: Americas, both through the participation in global and regional UN-GGIM meetings, and through the continuity and sustainability of the Caribbean Project, which includes ensuring that the acquired infrastructure and capacity built will be sustainable in time for the 19 countries involved.

73. Another important objective for the Regional Committee is the active participation of member countries in Working Groups and activities related, recognizing their great potential in priority areas for Geospatial Information Management in the Americas; the main challenge in this regard is the continuity of commitment of representatives, as there are many internal changes within Member States and the commitment with the Regional Committee is not always institutional but personal.

74. These two priorities also constitute the main challenges for the Regional Committee: to ensure continuity and active participation of representatives of member countries, along with getting the support of their countries´ authorities, which includes receiving financial support for meetings of the Committee and its Working Groups, among others.

7. Perspectives and Future Plans.

75. The immediate plans for the Regional Committee are the activities to be carried out within the framework of the 6th Session of UN-GGIM in New York City in August 2016, including a training course on Spatial Data Infrastructures for Caribbean countries, and a side event for the Regional Committee, aiming to be a preparatory meeting to the 3rd Session of the Regional Committee in October in Mexico City.

76. The sixth course under the capacity building stage of the Caribbean project, will be a Workshop on the Use of Geodetic Equipment that has been installed in

the Caribbean Countries. This workshop will take place at the University of West Indies in St Augustine, Trinidad & Tobago, from August 15 to the 19. It will be given by Francisco Medina from ECO, and Javier Arellano from INEGI.

77. Currently, future training events are being analyzed in terms of priorities and major needs/priorities of participating Caribbean countries and territories. There are some tentative courses that include topics such as: Remote Sensing, Geoportals and Geoservices, Digital Elevation Models, Geographic Database, among others.

78. Another important event for the Regional Committee will be the UN-GGIM International Forum on Geospatial Information and Services for Disasters that will be held on September 4-5, 2016, under the frame of the URISA Caribbean 2016 GIS Conference, in Bridgetown, Barbados.

79. On October 5th and 6th, the third session of UN-GGIM: Americas will be held in Mexico City, under the Latin America Geospatial Forum. The program includes this year's progress and activities; final results of the regional diagnosis; regional and international cooperation; working groups' progress, and future plans for the Regional Committee, among others.

80. The Caribbean Project work program includes the purchase of computer equipment for the creation of the geomatics solution for the Caribbean, which will contribute to the interoperability and availability of geospatial data from/to the region.

81. The Regional Committee Working Groups coordinators will analyze and use the final results of the joint diagnosis of Geospatial Information Management, and outline the committee's future actions, giving priority to reducing the gaps between countries.

8. Conclusions

82. UN-GGIM: Americas has successfully worked to address relevant regional issues on geospatial information management, and taken the necessary action on these to maximize the economic, social and environmental benefits derived from the use of geospatial information built on the knowledge and exchange of experiences and technologies from different countries, based on common standards, allowing the establishment of the regional Geospatial Data Infrastructure.

83. Some breakthroughs and foundational tasks, such as the incorporation of the Caribbean Region and the strengthening of their SDI; the integration of Statistical and Geospatial Information; and the International and Regional Cooperation, have been key to the consolidation of UN-GGIM: Americas.

84. UN-GGIM: Americas, in the last three years has become the regional linkage between the national decision makers on geospatial information management and the Committee of Experts of UN-GGIM.

9. Acknowledgments:

85. Key players for the significant growth experienced by UN-GGIM: Americas include the regional and international development cooperation agencies from the Governments of Mexico and Chile (AMEXCID and AGCID, respectively), the Technical Committee (ACS, INEGI, CDEMA, URISA Caribbean Chapter, The University of Guyana, The University of the West Indies and IG-UNAM) and SNIT, for the support and implementation of the Caribbean Project and the difference it will make to the Region's Spatial Data Infrastructure.

86. Within the Committee, the active role of the Vice-President of the Regional Committee, Álvaro Monett, has been crucial, as an active coordinator of the Working Groups tasks and a in the development of the region's General Diagnosis.

87. A special recognition goes to INEGI's team for their technical and logistical support at all the Committee activities, their participation in training events and the work during the last year managing the of UN-GGIM: Americas website.

88. Representatives of Member States that have been active handling high responsibility activities, including the Coordinators of the Working Groups representing the following organisms: Natural Resources Canada; the Geographic Institute Agustín Codazzi and the National Administrative Department of Statistics of Colombia; Ministry of Public Housing, Spatial Planning, Environment and Infrastructure of Sint Maarten; National Territorial Information System of Chile; and the National Institute of Statistics and Geography of Mexico. And also our Vocal Members, representing the following organisms: Natural Resources Canada; National Institute of Geography of Costa Rica; National Lands Agency of Jamaica and the Brazilian Institute of Geography and Statistics.

89. Also and finally, thanks to the Secretariat of UN-GGIM for coordinating and ably supporting the global and regional efforts on geospatial information management, working closely with UN-GGIM: Americas.

90. To all of them, our recognition and gratitude

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Report reviewed by: Rolando Ocampo, President of UN- GGIM: Americas

III. Report of the Regional Committee of United Nations Global Geospatial Information Management for Africa

1. Introduction and Background

91. The African caucus of the United Nations Global Geospatial Information Management (UN-GGIM: Africa) was set up to address the issues of developing the capacities of African nations in the generation and dissemination of authoritative, accurate and sustained geospatial information in the continent. It focuses around the following key pillars:

i. The African Regional Spatial Data Infrastructures (ARSDI) as a framework with policies & structures to facilitate the availability of and access to spatial data, facilitating data-sharing among data producers and users.
ii. The AFREF project, to develop a regional geodetic reference frame, aligned with the Global Geodetic Reference Frame (GGRF), to enable direct and seamless applications of all geospatial information on the continent.
iii. The SALB project, to build authoritative and accurate second administrative level boundary databases with validated datasets from member States that will be used in a plethora of applications including census data analysis and disaster management.
iv. The GeoNyms programme, to create an African gazetteer populated with Member State data and input through the UN Group of Experts on Geographical Names (UNGEGN).
v. The Fundamental Geospatial Datasets to develop a well-structured and comprehensive data foundation that would be consistent, comparable and compatible at the local, national, regional, and global levels.
vi. The Integration of Geospatial Information and Statistics to mainstream geospatial information applicability in the various sectors and subnational constituents of statistics.
vii. The 2030 Sustainable Development Agenda, to develop common tools and data for applications of geospatial technologies for monitoring and tracking progress of the sustainable development goals.

92. This report outlines activities carried out by the Africa region with regard to geospatial information management since the sixth session of the United Nations Committee of Experts (UNCE) on Global Geospatial Information Management (GGIM). The report includes actions taken as a follow-up of resolutions adopted by UN-GGIM and other activities considered as being of interest to member States and partners.

2. Objectives

93. The main objective of the African cluster of UN-GGIM is to leverage the enabling capabilities of geospatial information technology to meet African development agenda and in support of the emerging global challenges. This will be mainly achieved through: i) promoting and supporting technical activities development of standards, interoperability and streamlined electronic services delivery in such a way that they anticipate the future potential use of geospatial information resources in the continent; ii) strengthening and aligning specific needs and interests of Africa with international mechanisms; iii) encouraging and facilitating the integration of statistics with geospatial information efforts to attain viable and meaningful outcomes, analysis and visualization of data in supporting and tracking progress of the sustainable development goals.

3. Activities, Areas of Work – achievements

3.1. Organisation of the first meeting of UN-GGIM: Africa.

94. The region has organized the first meeting of the African cluster of UN-GGIM. The main objective of the meeting was to debate, adopt and endorse the overarching governance mechanism for UN-GGIM: Africa. The meeting reviewed the critical aspects in articulating the UN-GGIM: Africa's charter: the governance structure and modus operandi; the action plan with the framework of priority actions, milestones and related costs; the terms of reference of the Executive Working Groups.

95. The meeting was attended by over 40 participants, comprising delegates from 21 African countries, as well as observers from international organizations including the United Nations Secretariat, academia, regional organizations and networks, and the private sector.

96. The key outcomes of the meeting are as follows:

i. The formal endorsement by Member States of the establishment of the Regional Committee of the United Nations Global Geospatial Information Management for Africa (UN-GGIM: Africa);
ii. The agreement on the basic set of concepts, practices, standards and guidelines that are critical to UN-GGIM: Africa operations;
iii. The identification of the building blocks for the development of the Action Plan while providing perspectives on the essential activities to be carried out;
iv. The adoption of UN-GGIM: Africa statutes, rules of procedure and organizational structure.
v. The election of the Executive Board to steer the caucus for the next three years,
vi. The establishment of the Executive Working Groups that will carry out the work programme for the next years.

97. The meeting finally made several resolutions among which : i) a request for the United Nations Economic Commission for Africa to establish a permanent secretariat for UN-GGIM: Africa with the appropriate resources; ii) a call for UN-GGIM: Africa shall ensure linkages with other regional clusters; and iii) a provision to present the resolutions and recommendations taken during this meeting of UN-GGIM: Africa to the Sixth Session of the United Nations Committee of Experts on Global Geospatial Information Management.

3.2. Organisation of the 4th High Level Forum on UN-GGIM

98. The UNGGIM High Level Forum was held on 18-22 April 2016. The Forum was attended by 304 participants (20% females) drawn from 57 countries among which were 8 Ministers from ministries responsible for land administration and management of geospatial information. Seven UN agencies and 61 intergovernmental organizations (IGOs) and non-governmental organizations (NGOs) were also represented at the High Level Forum. Twelve side-events paved the way for the main session of the Forum. The formal sessions included a Presidential Opening Ceremony, a Ministerial Segment (with 8 Ministers from Africa, America, Asia and Europe), a High Level Policy Dialogue on

Land Governance and 5 Technical Sessions that count 12 plenary, 11 keynotes, 10 panel discussion and 10 statements.

99. The key outcomes of the forum include:

i. Raising political awareness and highlighting the importance to decision makers of the need for timely and fit for purpose land administration and management
ii. Dialogue among global experts from the land administration and geospatial communities to strengthen the use of geospatial information for good land governance
iii. Identifying and addressing common issues of land management and governance in support of sustainable development.
iv. The Addis Ababa Declaration that invites international development partners, non-governmental organizations, the private sector and industry to take collective action to include a geospatial component in all of their sectoral projects they are funding in order to significantly improve geographic coverage of land administration and management systems.

3.3. UN-GGIM: Africa Action Plan

100. The continental action plan on UN-GGIM: Africa has now been articulated around the following key building blocks:

i. Policy required to guide member States' efforts in achieving a better coordination mechanism for geospatial information management is put in place.
ii. Common frameworks and tools for geospatial information management in Africa are developed and answer the questions on how to support geospatial standard setting processes; how to explore new data capture and process technologies and tools.
iii. Comprehensive, holistic, vision-driven, long-term transformative development of capacities in Africa is sustained and role and responsibilities of stakeholders is outlined.
iv. Mechanism for partnership and collaboration within the geoinformation community world-wide is set up.
v. Integration of geospatial and statistical information.

101. The action plan was reviewed by external mechanism so as to ensure its internal and policy consistency and to articulate it with global agendas and programmes such as the 2030 SDG, and the AUC 2063 Vision.

3.4. White Paper on Volunteered Geographic information

102. UN-GGIM: Africa produced a document on "Volunteered Geographic Information (VGI) in Africa". The document outlines the guiding principles that could be used to sensitize the national mapping agencies as well as seek ways and means of incorporating VGI mapping into national mapping practices in Africa. The document was validated by an Experts Group Meeting, which also raised issues related to VGI application and reviewed some best practices as well as the current status on VGI mapping. The Africa region would welcome any contribution from partners and possibly other interested technology solution providers to mainstream citizen generated data in the mapping infrastructures of the African National Mapping Authorities.

4. Contribution to UN-GGIM Activities

103. The Africa region participated in the following UN-GGIM related events and activities:

i. Attendance to the fifth Session of the Committee of Experts of GGIM, held in New York in August 2015. The main purpose of attending the meetings was to raise awareness within the international community of UNECA efforts in coordination of GGIM-Africa and identify any potential donors to assist in funding the efforts. It was also to hold initial discussions with African member state representatives in preparation for the first Africa meeting and to learn from what other regional GGIMs had already achieved.
ii. Contribution to the work of the United Nations Expert Group on the Integration of Statistical and Geospatial Information (UN EG-ISGI). UN-GGIM: Africa participated in the 3rd meeting of UN-EG-ISGI and contributed to the discussion on the Global Statistical Geospatial Framework Proposal, providing the African perspective on mainstreaming geospatial information into statistics.
iii. ECOSOC Programme Review Process of UN-GGIM: The Africa region contributed to the Programme review of the work of the Committee of Experts on Global Geospatial Information Management since its inception in 2011. UN-GGIM: Africa was strongly supportive to the initiative in strengthening the UN-GGIM mandate and providing necessary resources for its operations within the UN budget cycle. The region is offering that a resolution must be passed by the African group requesting ECOSOC to favourably consider this Option 4 in strengthening Mandate and Resources of UN-GGIM.
iv. Contribution to GGRF: Although African countries participation in the GGRF process is still very low, two countries from Africa (Ethiopia and Tunisia) actively contributed to the adoption of the resolution on GGRF submitted to the General Assembly.
v. Attendance and contribution to the Expanded Strategic UN-GGIM Bureau Meeting in New York. The purpose of the Expanded UN-GGIM Bureau Meeting was to set strategies and an agenda for a sustainable global geospatial information management mechanism that will contribute to support the work programme, directions, and implementation strategy of UN-GGIM for 2016 and beyond.

5. Administrative arrangements

5.1. Executive Board

104. The first meeting discussed and reached a consensus to establish a formal Executive Board of UN-GGIM: Africa pursuant to the decision made during the inception meeting that the interim bureau should stand till the subsequent meeting is organised. In accordance with the disposition in the Statutes of UN-GGIM: Africa, the following Executive Board members were elected through a vote by the national representatives that were present:

i. Chair: Ethiopia
ii. 1st Vice-Chair: Burkina Faso
iii. 2nd Vice-Chair: South Africa
iv. 1st Rapporteur: Morocco
v. 2nd Rapporteur: Cameroon
vi. The United Nations Economic Commission for Africa (ECA) continues to be the Secretariat of UN-GGIM: Africa.

5.2. Executive Working Groups

105. The meeting further discussed and agreed on the following decisions with respect to the establishment of executive Working Groups (WG): i) number; ii) composition, and iii) terms of reference. The following working groups with their chair and members were established.

Working Group	Chair	Members	Non Voting Members
WG1: African Geodetic Reference Frame	Kenya	Nigeria Morocco Botswana Gabon	RECTAS RCMRD UNECA
WG2: Fundamental Geo spatial datasets and Standards	South Africa	Cameroon Burundi Burkina Faso North Africa [TBD]	Niger UNECA
WG3: Institutional arrangements and Legal frameworks	Nigeria	Algeria [TBC] Madagascar Ethiopia Central Africa [TBD]	UNECA
WG4: Capacity and capability development	Morocco	Kenya Zimbabwe Côte d'Ivoire Central Africa [TBD]	South Africa RECTAS RCMRD AARSE UNECA
WG5: Integration of Geospatial and Statistical Information for Sectoral Applications	Namibia	South Sudan Liberia Cameroon Morocco	Zambia Gabon UNECA

106. All African countries and other interested organisations are encouraged to contribute and become active members of any of these working groups in accordance with the Statutes and Rules of Procedure.

6. Capacity Development

107. With the rapid evolution of geospatial technology, there is a strong need to constantly update and enhance the individual and institutional knowledge and skills within the geospatial community in Africa. The region has continued to collaborate and coordinate activities with its partners to build spatial awareness through organising seminars and workshops to raise awareness and share knowledge on the importance of using geospatial technology for Africa development agenda.

6.1 Training on the use of Earth Observation for Sustainable Water Management in Africa

108. An international workshop - TIGER workshop 2016: Looking after Water for Sustainable Development and a training seminar were organized in partnership with the European Space Agency (ESA) and the University of Twente (The Netherlands) in February 2016. The training workshop was attended by about 25 participant professionals from different African countries working in the water sector.

7. Publicity and Outreach

109. The Africa region continued to give close attention to common issues related to data accessibility and familiarity to the users (including policy makers) and develop strategic guidance on making knowledge available to decision makers and the community in a coordinated way. Although some mechanisms within the Secretariat at ECA are being used for publicity and outreach, this needs to be extended to improve reach to all stakeholders. During the reporting cycle, the region has initiated several regional awareness raising campaigns and on-line media campaign through various channels such as social media, web portal, e-discussion on the role of geospatial information science and technology in socio economic transformation.

https://twitter.com/UNGGIMAFRICA/
Facebook: UN-GGIM:Africa

8. Technical

110. The activities carried out in this area aim at increasing the number of information and knowledge resources and services developed at the regional, sub-regional and national levels to improve availability and use of spatially-enabled information for development in Africa. The activities also encompass promotion of the common and interoperable tools and standards.

8.1 Development of geospatial information resources for various socio-economic sectors

111. As the continent is striving with burning issues such as climate change impact, water scarcity, energy shortage, environmental stresses and food crisis, which affect citizens, constituting factual, precise and updated information is critical for decision-making in key socio-economic sectors. Currently, various spatially-enabled datasets (including the global administrative data and second administrative level boundaries) have been sourced and collected as well as other statistical data that were processed and included in regional geodatabases.

8.2 Second Level Administrative Boundary (SALB)

112. The project has been revitalized in 2014 by UNSD and UNCS with ECA as the African focal point. Datasets have recently been received from Botswana, Côte d'Ivoire and Ethiopia.

8.3 African Reference Frame (AFREF)

113. Continuous support was provided to the International Steering Committee of the African Reference Frame (AFREF) programme to complete the roll-out of 10 GNSS reference stations in the following countries: Burundi, Chad, Côte d'Ivoire, Ghana, Kenya, Namibia, Zambia, and Zimbabwe. The installation of the stations is currently being implemented with the assistance of Trimble Inc.

9. Partnerships, Regional and International Collaboration

114. The establishment of the UN-GGIM: Africa has shaped new partnerships with national officials in all geospatial fields as well as non-governmental organizations, academia, research institutions and the private sector in Africa. Through the work of UN-GGIM: Africa, Member States have agreed on a basic set of concepts, practices, standards and guidelines for a cooperative management geospatial information in Africa.

115. A collaborative action was established with West Africa Economic and Monetary Union (WAEMU) to set the stage for the development and implementation of a regional spatial data infrastructure for the WAEMU countries.

10. Priority Issues and Challenges

116. Currently the priorities issues include and not limited to:

i. The establishment of effective national leadership and the institutional arrangements for operationalizing an integrated and coherent approach to UN-GGIM: Africa activities implementation at national level.
ii. Member States capabilities to undertake reforms that increasingly ensure operational effectiveness to support timely delivery of geospatial data, products and services for national planning and decision-making.
iii. Mobilization of resources needed for the working groups to effectively discharge their duties

11. Perspectives/Outlook, Future Plans

117. Second meeting of UN-GGIM: Africa: The region plans to organize the second meeting of UN-GGIM: Africa in conjunction with the Africa Statistical Commission (StatCom Africa). The meeting is tentatively scheduled on 21-25 November 2016.

118. UN-GGIM: Africa Action Plan: From the overarching balanced action plan that is endorsed by member States, the next steps will be to develop sectoral priority actions for each Working Group and further consolidate in a continental strategy on UN-GGIM: Africa. By the time of the next meeting, each Working Groups will revisit the document and draw some of the elements that are relevant to their domain of intervention.

12. Conclusion

119. With setting the stage for the development and implementation of UN-GGIM: Africa, the continent has fixed a key milestone as a visible sign that Africa will be a strong supporter in developing the United Nation Global Geospatial Information Management regional entity for Africa (UN-GGIM: Africa). The region expects that as part of the larger global organization, this will enable direct transfer of geospatial

standards and policy to be implemented at the continental and national level. The inception meeting has identified three pillars of UN-GGIM: Africa that will form the basis for the implementation of the programme in Africa: AFREF (geodetic reference frame), SALB (administrative limits) and GeoNyms (the African geographic names initiative).

120. The region expects that the development and coordination of UN-GGIM: Africa will gain consensus of African member States as well as support from partners in the common implementation of the programme.

13. Recommendation

121. **To the Sixth Session of the Committee of Experts of UN-GGIM:**

On the Programme review of UN-GGIM

UN-GGIM: Africa:

i. Noted the comprehensive draft review report prepared by the UN-GGIM Bureau to be submitted to ECOSOC in 2016, and,
ii. Re-affirmed support for the mandate of UN-GGIM to enhance its role and increase its contribution to the work of the UN system;
iii. Considered the four options for the future modalities of the UN-GGIM and recommended the adoption of Option 4: Strengthened Mandate and Resources;
iv. Agreed to the strengthening and revision of the mandates and terms of reference of the UN-GGIM in order for it to be at the same level as other subsidiary bodies of ECOSOC, and in order to strengthen its interaction with them, in particular the Statistical Commission, and to enable it to function as the peak inter-governmental organ reporting to ECOSOC on all matters relating to geography, geospatial information and related topics, and as the governing Member State and UN system body on geospatial information management;
v. Agreed that sustainable funding for the operations of the UN-GGIM is needed to ensure its continued effectiveness, including conference support, substantive and technical secretariat support, and in particular the funding of the participation of national delegates from developing countries, in order to ensure a broad and balanced representation at the sessions of the Committee, noting that some of the funding would be offset through the consolidation of activities and the rationalization of the various geospatial bodies within the UN system reporting to the Council.

14. Acknowledgement

122. The report was compiled and finalized thanks to the following contributors:

i. Andre Nonguierma (UNECA) – UN-GGIM: Africa Secretariat
ii. Sultan Mohammed Alya (Ethiopia) - Chair UN-GGIM: Africa Executive Board
iii. Musso Riba (South Africa) – Co-Chair UN-GGIM: Africa Executive Board
iv. Abdoulaye Belem (Burkina Faso) - Co-Chair UN-GGIM: Africa Executive Board

IV. Report of the of the Regional Committee of United Nations Global Geospatial Information Management for Europe

1. Summary

123. This report provides an overview of the activities carried out by the Europe Regional Committee of the United Nations Committee of Experts on Global Geospatial Information (UN-GGIM: Europe) in the past 12 months since the last meeting of the United Nations Committee of Experts on Global Geospatial Information in August 2015.

2. Introduction, background

124. UN-GGIM: Europe is one of five UN-mandated regional bodies established to facilitate regional development and discussion of the Committee of Exerts within and across the European UN Member States. UN-GGIM: Europe was formally established on 1st October 2014 in Chisinau Moldova.

3. Objectives

125. In line with the other regional bodies UN-GGIM: Europe aims to identify regional issues relevant to geospatial information management and recommend necessary actions on them so that the economic, social and environmental benefits of European geospatial information are maximized.

126. UN-GGIM: Europe fully respects existing European regional and national frameworks and capabilities in the context of European geospatial information management. UN-GGIM: Europe aims to encourage the implementation of the recommendations of UN-GGIM.

127. UN-GGIM: Europe also supports capacity building, donor funding and other measures, for the development of geospatial information and spatial data infrastructure development in Europe.

128. UN-GGIM: Europe aims to cooperate in the development of a European geospatial information infrastructure which supports the integration of statistics and avoids duplication of cost, effort and data.

4. Activities, Areas of Work - achievements

4.1 Contribution to UN-GGIM Activities

129. The UN-GGIM Committee of Experts Committee mandated UN-GGIM: Europe to establish and lead a Global Working Group to draw together current projects from different UN-GGIM regional bodies to determine global fundamental geospatial data themes. This followed from the report on the determination of global fundamental geospatial data themes that was prepared and presented by UN-GGIM: Europe to Committee at its Fifth Session in August last year.

130. While the Executive Committee of UN-GGIM: Europe will act as the steering group for this global Working Group it has appointed the United Kingdom to lead UN-GGIM: WG Fundamental Data. UN-GGIM: Europe will act as the permanent secretariat to the Working Group.

131. The main objective of the Working Group is to produce a recommendation for a minimum list of global fundamental geospatial data themes by collating results from existing activity being undertaken by UN-GGIM regional committees to avoid duplication and using where possible existing resources.

132. The UN-GGIM: WG Fundamental Data has drafted Terms of Reference and a Work Plan which we approved by the Executive Committee of UN-GGIM: Europe. In addition a working group was established with 16 members from UN Member States and three from observer organizations. All regional committees accepted invitations to participate and as a result all regions are represented in the global working group.

133. The UN-GGIM: WG Fundamental Data held two workshops at international events, the UN-GGIM HLF in Addis Ababa, and the GWF16 Conference in Rotterdam. Besides providing delegates with an outline of some of the existing initiatives already carried out by the different regional entities, and an overview of what is understood by fundamental geospatial data themes, the sessions were organized as global consultations to gather views on candidate fundamental geospatial data themes. The results and feedback from the sessions will be collated into the work of the Working Group.

134. In E/C.20/2016/5/Add.1, the interim report on the progress of the UN-GGIM: WG Fundamental Data is being submitted to the Committee of Experts.

4.2 Legal and Policy

135. As a region Europe has a number of European wide frameworks, policies, legislation and initiatives which have an impact on the management of geospatial information; overviews have been included in regional reports presented to the Committee of Experts at their 4th and 5th session.

136. The ISA² Programme, launched in 2016, is an EU programme aimed at addressing the need to modernize public administrations. The work programme includes a geospatial solutions package which consolidates all initiatives linked to the use of geospatial data in the public and private sectors. The European location interoperability solutions for e-government (ELISE) will continue to take the focus areas identified by the European Union Location Framework (EULF) as a basis for assessments and taking action. Key geospatial “common services” will be developed in conjunction with key partners in member states and related initiatives such as the European Location Framework (ELF) project. The action also plans to publish a package of recommendations and guidance to better link geo-data and statistics in consistent ways, drawing on the work of UNGGIM and other initiatives, whilst respecting privacy constraints.

137. Launched in May 2016 the Connecting Europe Facility (CEF) supports trans-European networks and infrastructures in the sectors of transport, telecommunications and energy. The work programme supports European Commission initiatives such as the Digital Single Market Strategy which aims to achieve better access for consumers and businesses to digital goods and services across Europe, and the European Digital Service Infrastructure which deploys trans-European digital services based upon mature technical and organizational solutions. One of the areas of the 2016 CEF Telecom Work Programme targets Public Open Data specifically in generating value through re-use of public sector information

4.3 Administrative arrangements

138. UN-GGIM: Europe is governed by the Articles and Rules which were adopted at the inaugural meeting of UN-GGIM: Europe. The Articles and Rules of procedure are publicly available.

139. UN-GGIM: Europe is coordinated and managed by an Executive Committee of nine: one chair, two vice-chairs and six members. The Executive Committee members were nominated and approved during the inaugural meeting of UN-GGIM: Europe on 1st October 2014. The term of the Executive Committee is of three years.

140. The Executive Committee of UN-GGIM: Europe is assisted in carrying out its functions by a Secretariat. The Netherlands is responsible for providing the secretariat to UN-GIM: Europe. The function of the Secretariat of UN-GGIM: Europe is carried out by EuroGeographics through a Service Level Agreement with Kadaster Netherlands.

4.4 Capacity Development

141. UN-GGIM: Europe supports various initiatives that foster knowledge sharing and capacity development across and within the region. These initiatives are led, funded or initiated either through cooperation between Member States or formally funded programmes. A few examples are included below.

142. The four year Impuls project, funded by the Swedish International Development Cooperation Agency, is led by Sweden in cooperation with Croatia. It supports Albania, Bosnia-Herzegovina, Kosovo, Macedonia, Montenegro and Serbia, to implement the INSPIRE Directive in the region to create interoperable content and services to support the development of e-governance in each country and contribute to economic development, transparency of ownership and anti-corruption processes. The project will provide the capacity and knowledge for how technical interoperability can be achieved, how authorities should disseminate geospatial data in an electronic format via services and how to share geospatial data with other public authorities within and across countries.

143. EuroGeographics, the membership association of the European National Mapping, Cadastre and Land Registry Authorities, is an Observer Organization of UN-GGIM. The association hosts eight Knowledge Exchange Networks (KENs) which bring together experts from the national mapping and cadastral authorities to provide forums for the exchange of best practice, sharing knowledge and experiences and directly contributing to the capacity development of the European NMCAs. The topics covered by the KENs overlap with the areas of interest of the Committee of Experts, and EuroGeographics is working towards facilitating collaboration opportunities between Un-GGIM: Europe and EuroGeographics.

144. Eurostat (the Statistical Office of the European Communities) Grants Programme funds projects that support the role of statistics in European integration: harmonization of concepts, definitions and methods, integration of production processes and implementation of common interoperable systems. The programme specifically aims at supporting a series of projects in member states that deal with combining statistics and geospatial information in order to derive new types of information significant for EU policy purposes. The results are intended to contribute increased cooperation on the

integration of statistics with geospatial information. A number of projects have been awarded grants under this programme to different member states.

4.5 Publicity and Outreach

145. UN-GGIM: Europe believes that the wider geospatial and statistical communities in Europe have much to offer UN-GGIM. As a result the regional entity actively engages with relevant professional, research and academic organizations and associations for them to become observer organizations. In October 2015, at the 2nd Plenary Session of UN-GGIM: Europe, the European Forum for Geography and Statistics (EFGS) and ESPON were formally admitted as Observer Organizations of UN-GGIM: Europe. Seven entities are currently formally recognized as Observer Organizations to UN-GGIM: Europe.

146. UN-GGIM: Europe has a formal communications plan, which is managed and coordinated by the UN-GGIM: Europe Secretariat. The communications strategy includes press releases to relevant stakeholders publicizing regional and global UN-GGIM activities and achievements. The regional entity maintains a website that provides information of the activities, outputs, news and documents of UN-GGIM: Europe. In addition UN-GGIM: Europe has an active twitter account which has over 380 followers from the regional and international geospatial and statistical communities.

147. A number of geospatial and statistical events and activities are organized in Europe throughout the year. UN-GGIM: Europe has actively participated in some of these events raising awareness of the aims and objectives of UN-GGIM and engaging with the European geospatial and statistical communities and other relevant stakeholders. A list of some of these events includes:

i. INTERGEO Plenary September 2015, held in Stuttgart, Germany
ii. EFGS Conference, November 2015, held in Vienna, Austria,
iii. 2nd Joint UN-GGIM: Europe and ESS meeting March 2015 held in Luxembourg
iv. 64th Plenary Session of the Conference of European Statisticians, April 2016, held in Paris, France
v. Two UN-GGIM: Europe Workshops held at GWF 2016, May 2016 held in Rotterdam, the Netherlands
vi. 9th Regional Conference on Cadastre and Spatial Data Infrastructure, June 2016 held in Opatija, Croatia

148. UN-GGIM: Europe held its 2nd Regional Plenary meeting in October 2015 in Belgrade, Serbia; the event was attended by 110 delegates from 34 Member states and 9 observer organizations. Celebrating the first anniversary of UN-GGIM: Europe, this meeting focused on an active first year since the inauguration of the regional committee in 2014. Reports highlighting the activities and accomplishments of the Executive Committee, the Regional Secretariat and regional Working Groups. The event also focused on new topics emerging from the 5th Session of the Committee of Experts: the 2030 Agenda for sustainable development, geospatial information for land administration and management, the global geodetic reference frame, and determination of global geospatial fundamental data themes. The proposed work plan for UN-GGIM: Europe for 2015 – 2018 was presented and approved by the regional committee.

4.6 Technical

149. UN-GGIM: Europe has three regional working groups. Working A - Core Data and Working Group B – Data Integration were set up on the establishment of UN-GGIM: Europe in October 2014. In February of this year, the Executive Committee of UN-GGIM: Europe agreed to establish a regional group on the Geodetic Reference Frame- Europe. A short update on the work, progress and outcomes from the three regional working groups of Europe follows.

4.7 Core Data - Work Group A

150. Work Group A – Core Data (WG A) comprises 15 European UN Member States and three Observers and is coordinated by France. It aims at increasing data interoperability and harmonization in Europe by proposing core geospatial data which meet essential user needs. In terms of concept, core data can be seen as the authoritative, harmonized and homogeneous framework data which both national and international users need to either fulfil their requirements or to geo-reference and locate their own thematic geospatial data. Besides, core data should follow a bottom-up approach from authoritative data of member states.

151. Over the past year, WG A has determined the scope of core data in Europe by selecting a list of priority INSPIRE data themes. The working group based their selection of core data themes by investigated user needs required for:

- the Sustainable Development Goal (SDG) targets which require geospatial information;
- the use cases to analyse, achieve and monitor these targets;
- the INSPIRE data themes required by these use cases.

152. The survey of user requirements carried out by WG A showed that SDG targets need geospatial data at different levels of detail and for different users. WG A identified the following 14 INSPIRE data themes as the most frequently required by SDG use cases, either directly or indirectly (i.e. as a framework to derive other data, as background for other data, or to combine with other data):

- INSPIRE Annex I: Geographical Names; Administrative Units; Addresses; Cadastral Parcels; Transport Networks; Hydrography.
- INSPIRE Annex II: Elevation; Land Cover; Orthoimagery.
- INSPIRE Annex III: Statistical units; Buildings; Area management/restriction/regulation and reporting units; Land use; Governmental services.

153. Although the core data themes selected by WG A have a European dimension, being based on INSPIRE themes and use cases, most of the SDG-based user needs investigated by WG A also have much in common with global needs. WG A outcomes can therefore be used as input to the UN GGIM: Work Group on Global Fundamental Geospatial Data Themes.

154. The next step of WG A is to provide a description and technical specifications for core data themes identified. Preparatory work is being carried out to setup a state-of-play of INSPIRE specifications and to investigate the way forward from INSPIRE to core data. Initially specifications for three core data themes will be prepared by the end of 2016, the rest of the selected core data themes are planned for 2017.

4.8 Data Integration - Work Group B

155. Work Group B - Data Integration (WG B) is chaired by Germany and deals with the integration of geospatial data (including cadastral parcels) with other information. Currently there are 17 European UN Member States comprising 20 National Mapping and Cadastral Authorities or National Statistical Institutes participating in WG B.

156. It is understood by WG B that a global vision, with the focus on Europe, should be envisaged for all tasks and deliverables. Strategic and political papers for "evidence based decision making" are needed rather than technical ones.

157. WG B takes into account the global recommendations from UN-GGIM such as of the UN Expert Group on the Integration of Statistical and Geospatial Information as well as of other relevant UN and global initiatives.

158. WG B distributed its work into three sub-groups, each focusing on one of three main tasks: definition of the priority user needs for combinations of data, recommendation for methods implementing the prioritized combinations of data, and recommendation about how to manage side-effects induced by data combinations.

159. The first deliverable on priority user needs was adopted by the UN-GGIM: Europe Plenary on 7 October 2015. The report shows how evidence based decision making can benefit from geospatial information in combination with other information on the European, national and sub-national levels, reflecting the UN and the European goals (e.g. UN sustainable development goals and European Union top 10 political priorities and challenges). Five recommendations are part of this first deliverable, the report with various recommendations and use cases can be found on the UN-GGIM: Europe website.

160. The focus of WG B in the past year has included a review of current European Interoperability Frameworks and best practice guidance for interactions between international organizations. In addition an investigation of any side-effects induced by data combinations has been conducted. The results will include the identification of the role for stewardship and if any agreements are useful to govern side-effects on an international level. It enhances governance methodology for dealing with side effects in multi-sourced spatial data (data combinations) and applications. Both tasks will be completed by mid-2016.

161. As a European contribution to the global process on developing a framework for monitoring of the SDG indicators, UN-GGIM: Europe is prepared to support, through WG B, a two-way interaction with the IAEG-SDG sub-Working Group on Geospatial Information. Besides ensuring that the IAEG-SDG sub-WG has access to existing work and ongoing working mechanisms in Europe related to monitoring of the SDG indicators, Working Group B will develop geospatial methodologies and approaches on monitoring, based on the specifications on indicators from the IAEG-SDG sub-WG, making these available to European authorities responsible for monitoring of SDG indicators.

4.9 GRF- Europe

162. The Working Group on Geodetic Reference Frames in Europe, GRF- Europe, was established in early 2016 as an expert group within the regional committee. This group which is chaired by Finland, will have a close connection to the geodesy-related organizations in Europe, and actively contribute to the work of the global GGRF

Working Group. The GRF- Europe group is to getting organized over the summer months of 2016, with the finalization of the action plan, tasks and deliverables. A. call for participation to the group will follow.

163. The objectives of the group are to provide an intergovernmental forum for the communication and cooperation on issues relating to the maintenance and enhancement of a geodetic reference frame within Europe, as well as creating strategic partnerships between mapping, space and other georeferencing related agencies and national mapping authorities. Moreover the group will encourage open sharing of geodetic data and information that contribute to regional and global reference frames and advocate for guidelines and standards to advance the interchangeability and interoperability of geodetic systems and data especially in Europe.

164. The objectives and action plans have been drafted by an ad-hoc writing team in a preparatory document "Global Geodetic Reference Frame for Sustainable Development - the European Contribution 'GRF-Europe'". The main principle underpinning the draft plan is that there should be no new administrative layer and that GRF- Europe will form an interface between existing relevant organizations and UN-GGIM: Europe. The reason for this is that while GGRF covers the topic globally a continental or regional group is needed for specific regional level issues.

165. The role of the International Association of Geodesy (IAG) Sub-commission EUREF (European Reference Frames) is the organization responsible for creating and maintaining the European reference frame, height and gravity systems. Therefore, a close connection to EUREF is essential, and the central role of EUREF as the scientific organization in Europe providing the Reference frames should be strengthened. GRF-Europe can act as a link between EUREF and users of its services.

4.10 Partnerships, Regional and International Collaboration

166. UN-GGIM: Europe welcomed the establishment UN-GGIM: Africa, sending a letter of welcome and congratulations on the formal establishment of the regional entity in November 2015.

167. UN-GGIM: Europe participated in the Extended UN-GGIM Bureau Meeting held at the UN Headquarters in New York in December of 2015. The focus of the meeting was the preparation for the Programme Review of the work of the Committee of Experts during the 2011-2015 period. The Executive Committee of UN-GGIM: Europe welcomed the opportunity to participate and engage in the review process of UN-GGIM and actively encouraged European UN Member States to participate in the global consultation on the topic. In addition UN-GGIM: Europe welcomes the opportunities for further global and inter-regional coordination and cooperation presented by the Expanded UN-GGIM Bureau Meetings, and suggests that these are held on a regular basis.

168. UN-GGIM: Europe accepted an invitation from UN-GGIM: Arab States to participate in their 3rd Regional Meeting in Abu Dhabi, UAE in February 2016. Presentations from UN-GGIM: Europe Member States and the regional secretariat were compliment by discussions and active participation in the working group sessions.

169. The Secretariat of UN-GGIM: Europe collaborated with Denmark which is leading the UN-GGIM Task Team on 2030 Sustainable Development Goal indicators. The regional entity provided a forum at 2nd Joint UN-GGIM: Europe and ESS meeting

in March 2015 for providing feedback on how geospatial and statistical experts can provide information about geospatial information that can support each of the agreed and relevant indicators.

170. UN-GGIM: Europe actively participated in the UN-GGIM Fourth High Level Forum at UNECA's Headquarters in Addis Ababa, Ethiopia, in April 2016. UN-GGIM: Europe Member States, regional Executive Committee members together with the secretariat of UN-GGIM: Europe organized and participated in various side meetings prior to the formal event and also presented during the plenary sessions of the forum.

171. UN-GGIM: Europe has a continuous, proactive and positive engagement with the National Statistical Institutions, and National Mapping and Cadastral Authorities of the European UN Member States through its collaboration and communication with EuroGeographics and Eurostat. In addition UN-GGIM: Europe is keen to further the collaboration between the statistical and geospatial communities.

4.11 Priority Issues and Challenges

172. The Executive Committee of UN-GGIM: Europe consider that some of the priority issues for the coming period include:

i. The Sustainable Development Goals
ii. Improved collaboration between the statistical and geospatial communities
iii. Global Fundamental Data Themes
iv. The continuation of the work of the Committee of Experts following the programme review of the ECOSOC

4.12 Perspectives/Outlook, Future Plans

173. The regional Committee will continue with the work and delivery of the working groups as outlined in the Work Plan 2015-2018. In addition, through the work of Working Group B UN-GGIM: Europe is keen to continue to promote the regional cooperation between the relevant stakeholders and identify better integration of processes for monitoring the Sustainable Development Goal indicators.

174. The future meetings of UN-GGIM: Europe until the end of 2016 are planned as follows:

i. The 3nd Plenary Meeting 5th October 2016, Budapest, Hungary
ii. Executive Committee Meetings planned for 4th October 2016 and 17th November 2016

175. UN-GGIM: Europe plans to participate actively in the following future events:

i. European Forum for Geography and Statistics Conference, 15-17 November 2016, Paris, France
ii. Joint UN-GGIM: Europe-ESS Meeting, March 2017

4.13 Conclusion

176. The Executive Committee of UN-GGIM: Europe will continue to actively contribute to and promote the work of the UN-GGIM, both at regional and global levels.

4.14 Acknowledgements

177. This report was compiled through the contributions of:

François Chirié	Acting Chair of UN-GGIM: Europe Working Group A	France
Pier-Giorgio Zaccheddu	Acting Chair of UN-GGIM: Europe Working Group B	Germany
Markku Poutanen	Chair of UN-GGIM: Europe Working Group GRF: Europe	Finland
Carol Agius	UN-GGIM: Europe Secretariat	EuroGeographics

V. Report of the Regional Committee of United Nations Global Geospatial Information Management for Arab States

1. Summary

178. This report highlights the activities carried out by the Regional Committee of United Nations Global Geospatial Information Management for Arab States (UN-GGIM-Arab States) since the last report presented to the Fifth Session of United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM), held in New York in August 2015.

2. Introduction

179. The member of UN-GGIM-Arab States have been actively working together in order to develop this fledgling body. They have obtained active support and patronage from their respective governments and the main government bodies or associations involved in the business of geospatial information in their respective countries. To this effect there has been one full meeting of the member states during this period, in addition to activities of the four working groups (WG), the details of which are presented in Section-4.

3. Objectives

180. The UN-GGIM Arab States plays its role as the regional coordinating mechanism in geospatial information and the formal Arab chapter of the UN-GGIM initiative, while cooperating with other regional and international entities.

4. Activities

4.1 UN-GGIM: Arab States Third Meeting - Abu Dhabi 2016

181. The third meeting of member states was held in Abu Dhabi from 23rd to 25th February 2016. It was attended by thirty five representatives of ten Arab countries: People's Democratic Republic of Algeria, Arab Republic of Egypt, State of Kuwait, Kingdom of Morocco, Sultanate of Oman, State of Qatar, Kingdom of Saudi Arabia, Republic of the Sudan, Republic of Tunisia, and United Arab Emirates. It was also attended by a representative of UN-GGIM as well as four invited experts from UN-GGIM Europe

182. It was organized by the United Arab Emirates Military Survey Department, in collaboration with the UN-GGIM Arab States secretariat and Bayanat UAE.

183. Detailed minutes of the meeting are present in Annex-1

184. Each of the four working groups had two workshop sessions during this meeting that were also attended by the invited experts. The experts also made presentations advising the working groups on the way ahead in their respective areas of focus. The results of these workshops are documented in Annex-1. Additionally, there were sessions where the participants shared their experiences in the field of geospatial information management.

185. The main objective of this meeting was to develop the general framework for the member states for the future program for all the working groups to reach the deliverables expected from this body. The core thinking behind this is to integrate and align with the

activities of the UN-GGIM to adopt international standards, policies, criteria and methodologies for management of geospatial information.

4.2 Meetings of WG1 (Institutional Arrangements, Legal, Policy, Awareness and Capacity Building)

186. 1. **Abu Dhabi – February 2016**: The meetings for WG1 were conducted during the third UN-GGIM: Arab States meeting held in Abu Dhabi in Feb – 2016.

4.3 Meetings of WG2 (Fundamental Data and Geospatial Standards)

187. **Tunis – February 2016**: An action plan regarding international standards to be adopted by GGIM – Arab States at their next meeting in Abu Dhabi Feb 2016 was developed and agreed upon.

188. **Abu Dhabi – February 2016**: The action plan developed in the Tunis meeting was discussed and approved. A questionnaire regarding the themes / layers & the international standards (to be approved by the member states in the next meeting) was developed and distributed.

189. **Doha – May 2016**: The results of the questionnaire that was distributed in the Abu Dhabi workshops was compiled and discussed. Eleven themes / layers were approved by the members to be used as fundamental geospatial data. Four international standards were approved to be utilized for the identified fundamental data.

4.4 Meeting of WG3 (Geodetic Reference Frame)

190. **Riyadh – November 2015**: The results of the questionnaire that was distributed in the previous meeting were discussed. The members recommended to start with GNSS data analysis, propose a common arrangement (in the form on an Internal Agreement) between Arab States. The need for providing training in the field of geodesy was also discussed. The members also agreed to the regional need for establishing at least two data centers as well as three centers for analysis of GNSS data. The members also proposed a GGRF Roadmap and also deliberated on the need of establishing a website for geodetic documentation, software packages, etc. for the purpose of knowledge sharing between them. The members also deliberated on the need to prepare for addressing other geodetic topics including but not limited to Geoid, Height System, Gravity measurements, and Tide Gauges.

191. **Abu Dhabi – February 2016**: Those member states who had still not responded to the questionnaire were encouraged to submit them before the end of March 2016. It was agreed that an analysis of the same would be sent for members review by May 2016. Initial work required for the establishment of the proposed two data centers for storing GNSS RINEX files and associated metadata. The participants also discussed the capabilities of the corresponding analysis centers. It is expected that a study on this will be deliberated for approval in the next WG meeting.

192. The next meeting of WG3 is planned to be held in Riyadh in November 2016

4.5 Meetings of WG4 (Integration of Geospatial and Statistical Information)

193. **Abu Dhabi – February 2016**: The meetings for WG4 were conducted during the third UN-GGIM: Arab States meeting held in Abu Dhabi in Feb – 2016. A draft work plan

has been created by the WG to be approved in the next General meeting of UN-GGIM: Arab States. The plan identifies important goals and supporting tasks to help achieve the ultimate objective of leveraging geospatial and statistical information to assist in developmental planning in member countries.

5. Conclusion

194. The period since the submission of the last report in August 2015 has been that of well-organized and sustained efforts by all the member states of UN-GGIM: Arab States to further the agenda improved management of regional geospatial information. The four working groups have been active in various degrees working on their respective mandates in an extremely cooperative manner. Draft plan of technical activities have already been charted out by three of the four working groups. It is anticipated that results of these activities will start showing in the coming year.

VI. Report of the Joint Board of Geospatial Information Societies[3]

1. Summary

195. This document provides a Report from the Joint Board of Geospatial Information Societies (JBGIS) to the Sixth Session of the UN Committee of Experts on Global Geospatial Information Management 3-5 August 2016, New York.

2. Joint Board of Geospatial Information Societies

196. The Joint Board of Geospatial Information Societies (JBGIS) is a coalition of the Presidents, Secretaries-General or equivalent office bearers or their nominees that lead recognized international organizations involved in the coordination, development, management, standardization or regulation of geospatial information and related matters. These organizations are:

i. Global Spatial Data Infrastructure (GSDI) Association
ii. IEEE Geoscience and Remote Sensing Society (GRSS)
iii. International Association of Geodesy (IAG)
iv. International Cartographic Association (ICA)
v. International Federation of Surveyors (FIG)
vi. International Geographical Union (IGU)
vii. International Hydrographic Organization (IHO)
viii. International Map Industry Association (IMIA)
ix. International Society of Photogrammetry and Remote Sensing (ISPRS)
x. International Steering Committee for Global Mapping (ISCGM)

197. The JBGIS meets formally once each year, typically when the UN-GGIM Committee of Experts meets, and informally when schedules permit.

3. Report content:

198. This report provides an update on the activities of the organizations listed above.

4. Global Spatial Data Infrastructure (GSDI) Association

4.1 Summary

199. The Global Spatial Data Infrastructure Association (GSDI) exists to promote international cooperation and collaboration in support of local, national and international SDI developments that will assist members to better address social, economic, and environmental issues of pressing importance in their nations.

4.2 Introduction, Background

200. The GSDI has 38 Organizational Members from national and regional associations, government agencies, academia and private industry, from 20 countries, including 4

[3] http://www.fig.net/jbgis/

regional (transnational) organizations and the UN ECA. Member divisions of the Association are being renewed as GSDI Individual Members throughout the year, under provisions of new Bylaws adopted in 2015. GSDI has MoUs with the International Cartographic Association (ICA), the International Federation of Surveyors (FIG) and the International Society for Photogrammetry and Remote Sensing (ISPRS), the International Society for Digital Earth (ISDE), and the Centre for Disaster Management and Public Safety (CDMPS) at the University of Melbourne for joint promotion of activities.

4.3 Activities, Areas of Work

i. GSDI has had representation on the UN GI Working Group (UNGIWG) and Special Consultative status with the UN ECOSOC Office for Support and Coordination since 1 May 2014. GSDI promotes the open data principles of GEO/GEOSS, and is involved in SDI capacity building activities in many developing nations via the GSDI Small Grants Program and training activities. The Association continues working with the International Hydrographic Organisation (IHO) Marine SDI Working Group in capacity building activities.

ii. GSDI Association Past President Prof. Abbas Rajabifard represented GSDI at the 4th High Level Forum of the UN-GGIM, UNECA Headquarters, Addis Ababa, Ethiopia, 19-22 April 2016.

iii. GSDI were represented at, and made formal presentations at, the CEOS Working Group on Information Systems and Services (WGISS) meeting held in Canberra, Australia, on 14-18 March 2016, and the GEO Work Programme Symposium and GEOSS Common Infrastructure Workshop at WMO in Geneva, Switzerland, 2-5 May 2016.

iv. GSDI members were also in force at the GIM International Summit meeting in Amsterdam, The Netherlands, in February 2016, and the Common Vision Conference 2016 in Amsterdam in June 2016.

v. Work continues on two GSDI projects, one updating the earlier Geoinformation Legal Interoperability Map of the World (GLIM), which started in 2014, and another focusing on Marine SDE Best Practice, led by members KU Leuven and our newest member, LETG-BREST GEOMER, which started in November 2015.

vi. GSDI supported a Marine SDI Best Practice workshop at the CoastGIS 2015 Conference held in Cape Town, South Africa, in April 2015, and a special one-day workshop in Kathmandu, Nepal, in November 2015 – “Sharing SDI Research on Disaster Risk Reduction”.

vii. Four GSDI Small Grants Program projects concluded in 2016, gratefully supported with funding from GSDI member Natural Resources Canada through 31 March 2016. These SDI-related projects were conducted in Ecuador (Galapagos Islands), Jamaica, Indonesia and South Africa. Further funding is now being sought to advance the programme through 2016-2017, continuing the excellent results obtained since the program started in 2003, since which more than 110 awards have been granted.

4.4 Priority Issues and Challenges

201. The main activities of GSDI are: 1) supporting growth of harmonized local, national, and regional SDIs that are globally interoperable; 2) fostering international communication and collaborative efforts for advancing SDI innovations; 3) supporting interdisciplinary research and education that advances SDI concepts and methods; and 4) promoting access to, and appropriate use of, public geographic information. Our main outreach and networking activities include the GSDI World Conferences, seminars and workshops, the monthly global and regional newsletters and discussion forums, individual capacity

building actions, and support to SDI initiatives in developing nations via the GSDI Small Grants Program and targeted training activities.

4.5 Perspectives/Outlook, Future Plans

202. The GSDI 15 World Conference is being held in Taipei from 29 November to 2 December 2016, under the theme "Spatial Enablement in the Smart Homeland", hosted by GSDI member Taiwan Association for Disaster Prevention Industry (TADPI). Visit the website at gsdi15.org.tw. More details on GSDI activities can be found on their web site http://www.gsdi.org.

5. IEEE Geoscience and Remote Sensing Society (GRSS)

203. No report tendered.

6. International Association of Geodesy (IAG)

6.1 Summary

204. The mission of the IAG is the advancement of geodesy. The IAG implements its mission by: (a) advancing geodetic theory through research and teaching; (b) collecting, analyzing and modelling observational data; (c) stimulating technological development; and (d) providing a consistent representation of the figure, rotation and gravity field of the Earth and planets, and their temporal variations.

6.2 Introduction, Background

205. The IAG is structured into four Commissions, the Inter-Commission Committee on Theory, fourteen International Scientific Services, the Global Geodetic Observing System (GGOS), and the Communication and Outreach Branch. The Commissions are divided into Sub-commissions, Projects, Study Groups and Working Groups. The ICCT investigates geodetic science problems in close cooperation with the Commissions. The Services generate scientific products by means of Operations, Data and Analysis Centres. GGOS has as one of its roles the coordination of the work of the different IAG components, relating in particular to the maintenance of the global reference frame for measuring and consistently interpreting key global change processes, and to promote its use to the scientific community, policy makers and the public. The detailed programme of the IAG is published in the quadrennial Geodesist's Handbook, and reports are published in the biennial Travaux de l'AIG. The IAG publishes the Journal of Geodesy, and a series of Symposium Proceedings.

6.3 Activities, Areas of Work

i. On 26 February 2015 the United Nations General Assembly adopted its first resolution recognizing the importance of a globally-coordinated approach to Geodesy. It was acknowledged that Geodesy plays an increasing role in people's lives, from finding disaster victims to finding directions using a smart phone. The General Assembly resolution, A Global Geodetic Reference Frame for Sustainable Development, outlines the value of ground-based observations and satellite remote sensing when tracking changes in populations, land use, ice caps, oceans, the atmosphere, and the environment over time. Such geospatial

measurements, when referred to a high quality geodetic reference frame, can support sustainable development policymaking, climate change monitoring and natural disaster management, and also have a wide range of applications for transport, preserving the natural and built environments, supporting agriculture and resource exploitation, and for land use planning, infrastructure provision and construction.

ii. The FIG and IAG co-organized and delivered the "Technical Seminar on Vertical Reference Frames in Practice", in Singapore, 27-28 July.

iii. The best known of the IAG services, the International GNSS Service (IGS), continues to have a major impact at a number of forums. Its products support high precision positioning applications for science and society. The most recent progress is expansion in IGS products to include GNSS constellations apart from GPS and GLONASS, the Real-Time Service to support geohazard applications, and participation in a planned International GNSS Monitoring and Assessment (IGMA) service/project organized under the auspices of the International Committee on Global Navigation Satellite Systems (ICG).

6.4 Priority Issues and Challenges

i. GGOS is IAG's observing system to monitor the geodetic and the global geodynamic properties of the Earth as a system. The new structure was refined and implemented over the past few years. It includes a Consortium composed by representatives of the Commissions and Services, the Coordinating Board as the decision-making body, the Executive Committee, and the Science Panel. The scientific work of GGOS is coordinated by Themes, Working Groups and Bureaus. The optimal structure of GGOS, and the establishment of linkages with the Commissions and Services continues to be a work-in-progress.

ii. Following the UN General Assembly resolution on the Global Geodetic Reference Frame (GGRF), the challenge is to develop a "roadmap" on how to encourage greater use of the GGRF, data sharing amongst all States, and increased investment in geodetic infrastructure (see http://ggim.un.org/UN_GGIM_wg1.html).

iii. The IAG continues to work closely with other organizations within JBGIS, other associations within the International Union of Geodesy and Geophysics (IUGG), as well as the Group on Earth Observation (GEO), International Standards Organization (ISO), the UN Office for Outer Space Affairs (UN-OOSA, with participation in Space-based Information for Disaster Management and Emergency Response, UN-SPIDER, and the ICG), and the UN-GGIM.

6.5 Perspectives/Outlook, Future Plans

206. The IAG is one of eight Associations of the IUGG. The IUGG meets every four years in a General Assembly. This year the General Assembly was held in Prague, Czech Republic, 22 June – 2 July. A new leadership team will be installed for the next quadrennial period. The new IAG President is Dr Harald Schuh, the Vice President is Dr Zuheir Altamimi, and the Secretary-General is Dr Hermann Drewes. More details on IAG activities can be found on their web site http://www.iag-aig.org.

7. International Cartographic Association (ICA)

7.1 Summary

207. The International Cartographic Association (ICA) is the world authoritative body for cartography and GI Science. The mission of the ICA is to promote the disciplines and professions of cartography and GIScience in an international context.

7.2 Introduction, Background

208. The mission of the ICA is to promote the disciplines and professions of cartography and GIScience in an international context.

7.3 Activities, Areas of Work

209. ICA has been endorsed by UN-GGIM in its meeting 2014 to organize the International Map Year 2015/16. The main idea of the International Map Year (IMY) is a worldwide celebration of maps and their unique role in our world. The purposes of the IMY include:

- making maps visible to decision makers, citizens and school children in a global context,
- demonstrating how maps and atlases can be used in society,
- showing how information technology can be used in getting geographic information and producing one's own maps,
- displaying different types of maps and map production,
- showing the technical development of mapping and atlas production,
- showing the necessity of a sustainable development of geographic information infrastructures, and
- increasing the recruitment of students to cartography and cartography-related disciplines.

210. The IMY was officially opened at the ICA conference in Rio de Janeiro in August, 2015 by Mr. Greg Scott on behalf of the UN-GGIM secretariat and then continue until December 2016. ICA has installed a Working Group to coordinate the activities. The book "The World of Maps" is already available in multiple languages and freely downloadable (http://mapyear.org/the-world-of-maps-book/). The highlight of the year will be the map poster exhibition during the UN-GGIM 2016 meeting in New York, which will give a special cartographic perspective on the sustainability goals.

7.4 Priority Issues and Challenges

211. Further priority issues of ICA include the further development of the Research Agenda of Cartography and GI Science, especially in the context of the recently endorsed full membership of ICA in the International Council of Science (ICSU). ICA aims to contribute significantly through this partnership to scientific efforts in tackling global challenges in relation to geospatial information management. A special focus is given as well to outreach programmes and capacity building. In several related workshops and activities in the last few years it became more then visible that several countries and regions of the world have a high demand and necessity in capacity building towards modern cartography tools, techniques and methods. In this framework a scholarship programme has been launched to allow easier participation in ICA

Commissions activities and our Global and Regional Conferences. ICA is actively involved in the "Geo4All" initiative (http://www.geoforall.org/), allowing geospatial education, materials and instruments accessible for all. This, accompanied with a long record of highly successful ICA hands-on workshops on modern cartography, can be requested from ICA by UN-GGIM national delegations.

7.5 Perspectives/Outlook, Future Plans

212. Finally it has proven to be a most successful strategy in the context of Global Geospatial Information Management to allow for a better awareness of the crucial role of the map as the interface between geo-data and human users. In this context ICA will continue to offer its expertise and consultancy for understanding the context of why maps are important, relevant and attractive, thus are key in making all geo-domains being able to reach out beyond the limits of the disciplines to all citizens. More details on ICA activities can be found on their web site http://icaci.org.

8. International Federation of Surveyors (FIG)

8.1 Summary

213. As a United Nations and the World Bank Group recognized non-governmental organization, The International Federation of Surveyors (FIG) is seeking to collaborate and to ensure that the disciplines of surveying and all who practice them are relevant and meeting the needs of both the community and the markets in which we are present. This worldwide professional community measures, maps, estimates, costs, values, assesses, models, plans and manages the natural and built environment for the effective planning and efficient administration of the land, the seas and any structures thereon.

8.2 Introduction, Background

214. The FIG vision is of a modern and sustainable surveying profession in support of society, environment and economy by providing innovative, reliable and best practice solutions to our rapidly changing and complex world, acting with integrity and confidence about the usefulness of surveying, and translating these words into action.

8.3 Activities, Areas of Work

i. The FIG Working Week 2016 was held in Christchurch, New Zealand 2-6 May 2016 with the overall theme “Recovery from Disaster”. More than 700 participants attended the Working Week that had disasters as overall theme in the plenary sessions and also in several of the technical sessions. Disasters, whether man made or natural has an enormous impact on society. Christchurch was an interesting example of an earth quake hit area, and there were examples of the immediate response and reaction after the serious earth quakes in 2011-12, the long term rebuilding with the motto “Build Back Better” and also on how to prevent major damages in disaster areas. The Working Week offered around 300 presentations during the three conference days and institutional partners were UN-Habitat/GLTN, FAO, UN-GGIM and the World Bank. There were several side events in connection with the Working Week. A workshop on Small Island Development, Young Surveyors Conference, Reference Frames in Practice Workshop, STDM Training Session and a History Symposium.

ii. FIG was represented by President Potsiou at the UN-GGIM 5th Session in New York, and Chris Lemmen participated in the Fourth High Level Forum on UN-GGIM in Addis Ababa, Ethiopia. The focus was on land administration and management, with particular emphasis on sharing experiences, including benefits and challenges, considering fit for purpose aspects, digital land registers, cadastres, and other land data needs, demonstrating practical examples of land administration success stories. Land information and its management are recognized as fundamental to successful land administration and the derived benefits to the economies, and overall sustainable development of nations. Therefore, the overarching theme of the Fourth High Level Forum was "Good Land Governance for the 2030 Agenda".

iii. FIG Commission 3 and 7 Conference and Annual Meetings 2015 was held 16-20 November in Malta. Overall theme was "Crowdsourcing of Land information – the Role of Citizens and Experts in Sensing Geographical Information. FIG Commission 2 together with ISPRS Commission IV held a workshop in Kathmandu, Nepal. It was not certain that the workshop could be realized due to the earthquakes, but the local organizers, Nepal Institution of Chartered Surveyors (NICS), managed to organize a highly successful and large event. Furthermore, Commission 5 held a Reference Frames in Practice Workshop in Singapore, 27-28 July 2015. The Regional Capacity Building Network – Africa region – had a network event in Nairobi, Kenya with Institution of Surveyors of Kenya as local host.

iv. FIG is undertaking several activities with UNHabitat and UN-Habitat/GLTN.FIG President Prof. Chryssy Potsiou, and FIG Commission 7 Chair Mrs. Gerda Schennach participated to the Second Session of the Preparatory Committee for United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) (PREPCOM2) in Nairobi 14–16 of April 2015.

v. UN-HABITAT Global Land Tool Network Partners Meeting that takes place every other year was scheduled for 3–5 November 2015, Nairobi, Kenya. FIG Vice President Diane Dumashie attended the 6th Partners Meeting followed by attending the International Advisory Board to the Global Land Tool Network (GLTN). The meetings were held at the UN-HABITAT Headquarters in Nairobi, Kenya. FIG Young Surveyors also played a key role at the Partners Meeting.

vi. New FIG publications:

- FIG Publication 67 - Property Taxation for Developing Economies, joint FIG Commission 9/UN-Habitat/GLTN – Valuation and the Management of Real Estate, FIG Report 2016.
- FIG Publication 52 – translated into Arabic.
- Formalising the Informal – Challenges and Opportunities of Informal Settlements in South-East Europe, FIG-UN-ECE Publication.

8.4 Priority Issues and Challenges

i. The Young Surveyors are very active on an international and regional level. Several regional events were held during 2015 and 2016, in all regions: South East Asia, Asia, US, Latin America, Europe and Africa. All meetings have been very impressive and young engaged and active surveyors have participated. Among other things the very relevant question has been discussed: "How do you see our profession in 10 years from now?"

ii. The General Assembly voted on the destination for the FIG Working Week 2020 that will take place in Amsterdam, The Netherlands. Two new vice presidents for the term 2017-2020 were elected, Mikael Lilje, Swedish Professionals for the Built Environment, and Orhan Ercan, Chamber of Surveying and Cadastre Engineers of Turkey, who is also co-conference director for the FIG Congress 2018 in Istanbul, Turkey.

8.5 Perspectives/Outlook, Future Plans

215. For the 2015-2018 time period FIG council has agreed on the following overall theme: “Ensuring the Rapid Response to Change, Ensuring the Surveyor of Tomorrow”. FIG launched a new web site in 2015with a new and improved technology and a navigation that enables to present the large amount of content in a more organised way. More details on FIG activities can be found on their web site http://www.fig.net.

9. International Geographical Union (IGU)

216. No report tendered.

10. International Hydrographic Organization (IHO)

10.1 Summary

217. The International Hydrographic Organization (IHO) is an intergovernmental consultative and technical organization. 85 States are currently members of the IHO, with 8 more States in the process of acceding to membership. Each Member State is normally represented by its national Hydrographer.

10.2 Introduction, Background

218. The overarching objective of the IHO is to ensure that all the world's seas, oceans and navigable waters are surveyed and charted adequately. As the competent inter-governmental authority for surveying and charting the world’s oceans, seas and coastal waters, the IHO coordinates the provision of the marine component of spatial data infrastructures at the regional and worldwide levels. It does this through the setting of international standards, the coordination of the endeavours of national hydrographic offices and through capacity building. The IHO sets the standards for hydrographic data and for the provision of hydrographic services, such as nautical charts, in support of safety of navigation and the protection and sustainable use of the marine environment. As reported to previous sessions of UN-GGIM, the relevant IHO standards relating to hydrographic surveying and nautical charting services have been universally adopted.

10.3 Activities, Areas of Work

i. The latest IHO standard is known as S-100 - The IHO Universal Hydrographic Data Model. S-100 is based on and compatible with the ISO 19100 geographic data standards and enables hydrographic data to be easily merged and used with other non-hydrographic geographic data - especially in geospatial information systems. As well as the IHO, a growing number of international organisations with diverse maritime interests are taking up S-100 as their data exchange standard, such as the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) of the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

ii. The IHO operates its own Capacity Building Programme aimed at assisting individual States and regions to develop their hydrographic capabilities. The IHO also cooperates with various other intergovernmental and international organizations

in complementary capacity building programmes under the UN theme of "delivering as one". Capacity Building partners include the International Maritime Organization (IMO), WMO, IOC, and IALA.

iii. The IHO operates a Data Centre for Digital Bathymetry (IHO DCDB) as the principal web-based data store that provides access to most of the existing depth measurements for the ocean and increasingly for coastal waters, too. Some of this data can be downloaded directly from http://www.ngdc.noaa.gov/mgg/bathymetry/iho.html for use; other data and metadata can be identified and then requested from the source owner.

iv. The IHO and the IOC jointly govern the long-running General Bathymetric Chart of the Ocean (GEBCO) project. The GEBCO project seeks to provide the most authoritative and openly available bathymetric dataset by harvesting observations from all sources. Further details are available on the dedicated GEBCO web site at http://www.gebco.net.

10.4 Priority Issues and Challenges

219. The principal shortcoming in the hydrographic domain remains the lack of depth measurements and related hydrographic information for most of the world's seas and oceans coupled with the limited resources being made available to address the problem. The lack of a comprehensive, detailed global bathymetric dataset is a major constraint on the safe, cost effective and sustainable development of the blue economy. The IHO maintains Publication C-55 - Status of Surveying and Nautical Charting Worldwide. C-55 provides statistics for each coastal State on the percentage of sea area that is unsurveyed and the percentage that meets modern requirements. C-55 is available from the IHO web site (see below).

10.5 Perspectives/Outlook, Future Plans

220. As well as encouraging the governments of all coastal States to increase their emphasis on hydrographic surveying and charting, the IHO is placing increasing importance on the changing role of national Hydrographic Offices from being the providers of official navigation charts and services to also being the managers of the national bathymetric dataset - and therefore an underpinning part of any Marine Spatial Data Infrastructure. The IHO DCDB is currently undergoing an upgrade to make it the world portal for the upload and download of so-called Crowd-sourced Bathymetry (CSB). CSB is depth data that is collected by ships and boats using their navigation echo sounders during their normal voyages across the sea and along the coastline. Harnessing the collecting power of all mariners is an efficient way of obtaining depth data where there is currently no data or the data is uncertain. More details on IHO activities can be found on their web site http://www.iho.int.

11. International Map Industry Association (IMIA)

11.1 Summary

221. The International Map Industry Association (IMIA) is a truly global organization that represents the world of maps. IMIA is where mapmakers, publishers, geospatial technology companies, location-based services, content producers, and distributors come together to conduct the business of maps.

11.2 Introduction, Background

222. Again this year IMIA endorses the 'International Map Year 2015 – 2016' (IMY) as proposed by the International Cartographic Association as a valuable means to promote the importance of maps and Geo information. IMIA has a number of activities planned at the IMIA Americas and IMIA Asia Pacific 2016 conferences and the popular IMIA Blog series "What is a Map?" To further celebrate and recognize the importance of maps and Geo information, IMIA Americas and IMIA Asia Pacific are conducting Student Map Awards under the IMY guidelines.

11.3 Activities, Areas of Work

i. IMIA Americas held its Strategic Planning Session in Las Vegas, NV USA on 23 January 2016. This was an opportunity for IMIA members to gather together and start the planning process for the year and beyond. This annual event is vital to the success of the association.

ii. IMIA Americas will host its first MeetUP event on 14 June 2016 at the National Park Service in Lakewood, Colorado. The MeetUP will provide a forum for leaders in the mapping industry to meet, network and be an active part of topical discussions and presentations.

iii. The IMIA Asia Pacific Region Annual Conference was held in Brisbane 15 – 17 November 2015 in conjunction with Brisbane International GIS Day 2015. IMIA Asia Pacific Map Awards, IMIA Student Map Awards along with IMIA International Map Awards were conducted at the conference.

iv. IMIA was well represented at GIS Day by way of an exhibitor stand and excellent promotion provided throughout the day by the organizer GIS People. IMIA members were also given the opportunity to display their maps on the Map Wall. Over 4,500 people attended this event.

11.4 Priority Issues and Challenges

223. Other regional MeetUP events will be planned throughout the year.

11.5 Perspectives/Outlook, Future Plans

224. More details on IMIA activities can be found on their web site http://imiamaps.org.

12. International Society of Photogrammetry and Remote Sensing (ISPRS)

12.1 Summary

225. The International Society for Photogrammetry and Remote Sensing (ISPRS) is a non-governmental organization devoted to the development of international cooperation for the advancement of the photogrammetry, remote sensing and spatial information sciences and their applications. The ISPRS promotes the extraction and utilization of information from imagery by encouraging and facilitating research and development in its areas of scientific activity, advancing knowledge through scientific networking, stimulating international cooperation, pursuing inter-disciplinary integration, facilitating education and training, enhancing and exploring new applications, and developing public recognition of photogrammetry, remote sensing and spatial information science. Photogrammetry is the science and technology of extracting reliable three-dimensional geometric and thematic information, often over time, of objects and scenes from image and range data. Remote sensing is the science and technology of capturing, processing

and analyzing imagery, in conjunction with other physical data of the Earth and the planets, from sensors in space, in the air and on the ground. Spatial Information Science is concerned with the modelling, storage, processing, retrieval, application and communication of information with a spatial reference.

12.2 Introduction, Background

226. After a lengthy discussion period, ISPRS has introduced a new structure with 5 commissions:

Commission I	Sensor Systems
Commission II	Photogrammetry
Commission III	Remote Sensing
Commission IV	Spatial Information Science
Commission V	Education and Outreach

12.3 Activities, Areas of Work

i. On the publication side ISPRS is proud to announce that its GI journal, the ISPRS International Journal of Geo-Information, is now also indexed in the Web of Science, and has thus joint the flag ship publication, the ISPRS Journal of Photogrammetry and Remote Sensing. For the latter journal ISPRS has appointed Qiohao Weng from Indiana State University to join Derek Lichti (Calgary University) as editor-in-chief. The International Archives, which contain abstract reviewed proceedings papers, is part of the Conference Proceedings Citation Index (CPCI) of Thomson-Reuters and of SCOPUS, the ISPRS Annals, which contain full-paper double-blind reviewed contributions, has also been accepted for CPCI and is part of the DOAJ (the Directory of Open Access Journals).

ii. The second round of the ISPRS Scientific Initiative, which was launched in autumn 2014 with a budget of 33.000,- CHF and has funded seven scientific projects over 12 months, has been successfully concluded in December 2015. One activity carried out under this umbrella was the project in cooperation with UN-GGIM entitled “Global Status of Land Cover Mapping and Geospatial Database Updating”.

iii. A review of the Scientific Initiative conducted by the International Science Advisory Committee, recommended that the Scientific Initiative be continued with calls every two years.

iv. Starting in November 2013 ISPRS has introduced a biennial series of scientific meetings called the ISPRS Geospatial Week (GSW). The motivation is to offer interested participants from research, development and applications in photogrammetry, remote sensing and geospatial sciences a platform for discussion also in odd years and thus to increase the visibility of the society. ISPRS GSW is a bundle of workshops with different topics, organized under a common roof. The ISPRS Geospatial Week 2015 was successfully held in Montpellier, France in September/October 2015, the following GSW will take place in Wuhan, China in September 2017.

12.4 Priority Issues and Challenges

227. As of May 2014 ISPRS offers individuals to become a member of the society. Membership is free of charge, the offer is primarily directed to people in areas without an active ISPRS ordinary member. As of June 2015 we have nearly 300 individual members.

12.5 Perspectives/Outlook, Future Plans

228. More details on recent ISPRS activities can be found on the ISPRS web site http://www.isprs.org. The ISPRS cordially invites you to attend the XXIII ISPRS Congress to be held in Prague from 12-19 July 2016.

13. International Steering Committee for Global Mapping (ISCGM)

13.1 Summary

229. The International Steering Committee for Global Mapping (ISCGM) was established in February 1996 to spearhead Global Mapping in response to the call for urgent actions at the 1992 Earth Summit in Rio de Janeiro for greater information support on 'the status and trends of the planet's ecosystem, natural resources, pollution and socioeconomic variables'. Twenty years later, in 2012, the same call was repeated at the UN Conference on Sustainable Development (Rio+20). In its Outcome Document, 'The Future We Want', the Rio+20 conference made specific references to 'the relevance of global mapping', and called for reliable geospatial information for sustainable development policy making, programming and project operations, and disaster prevention and mitigation.

13.2 Introduction, Background

230. Operationally, the ISCGM has two key tasks. First, it serves as the platform to "advocate the importance of Global Mapping, exchange views, facilitate coordination, and give recommendations". This is the advocacy function of ISCGM. Second, the ISCGM has the responsibility to develop a Global Map, which is defined as "a group of geographical data sets of known and verified quality, with consistent specifications which will be open to the public". This is the production function of the ISCGM. Over the past seventeen years, the ISCGM has been addressing these two core tasks.

13.3 Activities, Areas of Work

i. Global Map data (national and regional version) were released for 111 countries and eight regions from the ISCGM web site (see below), or from those of some participating organizations as of 1 June 2015. These data correspond to 67% of the total land area of the Earth.
ii. Participating countries and regions are steadily increasing and now total 167 countries and 16 regions. This represents 96% of the whole land area of the Earth.
iii. The Third UN World Conference on Disaster Risk Reduction (WCDRR) was held in Sendai-City, Miyagi-Prefecture, Japan from 14-18 March 2015. As a pre-event of the Conference, the ISCGM and Geospatial Information Authority of Japan (GSI) co-organized the symposium on Application of Geospatial Information Technology in Urban Disaster Management on 13 March. A common understanding was gained on the importance of listing urban hazard maps of the world and understanding their development. In order to contribute to the efforts, it was agreed that ISCGM advances the work for the launch of the Urban Hazard Maps Web Portal.

13.4 Priority Issues and Challenges

231. The ISCGM has proposed the development of a catalogue service of global map thematic layers and a web platform for urban hazard maps. Prototypes of these services are now available from the ISCGM web site.

13.5 Perspectives/Outlook, Future Plans

232. ISCGM reached the 20-year anniversary of its establishment in February 2016. It has been leading the Global Mapping Project for over 20 years, making ground-breaking contributions to the development of global geospatial information jointly with national geospatial information authorities of many countries. It made significant breakthrough in the sharing of Global Map data via the internet. ISCGM will conclude the Global Map Project in the final meeting of ISCGM to held in New York on 2 August 2016.

233. The main agenda items in this meeting are a simple ceremony to transfer Global Map data to the United Nations and a summary of various activities in the Global Map Project. More details on ISCGM activities can be found on their web site http://www.iscgm.org.

VII. The United Nations Global Geospatial Information Management Academic Network

1. Introduction and Background

234. In making its decision to establish the Committee of Experts in July 2011 the United Nations Economic and Social Council (ECOSOC) encouraged the Committee to hold regular high-level, multi-stakeholder discussions on global geospatial information, including through the convening of global forums, with a view to promoting a comprehensive dialogue with all relevant actors and bodies. From its inception the Committee of Experts has recognized the integral role of the academic, research, industry and private sector stakeholders in achieving its goals of promoting the global use of geospatial information for evidence-based decision making, and more recently exploiting the role of geospatial information in assisting with the measurement and monitoring of the SDGs of the 2030 Agenda for Sustainable Development.

235. The Beijing Declaration on Sustainable Development with Geospatial Information, issued at the conclusion of the Third UN-GGIM High Level Forum in Beijing, China on 24 October 2014, encouraged global, regional and national collaboration and capacity building in the promotion and development of geospatial information management for measuring and monitoring sustainable development, and in partnership with the contribution and ongoing role played by other intergovernmental organizations, international non-government organizations, academia and industry in supporting this important global process.

236. At its December 2015 meeting, and following a briefing from Wuhan University, China, the UN-GGIM Extended Bureau discussed the merits and agreed on the establishment of an Academic Network under the auspices of the Committee of Experts as a means to capture and include the role and contributions of academia in global geospatial information management.

237. The first informal meeting of the UN-GGIM Academic Network was convened on the margins of the Fourth UN-GGIM High Level Forum in Addis Ababa in April 2016, and constituted the formation of the Network and initial core participants. In this respect it was anticipated that the Academic Network will operate along the same lines as the Joint Board of Geospatial Information Societies (JB-GIS) and is able to "self-organize" and contribute to the activities of UN-GGIM in a similar and productive manner. The Addis Ababa Declaration, issued at the conclusion of the Fourth High Level Forum on 22 April 2016, endorsed UN-GGIM facilitating the establishment of an Academic Network as a strategic knowledge, research and training arm to assist its activities and objectives.

2. Summary

238. The Academic Network has now formed a Task Team, consisting of leading senior academics representing a broad geographic coverage globally, Chaired by Prof. Abbas Rajabifard, University of Melbourne, to facilitate the ongoing establishment of the Network and also progress with the preparation and documentation for a number of tasks as identified at the initial meeting of the Network in Addis Ababa. These Academic Network tasks include: drafting terms of reference; determining a process for membership; roles and responsibilities; preparation of a work plan and timeline; and

prepare and present a verbal report and draft materials to the Committee of Experts at this sixth session for consideration and discussion. A side event will also be convened by the UN-GGIM Academic Network on the margins of this sixth session.

VIII. The United Nations Global Geospatial Information Management Private Sector Network

1. Summary

239. Noting paragraphs 234 and 235 above with particular regard to the role of industry and the private sector, similar considerations for a UN-GGIM Private Sector network were discussed by the UN-GGIM Bureau at its December 2015 meeting, as a means to capture and include the role and contributions of the private sector in global geospatial information management. Since that time, and in parallel with the Academic Network, preparations for a UN-GGIM Private Sector Network have been actively pursued.

240. The first informal meeting of the UN-GGIM Private Sector Network was convened on the margins of the Geospatial World Forum in Rotterdam, the Netherlands on 22 May 2016, and hosted by Geospatial Media and Communications. This meeting constituted the formation of the Network and initial core participants. As is the case with the Joint Board of Geospatial Information Societies (JB-GIS) and the UN-GGIM Academic Network, the UN-GGIM Private Sector Network will also "self-organize" and contribute to the activities of UN-GGIM in a similar and productive manner. As an action, the Network agreed to immediately prepare a draft charter and terms of reference for consideration by the Committee of Experts at its sixth session.

241. A second meeting of the Private Sector Network was convened on 24 June 2016 on the margins of the OGC Planning Committee Meeting in Dublin, Ireland. The single agenda item for the meeting was the progress of the terms of reference, noting that the Private Sector Network will prepare and present a verbal report and its draft terms of reference to the Committee of Experts at this sixth session for consideration and discussion.

IX. Points for discussion

242. The Committee is invited to:

(a) Take note of the reports, and express its views on the operation and achievements of the regional committees and thematic groups;

(b) Endorse the establishment of the UN-GGIM Academic Network;

(c) Endorse the establishment of the UN-GGIM Private Sector Network.