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## Committee of Experts on Global Geospatial Information Management

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### Development of a shared statement of principles on the management of geospatial information

## Development of a shared statement of principles on the management of geospatial information

### Report of the Secretariat

#### Summary

The present paper contains the report for consideration on developing a shared statement of principles on the management of geospatial information. At its second session, held in August 2012, the Committee of Experts on Global Geospatial Information Management considered a proposal to develop a statement of ethics for the global geospatial information community (see E/C.20/2012/6). In its decision 2/104 (see E/2012/46), the Committee of Experts noted that a statement of ethics might be too strong, suggested that a shared statement of principles could be a better formulation, and requested the Secretariat to consult further and report to it in that regard. The report provides a review of the issue and introduces the need for a shared statement of principles on the management of geospatial information for the global community, taking into account the discussions held at the national and international levels, including a resolution adopted at the nineteenth United Nations Regional Cartographic Conference, held in Bangkok from 29 October to 1 November 2012, in which the Committee of Experts was requested to promulgate a statement of ethical principles for the geospatial information community (see E/CONF.102/8). The report identifies precursory issues to be addressed, such as the need for accepted definitions of what constitutes a geospatial professional and/or a geospatial organization, and the nature of the geospatial data being addressed under the principles. The report also examines the current situation within the geospatial field in relation to the issues and challenges that necessitate a shared statement of principles and suggests guiding principles for discussion and inclusion. The Committee of Experts is invited to take note of the report and to express its view as to whether a shared statement of principles on the management of geospatial information will benefit the global community. The Committee of Experts is also invited to consider the creation of a working group to prepare necessary definitions, scope, and shared statement of principles.

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\* E/C.20/2013/1

## I. Introduction

1. At its second session, held in August 2012, the Committee of Experts on Global Geospatial Information Management considered a proposal to develop a statement of ethics and supporting code of conduct for the global geospatial information community (E/C.20/2012/6). Discussions on this issue were initiated at the global level during the First High Level Forum on GGIM in Seoul, Republic of Korea in October 2011. A statement of ethics was further discussed at the International Symposium on Spatially Enabled Government and Society in Kuala Lumpur, Malaysia in February 2012 and at the UN-GGIM Hangzhou Forum in China in May 2012. Additionally, the need for a statement of ethics was raised as a substantive geospatial issue through the Committee's working group on the inventory of issues (E/C.20/2012/5/Add.1).

2. The above discussions and deliberations provided a strong indication that Member States considered that the global geospatial information community needed some form of overarching ethical guidelines or codes of conduct to clarify the distinctive social obligations inherent in its professional practices, and to enhance the trust placed by the public on geospatial information. The proposal to consider developing a statement of ethics, brought to the Committee in its second session, was aimed at providing guidelines on ethical behaviours for the geospatial profession. Providing simple, but clear, statements and principles that would help guide the behaviour of all entities engaging in the collection, production, management, and dissemination of geospatial information, was seen as being especially important.

3. In adopting decision 2/104 (E/2012/46) the Committee noted that a statement of ethics may be too strong a term, and suggested that a 'shared statement of principles' could be a better formulation. The Committee requested the Secretariat to consult further and prepare a document to clarify between a statement of ethics and various rules that exist within the governments and geospatial information communities. During the consultation process, the importance of the topic was reaffirmed when the nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific, held in October 2012 in Bangkok, adopted a resolution requesting the Committee of Experts to promulgate a statement of ethical principles for the geospatial information community (E/CONF.102/8).

4. Additional consultations, held with experts in Member States, determined that in order to provide clarity to the drafting of the shared statement of principles, it was necessary to clearly define to whom the shared principles would apply. Is it the individual geospatial professionals or the geospatial organizations of Member States? Clear definitions of the various geospatial professions and the relevant geospatial organizations would help to guide the identification of the types of principles needed. There is also the need to clearly define what kinds and types of geospatial data sets are being covered under the remit of the guiding principles. As the creation, use and dissemination of geospatial data is a pivotal component of geospatial information management, it should be made clear whether the principles to be prepared will cover all geospatial data created by all persons.

5. The present report identifies the precursory issues to be addressed, examines the current situation within the geospatial field in relation to the issues and challenges that necessitate the preparation of a shared statement of principles, and recommends elements for the preparation of guiding principles for geospatial information management. The Committee of Experts is invited to take note of the report and to express its views as to whether a shared statement of principles on the management of geospatial information will benefit the global community. Points for discussion and decision are provided in paragraph 16.

## II. Determining a shared statement of principles

6. The future trends in geospatial information management (as referenced in document E/C.20/2013/3 of this session) has provided a valuable synopsis of the global geospatial information environment, which is relatively young but maturing rapidly with an annual growth rate of almost 35 percent. Geospatial information now exists everywhere, and the industry is characterized by rapidly evolving technology including cloud computing, location-based services, sensor networks (including citizen sensors), and large private industry players providing global consumer-focused geospatial applications and services. Governments and the private sector are increasingly using geospatial information and technology to provide support for the management of local to global economic, societal and environmental issues and pressures, ranging from climate change, disaster management, sustainable development and food security, to terrorism and national security. The combined effect of the increased usage and continuous changes of geospatial information and technologies by a wide range of actors make it imperative to address the ethical generation and use of geospatial information, and to seek consensus on developing a shared statement of principles that society has a right to expect from the producers of geospatial information.

7. A shared statement of principles on the management of geospatial information must be underpinned not only by law but also by professional ethics as a set of underlying values. This is because professional ethics refer to, and is interchangeable with, rights, obligations, benefits to society, fairness, moral beliefs and conduct that ensure individuals and institutions adhere to professional standards. From the standpoint of the individual geospatial professional, the management of ethics has been addressed by geospatial professional bodies such as the International Federation of Surveyors and the GIS Certification Institute. Both bodies have codes of conduct that are standards of ethical conduct and professional practice. However, the ethical issues impacting the geospatial industry extend beyond the individual professional, requiring the need to formulate guiding principles and common values that will serve national and global geospatial organizations upon which society increasingly depends.

8. Guiding principles are here defined as precepts, values and beliefs that guide the organization throughout its life irrespective of changes in its goals, strategies and management team. In this context, guiding principles are the values and ideals upheld by the geospatial information organization in its interaction with its staff, its clients and stakeholders nationally and internationally, the execution of its geospatial operations and the delivery of its goods and services. In order to substantively develop guiding principles on the management of geospatial information within the geospatial industry, there is the overarching need to first clearly identify which players within the geospatial industry the proposed guiding principles will apply. There is a need to define and have accepted internationally, which professions comprise the geospatial industry, who are their members, and which are the relevant geospatial organizations. It is also important to define the types of geospatial data which will be covered under the remit of the proposed guiding principles. Will it be data solely created by government institutions, or will it also cover that data created by private organizations and the public? Guiding principles also have ethical underpinnings which vary across nations and societies. Therefore, there is a need to consider and formulate principles for the geospatial industry that are acceptable globally.

9. **The Geospatial Professional and the Organization:** At the global level, the need for guiding principles that govern the ethical decisions made by the geospatial institutions of the Member States is of concern. The conduct of the geospatial professional is the responsibility of the national institution or professional association to

which the individual is affiliated. The Urban and Regional Information System Association (URISA) GIS Code of Ethics, the GIS Certification Institute and other chartered societies and professional organizations such as the Surveying and Spatial Sciences Institute of Australia and New Zealand have codes of ethics which govern the practice of their members. This distinction has to be made in formulating guiding principles for geospatial information management at the global level. The issue is best addressed at the Member State institutional level. Therefore, in considering the preparation of guiding principles for geospatial information management, rather than simply addressing primarily ethical issues, the goal of the Committee could be the preparation of overarching principles to which institutions and their subjects abide in the execution of their geospatial mandates.

**10. Geospatial Data:** Geospatial data is today the fastest growing segment of the GIS/geospatial business. Growing at a compound annual rate of 15 percent for the last eight years, about twice the rate of growth for software and services, currency of data is gaining importance as it fuels the development of more dynamic applications, particularly given the use of crowd sourced and volunteered geographic information. The challenge to be addressed is can, and to what extent, the many and varied types of geospatial information and their creators would be covered under the umbrella of global geospatial guiding principles.

**11. Issues and Challenges:** The use of questionable data, the application of inappropriate or poorly applied analyses, or the integrity of interpretations have the potential for damaging the reputation of all persons and entities in the geospatial community. The need for guiding principles on geospatial information management has arisen from the realization that these challenges can only be solved by the geospatial community. The following are several types of legal and ethical issues that arise in relation to collection, dissemination, use and abuse of geospatial information. While the examples are relevant they are not exhaustive:

- (a) Ethical application of intellectual property law, especially for copyright, e.g. the right to reuse geospatial information for one's own purposes and how/where is intellectual property law being challenged on what can be construed as 'ethical' grounds;
- (b) Ethics regarding rights of citizens for access to information gathered at public expense;
- (c) Moral obligations for governments to create frameworks and infrastructure, both legal and physical, permitting universal access to information, especially that in the public domain or for public sector information not already in the public domain;
- (d) Protecting personal privacy and security through unethical use of publicly available geospatial information that can be used to track individuals;
- (e) Identifying who is legally liable when data of unknown quality and heritage is used to make important decisions that result in loss, damage and harm; and
- (f) The need to protect the geospatial user from unethical and non-transparent pricing policies and licenses for geospatial data sales and services, particularly given the demand for open and transparent access to government's information.

### **III. Benefits to be achieved**

12. The objective of creating guiding principles for geospatial information management is to provide a set of values and attitudes to guide the choices and actions of geospatial entities within Member States. Invariably, abiding to guiding principles are paramount to the successful operation and growth of the geospatial industry, the geospatial

organization and the geospatial individual/professional. These guidelines, once accepted and integrated within an organization's systems, practices and protocols, will:

- (a) Encourage, and support stakeholders to achieve their geospatial goals;
- (b) Motivate and empower geospatial organizations to make the right choices;
- (c) Help to avoid or negate legal issues, including liability;
- (d) Foster mutual trust and respect for the organization and the quality of geospatial services and products offered;
- (e) Inspire confidence and loyalty from stakeholders. Users of geospatial data and services will come to know and understand the ideals of geospatial institutions that serve them;
- (f) Attract and reassure potential partners/investors; and
- (g) Provide competitive advantage and support a strong geospatial marketplace.

#### IV. Elements of the guiding principles

13. Notwithstanding the need to achieve a consensus on this topic by the Committee of Experts, it is submitted that the elements being considered for developing a shared statement of principles on the management of geospatial information would be most appropriately termed "Guiding Principles for Geospatial Information Management". Several key elements that could be considered as being an important preamble to the guiding principles include acknowledging:

- (a) The critical role of high quality geospatial information to support evidence-based analysis and informed policy decision-making in support of sustainable development, economic growth, peace and security, as well as for mutual knowledge and trade among the Member States and peoples of an increasingly connected world, demanding openness and transparency;
- (b) The essential trust of the public in the reliability of official geospatial information depends to a large extent on respect for the fundamental values and principles that are the basis of any society. In this context, professional independence and accountability of national geospatial agencies are crucial; and
- (c) In order to be effective, guiding principles have to be enshrined in the institutional frameworks that govern national geospatial information agencies and be respected at all political levels and by all stakeholders in national agencies.

14. Given that geospatial information is of fundamental importance to society, the geospatial community should have the strongest ethical statements and principles of any sector in the global information society. The following are therefore suggested elements for consideration that may form the key values and principles relevant to national and global geospatial information management:

- (a) **Adherence to law:** Organizations are required to always work within the confines of national and international laws and conventions, and their stakeholders are to be made aware of those laws and conventions which govern and are related to their operations.
- (b) **Use of and adherence to geospatial standards:** Organizations are encouraged to embrace the development of, adherence to and use of geospatial standards. Facilitate the effective and efficient creation, sharing, exchange and use of geospatial data. Facilitate open transfer of data among platforms and applications and also encourage innovation, reduce transaction costs, increase transparency and allow international compatibility for the marketplace.

- (c) **Ownership and accountability:** To facilitate trust and clear understanding and use of geospatial data, creators/providers should at all times provide metadata, inclusive of ownership, currency, quality and accuracy definitions. Data creators should be accountable for the data sets made available for consumption and use.
- (d) **Respect and confidentiality:** Organizations exhibit high levels of regard and consideration to their stakeholders in the execution of their daily operations. Particular care should be instituted to protect the confidentiality of geospatial information that may bring harm to an individual, community and/or nations.
- (e) **Standards of service:** Employ geospatial information management best practices and solutions, and excellence in the delivery of geospatial data and services. Consider transparency, equality of access and fairness (value for money) to all levels of stakeholders.
- (f) **Continuous development and recognition of work:** Policies and practices should be instituted to ensure the ethical development and professional competence of geospatial employees. Protect the intellectual property of data creators. Acknowledge geospatial data received from non-primary sources.
- (g) **Geospatial advocacy:** A strong industry and profession are reinforced by unflinching advocates. The importance of the use and application of geospatial information to support a sustainable world should be promoted.
- (h) **Collaborate and coordinate nationally and globally:** Collaborations nationally, regionally and globally should be encouraged to facilitate improvements in the development and use of geospatial data and management practices.

15. The preceding elements are expected to serve as the start for future deliberations and discussions by a working group to be tasked to create guiding principles for geospatial information management. It is expected that the guiding principles will be a living document subject to revision and update given that the geospatial community is continuously evolving. The following activities are recommended as next steps for the creation of the guiding principles:

- (a) Establish a working group of experts from within the global geospatial community;
- (b) Prepare the guiding principles, inclusive of an action plan, for their implementation, promotion, continuous assessment and revision; and
- (c) Engage in consultative sessions with Member States to refine and improve the guiding principles.

## V. Points for discussion

16. The Committee is invited to:

**(a) Take note of the report and to express its views on the recommendation that guiding principles for the management of geospatial information are needed by the global geospatial community;**

**(b) Consider the recommendation to establish a working group to prepare global definitions of the geospatial professional and the geospatial organization; and**

**(c) Agree to initiate the drafting of the guiding principles through an inclusive process.**