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Consultation on United Nations Maps

United Nations Maps

Report of the Secretary-General

Summary

UNmap is being developed by UN Cartographic Section as a comprehensive digital map (geo-database) covering the entire globe at various levels of detail. It consists of basic cartographic and place-name information at different scales. As a geo-database, UNmap is designed to store, query, manipulate and exchange geospatial information, in order to be the primary spatial dataset for map production and digital display for users in the UN Secretariat and UN field missions. This paper provides an overview on the need that led to the development of UNmap, the scope and operational concept of UNmap, the steps and challenges laying ahead, and the prospects of cooperation with Global Map.

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United Nations Maps

I. Introduction and Objectives

1. UNmap is a comprehensive digital map (geo-database) covering the entire globe at various levels of detail. UNmap consists of basic cartographic and place-name information at different scales. As a geo-database, UNmap is designed to store, query, manipulate and exchange geospatial information thus being the primary spatial dataset for map production and digital display for users in the UN Secretariat and UN field missions.

2. In the past, the United Nations has had to rely mostly on varying external sources of geospatial information to produce maps and provide geospatial support. This has led to major challenges, including availability of up-to-date data, compatibility, exchange and clearance as well as timeliness. Hence, the United Nations Cartographic Section (UNCS) placed significant effort into the development of UNmap, the creation of which represents a milestone in the United Nations' efforts in the area of geospatial information. For the first time, a comprehensive geo-database exists that is owned by the UN Secretariat, follows UN standards and constitutes a single source of geospatial data for users in the UN Secretariat and UN field missions.

3. In line with the mandate of UNCS in regard to map production and clearance, UNmap represents the standards of the UN Secretariat, e.g. in regard to international boundaries and naming conventions. As an approved core geo-database, UNmap has been developed for UN specific needs and users are able to extract data as needed and at the same time provide continuous maintenance. This will streamline the geospatial support and production process, avoid redundancies and improve cooperation throughout the entire UN Secretariat including UN field missions and UN agencies. Moreover, the use of a single, certified digital map will allow for a higher quality of products and a more efficient service.

4. Geospatial information is the fundamental information base that allows geo-coded economic, social and environmental data to become meaningful analytical information. Through the establishment of the UN Committee of Experts on Global Geospatial Information Management (GGIM), it offers the opportunity for the UN community and Member States to consider its use at the global, regional and national levels for diverse strategic and operational purposes.

II. The Need for UNmap

5. In order to optimize the geospatial support to the UN Security Council, UN Secretariat and UN field missions, there was also a need to develop a standardised digital base map. Currently, different offices use different digital maps and manipulate them on an ad-hoc basis. In turn, this creates major challenges at multiple levels. Data and derived products are not fully compatible, thereby hindering the flow of information and creating confusion. Data preparation often has to be repeated in different offices and for different tasks, which extends the production time needed. Furthermore, since these digital maps come from external sources and are not owned by the UN Secretariat, additional limitations to their use are implied. UNmap was therefore developed to overcome these challenges and was designed for the specific needs of the United Nations. All users are able to operate on

the same base digital map which improves the exchange of information, streamlines the production process and avoids redundancies.

6. Correct representation of international and administrative boundaries, transportation features, place names, etc. is of paramount importance to UN operations. UNmap has been cleared and adheres to UN standards which, in turn, will improve the products derived from it and streamline the map clearance procedure.

7. Through the integration of all users in the update process, UNmap becomes a central information platform which will be kept up to date in accordance with UN specific needs. This results in a consolidation of information, creation of synergies and even allows offices with smaller capacities to benefit from the overall institutional knowledge. This will improve geospatial information support and the quality of map products throughout the UN Secretariat and UN field missions. It is also anticipated that these derived benefits could also be elevated to the level of Member States.

III. The Scope and Operational Concept of UNmap

8. The workflow of UNmap development includes the compilation and integration of different data sources by UNCS and the clearance of the data in accordance with UN standards. UNmap will then be provided to users in the UN Secretariat, UN field missions as well as UN agencies, which in return will provide field validations and updates. The updates as well as new available data sources will be cleared by UNCS and integrated into UNmap. This will ensure that UNmap is kept up to date and in line with UN needs and standards.

Table: Naming Convention for different scales of UNmap.

Name (full)	Name (short)	Scale	Coverage	Availability
UNmap Level X	**UNmap-X**	**1:10,000,000**	**Global**	**Available**
UNmap Level V	**UNmap-V**	**1:5,000,000**	**Global**	**Avaialble**
UNmap Level 0	**UNmap-0**	**1:1,000,000**	**Global**	**Available**
UNmap Level 1	UNmap-1	1:250,000	Operations AOI	Some UN missions AOIs
UNmap Level 2	UNmap-2	1:100,000	Mission AOI	Some UN missions AOIs
UNmap Level 3	UNmap-3	1:50,000	Mission AOI	Some UN missions AOIs
UNmap Level 4	UNmap-4	1:25,000	Special AOI	Some AOIs
UNmap Level 5	UNmap-5	1:12,500	Special AOI	Some AOIs
UNmap Level 6	UNmap-6	1:5,000	Special AOI	Some AOIs

9. UNmap covers the entire globe with small scale data. For larger scale data that are more detailed, the coverage will be focused on the UN operations and UN missions' area of interest. At the highest detail, only areas of special interest will be covered. UNmap is composed of datasets at different scales. In the first phase UNmap will only contain the

smaller scales, meaning 1:1 million and smaller. The scales larger than 1:1 million (such as 1:50,000 ~ 1:250,000) are partially developed or under development for UN missions' specific areas of interest and these data will become available over time. The naming convention for current and future scales is shown in the table.

10. For the smaller scales from 1:1 million up to 1:10 million, the data are based on the 1:1 million dataset (UNmap-0) which contains the most detailed information. Only this scale will be actively maintained and updated and all smaller scale data (e.g., UNmap-V and UNmap-X) will then be generalised from UNmap-0. This will ensure consistency between the different scales.

11. UNmap is comprised of different vector data layers (point, line and area information) that constitute the basis for geographic display and map production. The layers of UNmap-0 cover the basic physical (drainage and water bodies) and transportation (roads, railways, airports) features as well as populated places and administrative and international boundaries. Layers are generalised towards the smaller scales and contain fewer features while line and area features are also less detailed in their geometry. The data that initially composed the first version of UNmap are based on different sources that originate within the UN Secretariat and are also based on other prime sources, such as Vmap-0. The different data sources have been integrated and enhanced to meet UN standards.

12. For the larger scales ranging from 1:250,000 to 1:5,000, the data that exists has been produced mainly in response to specific UN operational demands. Some datasets have been produced directly by the UN Secretariat throughout different mapping projects, whilst other datasets have been contributed by Member States, International and Regional Organizations. In some cases, the datasets have been purchased. These high-resolution digital vector data include a much extended set of information layers, e.g. in regard to infrastructure and points of interest. The data schema of UNmap in these larger scales is the standard data schema of either Vmap/Umap or the Multinational Geospatial Co-Production Program (MGCP). This guarantees a seamless integration with the international geospatial data production effort and most current data available.

13. As new valid sources become available they will be integrated into UNmap to enhance its quality as well as coverage. In the first phase, the intended end-users are the departments and offices of the UN Secretariat. UN field missions as well as UN agencies that are working with geospatial information for map production, web applications and/or as reference material. For UNCS, UNmap is the primary source of base layer geospatial information for map production and GIS services. All users provide constant updates to improve UNmap and keep it up to date and according to their needs. In a later phase UNmap can be made available to the Member States. Gradually it can be transformed or connected to a platform to determine international standards and include direct input from the Member States. Since UN standards rely on input by the Member States, this would lead to the further improvement and authority of UNmap, and the ownership of UNmap will be eventually shared with the Member States and the UN Secretariat.

IV. Steps Ahead

14. The compilation of a global geospatial data set at multiple scales is a huge undertaking, and due to changes on the ground, it will be a constant work in progress. Hence, it is important to maintain UNmap as a live geo-database with as many users and

editors as possible. Only the steady use of UNmap and regular input and feedback by users will guarantee its currency.

15. Since UNmap is derived from different sources, including many non-UN sources, it is important that the data integrated are in compliance with UN standards. Due to the high volume of information, this can only be done gradually over time mostly by core users of UNmap. Not only here, but for general updates by users, it is important to provide an appropriate technical and administrative framework that allows for proper quality control, implementation and distribution of these updates and changes.

16. To ensure a proper setup and workflow, the distribution and implementation of UNmap will follow a phased approach. In the first phase, UNmap will be used by core users in the UN Secretariat and UN field missions. Gradually it will be moved into a geo-database environment as part of the common system architecture, at which point high-level end users can execute most of the edits while UNCS manages the final clearance. In the second phase, the circle of users will be extended to include all users within the UN system, including all UN agencies. In the subsequent phase, the goal will be to gradually involve Member States for their respective areas and make UNmap available for their use.

17. The UNmap was initially created with the purpose of being used as a UN community asset. However, with the establishment of the UN Committee of Experts on Global Geospatial Information Management (GGIM), UNmap now offers the opportunity to become a common global asset. In order for the Member States to benefit from accessing and contributing information to a common global geo-database, there is a need to develop mechanisms for collecting, harmonising, validating, disseminating and maintaining through a consultative process.

V. UNmap and Global Map

18. Global Map is a geospatial data set and consists of different data layers covering the world at a scale of 1:1 million. Based on a defined schema, each Member State provides the data for its territory. In addition to UNmap-0, Global Map also contains information layers for elevation, vegetation, land cover and land use.

19. In many ways, UNmap and Global Map share similar goals to provide a global standardised base of geospatial information that represents the views of Member States and which can be used for common base mapping. In this regard, it would be worthwhile exploring possibilities in the near future to develop synergies between the two projects and minimize duplication of efforts. Whereas Global Map has a mechanism to gather the input from the Member States, UNmap does not. At the same time, however, Global Map currently does not have the capacity to serve UN operational needs. Data in Global Map for the various Member States differ greatly in quality and completeness and can only partially be integrated into UNmap. Thus, it is in the interest of the United Nations to closely cooperate with Global Map to strengthen its capacities and ultimately incorporate and/or closely connect it with UNmap.