Introduction and Objectives

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.

In the past the UN had to rely mostly on varying external sources for geospatial information to produce maps and provide geospatial support, which led to major challenges, e.g. for data compatibility, exchange and clearance as well as timeliness. Hence, the United Nations Cartographic Section (UNCS) put significant effort into the development of UNmap and for the first time a comprehensive geo-database exists that is owned by the UN Secretariat, follows UN standards and constitutes a single source for users in the UN Secretariat and UN field missions.

In line with the mandate of UNCS in regard to map production and clearance, UNmap is representing the standards of the UN Secretariat, e.g. in regard to international boundaries and naming conventions. As an approved core geo-database, UNmap is 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 filed 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.

The Need for UNmap

In order to optimize the geospatial support to the UN Secretariat and UN field missions it is most important to have a standardized digital base map. In the current situation, different offices use different digital maps and manipulate them on an ad-hoc basis. This creates major challenges at multiple levels. Data and derived products are not fully compatible, which hinders the flow of information. Data preparation often has to be repeated in different offices and for different tasks and production time needed extends. Since these digital maps come from external sources and are not owned by the UN Secretariat, further limitations to their use are implied. UNmap was developed to overcome these challenges and designed for the specific needs of the UN. All users are able to operate on the same base digital map which improves the exchange of information and streamlines the production process and avoids redundancies.

Correct representation of international and administrative boundaries, transportation features, place names, etc. is of paramount importance to UN operations. UNmap is cleared and follows UN standards which improves products derived from it and streamlines map clearance procedure.

Through the integration of all users in the update process, UNmap becomes a central information platform and will be kept up to date and according to UN specific needs. That allows for a consolidation of information, creates synergies and even offices with smaller capacities can 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. In the same sense these benefits could ultimately be elevated to the level of Member States.

The Scope of UNmap

The workflow of UNmap development includes the compilation and integration of different data sources by UNCS and clearance of the data according to UN standards. UNmap will then be provided to users in the UN Secretariat and UN field missions, 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 to keep UNmap up to date and in line with UN needs and standards.

UNmap covers the entire globe with small scale data. For larger scale data that are more detailed, the coverage will be focused to the UN operations and UN missions' area of interest and 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 a table below.

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

For the smaller scales from 1:1 million up to 1:10 millions, 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 generalized from UNmap-0. This will ensure consistency between the different scales.

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 generalized 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 origin within the UN Secretariat and also based on other prime sources, like Vmap-0. The different data sources have been integrated and enhanced to meet UN standards.

For the larger scales from 1:250,000 to 1:5,000, the data are mainly produced by UN operational demands. Some datasets are produced directly by the UN Secretariat throughout different mapping projects, whilst other datasets are contributed by the Member States, International/Regional Organizations or need to be 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.

As new valid sources become available they will be integrated into UNmap to enhance its quality. In a first phase the intended end users are the departments/offices of the UN Secretariat and UN field missions which 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 further improvement and authority of UNmap.

Challenges and Steps Ahead

To compile a global geospatial data set at multiple scales is a huge task and due to changes on the ground 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 guaranty its currency.

Since UNmap is derived from different sources, many of them non UN sources, it is important to bring these parts up to 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 frame that allows for proper quality control, implementation and distribution of these updates and changes.

To ensure a proper setup and workflow, the distribution and implementation of UNmap will follow a phased approach. In a 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 this point high level end users can execute most of the edits

while UNCS takes care of the final clearance. In a second phase the circle of users will be extended to all users within the UN system, including all UN agencies. The next step will be to gradually involve the Member States for their respective areas and make UNmap available for their use.

UNmap and Global Map

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.

In many ways UNmap and Global Map have the similar goal to provide global standardized base geospatial information that represents the view of the Member States and can be used for common base mapping. Hence, it is desirable to bring the two efforts closer together in the near future to minimize duplication and create synergy. Although having a mechanism to gather the input from the Member States, which does not exist for UNmap, Global Map currently does not have the capacity to serve the UN operational needs. Data for the various Member States differ greatly in quality and completeness and could only partially be integrated into UNmap. Thus, it is in the UN's interest to support Global Map to strengthen its capacities and ultimately incorporate and/or closely connect it with UNmap.