



**AMERICAS GLOBAL MAP**  
**PROPOSED TECHNICAL PLAN**

“A Way to Pan-American Integration”

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## **AMERICAS GLOBAL MAP - PROPOSED TECHNICAL PLAN**

### **1. Introduction**

#### **1.1 General Rationale for the Americas Global Map**

The vision that drives the Americas Global Map as a means for Pan-American integration through Cartography considers the development of geo-spatial information to be an agent for cooperation among the communities of the American continents, due to the benefits it brings to specialized entities and to the public in general. In overall terms, the benefits would be those which the ISCGM has declared for the Global Map at world level; nevertheless, to achieve these ends the project described here aims to re-focus the Global Map project towards the regional reality. The integration of the communities of the American continents and the overcoming of conditions of poverty and economic strains are the major challenges in the region which add greater urgency to those projects that contribute to facing them. The support given by geo-spatial information in this integration and emergence is vital for the region to develop and advance.

## **1.2 The Purpose of the Proposed Technical Plan**

This document is intended to enable progress to be made in the initiative called “Americas Global Map” (AGM from here onwards, or MGA in Spanish initials). It is intended to fill out detail in plans that previously had only been proposed in outline form. This text is a draft for the project Technical Plan covering the period 2005 to 2007, and is intended to start discussion and exchanges of opinions on the project, with the aim of advancing in its definition and preparing the decisions to be taken at the first meeting of the MGA, which has been provisionally scheduled for the month of November 2005. The request to participants in the project is explained in detail in Point 8.

## **1.3 Background of the Project**

The “Americas Global Map” is a project which has started as a proposal from the Pan-American Institute for Geography and History –PAIGH– in cooperation with the “International Steering Committee for Global Mapping” –ISCGM–. To support the Global Map project, led at world level by the ISCGM, the “Americas Global Map” aims to coordinate a series of programs at regional level in the Americas. Further details of the background of this initiative are in Annex 1.

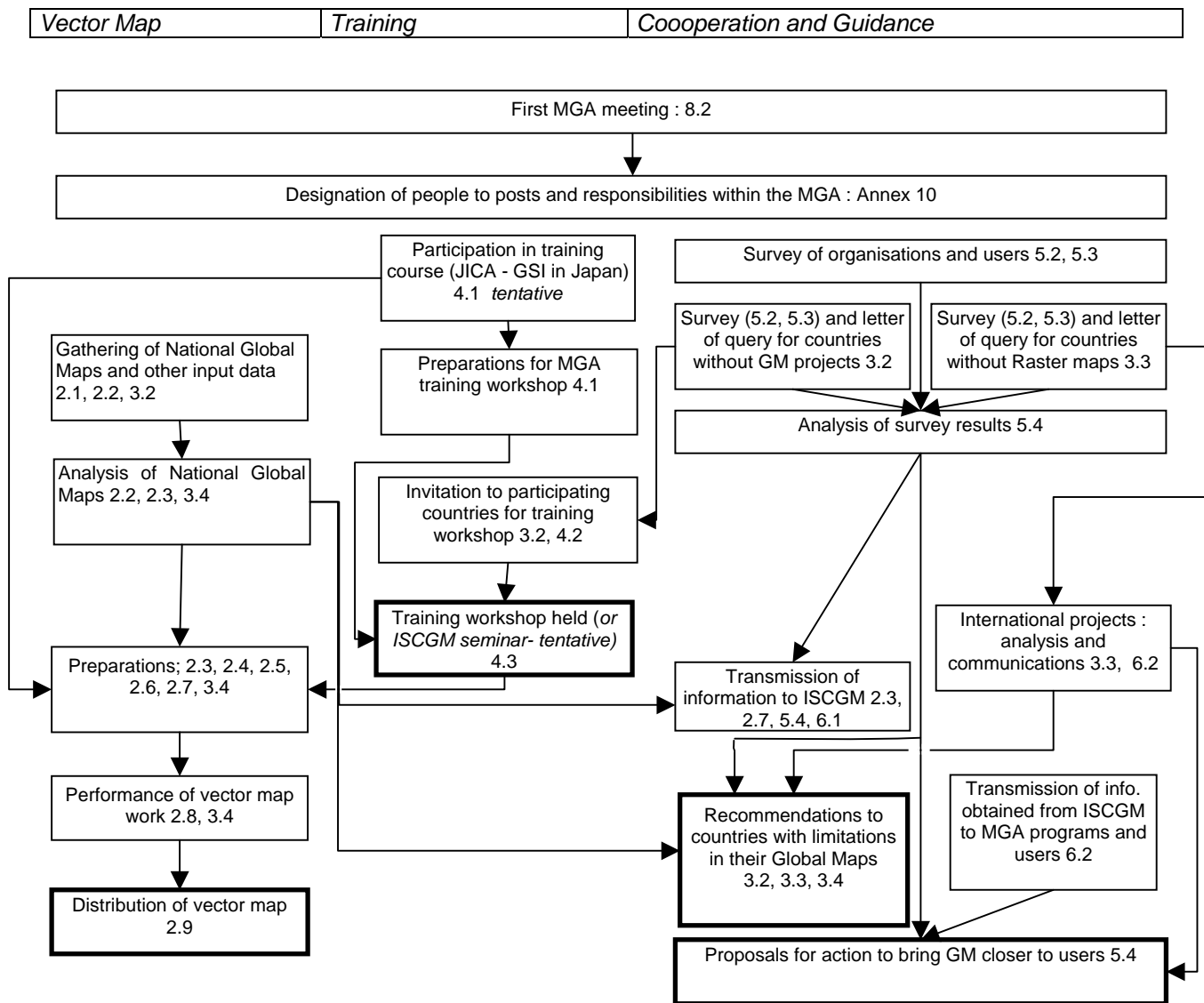
## **1.4 Objectives of the Americas Global Map**

The project should make progress on four main issues or tasks :

1. The coordination of a continuous version of the Global Map for the whole continent in the vector information layers.
2. Assistance for those countries in the Region whose participation in the Global Map project at world level has been very limited.
3. A definition of the optimal solutions for the raster layers at continental level, by means of providing guidance to the existing initiatives.
4. An integration of the Global Map projects and products in each country with the needs of their respective local communities, directly or by means of the national spatial data infrastructures.

The tasks to be performed by the MGA should respond to these four programs. The title “Americas Global Map” might at first sight seem to refer to the creation of a new map. Nevertheless, the tendency in all these programs, both the continental vector map and the others, consists rather of a better inter-connection and inter-relation of resources and projects that either exist or are due to be set up under the auspices of other organizations.

The following diagram summarises the activities to be described in points 2 through to 6. The numbers relate to the text numbering. The thick-line boxes are those where the AGM objectives are fulfilled.



## 2. The Continental Vector Map

This program is limited to the vector structure information, basically the layers with the administrative boundaries, transport, drainage and population centers. The Raster layers require other types of solutions.

### **2.1 The Information to be Gathered**

In order to put the vector map together, it is necessary at an early stage to gather in one place copies of all the vector Global Maps made in each country, intended for Global Map Version 1, in addition to a series of other reference information. Annex 3, point A.3.2 gives further details of this information.

## **2.2 The Evaluation of the National Global Maps**

As the Global Map copies start to arrive, an evaluation of these is to be made, in order to achieve these aims :

- (1) Compare the various maps provided to the Global Map.
- (2) Obtain a general qualitative overview of the components destined to the Continental Vector Map.
- (3) Detect cases of limitations in quality, in the content, and in other aspects of the material received.

Annex 3, point A.3.3 describes this assessment.

## **2.3 The Evaluation Results**

Once the evaluations of each national Global Map are complete, a technical report should summarise the results of these assessments and propose a way to integrate these maps in view of the evaluations. The same evaluation also contributes to determining the cases of the countries which need help for their national Global Map programs, see point 3.4 and annex 3 point A.3.5

## **2.4 Countries Without Global Map Material**

In the case of those countries which still have no Global Map projects or material, it is necessary to obtain from those countries indications about which material can serve in the vector map as a substitute. This could be Global Map Version Zero or some other compatible source. See also point 3.2.

## **2.5 Special Cases**

It is convenient to determine how to represent, in the Continental Map, the territories which, administratively, are dependencies of States in Europe. The same occurs in relation to those countries in the Americas which are not members of the PAIGH. This enables solutions to be proposed covering these issues for the Continental Map. See Annex 3 point A.3.4

## **2.6 Logistics Study and Preparations**

It is necessary to start preparations at an early stage for the work of putting together the vector map of the Americas. One person could research the alternatives for establishing a work team, considering the following aspects :

- Host institution willing to provide space and some secondary facilities.
- Identification of personnel available to work (see annex 10).
- Type of technical resources needed : software, hardware and computing accessories.

These estimates could be made before the scheme for the map itself reaches its final definition (point 2.8). Independently of this design, it is known in general terms what type of resources are necessary for performing the work for the continental vector map. The contacts with institutions in particular should be made in advance.

The preparation of the personnel to perform this work may include the training course that the organisations JICA and GSI in Japan run in Japan (see annex 5), for one person, followed by the training workshop for the rest of the team (points 4.2, 4.3).

## **2.7 Scheme for the Vector Map**

The following stage consists of proposing a scheme for a unified map. The starting point is the assessment of the Global Maps from each nation as an analysis of the components or materials intended for the Continental Global Map. Then, the other information gathered should be incorporated (see point 2.1), together with the study of the special cases (2.5) in a technical design of the map. The criteria to apply in the design are the following :

- a) To be open to convergence from the various component materials (the Global Maps from each country).
- b) To serve the needs identified up to that point (obtained from the queries, annex 4, and the survey, points 5.2, 5.3).
- c) The quantity of work required should be the minimum; where alternatives exist, always select the most economic in terms of resources and time.
- d) To match the technical specifications of the ISCGM to the maximum degree possible.
- e) To be open to future additions of further data.

The criteria (b) and (d) may be very difficult to reconcile with each other; it is for this reason that it is necessary to decide whether the final map will be made only in a version that adheres tightly to ISCGM specifications and published through the ISCGM, or if a version oriented towards users in the Americas at all levels will be produced separately. If two or more differing versions are produced, the AGM frees itself from the above-mentioned problem of compatibility, but this may increase the workload in the final phases and possibly cause confusion among the users. See Annex 6 point A.6.3 about the coordination with the ISCGM.

## **2.8 Performance of Work on the Map**

In overall terms the sequence of the work will be the following :

- (1) Finalize the technical scheme of the map. Determine solutions for cases of deficient material.
- (2) Finalize the work plan and logistical preparations (point 2.6)
- (3) The Global Maps from each nation are pre-prepared, removing elements excluded from the AGM Vector map and converting it to the appropriate media (file or coverage type).

- (4) Establish a geodesic framework that covers the American continents, insert in them the data. The SIRGAS system is applied as the reference framework.
- (5) Those edits on the content that are necessary to adapt the map to the final scheme are made.
- (6) The version (or versions) to be delivered to the ISCGM and the users are prepared.

Stage (5) could, potentially, be the most intensive in terms of work; it is necessary to take care to prevent this from leading to extensive interventions in the cartographic material by editing. The project is not intended to create completely new cartography, rather it is to integrate and adapt existing maps. See Annex 3 point A.3.5 about the input material which, according to the evaluations, may possess serious limitations.

## **2.9 The Evolution of the Vector Map**

The map created may be created initially through two channels; the ISCGM web site towards the public in general, and the PAIGH towards a large number of users in the Americas. See Annex 10 point A.10.8 regarding the map users. The distribution details should be decided and determined sufficiently far in advance. One person in the group should be responsible for the activities that come after the creation of the map :

1. Coordinate the delivery and distribution of the continental vector map.
2. Answer queries that arrive from users of the vector map.
3. Prepare plans for a possible later and updated version of the map.

The last issue (3) arises because the first vector map should ideally be improved at a future stage due to the factors described in Annex 3, point A.3.6.

## **3. The Program for Completing the Global Map**

### **3.1 The Current Situation**

The Global Map, to date, has the involvement of the great majority of countries in the Americas. Nevertheless, the Global Map V.1 has only been published covering three countries : Colombia, Panama, y Mexico. The United States is a special case because the material provided by two U.S. institutions was the base for Global Map Version Zero. Other countries are at varying stage of progress; between a third and half the countries have presented material to the ISCGM, but the Technical Unit has not yet published this material. Some countries are currently preparing material.

Some countries remain which have not yet started projects of actual work on Global Map material. Some of these have had contact with the ISCGM and may start projects at a future date; others simply do not participate in the Global Map project.

The problem goes beyond the participating nations being out of step with each other in the progress made. Not all countries have been able to participate in the project in a similar way. The main difference lies in the raster data layers; some countries have opted for contributing maps only for the vector layers; others have provided material for both raster and vector layers.

Facing this situation, the AGM will propose schemes of training and coordination intended for countries in the Americas and oriented towards four cases :

Case A: Country that has not yet started to implement a Global Map project.

Case B: Country that has provided cartographic material to the ISCGM or that will deliver material in the near future; nevertheless, the material is only for the vector layers, lacking data for the Raster layers.

Case C: Country that has provided cartographic material to the ISCGM or that will deliver material in the near future; nevertheless, the vector material possesses some defects and limitations, which affect its possibilities for being corrected and published by the Technical Unit of the ISCGM in the short term.

Case D: Country that has provided cartographic material to the ISCGM or that will deliver material in the near future, both raster and vector, and that does not contain significant defects.

The countries that correspond to case A have been identified by ISCGM. Cases B and C can be determined only by direct contact with the organisations responsible for the Global Map in each country; Annex 4 describes the way to obtain the necessary information through a general query. It will be possible to distinguish between cases C and D only when the evaluation of the Global Maps of the nations (points 2.2, 2.3) is finished. The type of cooperation between the AMG and these countries depends on these cases. A scheme of cooperation is proposed in points 3.2 to 3.4.

### **3.2 For Case A Countries, without Global Map Material :**

It is necessary to communicate with the appropriate organisation in this country. Normally these are the bodies that cooperate with the ISCGM and the MGA (defined in Annex 2, points A.2.3 and A.2.5). After identifying the organisation, a request for information describing the situation in that country will be presented, as outlined in Annex 4 points A.4.2 and A.4.3.

The solution to adopt will depend on the response to this request for information; the minimum solution consists of inserting substitute material identified and covering that country into the Vector map, in all its versions. The ideal solution is that they start their own projects and that they participate in the training workshop (point 4).

### **3.3 For Case B Countries, without Raster Material**

The query in this case includes questions about the solution proposed for the Raster layers, together with some questions specific to individual layers of the Raster data (see Annex 4 point A.4.4). The AGM does not propose to create new cartography in Raster structure; its role is to clarify the issues among the participants and to provide advice both to them and to the ISCGM (see Annex 6 point A.6.2 regarding the ISCGM).

### **3.4 For Case C Countries; Vector Material with Limitations**

The detection of limitations in the Global Maps of individual countries through the evaluations (see points 2.2 and 2.3) make it possible first to quantify or characterize the potential problems for setting up the Continental Vector Map (see Annex 3 point A.3.5). Moreover, and in combination with other information, it contributes to determining what kind of advice the AGM could and should provide to those institutions linked to Global Map projects which have had difficulty in carrying out these projects.

Persons in the Cooperation & Guidance working group could communicate with the institutions that are the authors of this material in order to explore possible solutions with recommendations based on the available information.

### **3.5 For Case D Countries; Material with no Serious Limitations**

In this case the institutions that prepare this material do not need 'aid' from the AGM, nevertheless, their cooperation is still important for the success of the AGM project.

## **4. Training**

The support of the AGM for the Global Mapping projects should include a training activity, at least one regional training workshop.

### **4.1 Training of the JICA-GSI in Japan and Logistical Aspects**

Previous to the preparation of a regional workshop, it is proposed to apply to those organisations in Japan which provide training courses oriented to work on Global Map projects. See Annex 5 for further details of this course. With the backing of the PAIGH and a national government, an application for the course of 2006 organized by the JICA will be presented. The number of people to be sent will be determined in the coming months.

In the case that it is not possible or convenient to send people to this course, in Japan, the alternative consists of requesting the ISCGM to name a person with experience in these courses to come to a country in the Americas and participate in the regional training workshop directly. See annex 5, points A.5.4 and A.5.5.

In order to hold the regional training workshop of the AGM, it is necessary to determine which institution is both willing and has the capacity to act as host to the workshop, also possessing experience in resources for training workshops. Once the organisation that indicates its willingness to cooperate is identified, it will be necessary to present a formal request for cooperation, backed by one of the entities within the PAIGH (the Cartography Commission or the appropriate National Section).

#### **4.2 The Queries and Invitations made to the Participating Countries**

It is necessary to consult the participating organisations (see Annex 4) about their preferences for the training of their personnel oriented to their present or future Global Map projects. These preferences relate mainly to the content of the training, also practical aspects such as the place and date of the training.

After, a list of organisations to receive invitations to participate in the training workshop should be determined. The main purpose of the workshop is to strengthen the capacity of institutions to perform Global Map projects in their respective countries. These countries are mostly those which have had difficulty in contributing to the Global Map at world level (see point 3), so invitations should be made especially to these countries, although the workshop should also be open to all countries participating in the AGM. See also Annex 2 point A.2.9.

#### **4.3 Holding the Training Workshop**

The length of the workshop, the number of people who may participate and other aspects are to be defined. An event lasting several days is the current intention. The approaches covered should include the adaptation of the existing sources of cartography as preparation for the Global Map in versions V.1 and V.2, also for the continental vector map of the AGM. It could be carried out in conjunction with one of the meetings of the AGM, and should include not only technical training activities but also a discussion forum about the Global Map, its applications and its future.

### **5. Bringing the Global Map Closer to Users**

#### **5.1 General Background**

Access to the Global Map has been through the Internet without charges to users; any user who needs the Global Map can download it from the web site. Nevertheless, this release does not necessarily guarantee that the Global Map achieve its potential in practical applications at regional, national, and local levels nor those of the individual user. With some exceptions, the ISCGM has not had much direct contact with institutions in Latin America which could potentially use the Global Map; this situation makes more difficult the possibilities for adapting it towards the needs of the user in the evolution of the Global Map project. Annex 2, points A.2.4 and A.2.8 gives a tentative identification and classification of the users. In this context, the only way to know the

opinions of these users about the Global Map and its applications would be through a survey.

## 5.2 The User Survey

A survey is proposed, for distribution to a series of organisations selected to represent the above-mentioned users. The queries presented would be aimed at obtaining the following information :

- The opinion of the Global Map held by the body answering the survey or by those people within that organisation who are aware of the Global Map.
- The possible practical applications in which the Global Map in its current format (V.0 and V.1) could be used.
- The main limitations that the Global Map has.
- The practical applications in which the Global Map could be used, in the theoretical case of the limitations identified being resolved.

## 5.3 Management of the Survey

The survey would be managed in the following stages :

1. The survey is drafted, informative material is selected to accompany it, and the final list of those to receive it is determined (see Annex 2 point A.2.7).
2. The survey is distributed to the organisations and people selected
3. The answers received are analyzed so as to report the results.

Subsequently, the AGM committees will use the results for the following purposes :

- Report to the group responsible for the continental vector map, who will see if there are opportunities for adapting the map design, see points 2.8 and 2.10.
- Report to the group responsible for organizing the training, who will take it into account in the selection of material to present in the workshop and in the invitations to the workshop made – see point 4.1.
- Advise the ISCGM and its work groups about the real necessities of the users, seeking in this way to support the design of the Global Map V.2 and the work of the ISCGM in relation to the users – see points 6.1 and 6.2.
- Be part of the base information supporting the recommendations to the participating organisations in their Global Map projects or maps – see points 3.2, 3.3, 3.4
- Determine new forms of action for the AGM in bringing the Global Map closer to users and to projects in performance in the American countries (important), starting with the integration of the Global Map and the continental vector map of the AGM with the NSDI of each country.

## 5.4 Advice to Global Map Users

In the case of capacity existing within the AGM for providing guidance to Global Map users, in the future stages of the project, people involved with the project could respond to the doubts and queries of the participants in the programs of the AGM and of the Global Map users. Annex 2 point A.2.10 indicates persons and organisations who could receive this guidance.

The advice given would be based on the information obtained by the contacts with the ISCGM and its Working Groups (see point 6.1), (b) the evaluation of the Global Maps of each nation (point 2.3) (c) the training obtained from the ISCGM (point 4 and Annex 5) (d) the analysis of the results of the survey of users (e) the analysis of the results of the queries to the participating organisations (point 3 and annex 4)

## **6. Communication with the ISCGM and other Projects**

An important function of the AGM project will be to act as a channel of communication and advice between the ISCGM on the one hand and on the other the community of organizations, projects and institutions in the Americas. This flow of advice is related to the work with the users described in point 5, nevertheless it is stated separately because of the coordination specifically with the ISCGM.

### **6.1 Communication with the ISCGM**

The communication with the ISCGM and the entities associated with it would have the objectives of :

- a) Achieving the recognition and cooperation of the ISCGM for the AGM
- b) Inform the ISCGM of the reality in american countries for the Global Map, including those aspects of the regional projects (see point 6.2) which relate to the Global Map.
- c) Obtain clear and early indications of the plans and intentions of the ISCGM and its Work Groups for the development of the Global Map at World level. These will be interpreted and transmitted to the participants in the AGM.
- d) Obtain the cooperation of the ISCGM in matters related specifically with the Continental Vector Map and the AGM training program.

Objective c) is crucial for one of the missions of the AGM, that of providing guidance and support to the organisations cooperating with the AGM, to the cartographic agencies in the Americas that manage Global Map programs (see point 3) and to the Global Map users (5.4). Annex 6 describes the communication with the ISCGM in detail.

### **6.2 Communication with International Projects**

It will be convenient to establish contact with the projects that function internationally in the region of the Americas, to achieve these objectives :

- a) Obtain the cooperation of these projects with the AGM, in the sense of obtaining recommendations, information and recognition.
- b) Adjust the AGM programs to the reality of the community of geospatial information information projects.
- c) Avoid duplicated efforts and conflicts of interests.
- d) Increase awareness of the Global Map among the community of potential users.

The regional projects include :

- Geocentric Reference System for the Americas – SIRGAS
- Global Land Cover Network – GLCN, a program of the FAO (ONU)
- Mesoamerican and Caribbean Geospatial Alliance – MACGA (USGS)
- Central American Geographic Information Project – PROCIG
- United Nations Geographic DataBase (Cartographic Section of the UN)

Annex 7 contains details of these projects and their possible relationship with the AGM. Annex 2 point A.2.6 indicates the organisations and projects that may be associated with the AGM without necessarily becoming active participants.

## **7. Project Organization**

It is intended to establish an executive committee, reporting to the PAIGH, to manage the technical programs and moreover take responsibility for the financial management associated with the MGA – see Annex 9 regarding the financial aspects.

One of the tasks for the first MGA meeting will be the designation of individuals to make up this committee. A complete list of the various people with specific responsibilities within the MGA is proposed in annex 10, and a complete proposal for the organization is given in annex 8. This last describes a structure with a committee and workgroups. It is proposed that the sequence of activities of the MGA over the next three years follow the agenda indicated in annex 13. The possibility of establishing a web site or page on the Internet to facilitate communications within the MGA and to raise public awareness of it is covered in annex 11.

## **8. The Request to Participants in the AGM.**

### **8.1 The Exchange of Opinions and Comments**

This document aims to constitute a basis for discussions and exchanges of opinions, so as to clarify the alternatives to discuss in the first meeting of the AGM. This text is completely open to the criticisms, modifications, reformulations and insertions of new material which the contacts, contributors and interested parties may propose. **It is requested that the contacts and contributors send their comments** to the Technical Secretary, who is committed to incorporating them in a new version to be circulated and moreover to use them to define the agenda of the first meeting. It is hoped to receive contributions mainly from the institutions and people who have expressed support and interest to date, but the proposal is open to comments from any source related to the field of geo-spatial information in the Americas.

## 8.2 First Meeting of the Americas Global Map

It is proposed that the first meeting of the Americas Global Map be held in Caracas, Venezuela, as an activity associated with the XX Meeting of the PAIGH Cartography Commission, which is to be held in during the period 15<sup>th</sup> to the 18th of November of the year 2005. The exact date of the AGM meeting is yet to be defined, but it should be during this same period. For those organisations cooperating with the AGM project (defined in Annex 2 point A.2.5); **it is requested that, from this moment onwards, the possibility of attending the first AGM is considered**, by means of a representative.

At this meeting it is hoped to take decisions about the tasks that it is both desirable and feasible to perform, moreover to define details about schedules, personnel and resources. See Annex 12 about this and other AGM meetings.

## 8.3. Contacts for the Technical Plan

It is requested that the comments be sent to the Technical Secretary of the AGM project:

Edwin Hunt

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Address : Sección Investigación y Desarrollo  
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Other contacts related to the AGM project include :

Colonel Rodrigo Barriga V.  
President of the PAIGH Cartography Commission  
[rbarrigav@igm.cl](mailto:rbarrigav@igm.cl)

Mr. Juan Carlos Montero  
Technical Secretary of the PAIGH Cartography Commission  
[jmontero@igm.cl](mailto:jmontero@igm.cl)

Secretariat of the ISCGM  
[sec@iscgm.org](mailto:sec@iscgm.org)

Annex 14 gives the sources for further contact and reference information.

## **ANNEXES**

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## **ANNEX 1 : BACKGROUND OF THE PROJECT**

Ref. punto 1.2

The Global Mapping project, managed at world level by the ISCGM, has been summarised in the first document proposing the AGM. Further details of the past development of the ISCGM project to date are available at the ISCGM web site, [www.iscgm.org](http://www.iscgm.org).

The Americas Global Map project arose out of conversations between the ISCGM and the PAIGH in the first months of 2004. The PAIGH had recently been accepted into the ISCGM through a Liaison Representative; the ISCGM includes representatives from a series of organisations interested in supporting the Global Map project. Among these, the PAIGH offered to establish a system for regional coordination among the countries of the Americas. A regional coordination already existed in the project for Europe, where the “Eurogeographics” organisation had put together a continuous map of the vector and elevation data, the EuroGlobalMap, intended for Version One. From the beginning however, the scope of the project for the Americas was going to be rather different in its focus.

Within the PAIGH, the initiative had the special interest of the Cartography Commission. Nevertheless, to be formally proposed to the PAIGH authorities, the initiative had to be supported by one or several PAIGH National Sections. The first proposal was presented initially to the ISCGM central committee, receiving its recognition and support, during the period March to April in the year 2004. In April the initiative was proposed formally by the National Section of Chile within the PAIGH, being addressed to the other National Sections of the PAIGH to request their support. At the same time the initiative was proposed to the PAIGH authorities as a ‘Technical Assistance Project’, with the intention of applying for the financial backing allowed for these projects. Later the same year the authorities of the PAIGH gave their approval to the ‘Technical Assistance Project’; nevertheless, this provides only a small amount of finance, and only for the period of the year 2005.

During the year 2004, declarations of support were received from four National Sections; those of Peru, Argentina, Ecuador and Venezuela. During the first months of 2005 these and other organisations began to designate persons to act as the local contact with the project. In the month of May 2005 the project was again presented to the Authorities of the PAIGH as a ‘Technical Assistance Project’, for the year 2006. The AGM Technical Secretary has been named as the ‘Researcher Responsible’ for the purposes of this application process.

Regarding the document with the first proposal for the project, distributed during the year 2004, it should be made clear that this is an introduction and initial declaration of the proposal. The first proposal explains the causes and reasons for the initiative and proposes a scheme of organization and a schedule of activities in very general terms. The Technical Plan presented here complements the first document because it describes the possible tasks in greater detail, thus fulfilling a different function.

The secretariat for the AGM Proposal has been located in the Military Geographic Institute of Chile – IGM, at Santiago, Chile. This is due to the fact that the Secretariat of the PAIGH Cartography Comisión, the Secretariat of the National Section of Chile in the PAIGH, and the team responsible for the Chile Global Map are all located within this same institution, the IGM.

## **ANNEX 2 : PARTICIPANTS IN GLOBAL MAP PROJECTS AND GLOBAL MAP USERS**

### **A.2.1 Introduction**

This annex provides a tentative classification of the organisations which relate, one way or the other, to the Global Map projects, and of the Global Map users, being reference material helping to clarify the main text. The participants and users may be classified or grouped according to the following criteria :

- Organisations that cooperate with the PAIGH.
- Organisations that participate in the project coordinated by the ISCGM.
- Users of the ISCGM Global Map.
- Organisations and persons participating directly in the AGM project.
- Organisations and projects that may be associated with the AGM project.
- Organisations which will receive the Survey Form.
- Final Users of the Continental Vector Map.
- Organisations which will receive invitations to the Training Workshop.
- Organisations which may receive guidance from the AGM.

### **A.2.2 Organisations that Cooperate with the PAIGH**

The Pan-American Institute of Geography and History, as an institution, contains several internal bodies; these include :

- The PAIGH Authorities, making up the leadership of the institution.
- The Annual Assambly of the PAIGH, a large meeting of the PAIGH members.
- The Secretariat of the PAIGH, with its offices headquartered in Mexico.
- The four PAIGH commissions; for Cartography, Geography, Geophysics and History.
- The eighteen National Sections of the PAIGH, one in each member state.
- Eighty four (approximately) commissions in the Nacional Sections, reproducing in each Section the four PAIGH Commissions.

Annex 1 summarises the way that these entities have related to the AGM project.

The PAIGH is attached directly to the Organization of American States – OAS. In turn, the PAIGH has relationships with a wide range of institutions present in the countries that are members of PAIGH or active at regional level in the Americas. These institutions cooperate with the National Sections and with the scientific, academic and technical work of the Four Commissions. Most of these institutions fall into these three categories :

- Governmental Ministries or Authorities, directly dependant on the State of a member country
- Universities and academic institutions.
- Agencies specializing in scientific and technical services or research.

Among these last, the agencies, are those of Cartography and Geography in each country. In some countries of the Americas, the main state cartographic agency of the country is responsible for the Technical Secretariat and the Cartography Commission of its respective National Section of the PAIGH, often with the same agency being the main contact in that country for the ISCGM and responsible for the local Global Map project.

### **A.2.3 Organisations that participate in the project coordinated by the ISCGM.**

The International Steering Committee for Global Mapping – ISCGM - is a committee that directs the Global Map project at world level. Reporting to this committee, there is a Technical Secretariat, a Technical Support unit and a web site, all located at the agency called the 'Geographic Survey Institute' of Japan. Nevertheless, most of the work on the Global Map project is performed at the agencies and institutions that cooperate with the ISCGM. In each State, the ISCGM designates one organisation as being responsible for the Global Map project of that nation and as local contact. This organisation then coordinates the work within that nation, with or without the aid of other national organisations.

These organisations are mostly the main cartographic agency of the country. In some countries it is a governmental ministry or a division or entity within a Ministry. The complete list of these affiliated organisations can be found at the ISCGM web site; [www.iscgm.org](http://www.iscgm.org), at the “Participants” menu option.

The ISCGM maintains links with a series of international and regional organisations and associations, represented at the ISCGM through a ‘liaison representative’. Those which may relate to the AGM project include the following :

- Pan-American Institute of Geography and History - PAIGH
- Cartographic Section of the United Nations
- United Nations Environment Program – UNEP
- International Federation of Surveyors – FIG
- Global Geo-Spatial Data Infrastructure – GSDI
- International Cartographic Association – ICA
- International Society for Photogrammetry and Remote Sensing – ISPRS
- Permanent Committee – Spatial Data Infrastructures of the Americas – PC-IDEA
- Eurogeographics

#### **A.2.4 Users of the ISCGM Global Map**

There is not a lot of information available which would enable a classification of the Global Map users. The ISCGM web site records only the total number of users in each country who register in order to download copies of the Global Map V.0 or V.1. Theoretically, the users could be classed in terms of their size and geographic range :

- Institutions, associations and projects operating at the level of a region or of a group of countries.
- Groupings and networks of institutions that work within one nation. The most important groups for the AGM are the NSDI of each country, that is, the network for a geospatial data infrastructure recognised as such by the GSDI association.
- Individual institutions and organizations that operate within one country.
- Individual persons

They can also be classified in terms of their sector; the main users in this case are :

- Public and state-owned institutions
- Academic institutions and bodies in the educational field
- Scientific or technological institutions and bodies
- Private individuals

There are also private businesses; the ISCGM allows commercial applications under certain conditions, although the Global Map is not oriented towards this sector.

#### **A.2.5 Organisations and persons participating directly in the AGM project.**

Those who participate in and cooperate with the Americas Global Map project are defined as those organisations and institutions that (1) state their support for and explicit interest in the project, or that (2) designate and name a person as contact, link or contributor for participating in the project.

The main contributors to the project, whose cooperation is currently being sought, are the following organisations and entities at the level of each nation :

- National Sections of the Pan-American Institute of Geography and History in the countries that are PAIGH members.
- The Cartography and Geography Commissions contained in the National Sections of the PAIGH.
- State organisations and cartographic agencies that cooperate directly with the PAIGH National Sections and its Cartography Commissions
- Cartographic agencies and state organisations in the Americas that cooperate with the ISCGM (see point A.2.3)

What is being requested of these organisations is that they participate directly in the project; this implies that, during the first period, they name one or more persons as contact for links between the AGM project and the appropriate national body. From the meeting of November 2005 onwards, it is hoped to set up the Committee that directs the project (see Annex 8) and some of its work groups with the participation of all or most of these contact persons. To date, some personas have been named as contacts; it is hoped to define at least one contact in each member state of the PAIGH.

### **A.2.6 Organisations and projects that may be associated with the AGM project**

Ref. point 6.2

Apart from the direct contributors, additionally it is sought to establish relations for communication, coordination, awareness-raising and support with the following organizations:

- The Authorities of the Pan-American Institute of Geography and History - PAIGH
- The Cartography Commission of the Pan-American Institute of Geography and History - PAIGH and the committees that report to this Commission
- The international organizations and associations that possess links with the ISCGM (see punto A.2.3), especially the GSDI, ICA, ISPRS, CP-IDEA y Eurogeographics
- Organisations and institutions at national level, and groupings of these, which have set up National Geo-Spatial Data Infrastructures (NSDI) in collaboration with the GSDI.
- The international projects at regional level named in point 6.2 and annex 7.
- Institutions which may provide finance and equipment to the AGM project (see Annex 9)
- Directors of Geographic Institutes of South America, Spain and Portugal – DIGSA in Spanish initials
- Persons who contribute to the ISCGM or to its Work Groups (these do not always coincide exactly with the institution responsible as national contact with the ISCGM)

### **A.2.7 Organisations that will receive the Survey Questionnaire**

The survey, described in points 5.2 and 5.3 will be sent to the following organisations, institutions and persons :

- All the organisations that contribute directly to the AGM project (see point A.2.5). They may receive the survey questionnaire as a component of the queries to these organisations (see Annex 4).
- All the persons who participate directly in the AGM project, whether as member of the Project Executive Committee, member of the AGM Work Groups, or as local contact person. The only people to be excluded would be the Project Manager, the Technical Secretary and those in charge of drafting and sending the questionnaire itself.
- Organisations and institutions within each nation and groupings or networks of these which have set up National Spatial Data Infrastructures (NSDI).
- The national contacts for the following international associations : DIGSA, CP-IDEA, ISPRS, ICA
- In the countries with no Global Map projects nor contacts with ISCGM, those institutions and agencies that have been identified as possible contacts for the AGM or as entities that potentially could perform national Global Map projects (see point 3.2).
- The national contacts for those international projects named in point 6.2 and annex 7
- Persons who contribute to the Cartography Commission of the PAIGH and its Committees
- Persons who contribute to the ISCGM or to its Work Groups
- Persons interested in the project who request copies of the survey form (see also Annex 11)
- Universities and Academic Institutions which possess schools in Cartography or GIS.
- State Cartographic agencies which do not fit into any of the previous categories (in some countries, there is more than one cartographic agency dependent on the state)

### **A.2.8 The Final Users of the Continental Vector Map**

The Continental Vector map, in order to fulfil its mission usefully, should be aimed at a wide range of users. Nevertheless, it is not possible to accurately define here who will be the users. The purposes proposed by the ISCGM and in the first AGM proposal document (June 2004) and the classification in point A.2.4 offer only starting points for these definitions. One of the aims of the Survey (see point 5) is to identify who the potential users of this map are, and what the potential applications are. At the moment of finalizing the scheme for the map (see point 2.8), the users and parties to receive the map should have been defined to a certain level of precision. This aspect is important, because one of the criticisms made of the Global Map in the past has been its lack of practical applicability among the potential users, mainly due to its small scale (1:1,000,000).

In a provisional and tentative mode, pending better definitions, it is expected that the main users of the Vector Map may include the following :

- The organisations and institutions contributing to the AGM project (see point A.2.5)
- Organisations and institutions within one country, and groupings of these, which have set up National Spatial Data Infrastructures (NSDI) and who may use the map as a reference tool.
- Universities and Academic Institutions which possess schools for Cartography or GIS
- Ministries of Education and those schools relating to these ministries who possess access to the Internet
- The international projects named in point 6.3 and in annex 7, together with other similar projects which imply the coordination of two or more countries.
- Individual persons who download the on-line version through the ISCGM web site.

### **A.2.9 Organisations which will receive invitations to the Training Workshop**

The Training Working Group should determine a list of organizations which may receive an invitation to participate in the training workshop. Given the objectives of the AGM, priority will be given to those countries which have had difficulty in performing Global Map programs, especially those cartographic agencies in countries which have not started any Global Map projects (see point 3.2), also those agencies whose contributions to the Global Map V.1 lacked Raster data (see point 3.3) or which was found to have serious limitations in the Vector material (point 3.4).

Depending on the setup of the workshop and the capacity for receiving participants, invitations should also be sent to the following :

- The host institution providing its premises for holding the workshop (point 4.1)
- All the organisations and institutions contributing to the AGM project (point A.2.5)
- Other institutions and persons who show interest in participating by means of the responses to the Survey (point 5).

### **A.2.10 Organisations which may receive guidance from the AGM.**

The guidance mentioned in point 5.4 would be aimed at the following people and organisations :

- Organisations and people who have expressed doubts through the survey returned to the AGM (see point 5.3) or by other means
- Cartographic agencies and state organisations whose participation in the Global Map programs has been limited (see points 3.2, 3.3 and 3.4).
- Users of the Continental Vector Map, once published

## **ANNEX 3 : THE CONTINENTAL VECTOR MAP**

Ref. Point 2.

### **A.3.1 Introduction**

This annex complements point 2 in the text, providing greater detail about several specific aspects of the program of evaluations of the Global Maps from individual nations and for the creation of the Continental vector map.

### **A.3.2 The Information to be Gathered**

Ref. Point 2.1

At an early stage of the MGA project, before setting up the Continental Vector Map itself, it is necessary to gather in one place and under the supervision of one person reporting to the MGA for these ends, the following information :

#### **A.3.2.1 The Global Maps of the Nations**

From each country that has participated in national projects of cooperation with the Global Map, it is necessary to obtain copies of the cartographic material in vector structure that has been prepared for Global Map Version One. These cartographic datasets can be classified by the progress they have made, as these include :

- a) Global Maps published by the ISCGM in V. 1
- b) Global Maps provided by participating countries to ISCGM which have not been published yet
- c) Material intended for Global Map V.1 which has not been formally handed over to the ISCGM yet, nevertheless having reached a level of development sufficient for it to be assessed for the MGA.

All these national Global Maps should ideally be accompanied by complementary information that aids their evaluation : technical reports arising from the local project, definitions of the classes of elements, metadata and descriptions of the sources used in these Maps.

#### **A.3.2.2 The Global Map Technical Specifications**

It is necessary to keep in mind the technical specifications published by the ISCGM for Versions Zero and One. Moreover, as the ISCGM and the Working Group responsible for the Specifications (WG 2) propose alterations to the specifications for Version Two of the Global Map, it is important to obtain copies of these by means of the communication channels indicated in points 6.1 and 6.2.

#### **A.3.2.3 Other Reference Information**

In order to fulfil the functions of the reference information that supports the design of the continental map and other activities of the MGA, it would be convenient to obtain the following information :

- Information about the method of integration used in the “EuroGlobalMap” project, obtained by communication with the “EuroGeographics” organisation.
- Comments on the Continental Map obtained through the queries to the participating organisations (see point 3 and annex 4).
- Comments relevant to the design of the Continental map arising from the survey to the users (point 5.2, 5.3).
- The recommendations of the PAIGH and the GSDI for a multi-purpose product, which responds to the needs of other programs apart from that of the ISCGM Global Map.

- Existing digital continental cartography, produced in recent projects, which may serve as models (to date, one chart of North America and another of South America are known to exist; there may be more).

#### **A.3.2.4 The Gathering of the Information**

The main purpose of collecting this information is to prepare the material intended for the Continental Vector Map, made up of the national Global Maps gathered. Nevertheless, the assessments of this information also serves for the other programs of the MGA, especially the advice given to those countries with limitations on their contributions to the Global Map.

#### **A.3.3 Data to Record in the Evaluation of the National Global Maps**

Ref. points 2.2, 2.3

##### **A.3.3.1 The Assessment Criteria**

The evaluation of the maps created by the countries participating in the Global Map, intended for Global Map Version One, should be organized in order to fulfil the following objectives :

1. Compare the various contributions made to the Global Map, to determine the level of discrepancy or compatibility between them
2. Determine the degree of conformity, compatibility or discrepancy in relation to the technical specifications of the ISCGM
3. Obtain a qualitative overview of the components destined to the Continental Vector Map of the Americas.
4. Determine the real conditions and the design factors which will affect the plan for the continental map.
5. Detect cases of limitations in the quality, the content and in other aspects of the material provided.

Regarding this last objective, 5, see also point A.3.5

##### **A.3.3.2 The Study of the Maps**

As a minimum, the inspection of the maps of a country should cover the following types of data :

1. Positioning and geodesy characteristics. Normally this should start with the WGS84 Datum or the GRS80 ellipsoid and the ITRF94 coordinate system, but it is convenient to confirm the degree of conformity with these specifications of the ISCGM and to record any additional characteristics.
2. Describe the content of the maps; which feature classes are present, which attributes are present for each class.
3. The structure of the data; how the graphic features relate to the alphanumeric data
4. A brief description of the definition of each class, in accordance with the complementary information provided by each country (where this is available), for example in the plan or work procedures.
5. Describe the solution adopted for text features; if place names and other texts are in the graphic material or only in the tables
6. Determine the degree of conformity with ISCGM specifications, describe in summary the structure, indicate which data are present, which data are lacking, and which are unnecessary in relation to the ISCGM specs. This applies as much to the alphanumeric data as for the graphic data.
7. The digital format of the data or the media on which they are presented, the possibilities for format conversions.

The first three of these are the most important for the program of the continental vector map; these could be reported at a preliminary stage, before the final report.

### **A.3.3.3 Secondary Characteristics to Check**

The above-mentioned characteristics are the most important to review in the evaluation. Additionally it would be convenient to check other aspects, provided that the time and personnel are available to do it. These characteristics are :

- Dates and nature of the sources used, if this data is available.
- The density and quantity of the spatial objects.
- The complementary information provided; normally this consists of metadata and documents created by the cartographic agency involved in making the national Global Map (it is assumed that the part about the class definitions has already been extracted in the first part of the evaluation).
- Metadata aspects of the cartography (in accordance with ISO standard TC 211 N° 19115).

### **A.3.3.4 Comparisons between the Maps**

All of the above refers to the evaluation of a set of maps from just one country participating in the Global Map project; nevertheless, the evaluation also covers the comparison between the Global Maps, in order to enable their being assembled into the Continental Map. Comparative tables could be prepared into which data selected from the evaluations of the National Maps are entered, in such a way as to be able to compare the maps in each key aspect for their integration. For the comparison, the most important of these aspects are :

- The geodesic characteristics of the positioning framework.
- The map contents; which elements classes are present.
- The structure of the graphic and alphanumeric data.
- Digital format.

The objective here is to determine the level of discrepancy versus agreement among the national Global Maps and the degree of compatibility between them. The results of these comparisons should be reported as soon as possible to the people responsible for the scheme of the Continental Vector Map scheme. Secondly, if time is available the maps could be compared in terms of all the other aspects mentioned for the National Global Maps.

Additionally, the National Global Maps could be compared with the portrayal of the same territory in Global Map Version Zero (remember that V.0 was based on VMPA.0 of the NGA (ex – NIMA) of the United States).

### **A.3.3.5 The Report of the Evaluation Results**

As the first impressions of the national maps are gained, also of the comparisons between them, it is convenient to report the essential aspects of these promptly to the people responsible for the work on the continental vector map scheme, if they are ready at that stage to begin planning the work (see point 2.8). In other words, to gain time, the continental map team could start planning the work without necessarily waiting for the whole evaluation of the national Global Maps. Nevertheless, it is not recommended that the scheme of work for the continental map be finished before the evaluation is finished. The full results of the evaluation of the maps should be presented before the scheme is finalized, so that all results can be taken into account.

The final evaluation report should allow for the objectives to be fulfilled (A.3.3.1). Its main use is in the preparation for the Continental Vector Map. This implies that the person in charge of the evaluations should include some suggestions about the way to integrate the national maps, on the basis of the overview he/she has of the material assessed. Nevertheless, the report serves other purposes apart from the continental map; these include :

- Determine those cases of countries with material that suffers from limitations, so that recommendations to the agencies creating those maps can be drafted (see point 3.4)
- Report the results to the organisations that back the AGM project, mainly the PAIGH and the ISCGM, also to those organisations that provide finance for the project.
- Contribute to the determination of those organisations which should receive invitations to participate in the training (see point 4.2), although this does not depend on the evaluation as much as on the results of the queries to those bodies and other criteria.

To summarise, the evaluation report will be one of the products of the AGM project that could be distributed (either the whole text or in summary versions and articles) to demonstrate in concrete form the progress of the AGM project.

### **A.3. 4 Special Cases of Specific Countries**

#### **A.3.4.1 Preparations for the Continental Map**

Before the final determination of the scheme for the Continental map, it is necessary to study two specific topics and propose solutions, in order to resolve them before they become problems or obstacles for the map program.

#### **A.3.4.2 The Overseas Dependancies**

In the Americas there are some territories that are not independent states; they are overseas dependencies of certain European states; these include :

- French Guinea, Martinique, Guadeloupe (France)
- Greenland (Denmark)
- Caicos Islands, Caiman Island, Virgin Islands (Great Britain)
- Lesser Antilles (Netherlands)

It is necessary to determine if these territories can be represented in the Continental map. It could be necessary to communicate with the cartographic agencies of these European countries associated with the ISCGM, also with the Eurogeographics organisation. Other possible solutions to consider include the inclusion of material from the Global Map V.0 and/or the Geographic DataBase of the UN (see Annex 7 point A.7.6). France is associated with the PAIGH as an observing country.

#### **A.3.4.3 The Member States of the PAIGH**

It is necessary to determine the form of cooperating with the countries in the Americas that are not PAIGH members without causing difficulties regarding the interests and policies of the PAIGH. The countries in the Americas that are not members of the PAIGH include Canada in North America, Guyana and Surinam in South America, and a group of countries in the Caribbean. Nevertheless, almost all of these countries are members of the O.A.S., the body to which the PAIGH reports. These include the countries that are members of the CARICOM organization in the Caribbean region, which are members of the O.A.S. although not of the PAIGH. Canada used to be a member of the PAIGH, while Jamaica is an observing country of the PAIGH. Regarding the cooperation with the ISCGM for the Global Map, some of the countries that are not PAIGH members have cooperated or communicated with the ISCGM. The only countries that are neither PAIGH members nor have had any formal contacts with the ISCGM are Guyana, Suriname, the Bahamas, Barbados, and Saint Kitts & Nevis.

#### **A.3.4.4 Study and Resolution**

The AGM Project Executive Committee should designate a person associated with the Work Group for the Continental Vector Map to make enquiries on the matters of the European overseas dependencies and of the non-members of the PAIGH. This person should report the results and propose solutions to the Work Group during the stage of determining the map scheme (point 2.7). The person studying these issues and the Work Group should report to the Project Executive Committee the solutions and decisions to implement.

#### **A.3.5 Cases of Limitations in the Material**

Ref. Points 2.8 and 3.4

In the evaluation of the National Global Maps, the detection of limitations, of problematic characteristics and defects in the material make it possible to quantify and describe the obstacles to the incorporation of these maps into the Continental Map. The differences between the maps regarding the spatial fit and the digital format are to be expected and should be resolved; nevertheless, there might be others that make the task difficult.

These limitations may be of various types, including the following :

- The absence of essential data required under the Global Map technical specifications; such as classes of required symbols and the alphanumeric attributes
- The lack of adaptation of the material to the Global Map (that is, the material has advanced very little in the process of modifying the source towards the technical specifications)
- The presence of elements whose function is not clear nor described in the documentation accompanying the map from the participating organisation.
- The presence of undesired graphic elements that are not easy to separate from the desired elements for example different symbols on the same level or coverage whose separation requires too much classifying and editing work)
- Significant defects in terms of the generally accepted criteria for quality (that is, not only in relation to the technical specifications of the ISCGM)
- Problems with the documentation that accompanies the maps; such as the lack of them, discrepancies between the documentation and the map they describe, the lack of necessary information in that documentation.

Once these cases have been analysed in the evaluations (see points 2.2 and 2.3), a decision should be taken in the planning of the Vector Map (points 2.8 and 2.9). If it is possible to rectify the limitations in the Continental Map, it is necessary to obtain the data that is lacking from the country concerned and plan the corresponding tasks. Nevertheless, the Continental Map team no should not take on significant amounts of editing work nor of data creation. If the limitations exceed the capacity of the team, it is necessary to perform the following procedure :

- Incorporate the material in the Continental Vector Map the best way possible, (during the work outlined in point 2.8), without immediately solving their deficiencies.
- Include in the public documentation and the metadata for the Vector Map clear declarations and descriptions of the limitations found in the sector of the map under consideration.
- Recommend to the country concerned the options for correcting the defects or resolving the limitations for a future contribution to Global Map Version Two and a second version of the Vector Map of the Americas (see point 2.10).

The Continental Vector Map team would be focused on solving these problems for the map; nevertheless, the detection of these problems should also serve the other AGM programs. The nature of the limitations detected should influence the advice provided to the participating organisations (point 3.4) and the type of training provided (point 4).

### **A.3.6 The Evolution of the Continental Vector Map**

Ref. Point 2.8

In any initiative to distribute a technical digital product to a wide range of users, the continual, unceasing changes in that environment should be taken into account. The AGM proposal arose in part because the ISCGM project needed fresh impetus, together with modernization and adaptation at regional level. For the Continental Vector Map to be valid over a significant period, the AGM should allow for the possibility of updating it. The factors that encourage this revision include the following :

- The first continental map necessarily will include preliminary versions in some zones, for example Version Zero of the Global Map. The program for cooperation with countries that have no Global Map material will not be able to rectify this in time for the first continental map. A second version of the map should surely count on more complete and uninterrupted material, in part as a result of the assistance program.
- Some of the more serious problems found in the national Global Maps in the evaluation may be impossible to resolve in the short term, during the work on the first map; nevertheless, after reporting these problems to the authors, they could be corrected in time for the second version.
- The ISCGM is preparing technical specifications for Version 2 of the Global Map. A new version of the Map of the Americas may require adjustments to conform with these specifications.
- The comments and criticisms made by users concerning the first map could be assessed, to detect opportunities for improvements in a second version.

An update means that, after the distribution of the first version of the map, the AGM and bodies within the PAIGH start to evaluate the map to find opportunities for improving it. One person would be concerned with listing these improvements and then proposing a work plan for a second version. The work for the second version would not require the same amount of resources as the first, as it would be done on an existing base and taking advantage of the experience gained with the first version.

## **ANNEX 4 : THE QUERIES TO ORGANISATIONS WITH GLOBAL MAP PROJECTS**

Ref. Point 3

### **A.4.1 The Queries to the National Organisations**

For the AGM, it is necessary to obtain information about the state of progress of the Global Map projects in each country, together with other information, so that the Project Committee may obtain, for each country, a profile of the national situation and thus take decisions for coordination adapted correctly to each case. This information is obtained from the organisations that cooperate with the AGM and with the ISCGM (defined in Annex 2, points A.2.3 and A.2.5).

### **A.4.2 Base Components of the Query**

For all the organisations contributing to the AGM and/or ISCGM projects, currently or potentially in the near future, a letter backed by an appropriate authority of the PAIGH will be presented with a request for the following information :

- Describe the current state of its cooperation with the Global Map project and the ISCGM.
- Describe the type of training that most serves the country and cartographic agency concerned for the purposes of the Global Map (see point 4.1).
- Answer the same questions also included in the survey of users (points 5.2, 5.3)
- Indicate if there has been direct contact with the international projects named in Annex 7)

These are the central components of the query, which we can call the basic request for information. The rest of the information requested will depend on the state in which the Global Map in the country consulted is in; that is, the nature of the query will vary depending on the situation. Four cases have been defined in Point 4; A, B, C, and D.

### **A.4.3. Case A : Country that has not started to implement ISCGM Global Map projects.**

In the case of those countries that have not run national projects for the Global Map nor had significant contact with the ISCGM, it is necessary to identify an appropriate organisation to which the query can be made. These will be identified through the previous contacts between these countries and the organisations associated with the AGM (see Annex 2 point A.2.6). After identifying the organisation, the basic query will be presented plus, in this case, the following questions :

- Indicate the main obstacles to starting up a Global Map project in that country.
- Identify existing cartographic material suitable for inclusion in the Continental Vector Map (see point 2) in provisional mode, pending the creation of appropriate cartography.
- Request opinions about the information that the ISCGM proposes at global level for the Raster data layers in V.2.

### **A.4.4. Case B : Country that has not provided Raster Data**

In this case the country has contributed only vector cartography to the ISCGM or is about to provide only vector material; without creating its own material for the Raster layers. In this case it is necessary to add to the basic query the following questions :

- The formal request to provide copies of the Vector cartographic material intended for Global Map V.1
- Ask which solution they propose (or which they have implemented with the ISCGM) for the Raster data corresponding to their country; if they will adopt the information proposed by the ISCGM in V.0 or V.2, or if they intend to create their own datasets at some future date.

- Request opinions about the information that the ISCGM proposes at global level for the Raster data layers in V.2.
- For the elevation data, questions drafted by the person specializing in geodesy and surveying issues would be included.
- For the land cover and vegetation data, questions drafted by the person specializing in those issues would be included.

#### **A.4.5. Cases C and D**

In both these cases, the country concerned has provided cartographic material to the ISCGM or will provide material in the near future both for the Raster and Vector layers. During the stage of these queries or requests for information cases C and D cannot be distinguished from each other; this can only be determined once the evaluations of the Global Maps from each nation (points 2.2, 2.3) are finished. During the stage of requesting this information, the organisations can be asked only the basic questions (point A.4.2), together with the formal request for the copies of the Vector cartographic material intended for Global Map V.1

#### **A.4.6. The Management of the Queries and the Information Obtained**

The drafting of these queries is closely associated with the survey (points 5.2, 5.3). Ideally the Project Committee should assign the same people to work on both the requests for information and the survey. The difference between the queries and the survey is that the requests for information are directed only at those organisations able to perform ISCGM Global Mapping projects in their respective country and/or contribute directly to the AGM; the survey on the other hand is aimed at a wide range of Global Map users (current and potential users). The queries and the survey should be managed by the Cooperation and Guidance Work Group, nevertheless, the Project Executive Committee or its main coordinators, (the project manager and the technical secretary) should ensure a correct form of inter-institutional communication in the drafting and presentation of the requests for information.

For the AGM, the objectives of obtaining this information is :

- To provide to the AGM programs the data required, given that this data relates to the Continental Vector Map, to the training, to the inter-institutional communication and to the clarification of themes for the Raster data.
- Obtain an overview of the solutions implemented or to be implemented, or of the options open to each country.
- In some cases, to support the work done in each country with recommendations
- To report to the ISCGM and its Raster Data Working Group, WG 4, the real situation in the Americas and to propose recommendations for the Raster data (see Annex 6 point A.6.2).
- Enable the AGM to establish a set of records, one for each country, reporting the situation of each country in these issues. The Technical Secretary would maintain these records up to date.

The components of these requests have been described together; nevertheless, the contingencies of running the AGM project may require that elements of these queries be sent to the contributing organisations at different times, although ideally they should all be presented together. In particular, it may be necessary to send the request for the copies of the Global Maps of each nation well before the rest of the queries (see Annex 13, on the project calendar).

## **ANNEX 5 : THE ALTERNATIVES FOR TRAINING**

### **Ref. Point 4**

#### **A.5.1 The JICA – GSI Courses**

The Government of Japan provides technical assistance to developing countries through the agency called in English “Japan International Cooperation Agency” – JICA. The Global Map of the ISCGM is among the programs that the JICA supports. Thus the ISCGM has been able to hold its training workshops for people from various countries around the world; this would have been impossible or very difficult to do without the backing of the JICA. To a large extent the ISCGM owes its close relationship with the JICA to the fact that the ISCGM Secretariat is based in Japan, at the Geographic Survey Institute – GSI, the main cartographic agency of Japan and one of the most important participants in the Global Map project. The Global Map courses are performed under the management of the profession staff of the GSI with experience in the Global Map.

The courses are run annually for comparatively long periods; the 2005 course is projected for three and a half months. The course contents covered include, firstly the general concepts of the Global Map and its technical specifications, then a series of practical workshops oriented towards the skills necessary for creating Global Map cartography and managing the associated data.

#### **A.5.2 Conditions for Participation**

The course constitutes technical cooperation by Japan; this means that the costs of registering, together with the food and lodging costs and the fare for travelling to Japan are paid by the JICA. Nevertheless, the selection criteria that the JICA applies are relatively strict; an individual person can apply, but the requirements to be complied with include :

1. Being a member of the main cartographic agency of the applicant’s country;
2. Having the backing of the government of that country;
3. Having university-level qualifications
4. Being linked in real terms or potentially with the Global Map project of that country;
5. Having more than three years of experience with GIS or remote sensing
6. Having adequate health
7. Not being a member of the Armed Forces of that country.

Requirement number seven probably refers to uniformed personnel; without necessarily excluding civilian employees of institutions that belong to the Armed Forces.

The second requirement is important; the application should be made with the backing of a governmental ministry of the state concerned. Correspondence exchanged with the JICA to date indicates moreover that it may be needed to present the application through an embassy of Japan. The JICA has mentioned a system for assessing countries in terms of their economic status and needs; this evaluation of developing countries is made by Japanese agencies and may affect the priorities the JICA assigns in the acceptance of applicants to the course.

#### **A.5.3 The Participation of the MGA in the Course**

The JICA system is oriented towards applications from individual countries. If one or two people apply representing an international organisation (PAIGH or MGA) or a group of people (countries participating in the AGM), it is necessary to establish special arrangements with the JICA.

One of the AGM participants to attend the course would be a person assigned to the continental vector map (point 2.6). Another of these participants could be the organizer of the regional training workshop (point 4.1, 4.2). The people attending the course should orient their participation in the course towards using it for the purposes of the AGM.

#### **A.5.4 Alternative Case : ISCGM Seminar in Latin America**

As an alternative to the scheme described above (point 4 and A.5.1 – A.5.3), talks could be started with the ISCGM about the possibility of holding a regional workshop as an ISCGM seminar. Apart from the JICA courses in Japan, the ISCGM has held some seminars in Africa, particularly at Nairobi in Kenya, where experts from the ISCGM and other organisations have given short courses for attendees from various countries on Global Map development and Spatial Data Infrastructures.

There is the possibility of proposing to the ISCGM the participation at the regional workshop of Global Map experts, preferably persons who have experience in the training courses of the JICA-GSI or in the seminars held in Africa. In this case the training workshop organized by the AGM could be transformed into an event very similar to the ISCGM seminars held in Africa. The ISCGM experts would be the main workshop leaders and guides on the material taught, while the seminar / workshop could also involve additional instructors from the Region.

#### **A.5.5 The Alternative Schemes for Training**

In accordance with the above, there are three alternatives for the training :

Case A :

- (1) Persons from the AGM attend the JICA-GSI course in Japan, mainly with the purpose of acquiring knowledge to be re-transmitted in Latin America.
- (2) A workshop is held at regional level. The instructors should include the persons who had previously attended the JICA-GSI course.

Case B :

- (1) One person from the AGM attends the JICA-GSI course in Japan, mainly with the aim of acquiring the skills necessary for the Continental Vector Map, secondarily for other AGM activities.
- (2) A workshop is held at regional level. An instructor named and sent by the ISCGM participates in the workshop, possibly aided by the person who previously had attended the JICA-GSI course.

Case C :

A workshop is held at regional level, with the participation of one or more experts from the ISCGM and assuming some of the characteristics of the ISCGM seminars held in Africa. In this case it is not necessary to participate in the JICA-GSI course in Japan.

## **ANNEX 6 : COORDINATION WITH THE ISCGM**

### **A.6.1 Communication with the ISCGM**

Despite the direct relationship between the AGM and the Pan American Institute for Geography and History – PAIGH, a substantial amount of communication with the “International Steering Committee for Global Mapping” – ISCGM – is needed. In order to avoid duplicated efforts and confusion in the exchange of messages, also avoiding omissions and delays, the Project Manager should designate persons in the AGM to take responsibility for the contacts with the ISCGM and the topics they are to deal with, while the Technical Secretary is kept informed of all the contacts between the AGM and the ISCGM.

The AGM leadership should inform the ISCGM and its working groups of the reality in the Americas for the Global Map. These communications could be achieved through three channels :

1. At the highest level, the AGM would be represented in the ISCGM by the liaison representative of the PAIGH, at least during the initial phase. Later, as the AGM acquires support and strength, the organizers could request to the ISCGM that a new liaison representative of the AGM itself be included. Ideally this would be the AGM Project Manager.
2. For routine communications, the technical secretary of the AGM and other members of its Executive Committee will be in frequent communication with the ISCGM Secretariat.
3. Certain members of the AGM Executive Committee and Working Groups could request membership of the ISCGM Working Groups and / or communicate regularly with them on specific topics. These topics are summarised in points A.6.2 to A.6.4 as follows.

### **A.6.2 Communications with the ISCGM Working Groups**

Relating to the Working Group for the Strategic Plan, WG1, the AGM Executive Committee may make recommendations for the future development of the Global Map and its institutional relations in the region.

For the ISCGM Specifications Working Group, WG 2, the ‘Coordination and Guidance ‘ Working Group of the AGM may provide advice on certain technical aspects of Version Two. In this context it is especially important that a person with substantial knowledge of the SIRGAS system advise WG2 in relation to the issues of elevation data and terrain models, for the elevation layer, also in relation to the geodesic framework and positioning for all the layers. (Despite being one of the Raster layers in the Global Map, the topic of elevations is not managed by WG 4, instead it is WG 2 that handles it). Moreover, it is important to obtain further information about the “Application Schema” project being managed by WG 2.

With the Data Policy Working Group, WG 3, the AGM team responsible for the Continental Vector Map could discuss the future and the way to distribute the Continental Vector Map. See also point A.6.3

Regarding the ISCGM Working Group for Raster Data, WG 4, the ‘Coordination and Guidance ‘ Working Group of the AGM should obtain clear indications of the intentions of WG 4 regarding V.2 and the way in which the countries participating in the Americas can check and approve the global coverages proposed by the ISCGM for the thematic layers. At the same time, the AGM ‘Coordination and Guidance’ group should inform ISCGM and WG 4 about the effects on the Global Mapping programs that the ‘Land Cover’ projects may have. The Land Cover projects are those associated with the ‘GLCN’ initiative of the FAO and the UNEP, both agencies of the UN, specifically the national and sub-regional projects for setting up LCCS databases.

### **A.6.3 Communication for the Vector Continental Map**

The AGM Executive Committee and the Working Group of the Continental Map will need dialogue with the ISCGM and its Strategic Plan Working Group (WG1), to deal with the issue of the commitment of the ISCGM to cooperate with the distribution of the Vector Map.

The AGM Working Group of the Continental Map could communicate with the ISCGM WG2, the group responsible for the technical specifications, about the relationship between the scheme for the AGM map and the technical specifications of the ISCGM for V.1 and V.2.

It is necessary to communicate with the Technical Unit of the ISCGM, located at the GSI in Japan, regarding the publication of the map for the public through the web site of the ISCGM. The ISCGM releases Global Map V.0 and V.1 in versions designed to be downloaded from its web site and handled in the “GMView” viewer software of the ISCGM, for which the Technical Unit converts the materials contributed by the participating nations. The ISCGM has tried to persuade the participating countries to perform this final conversion before delivering the maps; nevertheless, it is the Technical Unit which has taken on most of the conversions, with the result that many maps received and held by the Technical Unit still have not been converted nor published. Nevertheless, it would be convenient for the AGM to request that the Technical Unit take on at least some of the final conversion because the AGM will not have a lot of resources available for this work. Moreover, if the Technical Unit does a part, this implies a greater commitment on the part of the ISCGM to distribute the map in its web site.

### **A.6.4. The Training**

For the training, it is important to obtain the cooperation of the ISCGM firstly in order to achieve the participation of one or more persons on the course given in Japan by the JICA and GSI agencies (see Annex 5). After, it would be convenient to achieve the cooperation of the ISCGM to support the AGM training workshop. To these ends a person in the Training working Group should communicate with the ISCGM Secretariat and with people in the GSI of Japan associated with the training programs.

## **ANNEX 7 : THE INTERNATIONAL PROJECTS**

Ref. Point 6.3

### **A.7.1 Introduction**

The international projects are those programs, initiatives or organizations which bring together several institutions in various countries of the Americas for a specialized activity, or which one institution manages while its scope covers several countries. To date, five projects have been found which could potentially relate to the MGA; further international projects may be added in future.

### **A.7.2 Geocentric Reference System for the Americas – SIRGAS**

The SIRGAS project, established since 1993 by agreement among a group of national and international organisations, has worked to define a geodesic reference system for the American continents. The work coordinated by SIRGAS has provided an integrated continental reference usable for all spatial datasets. Over the last few years the participants in SIRGAS have made progress towards defining a geocentric Datum and a reference framework for altitude and elevations.

Both the Global Map and SIRGAS use the GRS80 ellipsoid. For the coordinate system, both use ITRF; SIRGAS relates to the ITRF 93 definition, while the Global Map is in ITRF 94. There is therefore a basis for compatibility.

It would be convenient for a person with substantial knowledge of SIRGAS and of other aspects of geodesy to participate in the MGA in order to carry out the tasks indicated in Annex 10, point A.103. SIRGAS will be the reference system for the Continental Vector Map, and its achievements should be informed to those people in the ISCGM and its work groups most closely involved in the reference system of the Global Map and in its Elevation layer.

### **A.7.3 Global Land Cover Network – GLCN.**

The GLCN program is run directly by the Food and Agriculture Organization – FAO, with the active involvement of the United Nations Environmental Program – UNEP. Both the FAO and the UNEP are agencies of the United Nations.

The “Global Land Cover Network” advocates a methodology called “Land Cover Characterisation System” – LCCS. This consists of (1) creating a classification legend appropriate for a study area (normally a whole country) and (2) creating thematic cartography based on source data (normally satellite images) that classifies the land under the legend. The legend and the cartography portray the physical characteristics of the land surface, that is, the ‘Land Cover’. GLCN-LCCS projects have been carried out in various countries of Africa; the GLCN proposes to encourage and support similar projects in all countries around the world. Currently various institutions in the Americas have had contact with the GLCN and there are proposals in some countries to establish LCCS databases; these are expected to start up during the next few years, simultaneously with the start-up of the MGA.

The ISCGM and WG4 have indicated that the contributions to the Global Map for the land cover layer from now on may be devised in conformance with the LCCS methodology and classification system. This means that each country may create its own land cover map applying its own classification legend, provided that the legend is designed under the LCCS methodology. For the land cover data in Global Map Version zero and one, the ISCGM imposed a single classification legend, that of the IGBP (a program run by the ICSU).

The coordination at world level of these land cover maps will remain under the supervision of the FAO and its GLCN team, nevertheless, it will be important to explore the possible ways to cooperate at regional level between the MGA, the GLCN, and the national projects affiliated with the GLCN, and to link these projects with the Global Map. In practice this means persuading the managers of the GLCN-LCCS databases to contribute versions of their original maps to the Global Map. The version adapted for the Global Map will almost always be a reduced version of the original; normally the LCCS databases are set up at scales larger than that of the Global Map. In other words, the recommendation for countries and agencies cooperating with the Global Map is that they adopt the GLCN-LCCS projects of the FAO to serve as the Land Cover component of the Global Map in V.1 or V.2. It makes no sense to create other land cover maps for the Global Map independently of the GLCN-LCCS databases.

#### **A.7.4 Mesoamerican and Caribbean Geospatial Alliance – MACGA (USGS)**

The MACGA project, managed by the United States Geological Survey – USGS of the U.S.A., is a program of technical assistance from the United States and a network of regional cooperation oriented towards the institutions of the countries of Central America and the Caribbean, with the aims of (1) improving the exchange, distribution and management of spatial data and (2) strengthening the capability of institutions and of the NSDI in those countries by means of training and technical assistance programs.

It is proposed that contact be made with those who manage the MACGA in order to find opportunities for cooperation. It is worth pointing out that the USGS is a major supporting agency for the ISCGM.

#### **A.7.5 Central American Geographic Information Project – PROCIG**

The PROCIG project is a network of organizations in the countries of South America, backed by the World Bank, the governments of the participating states, (Belize, Costa Rica, Honduras, El Salvador, Guatemala, Panama, Nicaragua), the Tropical Agriculture Center for Research and Training (CATIE), and the International Center of Tropical Agriculture (CIAT), with the objective of aiding and encouraging research and development for geographic information management, covering various projects in these countries related to GIS, Metadata, Clearinghouses, the environment, statistical and census data. It is proposed that contact be made with those who manage PROCIG in order to find opportunities for cooperation.

#### **A.7.6 United Nations Geographic DataBase**

This project of the Cartographic Section of the United Nations is focused on providing digital cartography oriented mainly towards the operational needs of the UN and its agencies; nevertheless, the ISCGM and the Cartographic Section are currently exploring opportunities for cooperation in the creation of certain developing countries. To date, the cartography of Africa, Asia and the Middle East has been worked on; as the DataBase extends through the Americas, both the MGA and ISCGM should explore opportunities for cooperation with the Cartographic Section. One possibility would be that, in the case of those countries which have not set up their own vector cartography, for Global Map V.1, a new set of cartography from the UN Geographic Database which represents these countries would be an option for filling the 'gaps' in the MGA vector continental map.

## **ANNEX 8 : THE ORGANIZATI3N OF THE AGM PROJECT.**

Ref. Point 7.1

### **A.8.1 Reporting and Dependency Relationships of the Project**

For structuring the Americas Global Map project, it is convenient to take as a model another international project that also belongs mainly to the PAIGH. This is the “Geocentric Reference System for the Americas” – SIRGAS in Spanish initials (see also Annex 7 point A.7.2). SIRGAS reports directly to the PAIGH, whilst two other institutions advise the technical leadership of the project; these are the “International Association for Geodesy” (IAG) and the NGA agency of the United States. The main cartographic agency of Brazil, the “Instituto Brasileiro de Geografia e Estatistica” – IBGE – maintains the project Secretariat.

The Americas Global Map project will have a relationship with the PAIGH similar to that of SIRGAS. The AGM relates particularly to the National Sections that support the initiative and with the Cartography Commissions contained in those Sections. These entities coordinate with the other channels within the PAIGH, including the PAIGH Cartography Commission, the PAIGH Secretariat and the Authorities.

The organisation that advises the project leadership in this case (similar to the role played by IAG and the NGA in the SIRGAS project) will be the International Steering Committee for Global Mapping – ISCGM. The Secretariat of the project, once operations start, could remain at the same place where the secretariat of the proposal for the same project now functions, that is, at the Military Geographic Institute of Chile – IGM in Spanish initials.

### **A.8.2 The Project Management**

In order to manage the project, it is necessary to set up a Project Executive Committee, ideally with at least one representative from each nation that participates in the project; normally this person will be active in one of the organisations participating in the project (see Annex 2 point A.2.5 , which defines these contributors).

The two persons with functions defined within the Committee would be the Project Manager and the Technical Secretary. These positions are described in Annex 10, point A.10.2. and should be assigned during the current year. At the moment the project has a “Researcher in Charge” (for its presentation to the PAIGH in terms of the 2006 Call for Technical Assistance Projects).

### **A.8.3 The Working Groups**

The people who contribute to the AGM may specialize in the various programs. In order to organise the work and make it systematic, it is proposed that there be three working groups :

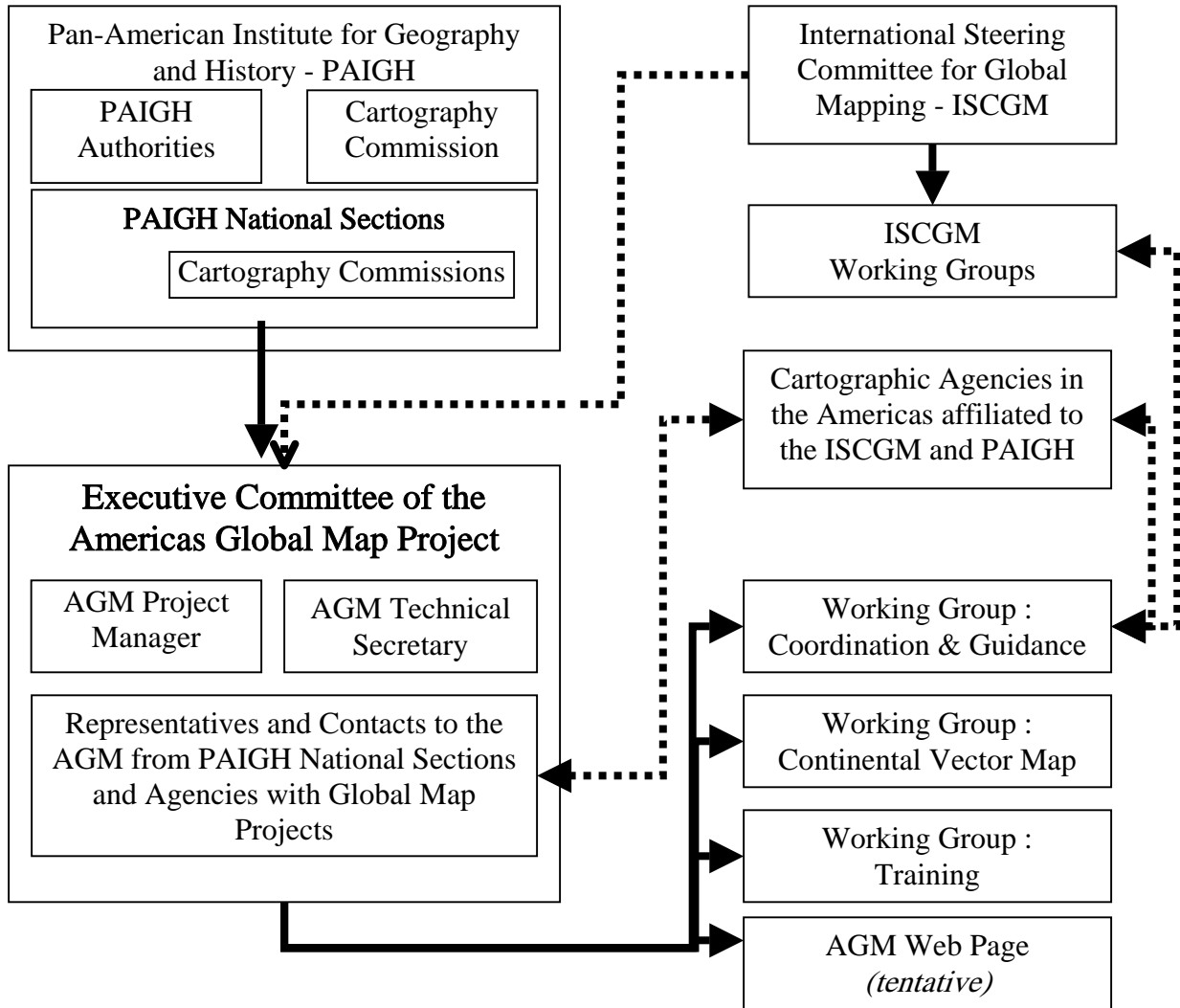
(1) Working Group for Coordination and Guidance : This group should manage a set of issues and programs that are closely Inter-related; these include :

- The queries to the contributing organisations (point 3 and Annex 4)
- The survey of users (points 5.2, 5.3)
- The advice given by the AGM to the ISCGM and its working groups (point 6)
- Communication with the projects that relate to the AGM (point 6.3)
- Actions and advice aimed at the Global Map users (point 5.4)
- The determination of action and guidance oriented towards the cartographic agencies with limitations on their participation in Global Map projects (points 3.3 and 3.4, point 3.2 shared with the Continental Vector Map Group).

(2) Working Group for the Continental Vector Map : This group should handle the activities described in point 2, being both a WG and at the same time the team that actually executes this task. It works mainly on setting up a Continental Vector Map; although it should be pointed out that the results of the evaluation of the national maps serve other additional purposes (see point 2.7 and Annex 3).

(3) Working Group for Training : This group should manage the issue and activities for training described in point 4.

**A.8.4 Organisational Structure of the Project**



Solid Line : relationship of organizational dependency  
 Dotted Line : relationship of inter-institutional communication

## **ANNEX 9 : ECONOMIC ASPECTS**

### **A.9.1 Introduction**

The Americas Global Map project requires funding for some of its activities; the rest of the tasks require the cooperation of the contributing organisations. Here, some of the general considerations are summarised, although most aspects of the finance and resources have not been defined yet. It is requested of the contributing organisations that, once the activities and plans of the AGM are defined, in the technical aspects, they contribute ideas and contacts which serve the goal of obtaining funding and resources. Once the technical program has been defined by consensus, it is possible to project a program for the finances.

### **A.9.2 The Financial Backing of the PAIGH**

An initial finance has been assigned by the PAIGH; in the year 2004 the AGM project was presented as a technical assistance project and was approved at the meetings of the PAIGH in November 2004. An amount of money was proposed under this scheme; during the coming months it is necessary to perform the necessary transactions involving the PAIGH in order to direct this money towards the aid required for subsidizing the travel fares of certain persons who desire to attend the first AGM meeting (see Annex 12). The transfer of these funds depends on the resources really available within the PAIGH; the assignation of the funds to technical assistance projects is subject to the real availability of funds during the period under consideration (year 2005). By the month of September 2005, confirmation of the funds assigned should have been received.

The amount requested for the year 2005 is not large; assuming that these funds become available, it will be enough to pay only the air fares of flights to Caracas of a few persons.

During the month of May 2005 the project has once again been presented as a technical assistance project to PAIGH for the period of 2006. In 2006 and after, the costs will be greater; so it is important to establish and present a detailed and feasible plan, widely agreed on in order to justify all requests for finance.

### **A.9.3 Sources of Finance Outside the PAIGH**

The funding which the PAIGH can provide will not be sufficient by itself for the AGM; it is necessary to find other sources of financing. To achieve this, the AGM should :

1. Identify the organizations that could possibly provide economic assistance; these are mostly governments, banks such as the World Bank or the Inter-Development Bank (BID) and grant aid programs to which competing applications may be made. Then the application procedures for each of these should be identified.
2. Obtain the support of the PAIGH, together with that of the ISCGM and of the contributing organisations, to back the applications for funding.
3. Draft a justification that is sound in terms of the technical program and above all the benefits to the community.
4. Present requests for finance, in accordance with the procedures identified and including the basis for justification and the declarations of support and backing.
5. Determine the way to incorporate a recognition and appreciation of this economic cooperation in the public image of the AGM.

#### **A.9.4 The Economic Management of the AGM**

The AGM has to manage the requests for funding, manage funds and payments, and keep accounting records in open and responsible fashion. The Project Manager has the main responsibility in these tasks, assisted in many details by the Technical Secretary. The Project Executive Committee should be kept informed of the financial transactions, advise the Project Manager and Technical Secretary on this work, and cooperate in the search for organizations that can provide funding and resources. It is necessary to define from the start which bodies should receive accounting reports from the AGM; these should include the PAIGH and those organizations that provide finance.

#### **A.9.5 The Resources of the AGM**

Apart from the direct finance (money), the resources to seek for the AGM include the following :

- Persons with time to work on the project. The application of man/hours implies the authorization of those persons by the institutions where they work.
- Technical resources : computers, software, peripheral equipment, Internet access
- Supporting infrastructure : offices or premises where the tasks can be carried out

Most of these resources should be obtained by requests for cooperation to the participating organisations, in the sense of allowing certain persons to work on the AGM and to use the equipment and infrastructure for all the tasks carried “at a distance”. For those activities requiring people to gather in one place and use a greater quantity of these resources, it is necessary to search for contributing organisations willing to provide resources for these events or tasks (see points 2.6 and 4.1)

#### **A.9.6 The Dedication of Finance and Resources**

As follows, the main activities of the AGM are classified according to the type of support it needs :

Activities which require direct finance :

- Attendance at the annual meetings of the AGM : some persons need economic aid for travel and accommodation costs.
- Attendance at the AGM training workshop, tentatively programmed for 2007 : some persons need economic aid for travel and accommodation costs.
- Costs of the work for the Continental Vector Map : This activity requires people and resources to be gathered, probably exceeding the capacity of a contributing body for providing its own resources ; it may require direct finance or a transfer to the institutions that house the work and provide personnel.

Activities that require the dedication of resources (man/hours, equipment and infrastructure) by the contributing organisations :

- Work done individually by persons participating in the AGM, communicating remotely with other AGM contributors
- The work of evaluating the Global Maps from individual nations
- The attendance of one or more people at the training course with the agencies in Japan (this implies an absence from the usual workplace of several weeks)
- The performance of the AGM training workshop, which requires a location and equipment
- Attendance at the annual meetings of the AGM
- The cost of communications within the AGM and between the AGM and other organizations (fax, the sending of physical elements by mail, telephone calls, etc.)

## **ANNEX 10 THE PERSONNEL OF THE AMERICAS GLOBAL MAP**

### **A.10.1 The Project Personnel**

The personnel of the AGM project should have these characteristics :

1. Belong to a suitable institution, generally these are the participating institutions indicated in annex 2 point A.2.5.
2. Possess enough time for carrying out the tasks assigned.
3. Possess authorization from their respective institutions to dedicate this time to the AGM

As follows, descriptions are given of the specific jobs that should be taken on by persons contributing to the AGM so that the tasks are fulfilled. This does not mean that the contributors and participants will only be these persons; the Executive Committee and the Working Groups require more people additionally without specific job-titles but willing to help carry out the tasks of the group.

### **A.10.2 Posts Related to the Project Executive Committee**

Project Manager :

- General Coordination of the project.
- Coordination of the Project Executive Committee
- Communicate formally with the PAIGH (as “Researcher” responsible for the project) and its National Sections, the ISCGM, the PAIGH “Liaison Representative” to ISCGM, and the organisations sponsoring the AGM
- To give guidance to the Working Groups on critical aspects.
- Manage the economic resources of the AGM.
- Participate in one of the ISCGM working groups (see points 6.1 and 6.2).
- Manage the requests to those institutions which imply commitments of economic resources, assignment of personnel and infrastructure, for example.

Technical Secretary :

- Participate in the management of the economic resources of the AGM
- Report the progress of the project regularly to the appropriate officials of the PAIGH and, to a lesser extent, to the ISCGM.
- Maintain a database with the list of contacts and participants in the AGM.
- Maintain a set of folders which describes the situation in each country, for easy reference
- Participate in one of the ISCGM working groups (see points 6.1 and 6.2).
- Support the working groups in aspects of Inter-institutional coordination and the management of finances and costs.
- Support the Project Manager in the coordination of the Project Executive Committee.
- Maintain records of the correspondence and meeting minutes of the AGM.
- Provide information for the Project Manager to use in justifying requests for funding and for the assignment of personnel and infrastructure

### **A.10.3 Posts Related to the Coordination and Guidance Working Group**

Coordinator of the Coordination and Guidance Working Group

- Coordinate the Coordination and Guidance Working Group and distribute communication tasks to the other members.
- Through communications and regularly updated information, keep an integrated vision of the activities of this group which relate mainly to the tasks described in points 3, 5, and 6 and in Annexes 4, 6, 7.
- Cooperate with the Technical Secretary in updating the Data Base and the folders about the individual countries, based on the communications of this group.
- Participate in one of the ISCGM working groups

Person Responsible for queries and survey :

- Draft and distribute the requests for information to the contributing organisations, receive and analyze the results (point 3 and Annex 4)
- Draft and distribute the survey, receive and analyze the results (points 5.2 and 5.3)
- Participate in the Coordination and Guidance Working Group

Contributor on Raster & Thematic information aspects (land cover, vegetation and land use)

- Participate in the ISCGM Working Group N° 4, that of the Raster data
- Evaluate and communicate to the AGM the intentions of the ISCGM and WG 4 regarding the thematic information
- Draft the recommendations of the AGM for Global Map users in relation to the thematic information
- Propose ways for the Global Map projects to cooperate with the Land Cover projects of the GLCN – FAO (see annex 7 point A.7.3).
- Participate in the Coordination and Guidance Working Group

Contributor on geodesic framework issues

- Advise the AGM on issues related to the geodesic framework, positioning, and SIRGAS
  - Advise the persons carrying out the evaluations of the Global Maps from the individual nations about their geodesic characteristics.
  - Participate in the design of the vector map, with special attention to the issue of the transformations
  - Participate in the ISCGM Working Group N° 2, to evaluate the proposals of the ISCGM for the elevation layer.
  - Draft recommendations for the organisations that manage Global Map projects (point 3) and for users in general (in combination with the results of the survey, point 5.3) in relation to the elevation layer in the Global Map at world level.
  - Participate in the Working Groups for Coordination and Guidance and for the Continental Vector Map
- This person should have knowledge of geodesy, cartographic projections, surveying and the SIRGAS system (see annex 7, point A.7.2)

#### **A.10.4 Posts Related to the Continental Vector Map Working Group**

Coordinator of the Continental Vector Map Working Group

- Coordinator of the Continental Vector Map Working Group / Team
- Receive appropriate training (points 4.1 and 4.3)
- Obtain suitable premises and infrastructure for the job, working together with the Project Manager
- Work on the preparations to establish the team to carry out this task (point 2.6)
- Participate in the design of the Continental Vector Map.
- Coordinate the tasks for the Continental Vector Map (points 2.8 and 2.9)
- Deliver the map in its first version, report its status (2.10)

Person responsible for the evaluations of the Global Maps

- Coordinate the requests for the Global Maps from each nation for V.1
- Coordinate the evaluations of the national Global Maps and of the other materials (points 2.1, 2.2).
- Communicate the results of the evaluations to the other participants in the AGM (point 2.3).
- Participate in the design of the Continental Vector Map (point 2.8)
- Participate in Continental Vectorial Map Working Group

Note : The vector map may require continuous work from a group of people over a period of several months. Nevertheless, the amount of labour (persons) will depend on the design scheme and the results of the evaluation of the existing Global Maps. Given the limitations on resources, it will be very difficult to obtain more than a very small number of people to work only on this task for any length of time; the other members of the work group would have to participate at occasional intervals or at a distance.

### **A.10.5 Posts Related to the Training Working Group**

#### Training Coordinator

- Coordinate the participation in the training course organized by the agencies of Japan. Prepare AGM training workshop.
- Jointly with the Project Manager, obtain the cooperation of an institution to host the training workshop
- Send the invitations to the participants, publicize the event
- Manage the Training Workshop when held
- Coordinate the Training Working Group

Note : Ideally, the person responsible for the training and for coordinating the Working Group should participate in the training course in Japan. If this is not possible, this person is responsible for the administrative and organizational aspects, while another person leads the classes. The other members of this working group are the persons who attend the training course in Japan and the key contacts in the institution hosting the AGM workshop. See Point 4 and Annex 5 for further details of the training.

## **ANNEX 11 : MGA WEB PAGE**

It is recommended that, once the MGA Project Committee is set up, the Committee assesses the options for establishing a web site or page, in order to establish a presence on the Internet. At this site, firstly information about the MGA would be published as reference material and easy access. This information would be addressed both to the participants in the MGA, for aiding internal communications, and to Global Map users and the public in general, for raising general awareness of the project.

Currently the first document of the MGA proposal is published on the web site of the Military Geographic Institute of Chile (IGM). Nevertheless, since it is not feasible to publish a large number of documents on the same page of the IGM, then as the MGA grows and needs to post more documents on line, the time will come when it will need to have its own on line presence.

The Project Committee could assign to a suitable person a feasibility study, in order to determine :

- The place to host the site or set of web pages
- The technical and financial aspects
- The assignment of a person entrusted with creating and then maintaining the pages
- General policy for the content and structure of the site.

One of the functions of the site will be that of aiding the distribution of the survey (points 5.2, 5.3). The survey form could be published on the MGA site for interested people to download, fill in, and return it, thus obtaining a greater quantity of information from potential users. Alternatively, a brief description of the survey could be published and the contact details for those interested to request copies of the form by e-mail.

The site should publish listings of the main contacts of the AGM with indications of their job titles, to facilitate the exchange of messages. Moreover, it should publish news relevant to the AGM, for example : the dates of meetings and training workshops as arrangements for these become definite, which implies periodic updating.

Once the web site is established, possibilities for using it could be studied in terms of it becoming the site for distributing the continental vector map, although this would require more substantial technical resources. The release of this map should be in coordination with the PAIGH and the ISCGM.

Despite the above, the possibility of establishing web site is, at this time, still very tentative. In the case of the resources of the AGM being very limited, it is necessary to give priority to the other programs of the AGM. A web site or page, useful though it may be for the project, should be subordinated to the needs of the project and to the available resources.

## **ANNEX 12 : THE AGM MEETINGS**

### **A.12.1 Introduction**

A large part of the communications and activities of the AGM necessarily have to be performed “at a distance”, given the limitations on the resources. Nevertheless, as a minimum the AGM should organize at least one full meeting every year, following the example of the ISCGM. These meetings are fundamental for taking decisions, for interaction and the resolving of complex problems that turn out to be impossible to manage at a distance, and in order to encourage a commitment to the project among the contributing persons and institutions.

### **A.12.2 The First AGM Meeting**

It is proposed that the first AGM meeting be held during November 2005, in the context of the Twentieth Meeting of the PAIGH Cartography Commission, to be held between tuesday 15th and saturday 19<sup>th</sup> of November, immediately before the Eighteenth General Assembly of the PAIGH, which is scheduled for the 21<sup>st</sup> to the 25<sup>th</sup> November. These meetings of the PAIGH constitute the ideal environment for the first meeting of the AGM, given the origins of the initiative and the need to promote it among the various bodies and groups within the PAIGH. The exact date of the AGM meeting is yet to be set, but it should be within the period of 15th to 19th of November 2005.

The place is Caracas, Venezuela. The host organisation for the PAIGH meetings is the “Instituto Geografico Venezolano Simon Bolivar” – IGVSB.

### **A.12.3 Attendance at the First Meeting**

This document requests (in point 8.2) the attendance of all those people who are really or potentially interested in participating in this project or in observing it at close hand. Those who attend ideally will include first of all the persons who have been named as contact by their respective PAIGH National Section or participating institution; moreover the representatives of any institution that could potentially become a contributor to the project are also especially invited (see Annex 2 point A.2.5). Finally, those who are present for the PAIGH meetings and representatives of other interested organisations may attend.

It is requested that everyone interested in attending contact the Technical Secretary (point 8.3) as soon as possible. There is a limited amount of finance available for some air travel costs of persons who wish to attend (see also Annex 9), so the persons without the possibility of travelling by other means may request economic aid. During the coming months, it is hoped to coordinate the attendance at the meeting and perform the transactions of this aid for some persons.

This finance is limited, so it is requested that everyone interested in attending first determine if they can cover the travel costs by other means; this would enable the attendance at the meeting of a maximum number of people. The persons who attend the meetings in Caracas officially as attendees of the PAIGH meetings should cover their travel costs on that basis. For obvious reasons, people resident in Venezuela should not request this economic aid.

#### **A.12.4 The Agenda of the First Meeting**

One of the main purposes of this document is that of preparing for this meeting. Once this document has been studied and commented on by correspondence, it is hoped to clarify which will be the viable options for the AGM; this will enable people to attend the first meeting aware of the issues and in a position to take the first concrete decisions and formally begin the performance of the Americas Global Map project. The first meeting should **not** be merely a presentation of information. Some meetings could be held to inform the attendees of the PAIGH events about the AGM with presentations and talks, but this would be separate from the main AGM meeting. The agenda will be defined with greater precision during the coming months; in general it should cover the following items :

- Definition of the main activities of the AGM for the years 2006–2007, on the basis of this Technical Plan but allowing modifications achieved by collective decision.
- Definition of the AGM Project Committee, confirming the Project Manager and Technical Secretary in their jobs and designation of some other persons for specific posts (see Annex 10) in so far as people are available and willing to take up these posts.
- The finances and economic basis of the AGM and the ways of ensuring it.
- Suggestions for institutions that may host (a) the evaluation of the Global Maps from each nation (b) the work on the Continental Vector Map (c) the Training Workshop.

The rest of the meeting, if there is time, would be dedicated to discussions of the details in this Technical Plan and of other issues which the attendees wish to raise. After the meeting, the Technical Secretary should send the minutes of the meeting to the attendees, to the PAIGH and to other bodies as an official record.

#### **A.12.5 The Second AGM Meeting - 2006**

It is proposed that the second meeting of the AGM be held in the month of November 2006, in the framework of the GSDI – 9 conference, programmed to be held in Santiago, Chile. Given that the thirteenth meeting of the ISCGM will also be held at the same conference, (ISCGM meetings are normally associated with the GSDI conferences), this constitutes an ideal opportunity for the AGM meeting and for holding an event officially launching the AGM. In reality, the tasks of the AGM should have begun well before this date, but a public launch is necessary for raising the project to a higher public profile. Moreover, just as with the first meeting, the second meeting will be fundamental for the work of the project, for the taking of decisions and for ensuring the sources of finance.

#### **A.12.5 The Third AGM Meeting – 2007**

AGM 3 cannot be planned with any detail yet. Given that the Training Workshop (see point 4) should be held in the year 2007, it may be convenient to combine the meeting with the workshop, thus achieving economies of various types.

## **ANNEX 13 : AGM PROJECT CALENDAR**

### **A.14.1 Calendar for the Period 2005 - 2006**

The calendar and sequence of activities proposed for the AGM during the years 2005 to 2007 is the following :

Year 2005 :

- Evaluation and comments on the Technical Plan.
- Communications to find organisations willing to contribute to the project.
- Gestión de fondos para apoyar la primera reunión.

November 2005 :

- First Meeting of the AGM project.
- Designation of the AGM Executive Committee.

Year 2006, 1st semester of the year :

- Setting up the Working Groups.
- Designation of the persons to take on the tasks required for this year : persons for the evaluation of the Global Maps from the nations, for receiving the training of the JICA-GSI in Japan, for drafting the survey (points 5.2, 5.3) and the requests for information to the countries (points 3.2, 3.3)
- Research into alternatives for finance, initiate contacts.
- Determine in which institution the Global Maps of the Nations are to be evaluated.
- Designation of the rest of the contributors with specific functions.
- Presentation of the request for Global Maps from the agencies that cooperate with the ISCGM.0
- Search for institutions to host the work of the Continental Vector Map (point 2.6)
- Search for institutions to host the training workshop (point 4.3)

Year 2006, Period July – September :

- Participation of representatives of the AGM in the JICA-GSI training course in Japan.

Year 2006, 2nd semester of the year :

- Activities oriented towards obtaining finance for operations in the period 2007 – 2008 (see Annex 9)
- Start the work of evaluating the Global Maps from individual nations (points 2.2, 2.3)
- Determine which institution will host the work on the Continental Vector Map (point 2.6)
- Draft and despatch the Request for Information to the contributing organisations (point 3 and Annex 4)
- Draft and despatch the User Survey (point 5.2, 5.3)
- Training Group : evaluation of the results of the JICA-GSI course in Japan, confirm institution to host training workshop (point 4.3)
- Preparation of AGM meeting and ISCGM 13

Year 2006, November :

- Committee Meeting, work groups and grupos de trabajo y colaboradoras MGA en el marco de la conferencia GSDI 9 en Santiago, Chile.
- Reunión ISCGM 13 en el marco de la conferencia GSDI 9 en Santiago, Chile - desarrollo de comunicaciones MGA – ISCGM (punto 6.1 y Annex 12)
- Lanzamiento oficial y acto de promoción del Proyecto Global Map de las Americas en el marco de la conferencia GSDI 9 en Santiago, Chile.

### **A.14.2 Calendar for Period 2007**

The Calendar for the year 2007 is much more tentative; given that it depends on the way that the project progresses during the previous period.

Year 2007, 1st Semester :

- Coordination & Guidance Working Group : evaluation of results of queries to contributing organisations and the user survey. Proposals of actions aimed at practical applications of the Global Map (point 5.4)
- Continental Vector Map: Finalize work on evaluating the Global Maps from each nation, report the results, the scheme for the Continental Map, designation of persons to work on the map, logistic preparations for work on the map (points 2.2, 2.3, 2.6, 2.7)
- Training Group : Invitations for participating in the training workshop (point 4.4), logistic and economic preparations for the workshop (point 4.3)

Year 2007, period June – July

- AGM Training Workshop held (*ideally the workshop should be held before work on the Continental Vector Map begins, but if necessary it could be held later. The main purpose of the workshop is to aid those countries which have had difficulty in completing their Global Map projects; the preparation of the persons working on the continental vector map is secondary to this*) (Point 4.5). Possibly the workshop could be held jointly with the third AGM meeting (see Annex 12).

Year 2007, 2nd semester

- Work on Continental Vector Map (point 2.8)

### **A.14.3 Projection of Activities for Communications and Guidance**

In the calendar the dates can be defined only for the main tasks which need to be scheduled with precision or which imply the use of funds and logistical preparations. The AGM project covers other activities apart from these, essentially these are communication, queries and distributions of information as outlined in points 3, 5 and 6, performed mainly by the Project Executive Committee and especially the Coordination and Guidance Working Group. It is not feasible nor necessary to set dates for these with a high level of precision; nevertheless, the following general outline can be sketched out :

- Year 2005 : Establish contacts.
- Year 2006 : Deepen relationships of cooperation, perform research.
- Year 2007 : Communicate information useful to the contributing organisations, to the Global Map users, to the international projects and to the ISCGM.

## **ANNEX 14 : ADDITIONAL SOURCES OF INFORMATION**

Ref. point 8.3

The first document with the initial proposal for the MGA (see annex 1) is available for downloading from the web site of the Military Geographic Institute of Chile, at the page [www.igm.cl/actividades.html](http://www.igm.cl/actividades.html).

Further information that complements the proposal document and this Technical Plan can be obtained from the following online sources :

Pan-American Institute for Geography and History – PAIGH  
[www.PAIGH.org.mx](http://www.PAIGH.org.mx)

International Steering Committee for Global Mapping – ISCGM  
[www.iscgm.org](http://www.iscgm.org)

Japanese International Cooperation Agency – JICA  
[www.jica.go.jp](http://www.jica.go.jp)

Geocentric Reference System for the Americas – SIRGAS  
[www.ibge.gov.br/home/geociencias/geodesia/sirgas/principal.htm](http://www.ibge.gov.br/home/geociencias/geodesia/sirgas/principal.htm)

Global Land Cover Network – GLCN (proyecto de la FAO)  
[www.glcnlccs.org](http://www.glcnlccs.org)

Central American Geographic Information Project – PROCIG  
[www.procig.org](http://www.procig.org)

Directors of Geographic Institutes of South America, Spain and Portugal - DIGSA  
[www.digsa.com.pe](http://www.digsa.com.pe)