

STRATEGIC PLAN

for the

International Cartographic Association

2011-2019

Note

Although this document appears on the ICA website it **is directed primarily at the ICA community** – officers and others working within the Association. Some of the following account may seem self-evident, but it is included for new members and as a benchmark against which misunderstandings may be compared.

International Cartographic Association



Association Cartographique Internationale

Foreword

The International Cartographic Association is led by its Executive Committee, which undertakes the plans and activities that are endorsed by the General Assembly of member nations for implementation in the four years following each General Assembly. The Executive Committee is supported by the Chairs and vice-Chairs of Commissions and Working Groups, the Editor of ICA News, the Chairs of the Publications Committee, the Awards Committee, and the Statutes Committee.

During the twenty-first century, the plans and activities of the Association have been directed by the Strategic Plan. The document you are now reading is a new edition of the Strategic Plan. It builds upon the previous plan (2003-2011) which included a review of the Association and provided a considered framework for developing the Association and advancing its aims. The previous work included an independent analysis by former ICA Vice-President David Rhind, presented at the 15th Conference/9th General Assembly in Bournemouth, UK, in 1991, and published in the Proceedings (Rhind, 1991). Professor Rhind's ideas and earlier contributions to EC discussions led to various changes, including a new set of aims, which is still in place today.

This was followed by the publication of a formal Strategic Plan for 2003-2011, prepared by the ICA Executive Committee, with input from the Commission Chairs, and edited by former ICA President Michael Wood. A preliminary version was reviewed by former ICA President Joel Morrison, former ICA Vice-President Judy Olson and David Rhind. The Strategic Plan for 2003-2011 was adopted by the Delegates at the ICA General Assembly in Durban, South Africa in 2003.

This document contains the Association's Strategic Plan for 2011-2019. It further develops the 2003-2011 Strategic Plan, and is presented as a set of guidelines for the management and development of the ICA over the next eight years. This Strategic Plan was developed by the 2007-2011 Executive Committee, with inputs from Commission and Working Group Chairs and vice-Chairs. The initial document was further developed by a review group consisting of ICA Secretary-General & Treasurer David Fairbairn, former ICA Secretary-General & Treasurer Ferjan Ormeling, former ICA President Bengt Rystedt and Michael Wood.

The Executive Committee of the International Cartographic Association presented this 2011-2019 Strategic Plan for approval at the Association's 15th General Assembly, Paris, France, on July 8th, 2011. It was subsequently endorsed by delegates representing member nations at the General Assembly and it forms the basis for developing strategic plans for growing and advancing the Association.

William Cartwright

President

Paris, France, July 8th, 2011



Table of Contents

1	<u>Introduction and background</u> : The ICA Strategic Plan: 2011-2019.....	5
2	<u>Developments</u> : Cartography and the International Cartographic Association	8
3	<u>Reflecting on where we are now</u> : The ICA today: strengths, weaknesses, opportunities, threats	12
4	<u>Goals for ICA</u> : Determining and meeting the strategies	16
5	<u>How ICA will implement the plan</u> : The effect of Strategic Planning on ICA.....	18
	Appendices	19
	Strategic Plan 2003-2011 outcomes	19
	Changes within specific operational fields.....	21
	Using the Strategic Plan to create Operational Plans.....	22

1 The ICA Strategic Plan: 2011-2019

If ICA is to preserve its authoritative international role in Cartography and the relevant fields within GIScience Science, a radical plan is required which will continue to stimulate a wide range of research and professional activities and confront challenges identified. This plan, directed at the ICA community, is written to maintain and develop ICA's standing. It also addresses the development and use of Cartography and GIScience (GI).

This Strategic Plan has been written to identify strategic goals that ICA must strive to achieve over the eight year period 2011 to 2019. The previous Strategic Plan (2003-2011) served ICA well, and is available for reference via the ICA Website. Its structure, aim and outcomes have been used to inform development of the current document, and its successes are noted in Appendix 1. It should be noted that the current Strategic Plan will be supplemented by Operational Plans, which will be drafted by the Executive Committee and Commission and Working Group chairs after each General Assembly. Such Operational Plans will present specific goals which can be used to assess the progress of ICA towards its strategic goals, and also to govern its day-to-day business. Each Operational Plan will cover the four year period between General Assemblies, but will be subject to significant review every two years.

Values

- The International Cartographic Association respects the freedom and universality of science, the equality of individuals and cultures¹, and appreciates creativity and critical thinking.
- In terms of operating principles ICA abides by United Nations recommendations on membership and freedom of scientific enquiry, and the ICSU declaration on the universality of science.
- ICA seeks the highest quality in theory, technology, standards guidelines and research.
- ICA recognises its responsibilities to recognise, lead and develop the disciplines of Cartography and GIScience for the benefit of society and humankind.

Vision:

- The aim of ICA is to ensure that Cartography and GI are employed to maximum effect and full potential for the benefit of society and science through promotion and representation of the discipline and profession of Cartography and GI science internationally.

Mission

To see ICA:

- recognised by the wider scientific community and society as the world authoritative body for Cartography and GI science, serving society in education and professional practice, motivating individuals and organisations throughout the world.
- play a leading role in the International Council of Science (ICSU), United Nations bodies and the Joint Board for Geospatial Information Societies (JBGIS).
- receiving professional and scientific recognition from individuals in all related fields
- use its knowledge, experience and expertise to remain relevant and authoritative in the representation of geography in its widest context.

¹*Evidence:* ICA is a non-governmental organisation acknowledged by the United Nations, and follows the rules of the International Council of Science (ICSU).

- seeking the highest quality in scientific investigation, technical processes, and academic enquiry.
- raising the profile of Cartography and GI science to enable them to become indispensable in all scientific and societal activities.
- maintaining pre-eminence, but also collaborating with a range of communities, in promoting research and scholarship in the disciplines of Cartography and GI science.
- implementing its vision through its constituent parts – its member nations, Executive Committee, its Commissions and Working Groups, and appointed Committees.
- attracting membership from national Cartographic and GI science societies, universities, government, and business and commercial organisations from every country of the world.
- recognised for outstanding service to its members.

Objectives:

- To contribute to the understanding and solution of world problems through the use of Cartography and GI science in decision-making processes.
- To foster the national and international use of geospatially referenced environmental, economic and social information.
- To encourage introduction of a focused geospatial basis for national and international statistical information.
- To provide global fora for discussion of Cartography and GI science.
- To participate in meetings, dissemination and publication in concert with sister societies and international organizations including the UN, sharing its vision with these organisations.
- To facilitate the transfer of new Cartographic and GI knowledge between and within nations, especially to developing nations, and to undertake Capacity Building, notably for communities in need.
- To perform or to promote multi-national Cartographic and GI research, including collaborative and trans-disciplinary research, in order to solve scientific and applied problems.
- To maintain a contemporary Research Agenda which is recognized as a leading and authoritative document addressing humankind.
- To enhance education in Cartography and GI science in the broadest sense through publications, seminars, conferences, competitions and exhibitions.
- To develop and promote the use of professional and technical standards, guidelines and applications of theory in Cartography and GI science.
- To demonstrate the utility of Cartography and GI science to all professions.
- To offer its expertise and knowledge of technical developments to other organisations e.g. governments, statistical bodies, GI management organisations etc.
- To support map-related research in specific topics such as child education, history, theory, and assistance for the visually-impaired.
- To maintain a repository of knowledge disseminated through the work of Commissions and Working Groups, Conferences, Workshops, publications and the Research Agenda.

Implementing the Plan

Growing from the Association's Vision and Mission, a number of strategies are outlined in this document. These may involve future changes to the organisation and proposals to improve structure and membership benefits: the strategies will have measurable goals so that success can be quantified. They will govern activity within ICA for an eight-year period



(2011-2019). It is expected that these strategies will be supplemented by an Operational Plan which will establish shorter-term, achievable targets over a sequence of 2 four-year periods.

Thus, strategic objectives and operational targets will be established, each supporting the other. The former, whilst quantifiable, are intended to establish the direction of the organisation, whilst the latter are more concerned with day-to-day activities and management tasks. Commissions are expected to contribute to the specific development of the Operational Plans.

Both the strategic and operational objectives will, ideally, direct the activities of the Commissions (and be incorporated into their Terms of Reference), and improve organisation in other areas of ICA activity.

2 Cartography and GIScience and the International Cartographic Association

The International Cartographic Association (ICA) is “the world authoritative body for Cartography, the discipline dealing with the conception, production, dissemination and study of maps.” The mission of the Association is to promote the discipline and profession of Cartography and GIScience in an international context. The ICA is the prime international body for Cartography and GIScience (see www.icaci.org for more information).

A history of Service, Growth and Achievement

The ICA was founded on June 9, 1959, in Bern, Switzerland. The idea to form an international cartographic association was the concept of Carl Mannerfelt (Sweden). Formation occurred after a number of preparatory conferences were held from 1956 to 1959, during which the association was discussed: the Esselte conference, Stockholm 1956; the Rand McNally conference, Chicago 1957; and the DGfK conference, Mainz (Germany) 1958. The first General Assembly (I) was held in Paris in 1961, at which the Statutes and organisation of the Association were confirmed. Later conferences have been held around the world from India (Delhi, 1968) to South Africa (Durban 2003), from Italy (Stresa, 1970) to Mexico (Morelia, 1987), from Australia (Perth, 1984) to China (Beijing 2001), and to Chile (Santiago, 2009). The map, below, illustrates the global reach of the ICA conferences and associated General Assemblies.



Figure 1. Location of ICA conferences to 2009. Map courtesy of Bernhard Jenny. The first President was Professor Eduard Imhof, of ETH Zurich, Switzerland, who held this position between 1961 and 1964. Presidents who followed were:

- Brigadier Dennis Thackwell, United Kingdom (1964-1968);
- Professor Konstantin Salichtchev, USSR (1968-1972);



- Professor Arthur H. Robinson, USA (1972-1976);
- Professor Ferdinand Ormeling, Netherlands (1976-1984);
- Professor Joel Morrison, USA (1984-1987);
- Professor Fraser Taylor, Canada (1987-1995);
- Dr Michael Wood OBE, United Kingdom (1995-1999);
- Professor Bengt Rystedt, Sweden (1999-2003);
- Professor Milan Konečný, Czech Republic (2003-2007); and
- Professor William Cartwright, Australia (2007-2011).

The ICA operates around an Executive, which consists of a President, up to seven vice-Presidents, and a Secretary-General & Treasurer. Further important roles include the Editor of *ICA News*, a webmaster, and the chairs of sub-committees. All of these positions are voluntary. The Executive is elected by popular vote at the General Assembly, which takes place every four years.

To achieve its aims the ICA operates through a number of Commissions and Working Groups. It works with national and international governmental and commercial bodies, and with other international scientific societies. It works closely with sister organisations through its membership of the Joint Board of Geospatial Information Societies (JBGIS). Commissions and Working Groups carry out the detailed work of the ICA. These organisations have addressed the full range of scientific, technical and social research, which is the mark of ICA activity.

The ICA promotes the generation of extensive publications, generally through its Commissions and Working Groups. This activity provides a focus for Commissions and Working Groups and allows for knowledge about advances in contemporary thinking and research to be disseminated. The publications include books, ICA-recognised journals and *ICA News*.

The ICA bestows awards for outstanding service to the ICA and to Cartography generally. There are currently two major award categories:

- Honorary Fellowships – awarded to recipients who have made outstanding contributions to the ICA; and
- Carl Mannerfelt Gold Medal – the highest award of the ICA, recognising excellence in scholarship and research in Cartography and GI Science.

In addition, Diplomas for Outstanding Service to ICA may be awarded.

The ICA also rewards excellence in map design and production. At each International Cartographic Conference, the Barbara Petchenik Children's World Map Competition is held. Based on an exhibition of submitted children's maps from around the world, this commemorates the work undertaken in the area of children and Cartography by the late Professor Barbara Petchenik.

The activities of the ICA are important for promoting and advancing the theory and praxis of Cartography. Throughout its history, ICA has brought together researchers, government mapping agencies, commercial cartographic publishers, software developers, educators, earth and environmental scientists, and those with a passion for maps. The cartographic world has changed significantly since 1959 – the role and impact of ICA has been steadfast. Proud of its

traditions, ICA looks forward to the next decades with the hope that they will be as vibrant and valuable as the first decades of its history.

Contemporary Cartography

As well as being statutory and commercial, the early aims and achievements of the ICA were scholarly and scientific, embracing Cartography as a discipline. With the increasing influence of new technology (especially computing and electronic communication) on map production and use, Cartographers began examining more technical and management support topics. In 1959 the Cartographic profession within the national agencies and commercial companies was distinctive and unchallenged. Now, developments in technology have helped ‘democratise’ the Cartographic process (by means of user-friendly graphics packages for presentation, with GI Systems for geographic data exploration and analysis, and with networks for data provision, advanced geographic data handling, visualisation and representation). This has led to a renewed interest in the discipline and the profession therefore continues to flourish with products still ranging from paper maps to maps and atlases on the Internet, sitting alongside less formal products. Such democratisation may carry its dangers (e.g. lack of appropriate basic knowledge of Cartography and GIScience), but, more importantly, increasingly interactive Internet mapping systems are quietly helping people rediscover their mapping instinct, and learn to **use** Cartography (in its widest sense) rather than just pre-printed maps. Not only are more maps used today but there is a growing pool of rudimentary ‘Cartographers’, and Cartography has regained its stature as a discipline of importance, interest, innovation and impact. The ‘renaissance’ of Cartography in recent years has resulted in a dynamic combination of the mapping impulse, the technology used in handling and disseminating geospatial data, the increasingly diverse and expanding role of Cartography in everyday life, and the wide-ranging and innovative application areas and uses for maps.

The dynamism of Cartography

Not all members of the general public who exploit the potential of Cartography (exploratory, analytical and communicative) are trained or competent in its use. Some, notably researchers in Analytical Cartography (mathematical and analytical theory) and the developers of GI system technologies, have exploited what have been referred to as the ‘deep structure’ of Cartography, to the enormous benefit of science and society. Many new Cartographic products (such as maps and atlases on the Internet) are considerably enhanced by (and even depend on) the functionality of such systems. Many of the problems associated with GI systems such as mathematical Cartography, human-map interaction and generalisation, for example, have been studied for decades or even centuries, and still apply. Cartography now, therefore, embraces ‘GIScience Science’, defined as “the set of fundamental issues arising from the use of... GI systems” such as “scale, accuracy and the relationships between humans and computers” (Longley et al 2001). It is obvious that, like GI system developers, those involved in creating new dynamic and interactive maps and mapping systems are equally dependent on GIScience Science.

It is clear that the landscape of Cartography has changed in the last decade. Map production technology is now readily available to more and the maps themselves are much more varied in terms of their provenance, appearance, and authority. Patterns of map use have also become much more diverse. In addition, the use of geographic data, traditionally represented using maps, has been extended and has led to further development in its visualisation and analysis. The role of geographic data in a wide range of human, social, economic, scientific, and environmental activities has increased. The result is that Cartography is being produced, used, managed, disseminated, analysed, and archived by more people than ever before,

through the use of a more diverse set of technologies, operating within a greater number of scientific paradigms than before. Significant challenges exist which an international association devoted to Cartography and GIScience must address.

ICA's focus

These challenges can only be faced at an international level: the global initiatives, for example the Millennium Development Goals, and a range of other societal projects promoted by the United Nations, along with the developments leading to a truly 'spatially-enabled society', need to be addressed in a coherent and common manner, in which Cartography is important and where ICA can lead. The adoption of new and more global aims, reflecting the international vision of ICA's foundation years, has led to a more expansive policy of interaction with sister societies and with international organisations. The ICA now sees itself as part of a wider international initiative, addressing the problems of our planet and is increasingly involved in scientific and technical matters such as geospatial data standards and infrastructures, multi-scale issues, Internet and satellite mapping, and geospatial analysis and modelling. The intention of such activities is to promote the efforts of the ICA by participating in and contributing to major international research, now expressed in the ICA Research Programme. These, and other, fields detailed above, are addressed by its Commissions and Working Groups.

Changes in the ICA community catchment

The roots of ICA are in the national committees (where they exist) and their associated cartographic/scientific societies, often the primary source of ICA officers, commission members and funding. So intimate is this nourishing relationship that it does not take long for ICA to be affected by changes in the economic health and well-being of these organisations. For these reasons, we recognise that ICA is a member-led association, and its success depends on the success of its members as they embrace, promote, develop, and use Cartography and GIScience in their own nation. Potentially, such organisations will change, affecting the relationship of member nations with ICA.

The wider picture and the 'Fields' of Cartography

ICA recognises a number of fields within which it operates. These are broad fields of human activity to which ICA can contribute and from which many influences on ICA's strategy and regular operations can be sourced. The fields are: Science and Technology, Education, Professional Practice, Society, and Art.

- 1. Science (including technology):** this field covers the development of the scientific and technological basis of Cartography, GI science and geoinformatics.
- 2. Education:** this field addresses the development and promotion, through education at all levels, of the truths of what we know and have discovered about our subject.
- 3. Professional Practice:** this considers the provision of support for two groups of professionals,
 - a) those who describe themselves as professionally active – as their main occupation - in a specific area of Cartography and GI science.
 - b) those who use systems or procedures from Cartography and GI science as part of their professional activity, e.g. environmental managers, utility managers, planners.
- 4. Society (social and organisational):** a field which seeks to promote applications of Cartography and GIScience in any area that can be beneficial to Society in general. It also covers the way in which regulation, legislation and political decision-making affect, and are affected by, Cartographic and GI data handling practice.



- 5. Arts:** the exploration of aspects of design and aesthetics in cartographic artefacts, along with the impact of creativity on the map production process and map use. This can involve collaboration with members of the Arts communities, who represent geography using methods that are different to those employed in the Cartography and GIScience community or who theorise about ‘other’ geographies.

Further discussion about how these fields affect the operations of ICA, notably the work done by its Commissions, are specified in Section 4. In addition, Appendix 2 shows, in more detail, the most important perceived changes within these fields – changes which inform this Strategic Plan, and the Operational Plans to be developed. At this stage it is sufficient to indicate that ICA must regularly scan, monitor, understand and respond to contemporary development and changes in each of these fields, to determine their effect on ICA. Similarly, the work of ICA can be usefully organised under these fields so that we can contribute to their progress and promote an ICA perspective in them, now and in the future.

3 The ICA today: strengths, weaknesses, opportunities, threats

This section which is intended to give an authoritative picture of where ICA stands in 2011 is presented as a SWOT analysis (strengths, weaknesses, opportunities, threats) which is standard practice in strategic planning. The strengths and weaknesses relate to internal practice, the opportunities and threats are externalities over which ICA has less control. This SWOT analysis was performed using some of the challenges specified in Section 2, the points made in the Strategic Plan 2003-2011, along with some of the successes and problems from that plan, and some updated input from more recent consultation. Those three issues perceived as being most important in each section are highlighted and worked through a standard SWOT matrix in order to develop strategic objectives (see Section 4).

Strengths

- Knowledge within ICA is special and unique, accumulated during over 50 years of growth.
- ICA's leadership is recognised internationally and its presence is also widespread.
- The communications and information presentation methods of ICA, notably its website and regular bulletin, *ICA News*, are excellent.
- The current membership structure is sound.
- There is strong support from member nations and affiliate members.
- ICA's current organisational structure is 'bottom-up' and therefore not regarded as 'distant'.
- The Association has good relations with sister societies in Geospatial Information, through the JBGIS.
- It is run by a core of dedicated, talented, volunteer workers.
- The institutions of most ICA officers willingly offer support.
- Commissions and Working Groups can show noted achievements and research output – some have received wide international acclaim.
- ICA is willing to consider its position and promote its identity through documents such as this Strategic Plan, its Research Agenda, and its regular analysis of its scope and role.

Weaknesses

- The vision and mission need updating.
- The Association's ability to record and respond to the changing operational fields is not good.
- The organisation depends largely on voluntary workers from supportive institutions and voluntary executive officers (some less active than others).
- There is more pressure in general on dedicated individuals.
- Insufficient nominations for key posts: only candidates with financial support can afford to stand for office.
- There is a lack of incentives to motivate officers, including Commission chairs.
- Commission terms of reference can be weak and ill defined and not all work equally well.
- Funding can be irregular and unpredictable: the reliance on national funding and fee payment has not built headroom in the budget; subscriptions from (and engagement with) non-governmental organisation can be irregular.
- The growth in membership has been modest.

- Thus, financial resources are limited (there should be sufficient reserve funds for one whole year).
- Poor finances require sections of the ICA to find additional funds elsewhere.
- Senior officers may have to restrict their travels (for both financial and time reasons), although the necessity for increased travel is part of the new international community.
- There are too many aims – and ICA tries to do too much.
- Communication can be difficult at irregular intervals, with uncertain destinations.
- The recent publishing record has been poor.
- ICA's role in the international community is perhaps less prominent than it should be.
- Major conferences still suffer from financial uncertainties.
- There have been recent signs of loss of active member nations.
- The organisation has been characterised as being open to new technology but closed to new concepts.

Opportunities

- The discipline of Cartography has an instinctive (map-related) attraction for many.
- Cartography is based on well-established traditions – and is moving into a new phase of evolution.
- The subject retains its traditional nature and strengths *but is expanding* from the purely presentational to provide more effective visual-thinking/decision-support tools.
- It continues to evolve with contemporary technology.
- Through maps, Cartography is increasing in level of usage in science and society, as it offers effective solutions for the problems of science and society.
- The new emerging activities in collaborative data collection, access and use (e.g. GeoWeb of Volunteered GIScience (VGI)) and open source technologies could welcome the input of an international organisation in Cartography.

Threats

- With the introduction of computing and the growth of GI systems, the perception of Cartography is less clear to many than it was in the past.
 - Definitions may be dated and open to different interpretations.
 - Cartography is primarily regarded as consisting of traditional static paper images.
 - The subject is believed by some to have become wholly or partially redundant with the growth of GI systems.
 - Cartography is assumed by some to be only the output phase of a GI system.
 - There is low awareness, outside our discipline, of how the modern subject has developed.
 - Previous scientific studies related to mapping, such as research into map reading, could be included in GI science.
 - There is inadequate explanation of our new field (i.e. beyond static paper maps).
 - The rationale of Cartography is doubted by some rival groups.
- There is possible loss of recognition of world leadership through changing outside views of the nature and relevance of Cartography.
- There is a view that a real reduction in the numbers of 'traditional' professional practising map-makers (Cartographers) is assumed to imply the demise of Cartography itself.
- Democratisation of 'Cartography' is believed to reduce the necessity for experts.
- Cartography may be losing some status and identity by being seen as a subset of GI systems/GI science.
- Cartography is not benefitting specifically from funding opportunities in research, in supportive production agencies etc.



- Technological, social and political changes can be difficult to read and react to.
- A breakdown of inter-disciplinary boundaries has led to a blurring of responsibilities for Cartography.
- There is an instability in the model of operations in some governmental and commercial agencies.
- Our subject's ability to absorb new communities of volunteered GIScience suppliers, and the open source software community, is limited.

The SWOT analysis is used to determine strategic objectives as reported in the next section.

4 Determining and meeting the strategies

The SWOT analysis reveals a number of issues which ICA must address, in particular the challenges outlined in the previous ‘weaknesses’ and ‘threats’ sections. This section attempts to synthesise some of these challenges, suggests initial goals and methods of addressing them. Because this section concentrates on the organisation itself, it is more focussed on internal challenges (‘weaknesses’), but ‘threats’ are also considered here, along with preliminary ideas of addressing them using ‘strengths’ and ‘opportunities’. The approach is based on a matrix seeking worthwhile conjunctions of the strengths with opportunities (using strengths to take advantage of opportunities) and threats (using strengths to avoid threats), and the weaknesses similarly (take advantage of opportunities to overcome weaknesses, and reduce weaknesses by avoiding threats). The intention is to determine 6-8 strategic objectives from the matrix.

	<p>Strengths:</p> <ol style="list-style-type: none"> <u>1. The communications and information presentation methods</u> <u>2. Current organisational structure is ‘bottom-up’</u> <u>3. Commissions can show noted achievements and research output</u> 	<p>Weaknesses:</p> <ol style="list-style-type: none"> <u>1. Lack of incentives to motivate officers</u> <u>2. Membership of ICA is not expanding as it could</u> <u>3. ICA has too many aims</u>
<p>Opportunities:</p> <ol style="list-style-type: none"> <u>1. Cartography has an instinctive (map-related) attraction</u> <u>2. Cartography is increasing in level of usage in science and society</u> <u>3. The new emerging activities in Geo-Web of Volunteered Geographic Information (VGI) and open source technologies</u> 	<p>S1-O1: appeal to lay public for individual membership S1-O2: advertise the role of Cartography better</p> <p>S2-O1: let map users suggest the agenda of activities S2-O3: new groups can self-organise under the ICA umbrella</p> <p>S3-O1: use the Research Agenda to explore new activities S3-O2: promote Commissions activities in current areas using current structure S3-O3: Commissions can show strengths in possible new areas</p>	<p>W2-O1: target other membership categories W2-O2: target decision makers in affiliated organisations W2-O3: target geographers and geoscientists in new areas</p>
<p>Threats:</p> <ol style="list-style-type: none"> <u>1. Some believe the field old-fashioned and that maps are traditional, static, paper</u> <u>2. There is declining funding</u> 	<p>S1-T1: we have the strength to change our image in the media S1-T2: publicise our results</p>	<p>W1-T2: re-direct money for incentives, including personal assistance to some officers, on a basis of equity</p>

<p><u>for Cartographic activities, from research to production</u> <u>3. Our subject's ability to absorb new communities is limited</u></p>	<p>better to stem decline in funding</p> <p>S2-T1: the strength to change our image can be sought from within</p> <p>S2-T3: change our ability to absorb new communities from within</p> <p>S3-T1: improve communication of novel achievements</p> <p>S3-T3: - Commission achievements can assist in bringing in new structures</p>	<p>W2-T2: - increase membership dues to ensure financial stability</p> <p>W2-T3: strengthen efforts to engage new communities</p> <p>W3-T1: reduce number of aims, but have attractive objectives</p> <p>W3-T2: reduce number of aims</p> <p>W3-T3: have revised aims covered by new communities</p>
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The following broad strategic objectives were sourced from this matrix:

1. Widening the awareness of map production and use – to maximise Cartographic activity in the public arena (e.g. by education, by public engagement and exhibitions, by encouragement of activities by national members): quantifiable objectives, more Cartography courses, more attendance at relevant exhibitions
2. Ensure publicity for achievements – at all levels e.g. a formal publication of achievements, higher quality of outputs in scientific literature, higher profile in the media: quantifiable objective, publish achievements
3. Embrace new communities – to use our strengths in independent Commissions to approach and work with new communities, including Volunteered GIScience and crowdsourcing groups: quantifiable objectives, higher ICA presence in the alternative cartographic community.
4. Examine all aspects of membership in order to increase number of members – new categories, expanding range of affiliate members, recruiting more national mapping agencies, membership fees, publicity for recruitment: quantifiable objective, to increase membership
5. Maintain financial stability – funds are not large enough to support long-term commitments to projects, but funds must be dispersed to maintain tax-free status: quantifiable objectives, balance of income and expenditure
6. Continue to monitor Commission structure and effectiveness: quantifiable objective, higher level of Commission activities, more active members in Commissions
7. Target geoscientists for joint activities – both at Commission level (most promising), and at EC level (through JBGIS, initiatives of other organisations, running joint workshops): quantifiable objective, increase number of joint activities and outcomes
8. Incentives for officers – primarily to ensure that people are willing to stand for office, and mainly at a financial level (e.g. use part of Commission budget for chair's expenses, preferential registration rate for ICC for officers): quantifiable objectives, more activity by officers

5 The effect of Strategic Planning on ICA

The adoption of strategic objectives outlined in Section 4 above will have impact on ICA's procedures and structure. In addition, the subsequent Operational Plans, described at the end of Section 1 are integral to the successful implementation of the Strategic Plan. Example operational objectives which may inform the development of Operational Plans are suggested in Appendix 3. The Operational Plans are the responsibility of each new Executive Committee (elected every four years).

This section considers the impacts of the Strategic Planning process, and concludes the document. The intention of the Strategic Plan is to ensure that ICA will become more professional in nature, and will undertake its mission with efficiency and relevance.

In terms of ways forward, the following immediate actions result from the Strategic Goals identified at the end of Section 4.

Maximising cartographic activity:

- *Increase the number of workshops and courses promoted by ICA, notably by its Commissions.*
- *Strive for high level of Commission activities and sufficient strength of Commission membership.*
- *Improve publicity (using ICA publications and the website) for both ICA and other cartographically-related meetings/exhibitions/activities to increase number of participants at these events.*
- *Engage with a wide range of other groupings to ensure the widest possible involvement of ICA with new activities in cartographic production, map use and alternative communities.*

Supporting capable officers through the following proposals:

- *Introduce motivational schemes (financial and career-path) for future ICA officers.*
- *Encourage members of minority groups, young people, and people from developing countries, to become involved in the ICA.*
- *Investigate new forms of identifying senior officers and potential commission members.*
- *Examine the possibility of having some paid officers, e.g. webmaster, executive director (although this would create an imbalance with volunteers), whilst acknowledging that ICA cannot currently afford to have paid officers.*

Achieving good quality outputs from ICA:

- *Maintain the high standards of ICA News and the ICA website.*
- *Improve the proceedings and publications from the ICC conferences and workshops.*
- *Promote the achievements of ICA more effectively*
- *Encourage Commission chairs to collaborate in activities which will lead to high-profile dissemination of results.*

Raising ICA's profile:

- *Increase membership, especially with affiliate members.*
- *Undertake more collaboration with a wide range of organisations, including UN and sister societies*

- *Improving communication between ICA officers and membership and provide for a continuous forum for discussion rather than a bi-annual one.*
- *Use ICA publications, website and conferences to raise awareness of ICA activities.*

Establishing efficient internal structures whilst maintaining the ‘bottom-up’ approach

- *Examining the scope, value and structure of Commissions, and their groupings.*
- *Ensure longer term financial planning and resource allocation, balancing income and expenditure.*

Approval, revision, timetable and resources

Approval and revision. This draft plan was circulated to members of ICA before the General Assembly in Paris 2011. Suggested modifications were welcomed and incorporated where appropriate. A session of the General Assembly discussed and voted on the acceptance of the Strategic Plan.

Once approved, it was expected that the new Executive Committee, along with the newly elected Commission Chairs, would quickly develop an Operational Plan to cover the period 2011-2015, with time dedicated at the International Cartographic Conference in 2013 to assess and modify the Operational Plan where necessary.

Resources. Both the Strategic Plan and the Operational Plans will require resources to implement. A provisional budget will also need to be approved by the General Assembly in 2011: this will direct resources towards the strategic objectives, and have the flexibility to also direct resources to operational objectives. The resources available will be directly dependent on the fundamental income stream – the membership fee. The current unit value (since 2007) is €250.

The ICA Strategic Plan 2011-2019 has been written to give direction and set achievable and quantifiable objectives. The Strategic Plan will set the agenda which ICA will adopt to meet its mission in the long term, and (through the Operational Plans) will have considerable influence on the day-to-day operation of ICA.

6 Conclusion

The first ICA Strategic Plan was presented to ensure that ICA preserved “its authoritative international role in Cartography (and in the associated fields of GIScience Science).” It was suggested that important changes within the organisation were necessary in order for the challenges of a new millennium to be met. The changes were to be introduced whilst ICA continued to operate its wide range of research and professional activities.

Because it was the first Strategic Plan, a significant portion of the document looked backwards in time to determine how ICA had reached its current position. This second Strategic Plan, presented here, does reflect on history and also assesses the impact of the first Plan, but the intention is to look forward. The General Assembly, as the primary decision-making body in ICA, expects to have a working document available which can guide the development of the Association into the future. The General Assembly meets every four years: it has a strategic role to play in guiding ICA, and this Strategic Plan is intended to present targets, create policy, visualise the future and expand the activities of ICA. It should be referred to throughout the eight year period of its authority, by all those involved in ICA – the Commission chairs, the national and affiliate members, the Executive Committee, the leaders of other ICA committees, the conference organisers, and the individual members of the representative national bodies which make up the General Assembly.

In addition, during those eight years, there will be a need for guidance for the day-to-day operations of ICA. Addressing the same groups of people involved, it is expected that shorter term operational plans will be developed by each new Executive Committee, to assist in directing the ongoing work of ICA.

The Strategic Plan is presented here as a working document, to be supplemented by an Operational Plan. The Strategic Plan is robust and visionary yet realistic: its goals should be worth striving for, and should be capable of being achieved.

Appendices

Appendix 1 Strategic Plan 2003-2011 outcomes

The SWOT analysis undertaken in the 2003-2011 Strategic Plan was somewhat unstructured, but it did present a number of challenges: the success of these is considered in this Appendix.

ICA was charged with:

- **remaining relevant to its constituency.** The ICA ‘constituency’ was considered to include national members, with varying characteristics; affiliate members, which come from commercial, academic and institutional backgrounds; interested parties for whom ICA acts in an advisory and supportive capacity, including international non-governmental organisations and national governments; and other user groups. Relevance was maintained by scanning the operational fields, by individual and group input into the basic working units of the association – its Commissions and Working Groups, by leadership from the Executive Committee, and by feedback from the membership. The relevance was reflected by the ICA’s outputs including international and regional conferences, workshops and Commission meetings, participation in international initiatives, engagement with sister societies, dissemination of ICA News and other publications, collaboration with ICA-recognised journals, and the ICA website. [*achieved: members, relevance, outputs considered to have met this challenge; ongoing*]
- **asserting use and ownership of Cartography.** It was felt that the increasingly seamless nature of science has led to some overlap of membership and interests between sister societies. It was noticed that some have interests in Cartographic representation and analysis (through geographical visualisation tools or GI systems). Like language, Cartography cannot be ‘owned’. It has many users and applications. But the ICA was asked to continue to offer authoritative world leadership for the whole of Cartography, its on-going strengths being reflected in the research fields of the research agenda and its Commissions and Working Groups. Collaboration with other organisations is still regarded as essential to ensure continued recognition of ICA’s ‘footprint’ within the fields of human activity. [*achieved: leadership and research activity both healthy; ongoing*]
- **increasing the visibility of the organisation.** This challenge was to be addressed at two levels. Firstly, more general education of the public as to what Cartography is (for the exploration, analysis and representation of GIScience) and what it is not (drawing maps for paper production) would allow ICA to establish recognition as the representative organisation for the discipline. Secondly, ICA was charged with promoting itself within the discipline and achieve status as the pre-eminent organisation in the field of Cartography and GIScience within the range of GIScience organisations. [*partly achieved: ICA has a high profile in official GI organisations, less so in informal organisations and wider society; ongoing*]
- **making better use of increasingly limited human resources.** Although the organisation’s wider constituency may remain large and even increase, it was recognised that the number of active members was likely to decrease in the short term. The pool of potential members of commissions was specifically highlighted. It was suggested that the ICA must take a more professional approach and consider the establishment of some paid posts. [*not achieved; ongoing*]

- **responding effectively to global geospatial initiatives.** The increasing number of world-wide initiatives demanding the application of Cartographic/GI science expertise was noted. It was felt to be increasingly important for ICA to organise priorities of response to, and procedures for action with, groups such as Digital Earth, ISCGM, Global Spatial Data Infrastructure (GSDI), ISO, UNGIWG, and JBGIS. *[achieved: MoUs and other linkages established with other organisations to address world-wide initiatives]*
- **widening the field of Cartography to include GIScience Science.** Although the concepts underlying Cartography have always been much wider, the ICA was founded during the heyday of printed paper maps, and naturally, its first concerns were with their conception, production and study. The design of maps and mapping systems (real and virtual) remains a priority, but recent years have seen more technical commission themes which reflect overlapping interests with, and the disappearance of boundaries between, other mapping sciences. However, it is Cartographic approaches which have played the major role in sourcing, developing and applying the theory and practice of geographic data handling. It was felt appropriate, therefore, that the International Cartographic Association should include Geographical Information Science as part of its vision. *[partly achieved: although not incorporated into the Association name, GIScience is accepted by the members of ICA and individuals associated with it; ongoing]*

Thus, 5 of the 6 challenges have been successfully addressed. It can be noted that these challenges are not absolutely quantifiable, which makes it difficult to determine how successfully they have been met. The strategic objectives outlined in the Strategic Plan 2011-2019 will be more quantifiable and achievable.

Appendix 2 Changes within specific operational fields

This section examines what influences are affecting the nature of Cartography and GIScience. Organised under the headings of the ‘fields’ presented in Section 1, these issues have an impact on our discipline. They may also, however, impinge on the ICA as an organisation, and thus have influence on the strategic and operational goals which this Strategic Plan presents. The SWOT analysis has taken many of these changes into account.

Science (including technology):

New scientific networks:

- More interdisciplinary use of, and utilisation by, Cartography
- Scientific enquiry operational on the Web
- More effective literature and data search to assist in research

Technological changes:

- Storage and archival improvements
- Improvement of web-based communication
- User-friendly mapping packages and flexible platforms for engagement (inc. mobile devices)
- Development of location-aware devices, and integration of contemporary real-world and archival data-driven systems

Education and Professional practice:

- Change in nature of both amateur and professional practice in all geosciences leading to varying demands for educational courses

- Decline in specific courses (at all levels) directed towards singularly Cartographic education
- Increasing demand for Continuing Professional Development
- Recognition of continuing need for the training of personnel in developed and developing countries
- Role of Cartography in secondary schools is still uncertain and subject to broader curriculum change

Society (Social and Organisational):

Changing societal needs, services and infrastructures will, in turn, affect mapping needs:

- Informal educational facilities for different age ranges
- Different business environments
- Different holiday and recreational patterns
- Daily needs of society (including everyday activities undertaken by consumers, citizens and office holders)
- New relationships between society and the environment driving Cartographic applications in climate change research, disaster management, emergency planning
- Growing awareness of spatial relationships and of the spatial context of location-based services
- New technical possibilities in social networking and related Cartographic data handling
- Wider availability of smart machines and sensors
- Organisations will be more specialised – leading to need for more co-operation

Arts

- Increasing use of Cartographic images and sources in artistic endeavour, including multi-media and digital art
- Widening of design possibilities in representing multi-dimensional data and creating representations on novel platforms
- The design of Cartographic interfaces for both private (e.g. desktop access to geobrowsers) and public (e.g. map products to guide navigation by public transport) use, and map design in general, requires creativity which may be sourced in art

Appendix 3 Using the Strategic Plan to create Operational Plans

As was suggested at the end of Section 1, ICA intends to create Operational Plans, governing shorter term objectives, which will be informed by the strategic objectives listed in Section 4 above.

The creation of Operational Plans will use the discussion of ICA's operational fields, as specified in Section 1, and explored further in Appendix 2. In this way, a series of operational objectives can be presented, which will form the basis of the Operational Plans. The objectives listed below, and the action points which derive from them, are examples which are intended to assist the developers of the Operational Plans.

It is expected that many of these action points will be used to direct Commissions and Working Groups, who are expected to prepare plans themselves, with objectives which can be monitored and achieved during their four year term. Some of the action points below, however, are specified as being the responsibility of other parts of ICA – the Executive

Committee, the Local Organising Committee of the International Cartographic Conference, the sub-committees of ICA (Awards, Publications, Statutes), and the membership itself.

Science

objectives:

Promoting Cartography and GI science as individual subjects and clarifying the relationship between them as well as with other geosciences by:

- *Strengthening the profile of scientific commissions in ICA.*
- *Promoting international co-operation in scientific research on Cartography and GI science, including fora for scientific discussions, dissemination of information and scientific publishing in Cartography and GI science.*

Actions:

- Keep to the published advisory guidelines to improve the co-operation between the EC (Executive Committee), the LOC (Local Organising Committee) and the commissions.
- Maintain the ICA research agenda on key themes within Cartography and GI science (EC).
- Maintain research into spatial representation and visualisation facilities for spatial exploration, modelling and analysis (specific Commissions, primarily those with a scientific emphasis).
- Review past studies and develop new research in map use, cognition, and aids to map-reading and decision-making (specific Commissions, primarily those with an emphasis on user issues).
- Organise commission and cross-commission meetings (all Commissions).
- Continue to support the international journal programmes on Cartography and GI science (all parts of ICA).
- Update information on ICA publications, definitions and other related material in the ICA and the commission home pages (Publications Committee).
- Activate interactions between ICA and other scientific geographic societies as well as those in computer science and statistics (EC).
- Organise a scientific bookshop display during ICA conferences (LOC).
- Update information on ICA and Cartography definitions and glossaries (all Commissions).

Education

objectives:

- *Investigate ways to strengthen and monitor education programmes in Cartography, GI science and related subjects at all levels (university, high school, elementary, life-long learning).*
- *Investigate fora for discussions of education programs and curricula in Cartography and GI science.*
- *Develop information networks and online courses on Cartography and GI science.*
- *Offer educational courses for students on Cartography and GI science for example in developing countries and for regional purposes.*
- *Offer 'master classes' in GI systems/mapping to guide managers in spatial decision-making*
- *Investigate methods (and funding sources) to encourage the participation of students and other young members in ICA activities.*

Actions:

- Analyse existing university curricula in Cartography and GI science (specific Commissions, primarily those with an emphasis on education).
- Help widen the Cartographic/GI science knowledge base and skills into new segments of Society (specific Commissions, primarily those with an emphasis on education and societal issues).
- Increase efforts directed to capacity-building, especially in developing countries, especially with reference to human resource development (specific Commissions, primarily those with an emphasis on education and outreach; those structures of ICA charged with, or volunteering for, organising workshops).
- In co-operation with commercial suppliers, develop online courses on Cartography and GI science to support and complement existing courses (specific Commissions, primarily those with an emphasis on education).
- Facilitate provision of geographic data for educational use (specific Commissions, primarily those with an emphasis on education).
- Support appropriate United Nations activities by providing geographic expertise (Executive Committee).

Professional Practice

objectives:

- *Encourage wider application of Cartographic principles within information technology.*
- *Promote the transfer of GI technology and standards for professional use.*
- *Strengthen the profile of professional practice commissions in ICA.*
- *Promote the presentation of 'best practice' in the field of Cartography and GI science.*
- *Provide possibilities for interaction between practitioners during the ICA conferences.*

Actions:

- Analyse commission structure and propose new commissions in order to maintain a balance between theory and practice (EC, national members).
- Organise workshops on specific topics (specific Commissions, primarily those with an emphasis on management and practical uses of Cartography).
- Organise high quality technical exhibitions and expert panels during the conferences to attract practitioners to participate and exchange ideas (LOC, EC).
- Encourage national associations and universities to translate proceedings of conferences and symposia into local languages, publish the translations on the web and link them to the ICA page (national members, webmaster).
- Facilitate the exchange of experts between and within developed and developing countries and revive the ICA 'Third World' policy (specific Commissions, primarily those with an emphasis on management and practical uses of Cartography, and education; those structures of ICA charged with, or volunteering for, organising workshops).
- Support United Nations by providing geographic expertise (EC).

Society

objectives:

- *Promote awareness of sustainability by disseminating information and knowledge on Cartography and GI science globally.*
- *Contribute to the understanding and solution of local and worldwide problems through the use of Cartography and geographic data.*
- *Encourage under-represented groups, especially women, young people and people from developing countries to be involved in the ICA.*
- *Integrate research, teaching and professional practice.*

Actions:

- Promote production of atlases on specific global themes aiming to strengthen decision support based on relevant and reliable GIScience (specific Commissions, primarily those with an emphasis on practical uses of Cartography and GIScience handling, and map production).
- Provide guidelines on the use of geographic data on the Internet (specific Commissions, primarily those with an emphasis on technological development in Cartography and GIScience handling).
- Develop navigation tools for visually impaired people (specific Commissions, primarily those with an emphasis on user issues, and impaired map users).
- Participate in research and development projects aimed at personal security, public services and well-being (specific Commissions, primarily those with an emphasis on technological development in Cartography and GIScience handling, and on map use).
- Where requested, support appropriate United Nations activities by providing geographic expertise (EC, all Commissions).

Arts

objectives:

- *Promote the use of Cartography in artistic endeavour.*
- *Examine the creativity involved in Cartography on new platforms, and with new interfaces.*
- *Examine how the arts might inform about practices that view and use Cartography and GIScience in ways that are innovative and creative.*

Actions:

- Continue to promote the links between Cartography and the arts, notably by means of exhibitions and trans-disciplinary meetings, workshops and projects.
- Create a Web resource on the interaction between Cartography and art (specific Commissions, primarily those with an emphasis on Cartography and art)
- Ensure map design and aesthetics are integrated into Cartographic education and production (specific Commissions, primarily those with an emphasis on art, education, and young cartographers; Affiliate Members)