REPORT WG IV 1 (MAP REVISION)

Terms of Resolution

COMMISSION IV

MAP REVISION

THE CONGRESS:
Noting that many countries have reached the stage in their mapping programs where the need for map revision is a dominant factor.

Recognising the availability of new data sources, such as space imagery, and an increasing use of digital technology.

Recommends that a Working Group should continue to study the problems involved in modifying revision methods to take account of these changes.

1 INTRODUCTION

A first step in achieving the recommendation contained in the above resolution was to assess the current situation amongst mapping agencies in relation to the problems and technologies associated with map revision.

Accordingly, a questionnaire was distributed to 75 Commission IV correspondents with the expectation of wider distribution within their own groups.

Up to June 1986, 33 responses were received. Whilst this is considered good, and the Working Group is extremely grateful to those who took the time to respond, there is every indication that the coverage of mapping organisations may not be representative. Nevertheless the responses have been analysed and listed under the questionnaire paragraphs.

2 MAP TYPES

What types of maps does your organisation use or produce?

The responses are illustrated in Attachment A. Fig.1 shows the various types of maps and Fig.2 the scales at which mapping is produced.

3 REVISION PROGRAM/SOURCES

3.1 Has your organisation established long term standard mapping programs?

81% of organisations have long term mapping programs.

3.2 Does this program make provision for systematic map revision?

68% have, to varying degrees, recognised specific map revision programs, but not necessarily covering their full range of products.
3.3 What map types and scales are covered by this revision program?

The map types and scales covered by revision programs are shown in Annex A. Fig.1 shows the types and Fig.2 the scales covered by these programs.

3.4 Do you have adequate financial and manpower resources to implement a revision program?

Of the organisations carrying out revision 59% claim to have adequate finance and manpower resources to achieve their programs within a reasonable time frame.

3.5 What proportion of your total mapping financial and manpower resources are allocated to map revision?

Within specific mapping programs, an average of 34% of resources were available specifically for revision work.

3.6 Is there an established procedure for determining the priorities of map sheets to be revised? If so, outline the procedures used to determine these individual map priorities.

60% of organisations claimed to have a systematic approach to their map revision program although few were able to demonstrate a detailed methodology to establish individual map sheet priorities.

4 REVISION TECHNOLOGY

4.1 Do your revision requirements refer to map content or position accuracy, or both?

How accurate? Very important 1 2 3 4 5 Not important

How up-to-date? Very important 1 2 3 4 5 Not important

The average response to the importance of map content as against positional accuracy in relation to revision requirements placed content at the "very important" end of the scale (1.5), ahead of positional accuracy at (2.0).

4.2 What photogrammetric, or other, technical procedures are used for revision compilation in relation to:

(i) Map content. (iii) Revision of digital data
(ii) Positional accuracy (iv) Revision of repromat material.

Technical procedures used for revision fell into the following groups:
513

4.3 Have comparative studies been undertaken to assess the relative merits of photogrammetric revision techniques using conventional aerial photography against alternative procedures?

51% of respondents have investigated alternative procedures with the remainder still using conventional aerial photography.

4.4 What proportion of your achieved mapping data is held in digital format?

50% of agencies have no mapping data in digital form. Of the remainder 36% have between 1% and 50% of their information in digital form and 14% between 51% and 100%.

4.5 In what way do you see digital mapping technology assisting your map revision procedures in the future?

40% clearly saw that digital mapping data would assist them in map revision, another 40% were not sure but were investigating the possibilities and the remaining 20% could not see that it would assist in any way.

4.6 Specifically, what part does remote sensing technology play in your revision procedures?

Remote sensing technology has apparently not yet had a significant impact on map revision as the analysis of responses shows:

- Used 7%
- Not used 67%
- Use intended 3%
- Investigating possibilities 23%
4.7 Are you carrying out research into relevant map revision techniques? If so, what are your major lines of investigation?

Some 60% of respondents are carrying out some form of research or investigations into the use of remote sensing for map revision purposes.

4.8 If you are a commercial organisation, what services can you provide for map revision?

No responses from commercial organisations.

5 SYMPOSIUM/CONGRESS PARTICIPATION

5.1 Do you intend to attend the Commission IV Symposium in Edinburgh 8-12 September 1986?

5.2 Do you intend to submit a paper on map revision to this Symposium?

5.3 Do you intend to attend the VXI Congress in Kyoto, Japan, July 1988?

5.4 Do you intend to submit a paper on map revision to the Congress?

- Attendance at Edinburgh 7
- Presentation of a paper at Edinburgh 2
- Attendance at Kyoto 15
- Presentation of a paper at Kyoto 4

6 CONCLUSION

The following needs seemed to emerge from the responses:

Program Determination

Few agencies appeared to have developed a logical and systematic approach to a map revision program. Many have adopted a simplistic approach related to the age of the existing mapping or map stocks. A few have taken the rate of cultural development into account; but there seems to be a need to develop a system or formula which will take into account all relevant factors and ensure that maps are revised in relation to an orderly program that will ensure that any map series will be substantially useful for its intended purpose at all times.

Technology

Little reference was made to instrumentation specifically designed for the particular needs of map revision. It is known that instrument manufacturers have developed, or are in the process of developing, photogrammetric plotters with specific revision facilities, both graphical and digital. These are directed at solving one of the basic
problems of revision - quickly and easily determining what map detail has changed and then being able to accurately record these changes.

Investigation into and evaluation of these instruments needs to be undertaken as a guide to agencies who may have a need for them, and as a help to the manufacturers for further improvements or developments.

A number of agencies (23%) indicated an interest in the possibilities of the use of remote sensing imagery although few (7%) were actually using it.

A good deal of investigation is already under way by various authorities and the results need to be co-ordinated and made available to these organisations in terms of both advantages and disadvantages so that a proper assessment can be made in each case.

**Recommendation**

Sub-groups within WG IV/1 should be established to investigate and prepare reports on:

1. Systematic revision program determination
2. Instrumentation for map revision
3. Digital map revision
4. Use of remote sensing for revision
5. A bibliography of articles and papers on map revision as indicated in Attachment B.

The reports of these sub-groups would be included in the overall report of Working Group IV (Map Revision) to be presented at the Kyoto Congress in 1988.

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Chairman  
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25.6.86.
Fig. 1  NUMBERS OF MAP TYPES PRODUCED BY RESPONDENTS

Fig. 2  NUMBERS OF MAPS AT VARIOUS SCALES PRODUCED BY RESPONDENTS
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