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IPC DEVELOPMENT IN ELECTRONIC AGE –
VIEW OF THE INTERNATIONAL BUREAU OF WIPO

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INTRODUCTION

1. This paper presents the views of the International Bureau (IB) on the changes that would be desirable to introduce in the IPC revision procedure and revision methods applied so far, so as to increase the efficiency of searching with the use of the IPC in an electronic environment or, generally speaking, to accommodate the IPC to the electronic age. To a considerable extent the solutions described were inspired by ideas expressed during meetings of IPC bodies or informally communicated by industrial property offices to the IB. Rich material on the position of offices with regard to the future of the IPC was also provided in summaries of lectures and presentations submitted to the IB and used for the preparation of the Seminar program. All this permits the IB to hope that, at least to a certain degree, this paper could present a common platform acceptable to the majority of users of the IPC.

OBJECTIVES: SPEED OF REVISION; TIMELY PUBLICATION

2. The principal objectives of the proposed changes in the IPC revision procedure and revision policy are to accelerate processing of IPC revision proposals and incorporation of the amendments into new editions. The current considerable delay between the submission of a revision request and implementation of the results in the IPC discourages examiners from putting forward revision proposals, even in fields where urgent revision is needed. In fact, two or three years were usually needed under the present revision procedure to finalize the revision project, and the results of the revision could not appear before five-year publications of new editions (see also the statistical data in Annex II). A look at the new revision program for the seventh revision period reveals about 70 projects deferred from the previous period, with two of them originating from 1994 and much more from 1995. This means that if the current five-year revision cycle would be retained, there will be 10-year gap between the submission of a revision request and its implementation in IPC⁸. It is clearly unacceptable at a time of rapid technological changes observed throughout the world.

3. To achieve the said objectives without deterioration of the quality of the revision work, a move is needed to more frequent publications through a transitional period during which the revision procedure and revision methods could be accommodated to a practically continuous revision process, so as to keep abreast of rapid technological developments. In the following paragraphs, a possible scenario of IPC publications is suggested.

4. To accelerate the revision work, the electronic version of IPC⁸ on the Internet (WIPO Web site) and the subsequent editions, could henceforth be considered as the official publication. It seems that nothing in the Strasbourg Agreement could hinder such consideration, which then could be decided upon by the IPC Committee of Experts. Electronic publishing would be considerably faster than the paper publication. Furthermore, computerized tools (new IPCIS) would further facilitate preparation of the new edition. As a result, it would be possible to continue the revision work until approximately three months before electronic publication of IPC⁸, which should be done, according to the Strasbourg Agreement, six months before its entry into force. This would save six months for additional revision work.

5. The paper version of IPC⁸, if needed, could be published later, depending on demand, during the six-month period between electronic publication of IPC⁸ and its entry into force. The same will apply to IPC-related publications, such as the official catchword indexes and the Revision Concordance List, which will also be included on the Internet and CD-ROM.

6. Amendments to the IPC adopted yearly by the Committee of Experts will be published, by being incorporated by the IB into the IPC structure, on the Internet. Those amendments, during the transitional period, will be considered as unofficial until the new edition enters into force. However, any office will be free to use them, in addition to the IPC edition in force, for classifying published patent documents. For such use, the now vacant INID code 53 under WIPO Standard ST.9 could be applied, although the Executive Coordination Committee of the now disbanded PCIPI has indicated that this code should not be reallocated before 2003. If so agreed, the IPC Committee of Experts should request the Standing Committee on Information Technologies to make necessary changes to Standard ST.9.

7. Any other system for the early implementation of revised IPC areas during the transitional period and prior to possible change to annual publication (see section *Planning the Revision Work*, below), could lead to confusion for patent offices and the public, and would result in coexistence of two versions of the IPC. Indeed, even for large offices it would not be possible to implement the revised areas at more or less the same time, in view of the necessity of translation into national languages, advanced classification of published documents, and so on.

PLANNING OF THE REVISION WORK AND A NEW REVISION CYCLE

8. In the course of the next revision period, an attempt could be made to better focus the revision work. At present, the revision program is formed on the basis of revision requests submitted by offices, but it could be that the revision process is not fully concentrated on the areas that are most in need of revision. To determine such needs, it is suggested that IPC (sub)groups relating to the most active fields of technology and containing also a large number of documents should be identified, by volunteering patent offices or by using databases commercially available. The Committee of Experts could then evaluate the groups identified, select, for example, 100 most active groups and plan the future revision work on their basis, by inviting offices to submit revision proposals concerning those groups. This approach would not of course preclude revision requests concerning other IPC entries which could be submitted by offices when they feel the need.

9. In order to ensure speedy completion of the most important revision projects, a system of priority could be considered for approval by the Committee of Experts. As envisaged, the first priority could be assigned to X-notations indicating subject matter for which no place is provided in the IPC or to proposals for creation of places covering new technologies, the second priority to proposals for subdividing existing large or rapidly growing places, and the third to proposals aimed at clarification of wordings in the Classification or borderline problems.

10. Now that correspondence can be carried out by electronic mailing, or in the future via the WIPO Web site, the presently established time periods for various actions under revision projects, providing generally one round of comments and one rapporteur report during six months between sessions of the working group, could be shortened, and offices encouraged to facilitate direct contact between their experts. Rapporteurs could have the possibilities of considering further discussions of outstanding questions or an additional round of comments for producing a comprehensive rapporteur report, and thus a better chance of early approval. For some simple projects revision proposals may be completely agreed by electronic correspondence.

11. For testing the accelerated revision procedure, the IB proposes to restrict the next revision period to three years and to have IPC⁸ enter into force on January 1, 2003. Provided that this change does not bring to light any insuperable difficulties for offices or the IB, particularly in respect of more frequent publication, it is proposed thereafter to move to an annual cycle (see section *Implementation of Yearly Revisions*, below).

12. To summarize, the IB proposes the following in respect of planning of the revision work:

- Refocus the revision work to the most active IPC entries;
- Prioritize new proposals;
- Accelerate the revision procedure;
- Move towards an annual cycle, through a transitional three-year period.

SOME REVISION POLICY CONSIDERATIONS

13. In the age of paper-based searching, in order to avoid multiple filing of paper copies of patent documents, the IPC contains rules established to restrict multiple classification, for example, precedence references or the last place rule. In the electronic age, where the use of paper for searching is constantly decreasing, the electronic retrieval of documents should be taken into account. In this case, multiple classification, when necessary, could lead to more pertinent search strategies.

14. Indexing schemes have been introduced into the IPC more and more intensively from the fourth to the present editions for use in hybrid systems combining classification and indexing schemes. The number of indexing entries in the IPC, not including double-purpose entries that may also be used for indexing, has increased from 344 in the fourth edition, through 493 in the fifth edition, to 1016 in the sixth edition. Nevertheless, they represent a relatively minor proportion of subject fields in the IPC. An inhibiting factor on the development, and utilization, of such hybrid systems, is the non-obligatory mode of application of indexing codes decided upon by the Committee of Experts. Now may be the time to consider once more the pros and cons of hybrid schemes to see if more emphasis could be given to their development, so as to convert the IPC into a multi-faceted classification.

15. One clear advantage of obligatory application of indexing codes would be a greater level of confidence for users. Such schemes lend themselves to computer searching, irrespective of the language of the documentation, presenting the searcher with *all* possibly relevant documents. Further, such schemes are useful, and indeed have already been developed, when further classification subdivision would be contrived. Many IPC fields where hybrid systems have been introduced are designed in such a way that the complete information on the subject of invention is impossible to reflect with the classification symbols only.

16. Against the obligatory application, it has to be acknowledged that application of hybrid systems would bring additional costs for some offices. Further, it could be argued that frequent revision of indexing schemes might be necessary to maintain effectiveness.

17. Clearly, if indexing were to become obligatory, a number of consequences would follow. Some simplification of the presentation of indexing codes could be envisaged, in particular of the linked indexing codes. Having been designed for increasing the accuracy of the search, the linked mode of presentation brings about many mistakes in the recording of data and is not easy to understand for a searcher. Perhaps, the most convenient way of presentation of the linked indexing codes would be to record them immediately after classification symbols with which they are associated and linked, no matter whether the classification symbols stand before or after the double oblique stroke.

18. Also the restriction that any indexing scheme should be associated with the relevant classification scheme, set out in the current Revision Policy (see Annex I), would need to be excised and some universal indexing schemes could be incorporated in the IPC. Examples of some predecessors of such universal indexing schemes may be found in those parts of the existing IPC which are used for secondary classification, for example subclass C 12 S, in association with many other places intended for primary classification, but in fact represent indexing schemes. Lastly, advances made in machine reading of texts would make automated indexing feasible in some fields.

19. The IPC as a searching tool will play its important part in the increasingly common machine searching. That being so, the Committee of Experts will need to establish a good working relationship, and coordinate activities, with the newly created Standing Committee on Information Technologies, e.g. by developing pilot projects for search systems enhancing the search with the use of the IPC, as requested by the Committee of Experts.

ORGANIZATION STRUCTURE OF THE REVISION WORK

20. The acceleration of the revision process will require some streamlining of the organizational structure of the revision work. In view of the transfer of the preparatory revision work to the Committee of Experts, now is the appropriate time for the Committee to establish a new working structure accommodated to new revision methods. A possible working structure from the viewpoint of the IB is outlined below.

21. The Committee of Experts, at its yearly sessions, considers policy matters of the revision and application of the IPC and adopts the amendments to the IPC approved by the working groups.

22. Three working groups are created, whose principal task would be to consider revision proposals in the mechanical, chemical and electrical fields. Participation in the working groups' meetings will be open to members and observers of the Committee of Experts and some other interested offices. A further working group might need to be created to deal with general questions of the revision of the IPC. The Committee of Experts carries out general planning of the meetings, and determines their duration. However, the working groups themselves and the IB may introduce changes in the yearly plan provided that the total time for the sessions of the working groups does not exceed six weeks in any given year.

23. The working groups normally meet twice a year. By analogy with the PCIPI Working Group on Search Information, the meetings of all three working groups could be held successively at the same venue. In this case, the duration of the three meetings would continue to be two weeks, unless and until a need is recognized for review due to any impact that new working procedures and new selection criteria, if elaborated, may have on the workload of the working groups. The working groups may meet in patent offices, to take advantage of the experience of examiners, or in WIPO.

24. The revision program of the working groups is formed on the basis of revision requests submitted by industrial property offices. Offices will be free at any time to submit revision requests, accompanied by revision proposals, to the IB. To ensure as far as possible the practical feasibility of revision proposals, the internal testing in the offices of such proposals should be a prerequisite of submission. To facilitate inclusion of the revision requests in the revision program, consideration of the revision requests will be carried out by the working groups which meet more often than the Committee of Experts. The IB will collect the requests and forward them for evaluation to the working groups concerned. The current selection criteria used for evaluation of the revision requests could be reconsidered with a view to giving primary importance to the criterion relating to the rate of growth.

PROBLEMS OF MULTIPLE IPC EDITIONS: PROPOSED SOLUTIONS

25. Shortening of the revision periods, will lead to the proliferation of IPC editions that should be taken into account in the novelty and state of the art search. This already presents a serious problem for offices and the public.

26. Two ways of solving this problem may be envisaged. First, the revision concordance data that is already prepared for each new edition of the IPC could be made more precise, by excluding the possibility of giving the concordance information on a general level (main group range or even subclass), so as to provide automatic determination of specific entries in previous editions to be included in the search query for the period concerned. Such automated tools could be included in the current edition of the IPC on the Internet or on CD-ROM containing different IPC editions. A step in this direction was made by the Committee of Experts at its recent twenty-seventh session by deciding that, in principle, transfer notes in the IPC and information on the transfer of subject matter in the Revision Concordance List should be presented with the most possible precision so as to facilitate retrieval of relevant entries when searching with the use of different editions of the IPC.

27. The other way of eliminating the problem of multiple IPC editions to be used during searching is reclassification of the backlog file for each new edition. This work, although carried out by some offices, is very time- and resources consuming, even if it could be done in the form of cooperation of several offices, because it includes review of huge collections of patent documents by experts in the field. However, a new approach to the reclassification of the backlog file could be investigated.

28. In the last few years, automated classification tools have begun development in some offices and commercial organizations. It seems that reclassification of the backlog would be the most natural field of application for such automated classification tools, where a high rate of correct classification could be expected because the classification algorithm could be limited by the transfer information provided in the IPC itself and in the Revision Concordance List. The Committee of Experts could study and coordinate development of such automated reclassification tools during the transitional revision period.

29. The other fields of application of the automated classification tools should also be investigated by the Committee of Experts by requesting information from offices already having experience in their use and by conducting pilot projects outsourced to external organizations. It is also proposed that, together with the Standing Committee on Information Technologies, the Committee of Experts should investigate the possibility of using emerging technology for linguistic and semantic processing to assist reclassification work. This study would result in a pilot project to test such a technological solution. It is to be noted that those new tools could also be useful in promoting the use of the IPC by novice users and the public, who have little knowledge and experience of IPC structures.

IMPLEMENTATION OF YEARLY REVISIONS AS AN ULTIMATE GOAL

30. Following completion of the transitional period, and provided its results are considered acceptable, yearly revisions of the IPC could be adopted, accompanied by reclassification of the complete patent document collection in the revised fields. If so decided, the electronic version of a new edition of the IPC would be published annually and, upon publication, would become the only classification used for classifying current patent documentation.

31. With regard to the reclassification, once the results of a revision project are adopted by the Committee of Experts, the originating office, with the assistance of other offices already having some experience with the revised scheme, will have to reclassify the major part of the PCT minimum documentation. Offices whose documentation is not part of the PCT minimum, or is included in the form of abstracts, should reclassify their published documentation. The reclassification process could last approximately six months and end at the time of publication of the new edition. In the preparation of the reclassification data, the experience in the reclassification procedure accumulated by industrial property offices, for example by the EPO, should be used. The use of automated classification tools as may be hoped will greatly facilitate the process of reclassification.

32. When the reclassification is completed, the new scheme becomes official. Following this, the classification data for new documents will be available to the public. The reclassification data should also be available to offices and commercial patent databases and they will replace the previous classification data.

BUDGETARY CONSIDERATIONS

33. Additional resources (human and financial) would be required to implement all the proposed changes, particularly procedural changes affecting planning and organization of the work, supervision of reclassification, and more frequent publications. It is premature for the IB to propose a significant increase in the corresponding budget, as no decision has yet been taken by the competent body on the further program of activities and their priorities.

[Annexes follow]

ANNEX I

POLICY FOR THE IPC REVISION WORK DURING THE SIXTH REVISION PERIOD (1994-98)

*adopted by the IPC Committee of Experts
(see document IPC/CE/XXII/11, Annex III)*

The following seven policy statements should form the basis for the IPC revision work during the sixth revision period (1994-98):

1. Revision of the IPC, in conformity with the Strasbourg Agreement Concerning the International Patent Classification, is needed, in order to enable efficient searches to be carried out, and this revision should be carried out in the light of the conclusions reached by the IPC Committee of Experts (see document IPC/CE/XV/5, subparagraphs 20(a) and (b)), i.e.:

(a) The further development of the IPC must continue—even though an acceptable basic scheme now exists—since the enormous influx of new patent documents each year will necessitate revising areas of the IPC that relate to already existing technologies. If the development of the IPC in this respect were to be discontinued, many offices would have to develop the IPC on the national level, and the value of the IPC as a universal instrument for classification and searching would be diminished. Such retrogression is not considered acceptable, in particular in view of more than 70 industrial property offices throughout the world using the IPC, and the increased use of the system by industry and other patent information users.

(b) The main goal of the further development of the IPC should be to improve the IPC as a universal search tool. The IPC should not be limited to cater for the searches mentioned in paragraph 2 of the Guide to the IPC, but should provide also for those searches referred to in paragraph 3 of the Guide.

2. Each revision request should be selected on the basis of the criteria currently agreed upon by the PCIPI Executive Coordination Committee.

3. When revising a given area of the IPC, every possible solution for improving that area as a search tool should be considered, taking into account the particular search needs in the area.

4. Care should be taken so that overlapping classification concepts are not created.

5. Any indexing scheme introduced should be associated with an adequate classification scheme.

6. Revision of the IPC which would change its basic structure should not be undertaken without good reason, for example, in order to accommodate new technologies, to avoid overlaps, etc.

7. If existing commercial databases that are readily available can meet the search needs in a certain area of the IPC, revision of that area should not be undertaken without good reason.

[Annex II follows]

ANNEX II

STATISTICS ON IPC REVISION PROJECTS ACCEPTED AND COMPLETED

PROJECTS ACCEPTED

Each year, the International Bureau invites submission of new IPC revision requests. Before dissolution of the Permanent Committee on Industrial Property Information (PCIPI) and integration of its activities, as of July 1998, into the Standing Committee on Information Technologies (SCIT), the requests, together with any accompanying proposal, certain statistical data, and any comments from offices were forwarded to the PCIPI Executive Coordination Committee. The PCIPI Executive Coordination Committee evaluated the requests, usually at its spring meeting, before acceptance into the program. Each year, a few projects were rejected. Following dissolution of the PCIPI, the activities relating to the preparatory IPC revision work had been transferred to the IPC Committee of Experts. The first such requests were considered by the Committee in 1998.

PROJECTS COMPLETED

When projects were completed by the PCIPI Working Group on Search Information, the approved amendments to the IPC were forwarded to the IPC Committee of Experts for adoption. The Committee normally meets only once a year. However, it did not meet in the first year of the current revision period (1994) and met twice in the last year (1998) of the period.

The table below gives the numbers of projects accepted and completed during the sixth revision period (1994-98).

	Projects accepted	Projects completed
1994	44	—
1995	22	14
1996	50	25
1997	26	27
1998	11	83

[End of Annex II and of document]