

B S O
Broad System of Ordering
An International Bibliography

Compiled by
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2011

BSO – Broad System of Ordering: an international bibliography

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Outline of the bibliography

The bibliography lists about 270 references to BSO ranging from 1973 to 2010. The number of languages covered in the bibliography is 19 in all: Arabic, Chinese, Croatian, Czech, Dutch, English, French, German, Hungarian, Italian, Japanese, Korean, Lithuanian, Polish, Portuguese, Russian, Slovak, Slovenian and Spanish. Every item has English abstract and/or annotation. Items are arranged in systematic order, and cross-references among related items as well as author and language indexes complement the systematic arrangement.

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I am in favour of a revolution, not of classifications, but of the management of classifications. (E.J. Coates, 1980)

BSO has inherited some of the traditions of documentary classification. However, it also incorporates many features drawn from post-1945 classification theory which have not previously found expression together in completed universal classification schemes. (E.J. Coates, 1995)

Anyone looking for a modern, useful, general classification of knowledge, for whatever purpose, will do well to begin by an examination of this publication. (D.A. Kemp, 1979)

Since it possesses a logical structure and a modern approach to the ordering of knowledge it could appeal as an international bibliographic standard for a systematic arrangement. (B.C. Vickery and I.C. McIlwaine, 1979)

The scheme does deserve wider consideration than it appears to have received, and if it is not adopted it should be for good reasons – not because of apathy. (Hazel Madeley, 1983)

It deserves more attention than it receives, however, as the very claim of switching capabilities should arouse interest in its potential, which goes far beyond the objectives set for it in the original Unesco/FID contract. (W.G. Stiles, 1987)

Preface

It has been over 30 years since the first edition of the Broad System of Ordering (BSO) was published by FID and UNESCO in 1978. There were setbacks until the completion of the first edition. At the FID Budapest Forum on the project of SRC (Standard Reference Code) in September 1972, it was decided to delegate it and to set up a special working group, the members of which were jointly from FID/CCC and FID/CR, to try and elaborate a new broad classification for UNISIST. During the first year or two (1973-74) the FID/SRC (Subject-field Reference Code) Working Group did much preparatory work for the new scheme. By the end of 1974, however, there was a sharp division of views within the FID/SRC Working Group. This resulted in two incompatible draft schemes, neither of which obtained approval at a joint meeting with four UNISIST representatives in September 1974. A three-man panel was appointed from the FID/SRC membership, charged with working out a compromise acceptable for UNISIST, which was named the FID/BSO Panel.

BSO has a twofold aspect. It is a switching language designed for use in the UNISIST programme, and it is a faceted general classification devised after World War II. Despite being an attempt at a new step in the sphere of information language, BSO was welcomed coldly. A few but scathing criticisms were put forward shortly after the appearance of BSO and they have been repeatedly cited in many references to BSO. Meanwhile two test exercises concerning applications of BSO were carried out by the FID/BSO Panel in the first half of the 1980s.

Due to a financial crisis of FID and UNESCO, BSO lost support in 1990 and was shortly incorporated as the BSO Panel Ltd in the United Kingdom. During this period there was an expansion of BSO taking account of the results of the test exercises mentioned above and the machine-readable 4th revision was released. While BSO has been developed in the framework of the UNISIST programme, the scheme does in many respects reflect the work of the Classification Research Group (CRG) in London. In 2000 BSO came under the management of the University College London, School of Library, Archive and Information Studies (now the Department of Information Studies). They set up a website for BSO and the machine-readable version of the BSO 4th revision has been being available free of charge (<http://www.ucl.ac.uk/fatks/bso/index.htm>).

I encountered BSO early in the 1980s. Since then I have been following the fate of BSO and have examined literature on the scheme. While this bibliography is a product of my study of BSO, there is another factor that drove me to carry out this work. It is said that according to historians of modern civilization, there is a time lag of about 30 years between the first revelation of a revolutionary idea and its acceptance as an item of practice in the common body of thought of the community concerned. I hope that the bibliography will be regarded in the future as a contribution to the re-start of BSO from the viewpoint of the 30 year rule.

Acknowledgement is due to Dr. Sinisa Maricic (Croatia) for his valuable discussion and encouragement at all times. I wholeheartedly appreciate the kind support of Dr. Aida Slavic (UK, of Croatian origin), Dr. Claudio Gnoli (Italy) and Mgr. Anna Janikova (Czech Republic). I am very grateful to Professor Ia C. McIlwaine, of the University College London (UK), for reading the preface and introduction of the publication as a native English speaker. I thank Ms. Hiromi Okada and Ms. Midori Takagi for their technical assistance.

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Introduction

Outline

This bibliography lists about 270 references to BSO ranging from 1973 to 2010. The largest and most important section of the publication is a single sequence of entries arranged in systematic order.

Coverage and selection

The bibliography aims at comprehensiveness as far as possible. It covers (1) journal articles, (2) conference papers, (3) monograph chapters, (4) reports, (5) theses, (6) seminar works, (7) book reviews, (8) letters, (9) news items, and so on. It also includes some unpublished literature which originated from activities of the FID/SRC Working Group and of the FID/BSO Panel. In view of the prevalence of the Internet, literature in websites or websites themselves which are available free of charge are included with some caution.

No attempt has been made to list items that are not primarily concerned with BSO. However, some items on other topics have been included if they are thought to provide supplementary information on BSO, either relating to features of the scheme which are considered noteworthy or if they deal with new aspects of the scheme.

Arrangement

Schedules for the systematic arrangement of items constitute a large part of the table of contents. The schedules consist of 10 main classes. In the first class (00) items dealing with pre-1978 BSO are collected as far as possible. They give information on the development of the first edition of BSO. In the second and third classes (10 and 20) items of BSO schemes and related literatures are listed. The purpose of systematic arrangement is to group related items. Therefore, for instance, book reviews are listed with the publication that they discuss and the item number of each book review is accompanied by that of the publication in brackets. The compiler endeavoured to arrange items in the most helpful order for readers interested in BSO.

Entries

Each entry consists of (1) item number, (2) bibliographic description and (3) abstract and/or annotation. In the case of journal articles, which constitute the majority of items included, the following bibliographic elements are given in order: original English title or English translation of title, author(s) if any, journal title together with an ISSN in brackets, volume number, issue or part number in brackets, year of publication, and inclusive pagination. Titles in English are given as they appear in the literature. Titles in other European languages using the Roman alphabet are given in both translated and original forms. Other titles, such as those in Arabic, Chinese, Japanese, Korean and Russian are given in translated forms only. As a matter of convenience all diacritical marks are omitted.

Abstracts

Abstracts used in entries are taken from various sources: original abstracts, abstracts supplied by authors for this bibliography, and abstracts of secondary information services. Below is a list of secondary information services from which abstracts are taken.

- ERIC – Educational Resources Information Center record (USA)
- HLISA – Hungarian Library and Information Science Abstracts (Hungary)
- IC – International Classification: Classification Literature, 1974-92 (Germany)
- LISA – Library and Information Science Abstracts (UK)
- VINITI-AJI – Abstract Journal. Informatics, VINITI, 1973-76 (USSR)
- VINITI-IA – Informatics Abstracts, VINITI, 1977-91 (USSR)

The abstract should be used for an entry depends upon the judgement by the compiler. The source is indicated in brackets at the end of abstract. Where an abstract or annotation is prepared by the compiler, his initials (KK) are indicated in brackets.

Indexes

The bibliography provides indexes to authors and to languages of texts written in those other than English. Both indexes refer to item numbers.

Omissions

Though the bibliography aims at comprehensiveness, there may be serious omissions. Information from readers will be appreciated.

Systematic Arrangement

00 DEVELOPMENT OF BSO

00.10 Reports and news from FID

#1 **First meeting of new FID/SRC Working Group.** – *FID News Bulletin* (ISSN 0014-5874), 23(2)1973, p.10-11.

The first meeting of the Working Group of the new FID/SRC (Subject-field Reference Code) was held at FID, 3-5 January 1973. The Working Group was set up by the FID Council at the Budapest Conference in September 1972. All eight members, including Chairman J. Toman, participated together with V. Rybatchenkov on behalf of UNISIST and I. Dahlberg in connection with the DGD/ID project "Ordnungssystem der Wissensgebiete." The scope of the FID/SRC Working Group was that for the purpose of interconnection and cooperation between information systems as envisaged by UNISIST, they will design and develop a broad subject-ordering scheme, for all fields of knowledge, and usable in manual and mechanized systems to serve as:

- (1) a tool for interconnection of information systems, services and centres using diverse (often compatible) indexing/retrieval languages,
- (2) a tool for tagging (i.e. shallow indexing) of subject-fields and subfields, and
- (3) a referral tool for identification and location of all kinds of information sources, centres and services.

The next meeting was fixed for 26-28 March 1973. (KK)

#2 **2nd FID/SRC meeting in The Hague, 26-28 March.** – *FID News Bulletin* (ISSN 0014-5874), 23(4)1973, p.45.

The second meeting of the FID/SRC Working Group was held in The Hague, 26-28 March 1973. Three assigned tasks had been completed and presented for discussion: (1) computer printouts of first merged list (KWIC and KWOC) of upper-level subject-fields from the former FID/CCC-SRC's 'superclasses,' the DGD/ID highest categories and CC 7th ed. 'basic and main subjects'; (2) a paper on possible applications and uses of SRC; and (3) two papers on guidelines for determining 'subject-fields' had been submitted. A first attempt was made to select from the KWIC merged list the main-top level categories. The results tallied closely with earlier estimates of about 80 'superclasses.' I. Dahlberg was co-opted to the Group as a new member, and it was agreed that the Chairman and Secretary should try to enlist a member associated with London CRG – perhaps E.J. Coates, Director of the British Technology Index. The next meeting was fixed for 6-8 June 1973. (KK)

#3 **3rd FID/SRC meeting.** – *FID News Bulletin* (ISSN 0014-5874), 23(7)1973, p.90.

The third meeting of the Working Group of FID/SRC was held in The Hague on 6-8 June 1973. The meeting was attended by eight of eleven members (including E.J. Coates) and was devoted mainly to: (1) reviewing the tasks so far done (January-June 1973), (2) planning and allocating the tasks to be done by the next meeting (October), (3) recommending allocations of funds for the projects, and (4) preliminary arrangements for the preparation and presentation of a first-year progress report for UNESCO and the FID Council. The fourth and last meeting of 1973 was fixed for 10-12 October. (KK)

#4 **Subject-field Reference Code.** – *FID News Bulletin* (ISSN 0014-5874), 23(11)1973, p.142. The first paragraph of the report was reproduced in: *International Classification* (ISSN 0340-0050), 1(1)1974, p.45.

The fourth meeting of the Working Group FID/SRC was held on 11-12 October 1973. They reviewed results achieved at the three earlier meetings for presentation as a first annual progress report to UNESCO and the FID Council. The main results to be recorded include: (1) agreement on guidelines and criteria for establishing 'candidate SRC subject-fields,' (2) investigation of some potential users, and possible structures, notations and forms of display of SRC, (3) a first provisional listing of about 100 main subject-fields in English, arranged alphabetically for the report and also in a few broad thematic groups for internal use, and (4) a second more detailed listing with some 600 subject-headings. (KK)

#5 **1973 Progress Report on a Broad System of Ordering for UNISIST: Project of Working Group FID/SRC "Subject-field Reference Code" under Unesco Contract 600.089.** – The Hague, FID, 3 December 1973, 6p.+Appendix I-V. The content of Appendix IV and V is the same as that of #49.

Progress report after four meetings in 1973 and interim homework. Matters included are: (1) some tentative agreements on definitions in the field of classification, (2) guidelines for determining SRC subject fields, (3) investigation of possible applications, (4) structures, notations and forms of display for SRC, (5) a provisional first listing of SRC main candidate subject-fields (Appendix IV), (6) a second more detailed list of further tentative candidate subject-fields (Appendix V), and (7) work programmes for 1974. (KK)

#6 **Subject-field Reference Code (SRC).** – *FID News Bulletin* (ISSN 0014-5874), 24(3)1974, p.28.

The 5th meeting of the Working Group FID/SRC was held at the FID Secretariat on 11-13 February 1974. They received a brief report of the comments made on the results of its work in 1973 (FID/SRC Progress Report, 1973) during the first meeting of the UNISIST Advisory Committee in Paris on 4-8 February (See #49). It was decided to use the name 'Subject-field Reference Code (SRC)' for the current project rather than 'Broad System of Ordering (BSO)' which is the name hitherto used by UNISIST. The results of considerable homework were discussed, which provided a much completer inventory of subject-fields at three levels than in the Progress Report 1973 and led to a new revised draft of some 80-90 top-level subject-fields arranged in nine main areas. It was expected that Dahlberg would prepare a first unified and structured list which would be considered at the 6th meeting of FID/SRC in May 1974. (KK)

#7 **FID/SRC 6th meeting.** – *FID News Bulletin* (ISSN 0014-5874), 24(6)1974, p.71-72.

The 6th meeting of FID/SRC was held at the FID on 13-15 May 1974. Eight members (including the UNESCO liaison officer) attended the meeting and the matters dealt with were concerning: (1) drafting of a structured SRC list with notation, (2) evaluation of criticism of the 1973 Progress Report by the UNISIST Advisory Committee in February 1974, (3) review and amendment of a first structured list and elaboration of an alternative list to be presented, and (4) plans for establishing a comprehensive document (with a single scheme) for the 1974

Progress Report and for presentation at the Bombay Conference in January 1975. Further meetings were fixed for 11-12 September and for 18-20 November. (KK)

#8 **FID/SRC meeting on Broad System of Ordering.** – *FID News Bulletin* (ISSN 0014-5874), 24(11)1974, p.134.

The 7th meeting of the FID/SRC was held in The Hague on 11-13 September 1974. Nine members (including the UNISIST liaison officer), jointly with four UNISIST experts, attended the meeting to discuss the results so far achieved. A composite working paper with an introduction and two alternative schemes led to the following recommendations: (1) work should continue in 1975-76 on the UNISIST project, now to be called BSO; (2) the procedure must be changed, i.e. a more concentrated, pragmatic approach is needed; (3) the task of the new BSO Panel comprising only three members is to complete a single two level BSO by early 1975 from the two alternative schemes taking account of the UNISIST experts' comments. (KK)

#9 **Broad System of Ordering (BSO) for UNISIST.** – *FID News Bulletin* (ISSN 0014-5874), 25(1)1975, p.4.

The new BSO Panel was formed in September 1974 at the joint meeting of the full FID/SRC Working Group with UNISIST experts. The Panel consisted of G.A. Lloyd, E.J. Coates and D. Simandl. Their urgent task is to complete the first draft of a single schedule, from the two alternative schemes presented at the September joint meeting, for discussion with other FID/SRC members in February and presentation to UNESCO with the 1974 Progress Report. Comments received after wider circulation to subject-specialists will be taken into account in a second draft version, for which later in 1975 a definitive notation will be applied before testing. (KK)

#10 **Broad System of Ordering (BSO).** – *FID News Bulletin* (ISSN 0014-5874), 25(3)1975, p.26.

Six members of the FID/SRC Working Group, including two members of the BSO Editing Panel, met on 17-19 February 1975, together with UNESCO liaison and FID Secretary General. The first draft unified BSO scheme, which was a structured list of some 2,000 subject-field terms arranged under 75 main field subject headings, had been prepared by the BSO Panel. In view of the urgent deadline in early March for the Progress Report, it was agreed that the BSO Panel's first unified scheme should be appended to the Report in its full form, with minor amendments only. Only if the provisional version is accepted by the UNISIST Advisory Committee at its meeting on 5-9 May 1975, can UNESCO consider any new 1975 funding, and then probably one essentially for field trials (See #50). (KK)

#11 **Current FID projects.** – *FID News Bulletin* (ISSN 0014-5874), 25(4)1975, p.42. Reprinted under the title: **FID 1975.** – *IFLA Journal* (ISSN 0340-0352), 1(3)1975, p.251.

The 1975 FID programme includes such major projects as Research, Classification, Information services, and Training. Classification project includes Broad System of Ordering – BSO (working group), for interconnecting information systems and services using different indexing languages (UNISIST programme). (Excerpt from original text)

#12 **Visits paid.** – *FID News Bulletin* (ISSN 0014-5874), 26(2)1976, p.23.

The article contains the news that on 20-22 January 1976, G.A. Lloyd, Head of the Classification Department of FID, participated in a meeting of the BSO Panel in London. (KK)

#13 **Broad System of Ordering (BSO).** – *FID News Bulletin* (ISSN 0014-5874), 27(4)1977, p.40-41. Similar report appeared in: *UNISIST Newsletter* (ISSN 0379-2218), 5(1)1977, p.7-8. See #24.

BSO Panel's activity during summer 1976 to winter 1976-77 was reported. Two major operations were: (1) schedule improvement, and (2) preparation of test instructions and choice of sources for the upcoming consistency test. (KK)

#14 **[The 1978 FID Congress, 25-28 September in Edinburgh].** – *FID/CR Newsletter* (no ISSN), 5(2)1977, p.11-18.

It is announced that the 1978 FID Congress will be held 25-28 September in Edinburgh. Its title being "New trends in documentation and information"; the Congress should cover in principle the whole field of documentation on the one hand, and the role and activities of FID in the field on the other; the Congress should at the same time contribute to the elaboration of the new programme of FID. The preliminary programme and details of the preparatory work of the Congress are given. Brief accounts are given of the FID/BSO (Broad System of Ordering) progress, the International Patent Classification developments, and the FID projects towards establishment of a common English-French vocabulary in physics. New editions of the UDC, Bliss classification, Dewey Decimal Classification, and thesauri are announced. (VINITI-IA 78.2.195)

00.20 Reports and news from UNESCO

#15 **Development of a Broad System of Ordering for UNISIST purposes.** – *UNISIST Newsletter* (ISSN 0379-2218), 1(2)1973, p.3-4.

Outlines the functions of BSO as a switching mechanism in the UNISIST programme. Cooperation has taken place with FID. At the FID Congress held in Budapest in September 1972, it was decided to set up a Working Group of the new FID/SRC (Subject-field Reference Code) whose functions would be completely dissociated from the UDC revision activities. The first meeting of the WG which was chaired by J. Toman took place at the FID Headquarters in January 1973. The main objective of the meeting was to develop the terms of reference, the work plan and distributions of tasks between the members of the WG. In March 1973 a contract was assigned with FID assuring financial support of UNESCO. The second meeting took place in March 1973 in The Hague. Discussions centered on the progress achieved by the members. It is expected that an outline of SRC will be ready by the end of 1973 and a more detailed scheme is hoped for autumn 1974. UNESCO plans to convene a meeting of experts in 1974 to discuss the results obtained by the FID/SRC WG. (KK)

#16(#15) **UNISIST seeks broad classification scheme.** – *Information, Part 1: News, Sources, Profiles* (ISSN 0036-8776), 6(2)1974, p.41. The majority of the report was reproduced from: *UNISIST Newsletter* (ISSN 0379-2218), 1(2)1973, p.3-4.

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#17 Broad System of Ordering. – UNISIST Steering Committee (First Session), Unesco House, Paris, 5-9 November 1973, 3p. (SC/UNISIST/St.Com.I/5). Part of a report by Vladimir Rybatchesnikov who is a UNESCO liaison (See #18). French and Spanish versions were prepared as well.

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#18 Development of a Broad System of Ordering for UNISIST purposes. / Vladimir Rybatchesnikov. – *International Classification* (ISSN 0340-0050), 1(1)1974, p.20-21.

Outlines the functions of a BSO as a switching mechanism in the UNISIST Project. Cooperation has taken place with FID which set up a Working Group for the elaboration of a Subject-field Reference Code (SRC) in 1972. Structure, notation and display of the SRC as a result of the first year's discussions are mentioned as well as the use of existing experience and the work planned for 1974. (LISA 75/3142)

One of the main directions of effort of SRC Working Group in 1974 is to present SRC scheme at the Bombay conference on Universal Systems of Ordering in January 1975 for comments and criticism. (KK)

#19 Broad System of Ordering. – UNISIST Advisory Committee (First Session), Unesco House, Paris, 4-8 February 1974, 5p. + Annex. (SC/UNISIST/Adv.Com.I/5). French version was prepared as well.

Another title given as the headline of the content is "Development of a Broad System of Ordering for UNISIST purposes." Outlines the functions of BSO as a switching mechanism in the UNISIST programme. Cooperation has taken place with FID. At the FID Congress held in Budapest in September 1972, it was decided to set up a new Working Group of FID/SRC (Subject-field Reference Code) whose functions would be completely dissociated from the UDC

revision activities. The WG composed of 10 members. In March 1973 a contract was assigned with FID assuring financial support of UNESCO. During 1973 a substantial amount of work was accomplished, and progress to date includes some agreement on definitions, on structure and display for BSO. One of the main directions of effort of the WG in 1974 is to present SRC scheme at Bombay conference on Universal System of Ordering in January 1975 for comments and criticism. The general outline of the scheme, including two levels of subject-fields, is brought as an annex. (KK)

#20(#19) **Final report.** – UNISIST Advisory Committee First Session, Paris, 4-8 February 1974. – Paris, Unesco, June 1974, p.12. (SC/MD/42). French version was prepared as well.

The Committee conducted an examination of current projects in the UNISIST programme. The result of an examination of BSO has been reported as “Broad System of Ordering (SC/UNISIST/Adv.Com./I/5 + Annex).” The Chairman J.-C. Gardin summarized the Committee’s views and recommendations as: (1) Conflicting views were expressed as to the scope and the depth of BSO scheme; (2) The concentration on the broad level requires interaction with specialist units in various subject fields, to provide the detailed classifications; (3) The BSO scheme should include topological relationships and scope notes. A concordance sample should be provided; (4) Attention must be directed to minimizing duplication of work on overall classification schemes; and (5) A single name should be given by which the project is universally known. (KK)

#21 **Final report.** – UNISIST Steering Committee, Bureau, 2nd Meeting, Unesco House, Paris, 19-20 September 1974, 21p. in various pagination. (SC/UNISIST/St.Com./Bur.2/4). French and Spanish versions were prepared as well.

The report includes: Point 9 of the Agenda – Broad System of Ordering (SC/UNISIST/St.Com./Bur.2/4. Annex V). In accordance with the recommendations of the first meeting of the Bureau, an ad hoc meeting of the FID/SRC Working Group with four UNISIST experts was convened in The Hague, 11 to 13 September 1974. Prior to the meeting UNISIST experts received the latest working documents developed by the FID/SRC Working Group in the spring and summer 1974 which included an introduction to SRC and two alternative schemes. Following the thorough review of the work of the FID/SRC group, the UNISIST experts came to the conclusions, of which the last one was that the scheme itself should have only one name, i.e. BSO. After the joint meeting a separate meeting of the FID/SRC group took place, and they chose three of its members to finalize the BSO scheme in accordance with the recommendations of the UNISIST experts. The panel members chosen were G.A. Lloyd (Rapporteur), E.J. Coates and D. Simandl. (KK)

#22 **Broad System of Ordering.** – UNISIST Advisory Committee (Second Session), Unesco House, Paris, 5-9 May 1975, 4p. (SC/UNISIST/Adv.Com./II/4). French version was prepared as well.

Following a description of the works of the FID/SRC Working Group and the comments of the UNISIST Advisory Committee on these works of 1973 to 1974, mention is made of the scheme which is the result of the editorial and drafting efforts of the new FID/BSO Panel formed in September 1974. The first unified draft of BSO scheme contains some 2,000 subject-fields in a

structured arrangement at minimum two levels, but notation has not yet been applied. In compliance with the recommendations which were given by the UNISIST expert at the September 1974 meeting, this first unified draft of BSO will be: (1) circulated for comments to all ICSU-affiliated unions and other international bodies concerned, (2) subjected to field trials, (3) amended in the light of these two operations to establish a revised BSO, and (4) provided with an appropriate notation. Activities needed for the field trials are listed. (KK)

#23 Broad System of Ordering – progress report. – *UNISIST Newsletter* (ISSN 0379-2218), 3(2)1975, p.5-6.

A concise but very useful report that summarizes the work of the BSO project during 1973 to May 1975. By the end of 1973 the FID/SRC Working Group submitted the first draft of SRC which was arranged in alphabetical order to UNISIST Secretariat. Following the comments by the UNISIST Advisory Committee in February 1974, the WG started the compilation of a classified list of the 850 terms. After six months of work, two alternative SRC schemes were developed. The two schemes followed a somewhat similar pattern for the physical and life sciences, but diverged considerably thereafter. The two schemes were presented at a joint meeting of FID/SRC with four UNISIST-nominated experts in September 1974. Despite the criticism expressed by the experts, it was felt that the UNESCO/FID project seemed to be necessary and worthwhile. As a result, it was decided that the necessary revision and merging of the two schemes was to be undertaken by a three-man BSO panel (G.A. Lloyd, E.J. Coates and D. Simandl). This work was accomplished by March 1975. (KK)

#24 Broad System of Ordering – progress report. – *UNISIST Newsletter* (ISSN 0379-2218), 5(1)1977, p.7-8. Similar report appeared in: *FID News Bulletin* (ISSN 0014-5874), 27(4)1977, p.40-41. See #13.

Reports on activities of the FID/BSO Panel since March 1976. Although the 2nd version was stated as being reasonably ready for testing, the FID/BSO Panel considered it advisable to re-examine and revise it before circulating it with instructions to potential testers. During the summer of 1976 and winter of 1976-77, the FID/BSO Panel has been engaged in two major operations: the one in BSO schedule improvement and preparation of an alphabetical subject index, the other in preparation of test instructions and choice of sources for extracting test samples. The 2nd draft schedule was completed in March 1976. The FID/BSO Panel has planned its 1977-78 programme provisionally as follows: (1) test materials (worksheet, instructions for use with 1977 revised BSO scheme and index), (2) evaluation of test results and final version of BSO to be completed by 31 March 1978, and (3) publication of the BSO to be expected during the summer of 1978. (KK)

00.30 References made to BSO project

#25 UDC revision and SRC project: relations and feedback. / Andre van der Laan and Jan H. de Wijn. – *Unesco Bulletin for Libraries* (ISSN 0041-5243), 28(1)1974, p.2-9.

Paper contributed by two members of the FID/CCC (Central Classification Committee) which is responsible for UDC and its revision. Since 1971 the Standard Reference Code (SRC) has been developed to meet the FID's need for a new superstructure of UDC and the UNISIST's

need for a Broad System of Ordering (BSO) for its information work. The following are described: (1) the reason why the FID/CCC resolved to combine the efforts for the revision of UDC with the work for the SRC project; (2) the procedures for UDC revision; (3) the SRC project as a specific task for UDC revision set up at FID (CCC/SRC); (4) the FID Budapest Forum held in September 1972 and the reason why the FID Council decided to separate the work on the SRC project from the UDC revision work; (5) the scope and programmes of the new Subject-field Reference Code (FID/SRC); and (6) the UDC reform plan after the Budapest Forum. Concludes that though the revision of UDC and the development of SRC no longer go hand in glove, they will certainly influence each other and SRC will particularly have a strong influence on the future of UDC. (KK)

#26 History, development and present state of affairs regarding the FID Subject Field Reference Code Project [In Dutch]. *Geschiedenis, ontwikkeling en huidige stand van zaken ten aanzien van het FIP-project 'Subject Field Reference Code.'* / Jan Hendrik de Wijn. – *Open* (ISSN 0030-3372), 6(6)1974, p.312-320.

During 1971 and 1972 the existing plans for a Standard Reference Code, originally intended to serve as a new upper structure for UDC and as a Broad System of Ordering (BSO) for UNISIST, underwent some modifications. Since January 1973, an FID/SRC working party has been engaged in devising an SRC (now Subject-Field Reference Code) which may be used as a BSO in all fields of science, and in both manually and automatically served information systems. When completed, this SRC will be a useful tool to interconnect information systems, services and centers which employ different and often not comparable access and retrieval methods. (LISA 74/2499)

#27 The future of classification. / Phyllis A. Richmond. – *Drexel Library Quarterly* (ISSN 0012-6160), 10(4)1974, p.105-117.

Paper delivered at the Institute on Classification in the 1970s, Faculty of Library Science, University of Toronto, 25 May 1974. Some developments in classification research are outlined. Work is in progress on SRC (Subject-field Reference Code) – a broad classification scheme which is being developed by an FID working group as part of the UNISIST programme. The influence of new factors on the scene is noted. Unsolved problems of classification are described: the problem of continuous updating; an objective representation of objective reality; lack of an organizing philosophic basis for current thought in classification research; and the development of a completely open-ended system with infinite hospitality in array, chain and concept capture. A few research problems are outlined. (VINITI-AJI 75.9.124)

#28 Classification. / D.J. Foskett. – In: *Handbook of special librarianship and information work*, 4th ed. / ed. W.E. Batten. London, Aslib, 1975, p.153-197. (ISBN 0-8514-2073-7).

Describes various aspects of classification, with particular reference to public and special librarianship. Identifies philosophical premises and logical principles underlying different theories of classification. Makes a comparative study of general classifications and special ones. Specific schemes described are: (1) DDC, (2) UDC, (3) Cutter and LCC, (4) Bliss, (5) CC, (6) relational analysis, (7) special schemes, (8) UNISIST and BSO, (9) schemes for special materials and patents, and (10) other forms. Building classifications are mentioned. Discusses

the problems of notation and choice of scheme. Reviews mechanized methods of information retrieval and research in classification. (KK)

#29 Classification of current research projects. / Ingetraut Dahlberg. – *International Classification* (ISSN 0340-0050), 2(2)1975, p.110.

Introduces a study report that almost all of the papers with descriptions of current research project documentation proved that each of the centers uses a different classification for the broad subject ordering, for storage and announcement. Emphasizes that a single universal classification system would be needed for common use and that this might well be BSO once it becomes available. Suggests that BSO has the advantage not to be identical with any of the national systems so far in use. (KK)

#30 The IFLA Medium-Term Programme: a summary. / C. Reedijk. – *IFLA Journal* (ISSN 0340-0352), 2(2)1976, p.87-92.

Mentions that one of the professional activities in connection with the bibliographic control is “Study of results of work on Broad System of Ordering, with a view to establishing an international subject-content code.” (KK)

#31 NATIS, an international information system: impossible dream or attainable reality? / Michael E. Carroll. – *American Archivist* (ISSN 0360-9081), 39(3)1976, p.337-341.

NATIS is the acronym of National Information System. The concept of NATIS was discussed at an intergovernmental conference held in Paris in 1974. The conference was organized by UNESCO in cooperation with FID, IFLA and the International Council on Archives (ICA). UNISIST is one that is NATIS concept at an international level, and FID has undertaken within the UNISIST programme the elaboration of BSO to allow the compatibility of subject references. Poses three questions: (1) Is NATIS impossible dream or attainable reality? (2) Why should NATIS be planned in an international context? (3) Does the archival world fit into, and should it associate itself the NATIS proposal? Concludes that national and international information systems for libraries and documentation centers are feasible and desirable. Argues that the NATIS proposal would be of considerable benefit to the uses of archives. Suggests that archivists should work with librarians and documentalists in order to take advantage of work and experience of them. (KK)

#32 Information needs of social scientists: a review article. / Fred W. Riggs. – *Library Quarterly* (ISSN 0024-2519), 46(3)1976, p.299-303.

Review of ‘Classification and indexing in the social sciences, 2nd ed. by D.J. Foskett. London, Butterworth, 1974, 202p.’ Evaluating the book from the viewpoint of a social scientist, expresses a disappointment because the basic orientation of the book is towards handling a collection, towards making its contents more available. Argues that the book should have extended the scope of contents so as to make it more broadly responsive to the needs of social scientists. Mention is made of the project of UNISIST, which involves the creation of BSO that already includes draft terminology for social sciences. But much refinement is needed to make BSO a useful instrument for social scientists. (KK)

#33 **UNISIST and the BSO.** / A.C. Foskett. – In his: *The subject approach to information*, 3rd ed. – London, Clive Bingley, 1977, p.211-214, and p.223 for references. (ISBN 0-85157-238-3).

Describes prehistory of arising the need for switching language in indexing and classification to cope with the information explosion. BSO containing up to 4,000 terms is expected to be published in 1978. The outline of BSO has the remarkable resemblance to Bliss Classification. As existing classification schemes do not reflect the modern structure of knowledge, it is interesting to see how BSO paid attention to the order of main subject fields. As to the questions concerning the success of BSO, concludes that only time can provide the answer. (KK)

#34 **[Book review].** / Rowena Weiss Swanson. – *Journal of the American Society for Information Science* (ISSN 0002-8231), 28(5)1977, p.304-305. The following is reviewed.

Advances in librarianship, volume 7. / ed. Melvin J. Voigt and Michael H. Harris. – New York, Academic Press, 1977, 348p. (ISBN 0-12-785007-4).

The volume contains eight chapters, of which the first is by F.W. Lancaster entitled “Vocabulary control in information retrieval,” and the second is by I. Dahlberg “Major developments in classification.” Lancaster and Dahlberg have different opinions on the importance of classification for information retrieval. Dahlberg contends that “one needs to establish a better and more sophisticated order the larger the size of the database.” The chapter summarizes international activities related to the evolution of BSO. Says that the chapter is highly recommended for those who are interested in classification. (KK)

#35 **Major developments in classification.** / Ingetraut Dahlberg. – In: *Advances in librarianship*, volume 7. / ed. Melvin J. Voigt and Michael H. Harris. – New York, Academic Press, 1977, p.41-103. (ISBN 0-12-785007-4).

Recent classification history is sketched beginning with Ranganathan in the 1930s and covering the work in the USSR (1960s) and the UK (1960s and 70s), the Elsinore Conference (1964), thesauri developments, the UNISIST programme, and the efforts of FID towards the international Broad System of Ordering. Developments in the 6 major international classification systems (Dewey, UDC, LCC, Bliss BC, Colon Classification, Library-Bibliographical Classification – BBK) are discussed. The following are also outlined: developments in classing methods; developments in universal classification; and activities of organizations in the classification field. (LISA 77/1827)

BSO is discussed in the section IV (Developments in universal classification) in detail. (KK).

#36 **Standardization and classification** [In German]. **Normung und Klassifikation.** / Ingetraut Dahlberg. – *DK-Mitteilungen* (ISSN 0011-4987), 22(5-6)1978, p.13-17.

Lecture given at the 9th Colloquy on Information and Documentation, Oberhof, November 1975. The use of standard classifications has long been discussed; the proposed unit classification in Germany and UNESCO’s Broad System of Ordering are current moves in this direction. In some countries UDC has become part of a national standard classification; UDC is the most widely used general classification in the world. A standard classification assists library rationalization and national and international cooperation on statistics, research and cataloguing. Since 1958 the German Standards Institute’s Committee on Classification has produced guidelines on all aspects of classification, not only from the theoretical viewpoint but

also from that of library management. (LISA 80/4750)

#37 **Cooperation in classification.** / Wolfgang Dahlberg. – *International Classification* (ISSN 0340-0050), 5(2)1978, p.95-98.

Report of the 2nd Conference of the Gesellschaft für Klassifikation (the Society for Classification) held in Frankfurt-Hochst, West Germany, 6-7 April 1978. The greeting messages of the international and national institutions, such as UNESCO, FID, IFLA, DGD, etc. reached. Helmut Arntz, who was President of FID and gave a paper entitled “UNESCO and FID efforts towards a Broad System of Ordering (BSO),” presented the following message: “For a very special reason, the FID vividly acclaims the founding of the Society for Classification Over and beyond the UDC, the BSO (the new Broad System of Ordering) should make it plain to everyone, how intensely the FID remains concerned with all classification problems and how happy we are over the fact that the Gesellschaft für Klassifikation has succeeded in organizing such an impressive conference by which we will all greatly profit. Together with my special congratulations to the organizers I wish to express hereby the FID’s very best wishes.” (KK)

#38 **UNESCO and FID efforts towards a Broad System of Ordering (BSO)** [In German]. **UNESCO- und FID-Bemühungen um ein Broad System of Ordering (BSO).** / Helmut Arntz. – In: *Kooperation in der Klassifikation 1: 2. Fachtagung der Gesellschaft für Klassifikation e.V., Frankfurt-Hochst, 6-7 April 1978.* / Red. Wolfgang Dahlberg in Zusammenarbeit mit Ingetraut Dahlberg, Robert Fugmann, Hans-Hermann Bock. – Frankfurt am Main, Gesellschaft für Klassifikation, 1978, p.60-71 (includes discussion, p.69-71). (Studien zur Klassifikation 2) (ISBN 3-88283-002-6).

The paper substantiates the need for setting up a classification system that could be used as a means of ensuring the compatibility of the classification systems of different information services. The organizational aspects of the system that have given rise to changes in the formulation of objectives and in approaches to the problem are discussed in detail. The expert evaluation of the system design is reported and the reasons for critical comments are described. A brief description is given of the classification structure and recording procedures, followed by critical observations and improvement proposals. The possibility of creating in principle intermediary languages ensuring the compatibility of different IR languages is discussed. (VINITI-IA 79.9.223)

#39 **[Book review]** [In French]. / Jean-Francois Cosandier – *Bulletin des Bibliothèques de France* (ISSN 0006-2006), 24(11)1979, p.556-557. The following is reviewed.

Cooperation in classification [In German]. **Kooperation in der Klassifikation: proceedings der 2. Fachtagung der Gesellschaft für Klassifikation e.V., Frankfurt-Hochst, 6.-7. April 1978.** / Red. Wolfgang Dahlberg in Zusammenarbeit mit Ingetraut Dahlberg, Robert Fugmann und Hans-Hermann Bock. – Frankfurt am Main, Gesellschaft für Klassifikation e.V., 1978, 2 vols. (Studien zur Klassifikation 2 & 3) (ISBN 3-88283-002-6 & 3-88283-003-4).

Though much has been said about classification in long time, it is an invaluable tool in many fields of application. The Gesellschaft für Klassifikation was founded in 1977. It participates in the work of German Institute for Standardization (DIS) and various international organizations, such as FID, ISO, IFLA, and so on. The 2nd conference was held in

Frankfurt-Hochst in 1978. One section dealt with the philosophical and linguistic foundations of classification. But the central theme was national and international cooperation in this field, and we must retain presentations showing particularly significant achievements, such as BSO created under the auspices of UNESCO and FID for use in interconnection between different information systems. (KK)

00.40 FID/CR Bombay Conference of 1975

#40 Third International Study Conference on Classification Research, Bombay, 6-11 Jan. 1975. – *FID/CR Newsletter* (no ISSN), 3(1)1975.

The Third International Study Conference on Classification Research was held in Bombay, 6-11 January 1975. It was organized by the FID Classification Research Committee under the by-line “Ordering systems for global information networks.” The main objectives of the conference were: (1) to examine the use and impact of the application of (a) developments in information technology, computer technology, and communication facilities, (b) relevant studies in linguistics, psychology, general systems theory, and behavioural sciences, on classification, indexing, and other information ordering techniques particularly in the context of global information network design and development; and (2) to recommend areas of research. The conference expressed its appreciation of the initiative taken by UNESCO in its UNISIST programme to facilitate the sharing of knowledge and experiences among all people by promoting the establishment of a world-wide information network utilizing the developments in information science and technology, computer science and technology, communication, etc. The conference also took note of UNISIST’s programmes for the development of a Broad System of Ordering to facilitate switching between, and interconnection of, information systems, and the formulation of guidelines and mechanisms to achieve compatibility between information systems using a variety of indexing and classification methods, thesauri systems, etc. (VINITI-AJI 75.9.127)

#41 Third International Study Conference on Classification Research. / FID/CR Secretariat. – *International Classification* (ISSN 0340-0050), 2(1):1975, p.37-41.

The Third International Study Conference on Classification Research was held in Bombay, India, 6-11 January 1975. It was organized by FID/CR. The theme of the conference was “Ordering systems for global information networks.” Fifty-seven papers were received for the conference. There were two papers on the development of broad ordering systems such as the Subject-field Reference Code (SRC) for use in UNISIST programme. The work was included in the recommendations of the conference. (KK)

#42 Some reflections on the Bombay CR-Conference. / I. Dahlberg. – *International Classification* (ISSN 0340-0050), 2(1)1975, p.41-44.

There were 121 participants, of whom Indians were 70. 55 participants contributed their papers, and 66 were just observers. It was a pity that all those Englishmen, who organized the Dorking Conference of 1957 and supported the Elsinore Conference of 1964, were absented from the conference. The theme had been chosen especially with regard to the UNISIST programme. The results of the efforts of the FID’s Working Group for BSO or SRC should be

delivered to the critical comments by experts. The discussion could not take place since neither Chairman (Jiri Toman) nor Secretary (G.A. Lloyd) was permitted to travel to India. Though they contributed two papers, these were presented by I. Dahlberg in a very early session. (KK)

#43 Ordering systems for global information networks: proceedings of the Third International Study Conference on Classification Research held at Bombay, India, during 6-11 January 1975. / ed. A. Neelameghan. – Bangalore, Documentation Research and Training Centre, FID/CR and Sarada Ranganathan Endowment for Library Science, 1979, 511p. (FID publication 553) (Sarada Ranganathan Endowment for Library Science Series 13).

There are 57 papers included in the proceedings. As the title indicates the conference theme was particularly related to the UNISIST programme. Chairman and Secretary of the FID/SRC Working Group contributed two papers. See #47 and #48. (KK)

#44(#43) [Publication announcement]. – *FID/CR Newsletter* (no ISSN), 7(1)1979, p.1-8.

The appearance of the published Proceedings of the Third International Study Conference on Classification Research, held in Bombay during 6-11 January 1975, under the title “Ordering systems for global information networks,” is announced. The papers are organized into 11 major areas: (1) Linguistic problems in natural language interactive enquiry systems; (2) Input-output in multilingual information networks; (3) Languages for control and access in both data entry and enquiry; (4) Semantic and conceptual foundations of classification; (5) Research in the theory of classification and representation of subject-propositions in information systems; (6) Research in mechanized classification and indexing; (7) Use of classification in computer-based information systems; (8) Development of the Broad System of Ordering; (9) Formulation of systems of subject headings, thesauri, and similar subjects structuring tools; (10) Problems and solutions relating to accessibility to information from various points of interest for fast action oriented use; and (11) Ordering problems in decision-situations at global distances from potential information sources. (Excerpt from VINITI-IA 81.1.177)

#45(#43) [Book review]. / Hans H. Wellisch. – *Library Quarterly* (ISSN 0024-2519), 50(4)1980, p.511-513.

Mentions that the proceedings of the first conference (Dorking, 1957) and the second one (Elsinore, 1964) are still cited frequently in the professional literature, but it is somewhat doubtful whether the third conference will become a similar milestone. Argues that large time lags between a conference and publication of the proceedings are not unusual, but four years is too much. Concludes that many of the contributions, e.g. those on the Broad System of Ordering, are now of historical value only. (KK)

#46(#43) [Book review]. / Helmut Beck. – *International Classification* (ISSN 0340-0050), 9(3)1982, p.165-170. Also included in: *Universal classification 1: subject analysis and ordering systems: proceedings, 4th International Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e.V., Augsburg, 28 June-2 July 1982.* / ed. Ingetraut Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1982, p.6-18. (FID publication 615) (Studien zur Klassifikation 11) (ISBN 3-88672-010-1).

This is a thorough review of the papers of the conference proceedings according to thematic areas except for the papers on mechanized classification and indexing. Points out that the proceedings is organized along the same formal lines as that of the material on the Elsinore Conference of 1964. But there are two regrettable features: one is the omission of the discussion remarks to the papers read, and the other is the 4-year time-lag between the conference and the printed proceedings. The general theme of the conference as given in the title puts emphasis on the project undertaken in the framework of the UNISIST programme. In this connection two papers on SRC (later called BSO) were presented, but both the first by Jiri Toman and the second by also Toman together with Lloyd have been outdated. By the time the proceedings went to press, the BSO 3rd revision was published in 1978. It has met with approval as well as with an equal amount of criticism partly based on false preconditions that are influenced by expectations that BSO cannot fulfill by virtue of its objections. (KK)

#47 Trend of the future: two ordering systems used together? / Jiri Toman. – In: *Ordering systems for global information networks: proceedings of the 3rd International Study Conference on Classification Research held at Bombay, India, during 6-11 January 1975.* / ed. A. Neelameghan. – Bangalore, Documentation Research and Training Centre, FID/CR and Sarada Ranganathan Endowment for Library Science, 1979, p.316-320.

Paper contributed by Chairman of the FID/SRC Working Group and presented by I. Dahlberg. Points out that in the past decade there have been two main trends in 'information ordering,' namely a growing realization of the need to integrate the various information systems on the one hand and the demand for special ordering systems for particular fields or branches of knowledge on the other. Experience in recent years has shown that a universal ordering system to replace, say the Universal Decimal Classification, which would better serve than UDC both the functions of integration of existing ordering systems as well as the needs of in-depth indexing is impracticable. It seems possible to satisfy both the requirements by developing a broad ordering system which would represent a sort of roof or superstructure above special ordering systems (classification schemes and thesauri). Briefly describes the Subject-field Reference Code (SRC) and the work of FID/SRC. (Original abstract)

#48 Introduction to the Subject-field Reference Code (SRC) or Broad System of Ordering (BSO) for UNISIST purposes. / Jiri Toman and G.A. Lloyd. – In: *Ordering systems for global information networks: proceedings of the 3rd International Study Conference on Classification Research held at Bombay, India, during 6-11 January 1975.* / ed. A. Neelameghan. – Bangalore, Documentation Research and Training Centre, FID/CR and Sarada Ranganathan Endowment for Library Science, 1979, p.321-324.

Paper contributed by Chairman of the FID/SRC Working Group and its Secretary, and presented by I. Dahlberg. A preamble explaining the need for a broad system of ordering or subject-field reference code as a standard switching device for exchange of blocks of information (especially at international level) and briefly describing its general aims, history and development by the FID, is followed by a main section 1 on its envisaged scope, structure, display forms and possible applications. Section 2 describes the progress made and programme for work during 1973-74, with a select list of schemes consulted, and recent developments on presentation of two alternative schemes of a joint meeting in September 1974 of UNISIST

experts and FID/SRC members. Invites comments on the unified BSO scheme being elaborated by a three-man panel of FID/SRC members, charged with completing a first provisional outline by March 1975. (Original abstract)

10 BSO SCHEDULES AND INDEX UP TO 3RD REVISION

10.10 Preliminary drafts

#49 **Broad System of Ordering: draft outline of BSO (SRC)** [/ prepared by the FID/SRC Working Group]. – UNISIST Advisory Committee (First Session), Unesco House, Paris, 4-8 February 1974, 2p.+16p. (SC/UNISIST/Adv.Com./I/5/Annex). The content of this report is the same as that of Appendix IV and V of #5.

This is the first outcome of efforts made by the new FID/SRC Working Group set up in September 1972 and chaired by Jiri Toman. A general outline of SRC presented to UNESCO in December 1973, which includes 1st and 2nd level subject-field lists in alphabetical order comprising 126 and 850 terms. (KK)

For outline of two alternative schemes submitted by FID/SRC Working Group to a joint meeting with UNISIST experts in September 1974, see BSO Manual, p.21-22 (#71)

#50 **Outline of main subject-fields for the Broad System of Ordering** [/ prepared by the FID/SBO Panel]. – UNISIST Advisory Committee (Second Session), Unesco House, Paris, 5-9 May 1975, 46p. (SC/UNISIST/Adv.Com./II/Annex).

This is the first outcome of the new FID/BSO Panel formed in September 1974. Five months later the FID/BSO Panel completed the first draft of BSO. The 1975 BSO schedules contain about 2,000 terms, which are grouped into 76 major subject-fields. Terms without notation are arranged in suitable order for recommendation. This provisional draft was circulated to some 400 experts in most cases associated with ICSU affiliated unions, and 103 replies were received. (KK)

#51(#50) **Outline of main subject-fields for the BSO.** – *FID/CR Newsletter* (no ISSN), 3(2)1975, p.12-14.

Report of the state-of-affairs of BSO as of June 1975. In accordance with the recommendations of the UNISIST Advisory Committee in September 1974, the FID/SRC Working Group nominated a three-man BSO editing/drafting panel to undertake the work of drafting a two-level scheme that should be finished by the spring 1975. Five months later the new FID/BSO Panel completed the first draft BSO scheme. The scheme contained some 2,000 terms, which were grouped within 76 main subject-fields, in a structured arrangement at minimum two levels without notation. (KK)

#52(#50) **Broad System of Ordering (BSO).** – *IFLA Journal* (ISSN 0340-0352), 1(3)1975, p.251.

Various IFLA Committees have been inquiring after the progress made by FID with the BSO

scheme. The situation is now as follows: The first draft unified BSO scheme, a structured list of some 2,000 subject-field terms arranged under 75 main field headings has been subject to discussion by the UNISIST Advisory Committee in May 1975. Only if the first draft would be accepted by UNISIST, could UNESCO consider any new contract for 1975. If the outcome of the discussion at UNISIST is favourable, FID will then circulate the (improved) draft BSO to subject-field specialists, especially in the ICSU-affiliated scientific unions and other international bodies concerned, while preparations could begin for field trials. (Original text)

#53(#50) BSO under preparation of field testing. / Ingetraut Dahlberg. – *International Classification* (ISSN 0340-0050), 2(2)1975, p.110.

A revised draft of BSO comprising 76 main subject-fields and some 2,000 sub-fields had been circulated during August 1975 to about 200 experts of the 17 unions and the committees and services of ICSU and to about 100 organizations and individual experts interested in BSO. A questionnaire (8 questions on one page) is to be returned not later than 15 October 1975. The present task of the FID/BSO Panel consists in evaluating the critical comments, re-editing the draft and supplying a notation to the concept-names. The revision work is due by February 1976 in order that field tests may be undertaken in 1976. The final compilation of BSO is envisaged for 1977. (KK)

#54 Broad System of Ordering: 1975 Progress Report [/ prepared by the FID/BSO Panel]. – The Hague, FID Working Group Project under Unesco contract, March 1976, 74p.

This is the 1st revised draft of BSO which is the outcome of consideration of comments received on the 1975 draft (See #50). The draft contains about 3,200 terms, reflecting the fact that the main effect of the questionnaire has been to increase the number of terms in the scheme. The schedules is notated for the first time, together with some rudimentary Time and Place facets, a fully explicit citation order for composite subjects, and defined restrictions of the kinds of relations which can be expressed by combining the notation. (KK)

#55 Broad System of Ordering (BSO), 2nd revised draft [/ prepared by the FID/BSO Panel]. – The Hague, FID, 30 June 1977, 98p.+83p.

This is the 2nd revised draft of BSO, equipped with alphabetical index. The draft is the result of further study by the BSO Panel, oriented to the need to prepare a scheme sufficiently explicit and ambiguity-free to be usable in a field test in the autumn of 1977. As a result of this upgrading activity the 1977 schedules had an increase of 600 terms over the 1st revised draft of 1976. (KK)

#56(#55) Broad System of Ordering. – In: Classification Research Group Bulletin, No.12. – *Journal of Documentation* (ISSN 0022-0418), 41(2)1985, p.79-80.

Eric Coates reported on the project for testing BSO. The test sample consisted of a set of 150 items chosen from four organized information sources. The items were selected with three conditions. Six tests were devised, each consisting of twenty-five items. In two of the tests, testers were divided into two groups, according to their science/technology or social science/humanities affiliations, and each group handled only items belonging to its affiliated field. Mean matching percentage was 43.58%. Range individual testers' scores: lowest 31.35% to

highest 60.17%. Scores for the six individual tests: 31.89% to 50.04%. (KK)

10.20 BSO 3rd revision

#57 BSO – Broad System of Ordering: Schedule and Index, 3rd revision. / prepared by the FID/BSO Panel: Eric J. Coates, Geoffrey A. Lloyd and Dusan Simandl. – The Hague, FID: Paris, Unesco, 1978, 102p.+82p. (FID publication 564) (ISBN 92-66-00564-9).

This is the 3rd revised draft and also first published edition of BSO which reflects further amendments found to be necessary after a consideration of the result of the field test. It contains about 4,000 English terms ranging over the whole field of knowledge. This publication consists of the following sections: (1) Introduction; (2) Combination areas, filing and combination orders; (3) Procedures for combining notations, examples of combinations; (4) Optional facets, time and place facets; (5) First and second outlines; (6) Full schedules; and (7) Alphabetical index. (KK)

#58(#57) Broad System of Ordering. – *FID News Bulletin* (ISSN 0014-5874), 28(7-8)1978, p.1.

Publication announcement from FID on the BSO 3rd revision which is the first published edition of the outcome developed as a joint FID/UNESCO project in the framework of the UNISIST programme. (KK)

#59(#57) BSO – Broad System of Ordering. – *FID News Bulletin* (ISSN 0014-5874), 28(9)1978, p.77.

Introduces the BSO 3rd revision regarding the following matters: (1) background of developments as in connection with the UNISIST programme, (2) project undertaken by FID with financial support in part from UNESCO, (3) the criterion of cut-off of detail based on 'institutional warrant', and (4) structural characteristics together with those of notation. Emphasizes that first priority has been given to 'system predictability' in face of the arrival of new knowledge and to economy of decision efforts in updating. A BSO manual is being prepared and would be available by the end of 1978. (KK)

#60(#57) BSO – Broad System of Ordering. – *IFLA Journal* (ISSN 0340-0352), 4(4)1978, p.403.

Announces that FID recently published the BSO, a classification of whole field of knowledge, limited to about 4,000 terms in English. The classification intends to serve as a switching mechanism to link different classifications and thesauri. (KK)

#61(#57) [Publication announcement]. – *Unesco Journal of Information Science, Librarianship and Archives Administration* (ISSN 0379-122X), 1(2)1979, p.149-150.

This is the 3rd revision and first published edition of BSO which has been prepared by FID in cooperation with and financial assistance from UNESCO. It is a classification consisting of about 4,000 English terms ranging over the whole field of knowledge. To include terms into the scheme, an objective yardstick that if an independent organized information devoted exclusively to a subject is identified, then that subject should have a specific BSO code, is

applied. The outline of BSO can best be understood as three separate areas: 100-188, 200-588, and 600-992. BSO is fully faceted. There is a citation order for composite subjects by combining elements. Provision is made in BSO for the coding of material and phenomena from a multi-aspect point of view (area 088). The notation has been devised with the question of updating in mind. The present version is offered as a basis for comments and experimentation by those involved in indexing system compatible problem. (KK)

#62(#57) **[Book review]**. / D.A. Kemp. – *Library Review* (ISSN 0024-2535), 28(2)1979, p.109-110.

Summarizes the original purpose of BSO, with an example envisaged. Outlines the structure of BSO schedules that has three parts: (1) methodological sciences and techniques, (2) sciences including social sciences, and (3) products of human activities including technologies and religion. Attention has been paid to the problem of separation or collocation of technologies with sciences, and different solutions adopted. There is considerable opportunity for dealing consistently with composite subjects. Whether the work was entirely necessary, and the compilers' efforts will be rewarded by an appropriate amount of use, may however be open to doubt. Nonetheless, it is to be hoped that the scheme will be used, for it has considerable potential beyond its original purpose. Concludes that anyone looking for a modern, useful, general classification of knowledge, for whatever purpose, will do well to begin by an examination of BSO. (KK)

#63(#57) **[Book review]**. / A. Maltby. – *Journal of Documentation* (ISSN 0022-0418), 35(4)1979, p.341-342.

Mentions that we have a relatively broad scheme for locating and relating material systematically. Enumerates many advantages: (1) it is up to date, (2) it is clear and easy to follow in layout, (3) instructions are lucidly expressed, (4) notation is fully acceptable, (5) it has been tested against published literature to some degree and revised accordingly, and (6) the chosen order shows the mark of careful planning and is excellent. But puts many questions which are all concerned with the question of whether BSO will be used. (KK)

#64(#57) **[Book review]** [In Spanish]. / Rafael Rodriguez Delgado. – *Revista Espanola de Documentacion Cientifica* (ISSN 0210-0614), 2(2)1979, p.171-173. For the author's historical study of BSO, see #134.

Discusses the necessity of general ordering system in the age of diverse information languages. Describes the development of BSO in the framework of the UNISIST programme. Outlines the structure of BSO with special reference to the non-disciplinary or phenomena classes, which however are based on not scientific criteria but the existence of institutions. Points out the effect of 'anglo-phones,' such as Spanish "educacion" or "ensenanza" which could be corresponding to English "education". Concludes that while BSO is a valuable attempt, it does not solve the problem of general ordering system. (KK)

#65(#57) **[Book review]**. / Irene L. Travis. – *International Classification* (ISSN 0340-0050), 7(2)1980, p.92-93.

Estimates that the BSO manual and the schedules together have considerable potential

move as a tool for teaching modern principles of classification, because the clarity of the explanations in the manual and the compactness of the scheme make it vary attractive for that purpose. But argues that such an instructive use alone cannot justify the efforts made by many distinguished classificationists. At present BSO is in search of a purpose. The question remains, will it find a user? (KK)

#66(#57) **UNESCO's General Information Programme, 1977-1987: its characteristics, activities and accomplishments.** / Kenneth H. Roberts. – *Information Development* (ISSN 0266-6669), 4(4)1988, p.208-238.

This report includes the news that with the assistance of UNESCO, FID published BSO schedules and index in 1978 as a switching mechanism and that FID and UNESCO published the BSO Manual in 1979. (KK)

10.30 Translation of BSO 3rd revision

For reference to Hungarian translation of BSO 3rd revision, see #247

#67 **BSO – Systeme general de classement: Tables et index, Troisieme revision** [In French]. / preparee par le Groupe d'experts FID/BSO: Eric J. Coates, Geoffrey A. Lloyd et Dusan Simandl. – La Haye, FID: Paris, Unesco, 1981, 125p.+88p. (PGI/81/WS/20).

French translation of the Broad System of Ordering (BSO) 3rd revision published as FID publication 564. It is informally said that the translation work was carried out by Eric de Grolier. (KK)

#68(#67) **[Publication announcement]**. – *FID News Bulletin* (ISSN 0014-5874), 31(11)1981, p.88.

French translation of FID 564 "Broad System of Ordering (BSO), Schedule and Index". (Excerpt from original text)

#69 **Broad System of Ordering, 3rd revision** [In Chinese]. / FID/BSO Panel / tr. Pengpeng Wu, Dehai Lin, Xiaoxian Zhang and Guohui Sun. / checked by Xinghui Li and Qilin Qian. – Beijing, Research Department of Beijing Library, [1986], 267p.

Chinese translation of the Broad System of Ordering (BSO) 3rd revision published as FID publication 564. This book was not-for-sale and limited in distribution. (KK)

#70 **Broad System of Ordering (General scheme of classification). The main subject areas** [In Croatian]. **Broad System of Ordering (Opca shema za razvrstavanje). Glavna predmetna podrucja** / Ivan Bauer. – *Informatologia Yugoslavica* (ISSN 0046-9483), 11(3-4)1979, p.25-31.

A parallel English-Croatian version of the 2nd outline of the BSO 3rd revision. The work gives the list and the translation from English of the main subject-fields included in the Broad System of Ordering scheme. The scheme in question was created and its development is supported by FID and UNESCO and should represent a widely applicable subject frame for systematic ordering and retrieval of the sources of information to answer the requirements of the institutions and the services of information and documentation, within the regional,

national and international information systems and networks, particularly within the framework of the UNISIST programme. (Original abstract)

10.40 BSO Manual

For review of BSO Manual, together with BSO 3rd revision, see #65

#71 **The BSO Manual: the development, rationale and use of the Broad System of Ordering.** / prepared by the FID/BSO Panel: Eric Coates, Geoffrey Lloyd and Dusan Simandl. – The Hague, FID, 1979, 157p. (FID publication 580) (ISBN 92-66-00580-0).

The present volume gives a more extended treatment of the topic briefly touched upon in the *Broad System of Ordering*, a general classification scheme for information exchange and switching published in 1978. It covers the stages by which the original concept eventually came to realization, together with the theoretical considerations underlying the scheme. The later chapters deal in depth with concrete issues which arise in the practical application of BSO, and to illustrate these issues and the ordering pattern offered by the scheme, a specimen file of 750 directory entries of specialized organizations and secondary information services is included. (Original note in the manual)

#72(#71) **[Publication announcement].** – *FID News Bulletin* (ISSN 0014-5874), 29(7-8)1979, p.1.

The Broad System of Ordering, a general classification scheme for information exchange and switching, was published in 1978. It included a brief Introduction giving the basic mechanics of the system. The present volume, prepared in cooperation with UNESCO, gives a more extended treatment of the topics briefly touched upon in the BSO Introduction. It covers the stages by which the original concept eventually came to realization, together with the theoretical considerations underlying the scheme. The later chapters deal in depth with concrete issues which arise in the practical application of BSO, and to illustrate these issues and the ordering pattern offered by the scheme, a specimen file of 750 directory entries of specialized organizations and secondary information services is included. (Original text)

#73(#71) **[Publication announcement].** – *UNISIST Newsletter* (ISSN 0379-2218), 7(4)1979, p.63.

FID has just issued the publication. The present volume gives a more extended treatment of the topic briefly touched upon in the *Broad System of Ordering*, a general classification scheme for information exchange and switching published in 1978. It covers the stages by which the original concept eventually came to realization, together with the theoretical considerations underlying the scheme. The later chapters deal in depth with concrete issues which arise in the practical application of BSO, and to illustrate these issues and the ordering pattern offered by the scheme, a specimen file of 750 directory entries of specialized organizations and secondary information services is included. The work was prepared by FID in co-operation with and with the financial assistance of UNESCO. (Original text)

#74(#71) **[Publication announcement]**. – *Unesco Journal of Information Science, Librarianship and Archives Administration* (ISSN 0379-122X), 2(2)1980, p.139

The present BSO manual provides a more extended treatment of topics that contained in the BSO schedule and index published in 1978. The topics dealt with in the manual are: the definition and limit of 'breadth', the structuring and feedback, field-tests and applications of BSO. The manual also contains practical subject indication with BSO. A specimen file of material (directory entries for specialist organizations and abstracting services) is given on pages 72-127, based on the field-test in 1977. An alphabetical index to the specimen file and an index to the manual conclude this work. (KK)

#75(#71) **[Publication announcement]**. – *IFLA Journal* (ISSN 0340-0352), 5(4)1979, p.343-344.

This manual gives a more extended treatment of BSO whose main purpose is to serve a switching mechanism to link different information languages. It covers the stages by which the original concept came to realization, together with the theoretical considerations underlying the scheme. Presented also are: the field test of BSO, its applications, and the description of the BSO scheme. The later chapters deal with issues which arise in the application of BSO. To illustrate these issues and the ordering pattern, a specimen file of 750 directory entries of specialized organizations and secondary information services is included. (KK)

#76(#71) **[Book review]** [In French]. / Marie-Therese Laureilhe. – *Bulletin des Bibliothèques de France* (ISSN 0006-2006), 25(9-10)1980, p.500-501.

BSO is a scheme for information exchange and retrieval. It is a documentary language directly related to classification systems. Its concept is "broad" as it can transfer "large blocks" of information. The 1978 edition of BSO which has 4,000 terms is three times broader than the abridged edition of UDC. In France there are classification systems, such as DDC and UDC, together with other systems. There exist even more abridge tables of the two systems in developing countries. Concludes that BSO is a well-designed system, but cannot see its place. (KK)

#77(#71) **[Book review]**. / Mary Piggott. – *Indexer* (ISSN 0019-4131), 12(3)1981, p.165.

The short review mentions that the BSO manual gives the history, description, testing, applications and method, with examples, of use of BSO. (KK)

20 BSO 4TH REVISION

20.10 Preparatory stage

#78 **FID/BSO Panel – Broad System of Ordering**. / E.J. Coates. – *FID News Bulletin* (ISSN 0014-5874), 34(11-12)1984, p.91.

The FID/BSO Panel has met at FID Headquarters twice since September 1983. The first part of 1984 was occupied by the final phase of the BSO Referral Test. The referral test and the report on it were completed at the end of November 1983. The BSO Referral Index which was a

product of the test was completed in March 1984. The confidence in BSO of the LUCIS researchers as a result of the test decided to use a portion of BSO schedules, with some elaboration, as the knowledge base in a British Library project on an Expert System for Referral. During the period April-September 1984, the BSO Panel proceeded with projects to (1) outline updating methodology for BSO, (2) revision of BSO schedules and index, and (3) the promotion and dissemination of information about BSO. (KK)

#79 Broad System of Ordering (BSO). – *FID News Bulletin* (ISSN 0014-5874), 35(12)1985, p.94. An adapted version of the FID's publicity leaflet issued in 1984 (See #194).

BSO is a classification system with a mono-hierarchical and faceted structure, with an outline organized in a manner consistent with integrative level theory. These features produce a unified overall pattern which makes the system simple for users. The BSO schedule and index appeared in 1978. A revised and enlarged edition, incorporating the lessons learned from 3 major test projects, is under preparation. The first of the projects was consistency test of 1977, the second switching test of 1981, and the third referral test of 1982-83. Nine distinct categories of BSO application are given. (KK)

#80 FID/BSO Panel – Broad System of Ordering. / E.J. Coates. – *FID News Bulletin* (ISSN 0014-5874), 35(12)1985, p.102.

Describes a brief history of the development of BSO. The first edition of BSO was published in 1978. A year after the publication of BSO, an explanatory text, the BSO Manual, appeared. In the period 1982-84, BSO was tested in the role of a referral aid at an online system terminal. At its meeting of September 1984, FID Council agreed to join with the National Association of Citizens Advice Bureau (NACAB) and the Bliss Classification Association (BCA) in funding a systems analysis of a scheme to develop micro-computer software. The first application of such a scheme was envisaged as the preparation of a revised edition of the 1978 BSO, taking into account of the findings and experiences of the BSO Switching Test of 1981 and the BSO Referral Test of 1982-83. During July 1985, printed copies of the 1983 Report of the Referral Test and the 1984 Referral Index became available. (KK).

#81 FID Broad System of Ordering Panel (FID/BSO): looking back 12 years – and forward. / E.J. Coates. – *International Forum on Information and Documentation* (ISSN 0304-9701), 11(3)1986, p.64-67.

The history, programme and future plans for the Broad System of Ordering are described. (Original abstract)

Description is made under the following headings: (1) Origin of BSO, (2) Anticipating the effects of mechanisation, (3) Need for an exchange information language, including introduction to the BSO 1978 edition and the BSO Manual, (4) Testing of BSO for its mediation roles, including the BSO Switching Test and the BSO Referral Test, (5) Current programme, including BSO in machine-readable form, publication of the BSO Referral Test report and of the BSO Referral Index, and other publicising and user-relations activities, (6) Plans for the future, and (7) Focus for the coming decade. (KK)

20.20 BSO 4th revision and translation projects

#82 **BSO – Broad System of Ordering, 4th revision. Machine-readable version.** / BSO Panel: Eric J. Coates, John E. Linford, Geoffrey A. Lloyd and Sinisa Maricic. – St. Albans, England, BSO Panel Ltd, 1991 and updated 1994. The copyright was transferred to the University College London, School of Library, Archive and Information Studies (UCL/SLAIS) in 2000.

An expansion of the 1978 BSO, comprising a faceted arrangement of about 6,800 terms, utilizing specificity failure data from the BSO Switching Test (1980-81) and the BSO Referral Test (1982-84). Distributed first by the BSO Panel Ltd on floppy disks (See #95) and later freely available at the website of the University College London (See #96). (KK)

#83(#82) **Machine-readable form of the Broad System of Ordering (BSO)** [In Japanese]. / Keiichi Kawamura. – *Joho Kanri* (ISSN 0021-7298), 36(12)1994, p.1150-1151.

Describes the origin and development of BSO. The 1991 edition is a 3-fold expansion and updating of the 1978 hard copy taking into account of the BSO Switching Test and the BSO Referral Test undertaken in the 1980s. The new edition is available only in machine-readable form on floppy disks from the BSO Panel Ltd. The price is 120 pounds sterling. (KK)

#84(#82) **Prospects for the Japanese version of the Broad System of Ordering: the design and uses of machine-readable form** [In Japanese]. / Keiichi Kawamura, Katsuichi Kita and Masanori Shiba. – *TP&D Forum Series* (ISSN 0918-404X), (5)1996, p.36-48.

Describes the ongoing project for the creation of a Japanese version of the Broad System of Ordering (BSO). Translation of the original English BSO into Japanese was completed in April 1995. A machine-readable form of the Japanese BSO version (BSO-mrJ) is now under-development. BSO-mrJ has 3 components: a standardized MARC format for data exchange, object-oriented database, and a device for human-recognizable classification output. It will incorporate a classifier's guidance and error checking systems and users will be able to search logically stored BSO codes as well as index entries. Possible areas of BSO application in Japan are discussed. (LISA 97/7091)

#85(#82) **Dialogue with Amer Azam, President of the World Association of Arab Translators and Linguists** [In Arabic]. / Somaya Darwish. – 23 March 2007. Available online at: <<http://www.wata.cc/forums/archive/index.php/t-8187.html>>. Accessed 15 February 2011.

Asks President of the World Association of Arab Translators and Linguists (WATA) what are the most important projects that they are doing now. President replies that there are some voluntary projects, including translation of BSO into Arabic. President explains that BSO is a scientific classification of all human knowledge conducted by the University of London. It is also an exchanger in the Western world but not widespread enough in the Arab world. This is due to lack of BSO in Arabic. The project is carried out by 10 translators headed by Abdul Wadud. (KK)

20.30 Managing bodies

For formation of FID/BSO Panel, see #8, #9 and #21

#86 **Broad System of Ordering.** / E.J. Coates. – *FID News Bulletin* (ISSN 0014-5874), 40(9)1990, p.112.

FID has recently transferred its copyright of BSO to the members of the BSO Panel. Copies of the revised and expanded BSO schedules and index, approximately 3 times the length of the 1978 edition, will be available on floppy disc when distribution arrangements have been completed. (KK)

#87 **U.K.: CRG 276 and 277.** – *International Classification* (ISSN 0340-0050), 17(3-4)1990, p.179-180.

The 276th meeting of CRG was held on 26th April 1990 at the University College London with eight members present. The topics of this meeting were practical and theoretical implications for subject indexing in large scale bibliographic databases in the online environment. At the further meeting on 5th July, the topic of the April meeting was continued. At this July meeting it was also related that FID had now relinquished any responsibility for BSO and that the three panel members who had been in charge, were permitted to do what they wished with it. (KK)

#88 **U.K.: CRG 278 and 279.** – *International Classification* (ISSN 0340-0050), 18(1)1991, p.45-46.

The 278th and 279th meetings of CRG took place at the University College London on 26th October and 13th December 1990 with 10 and 11 members present. At the October meeting Eric Coates spoke on BSO, its history, present situation and possible future. In the past five years BSO had been enlarged considerably so that a version three times the size of that originally published had now been created. Advice was sought from the CRG members on the best way to forward the scheme in the future. (KK)

#89 **The work of FID** [In Czech]. **BID bilancoval.** – *I'91 Casopis* (ISSN 0862-9382), 33(4)1991, p.122-123.

Relays the report presented by the past president of FID during the September 1990 FID annual general meeting in Havana, Cuba. The report stresses the importance of two major decisions: to cease supporting the Broad System of Ordering (BSO) which means that the BSO Panel will now be able to develop its own marketing and sales policy; and future involvement of FID in UDC work in view of a study prepared by the UDC management board which shows that UDC has a broad spectrum of applications including automated library systems. The report further discusses the financial position of FID and reviews its current projects. (LISA 93/4803)

#90 **Broad System of Ordering on disc.** – *Aslib Information* (ISSN 0305-0033), 21(4)1993, p.141.

Following a decision of FID to hand over copyright of the Broad System of Ordering to the

members of the former FID/BSO Panel, the Panel had formed a limited non-profit-distributing company with the object of supporting the continuous updating and maintenance of an expanded machine-readable BSO through the sale, under license, of floppy disc copies of the system. The full schedules are a 3-fold expansion and updating of the 1978 hard copy taking into account both the results of test exercises undertaken during the 1980s and the development of post-1945 classification theory directed toward the achievement of stable classification systems capable of reflecting the changing patterns of new knowledge, without inflicting drastic changes upon users of the scheme. The system is available only in machine-readable form and costs 120 pounds sterling. (Excerpt from original text)

#91 **Broad System of Ordering.** / Nancy Williamson. – *Knowledge Organization* (ISSN 0943-7444), 20(2)1993, p.89.

Announces two matters mainly addressed to FID/CR members. The first is that an expanded version of BSO is now available on computer disk. The machine-readable BSO is contained on a set of three 3.5 inch disks formatted by MS-DOS. The second is that the copyright for BSO has been handed over from FID to the former FID/BSO Panel, which has formed a limited non-profit distribution company (BSO Panel Ltd) in England. Directors of the BSO Panel includes: Eric J. Coates (UK), John E. Linford (Italy), Simisa Maricic (Croatia) and Colin Neilson (UK). (KK)

#92 **Broad System of Ordering news.** – *IFLA Newsletter: Section on Classification and Indexing* (no ISSN), (21)June 2000. In: *IFLANET*. Available online at: <<http://www.ifla.org/VII/s29/pubs/ci21.htm>>. Accessed 15 February 2011.

Announcement mainly addressed to members of the IFLA Section on Classification and Indexing. BSO has passed into the hands of the School of Library, Archive and Information Studies, University of London. Further information may be gained from the website (<http://www.classbso.demon.co.uk/wwwpgaa.htm>). (KK)

#93 **Broad System of Ordering.** / I.C. McIlwaine. – *IFLA Newsletter: Section on Classification and Indexing* (no ISSN), (22)November 2000, p.20. Also available online at: <<http://archive.ifla.org/VII/s29/pubs/ci22.pdf>>. Accessed 15 February 2011.

Announcement mainly addressed to members of the IFLA Section on Classification and Indexing. Responsibility for the administration of BSO has passed to the School of Library, Archive and Information Studies, University of London. Eric Coates will continue to be involved in the intellectual maintenance of BSO, but its copyright now resides with the School. The present BSO website will be incorporated into the main UCL website during the summer of 2000. (KK)

20.40 Publicity leaflet and official websites

For publicity leaflet stating application fields of BSO, see #194

#94 **Broad System of Ordering.** – St. Albans, England, BSO Panel Ltd, 1993, 4p.

This is the red-coloured publicity leaflet published by the BSO Panel Ltd in 1993.

Corresponding to the machine-readable expanded version of BSO, the first page gives an account of BSO under the following sections: Origin, Development and testing, Main features, Design priorities, and Uses. The second page gives the famous diagram of the cycle of knowledge. The third page gives the first outline of schedules. The fourth or last page gives excerpts from full schedules. (KK)

#95 **BSO – Broad System of Ordering: a systematic overview of knowledge.** – St. Albans, England, BSO Panel Ltd, 1991. Available online at: <<http://www.classbso.demon.co.uk/wwwpgaa.htm>>. Accessed 15 February 2011.

The official website of BSO set up on the occasion of the appearance of the BSO 4th revision in 1991. Contents were: Uses of BSO; Needling the haystack – subject searching in wide angled information systems, such as the Internet; A systematic overview of knowledge – what does it mean for subject searching?; BSO as a systematic overview of knowledge; BSO cycle of knowledge – the conceptual skeleton; BSO cycle of knowledge – sector description; Starting to clad the skeleton; Adding more cladding; Full detail excerpt; Index excerpt; and How to obtain BSO. In 2000 the copyright of BSO was transferred the University College London, School of Library, Archive and Information Studies (UCL/SLAIS). (KK)

#96 **BSO. Broad System of Ordering. A general, faceted classification scheme for information exchange and switching.** – London, University College London, School of Library, Archive and Information Studies, 2002. Available online at: <<http://www.ucl.ac.uk/fatks/bso/index.htm>>. Accessed 15 February 2011.

The official website of BSO which was created by Aida Slavic in 2000 and has been maintained by UCL/SLAIS, now the Department of Information Studies. It includes sections of: About BSO, Outline, BSO Manual, Structure, Full schedules, and Publications. BSO schedules and index are freely available at this website. For preliminaries to the BSO 4th revision, see the different files at: <<http://www.ucl.ac.uk/fatks/bso/FILES/BSOPreliminaries/>>. (KK)

30 GENERAL STUDIES

30.10 Works in English

#97 **The Broad System of Ordering (BSO).** / E.J. Coates. – In: *New trends in documentation and information: proceedings of the 39th FID Congress, University of Edinburgh, 25-28 September 1978.* / ed. Peter J. Taylor. London, Aslib, 1980, p.259-273. (FID publication 566) (ISBN 0-85142-128-8).

This is the first paper presented by a member of the FID/BSO Panel immediately following the publication of the BSO first edition of 1978. BSO has its origins in the idea of information networks. Once the basic idea of concrete ‘institutional warrant’ for inclusion in BSO was established, the necessary developmental steps opened out in logical progression. BSO contains tabulation of just over 4,000 terms; the scheme is discipline-oriented but there are some phenomena classes to cope with multidisciplinary subjects. Discusses easiness of updating BSO and gives some examples of outlines and notational mechanics. Assesses the 1977 field test of

BSO. Mentions that an introductory manual to BSO, including a fairly extensive specimen file of material arranged according to the scheme, is to be published. (KK)

#98(#97) **New developments in classification.** / I. Dahlberg. – *International Classification* (ISSN 0340-0050), 6(1)1979, p.36.

Short report of the 39th FID Congress held in Edinburgh, Scotland, 25-28 September 1978. There were some 250 participants at the session of trends in classification. Coates delivered his keenly awaited address on BSO now published by FID and UNESCO. Mentions that when the image on the screen showed not a structure but rather an illegible list of typed 3-digit notations of “area identifications,” there was the audible disappointment of the 250 persons present at the session. (KK)

#99 **BSO – Broad System of Ordering.** / Geoffrey Lloyd. – Arlington, VA, Educational Resources Information Center, 1979, 10p. (ERIC ED-186 005).

Paper presented at the 45th Conference of IFLA, Copenhagen, Denmark, August 27-September 1, 1979. The Broad System of Ordering (BSO), a subject-indication coding and ordering scheme developed to meet the requirements of the UNISIST programme for an international switching mechanism between information systems using diverse indexing/retrieval languages is described. The scope and purpose of the BSO, its development and testing, a schematic outline of the schedule, and an explanation of its main features are presented. The report concludes with a brief review of future needs and prospects for the new ordering systems. (Original abstract)

#100(#99) **Round Table on Classification.** – *International Cataloguing* (ISSN 0047-0635), 8(4)1979, p.38. Reprinted under the title: **Round Table on Classification, Copenhagen, Aug. 1979.** – *International Classification* (ISSN 0340-0050), 7(1)1980, p.25.

The Round Table on Classification, which had its first meeting in 1978 at the IFLA Strbske Pleso conference, continued its policy of presenting papers dealing with the major classification systems already in existence, and in this meeting in Copenhagen, received a report on the Broad System of Ordering (BSO) which has been developed as an FID/UNESCO project to serve as an international switching mechanism. This was followed by a paper from Ben Caster, editor of the Dewey Decimal Classification [DDC], describing his long connection with DDC and his experience in producing four editions. In the past twenty years, under his guidance, the use of DDC has spread to one hundred and thirty countries, and the number of copies has increased more than two hundred percent. The Round Table, in re-electing its officers, Joel Downing, Chairman, and Frances Hinton, Secretary, also agreed to support a proposal that it be transferred from a Round Table to an IFLA Section. (Original text)

#101(#99) **Round Table on Classification.** / Joel Downing. – *IFLA Journal* (ISSN 0340-0352), 6(3)1980, p.214-215.

The Round Table on Classification was set up by the IFLA Professional Board at its meeting in November 1977. The decision reflected a request from the author to the Board that there was a need for a regular international forum on general classifications to allow for an exchange of views between the users of the classifications and their producers, both editorial and publishing

staff. The above-mentioned meeting of the Round Table took place during the IFLA Congress at Strbske Pleso, Czechoslovakia, where John Humphry gave a paper on DDC and Jack Mills on BC2. The second meeting was held in Copenhagen in 1979, where Geoffrey Lloyd gave a paper on BSO and Benjamin Custer on DDC. At the second meeting it was agreed that the Round Table's proposal to the Professional Board that it become a Section of the Division of Bibliographic Control, should be supported. (KK)

#102 Classifications and information languages. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.3-27.

This issue carries a series of articles devoted to an extremely topical problem, i.e. research in classification in connection with the Broad System of Ordering (BSO) intended to be applied within the UNISIST framework. This project is presently carried out at the FID on contract from UNESCO. The editorial board expresses acknowledgements to E.J. Coates, FID/BSO Panel Rapporteur, for his energetic help in organizing contributions to this issue, as well as all authors for discussing various aspects of the BSO. For articles included, see the following items: #103, 104, #105, #106, #107 and #108. (Original abstract – expanded by KK)

#103 The Broad System of Ordering. / Eric J. Coates. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.3-6.

Contribution to a section on the Broad System of Ordering (BSO). Presents main principles which serve as the basis in developing BSO presently being constructed at the FID in connection with the UNISIST programme and intended as a switching mechanism for various local indexing languages. The structural outline of the schedule is cited. Special attention is paid to the notation used, as well as ways of reflecting syntactic relations and representing multidisciplinary subjects. (Original abstract)

#104 The Broad System of Ordering: old wine into new bottles? / Anthony C. Foskett. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.7-12.

Contribution to a section on the Broad System of Ordering (BSO). There are two approaches to dealing with the information explosion, either to develop sophisticated computer-based information retrieval systems or to devise a world scientific information system. The BSO scheme is not intended to specify fine details and an attempt has been made to develop a sound overall order. Describes the specificity, terminology, notation, index, organization and special features. UNISIST should provide moral and financial backing to get the scheme into use before enthusiasm wanes. (LISA 80/4754)

#105 Structuring and switching: a discussion of the Broad System of Ordering. / Brian Vickery and I.C. McIlwaine. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.13-15.

Contribution to a section on the Broad System of Ordering (BSO). BSO differs from many general classifications in that its broadness stems from its intention to link institutions and collections of data and not to provide a detailed bibliographic system. The classification is fully faceted and is arranged in an increasingly complex order; the schedule is inverted so any topic may be subdivided by all the preceding isolates. Within its limits BSO presents a reasonable

and comparatively up to date conspectus of knowledge; overall a logical and developmental structure is discernible. Possibilities for switching are: transferring index records or search queries, moving the enquirer from one system to another. (LISA 80/4755)

#106 **Some problems in the BSO.** / Jean M. Perreault. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.16-20.

Contribution to a section on the Broad System of Ordering (BSO). Critical analysis of BSO, covering its main structural characteristics from the point of view of use; synthesis; structure (sources, systems vs. convenience, institutional warrant); order of concepts; types of information (information source, extra-disciplinary entities); terminology; notation (gaps, combination sign, plus sign, derived codes). (LISA 80/4756)

#107 **The Broad System of Ordering – a critique.** / Dagobert Soergel. – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.21-24.

Contribution to a section on the Broad System of Ordering (BSO). Critical comments on the BSO concern basic principles used in system construction, the quality of which, from the standpoint of the author, does not meet the requirements set out for the BSO. First of all, it would be necessary to revise and clearly formulate the purpose of the system, to make and consistently implement a basic decision on its structural characteristics, to provide for high-quality conceptual analysis and subjects expertise which directly influence the content of the tables, and to clearly display supplementary materials for the tables. (Original abstract)

#108 **Comments on the Broad System of Ordering.** – *International Forum on Information and Documentation* (ISSN 0304-9701), 4(3)1979, p.25-27.

Contribution to a section on the Broad System of Ordering (BSO). Comments prepared on behalf of the Interdepartmental Commission on Classification at the USSR State Committee for Science and Technology, to be presented to the FID/BSO Panel. The scheme is noteworthy for consistency of facet structure and rational approach to code structure. BSO reflects a western approach to the social sciences and does not offer an adequate treatment of Marxist-Leninist thought. Discusses social science in different cultures. Makes some more specific objections and recommendations. (LISA 80/4758)

#109(#104, #105, #106, #107, #108) **The Broad System of Ordering: the compilers reply to their critics.** / Eric J. Coates. – *International Forum on Information and Documentation* (ISSN 0304-9701), 6(1)1981, p.24-30.

Reply on behalf of the FID/BSO Panel to the authors of the five review articles on BSO, *IFID*, 4(3)1979, p.7-27. Compares and contrasts their statements and gives the Panel's response to each point raised by them. (LISA 82/2397)

#110 **Librarian's guide to Broad System of Ordering (BSO).** / Attam Parkash Gakhar. – New Delhi, Metropolitan Book, 1982, 82p.

The book contains chapters on: Genesis, Development, Problems and prospects, Description and a critical study of the BSO of 1978. References are given with each chapter. Subject index. (IC 85-1111)

#111 **Indexing languages, classification schemes and thesauri.** / J. Aitchison. – In: *Handbook of special librarianship and information work*, 5th ed. / ed. L.J. Anthony. – London, Aslib, 1982, p.207-261. (ISBN 0-8514-2160-1).

Basic concepts of indexing language typology are introduced: controlled and natural languages, pre- and post-coordinate languages, syntax, etc. Systematic classifications are grouped into enumerative, synthetic or mixed. An enumerative scheme assumes a universe of knowledge and divides it successively into narrower classes. A synthetic classification, on the other hand, makes provision for class number building, to represent topics which are not specifically enumerated. Faceted classification schemes, as a species of synthetic classification, are further described outlining the history of Ranganathan's Colon Classification and the application of his ideas in other indexing languages. Classification scheme notation is dealt with, and the issues of reclassification and shelf vs. depth classification are addressed. A detailed presentation is given of DC, UDC, LC, CC, BC and the Broad System of Ordering (BSO), and dozens of special classification schemes are presented in outline. The history of the thesaurus is set forth and a short list of titles on the topic is included. The thesaurus-related topics discussed include vocabulary control, thesaural relationships, thesaurus presentation and display, etc. The Thesaurofacet is described briefly, which is a hybrid of a descriptor language and classificatory one. Numerous fragments of thesauri are given to illustrate their structure and special features of their design. (VINITI-IA 84.12.218)

BSO is discussed as to the following topics: purpose, order of main classes, vocabulary size, facet structure, notation and synthesis, index, and problem of financial backing. Points out that the basic functions of BSO are: (1) an overview or superstructure of the universe of knowledge, (2) index language for an information system on organizations and information sources, and (3) a switching language for the exchange of bibliographic information at a broad level of indexing. (KK)

#112 **UNISIST and the BSO.** / A.C. Foskett. – In his: *The subject approach to information*, 4th ed. – London, Clive Bingley, 1982, p.235-241, and 252 for references. (ISBN 0-85157-313-4).

Describes prehistory of arising the need for switching language in indexing and classification to cope with the information explosion. In 1974 a three-man BSO Panel succeeded to the work of the former FID/SRC Working Group, and BSO was published in 1978. Gives the outline of BSO subject fields, together with some significant differences between BSO and other schemes, such as non-expressive notation and institutional warrant. Points out two weaknesses of BSO. The first is the poor quality of the index compared with the schedules. The second is the lack of an established organization. As to the questions concerning the success of BSO, argues that they are likely to form the subject of debate for some years to come. (KK)

#113 **The Broad System of Ordering.** / Hazel Madeley. – *Australian Academic and Research Libraries* (ISSN 0004-8623), 14(4)1983, p.235-246.

The Broad System of Ordering is the latest attempt at a general classification scheme. Its background history and philosophy are described, its broad structure outlined, and the reactions on its publication are discussed. Concludes that BSO does deserve wider consideration than it appears to have received and that if it is not adopted it should be for good

reasons – not because of apathy. (Original abstract – expanded by KK)

#114 **The Broad System of Ordering.** / A.C. Foskett. – In his: *The subject approach to information*, 5th ed. – London, Library Association, 1996, p.303-314. (ISBN 1-85604-048-8).

The author devotes a whole chapter to BSO in the well-known textbook. Following a description of the development of BSO, the structure of schedules and the notational combinations are explained in some detail. In conclusion some questions concerning the future of BSO are raised. (KK)

30.20 Works in languages other than English

#115 **Broad System of Ordering** [In Chinese]. / Ming Qin [a pen name of Hanqing Hou]. – *Information Science* (ISSN 1007-7634), 1(3)1980, p.127.

Introductory article on BSO to those who are interested in classification. Following a brief description of the development of BSO, mention is made of main structure of the new general classification. (KK)

#116 **An exploration of a coarse system for book classification** [In Chinese]. / Xuesi Zuo. – *Hubei College and University Libraries = Hubei Gaoxiao Tushuguan* (no ISSN), (3-4)1983, p.42-48, and 65.

Describes the origin and development of BSO that was designed to serve as a switching language for the UNISIST programme. Estimates BSO as a new attempt at a classification with logical and simple structure and sees the following points: (1) It is a new classification starting from the reality that modern science recognized; (2) If the idea and practice of a broad classification which is an unprecedented attempt is successful, its impact should not be underestimated; (3) Its structure is flexible enough to be easily updated, which could not be realized in traditional classifications; and (4) Being confined to be a tool for the location and exchange of information sources, it does not intend to replace a traditional detailed classification such as UDC. Outlines main subject fields and extracts schedule parts from the fields of history, linguistics and literature, and arts. Concludes that BSO is a new wind and that its system, ideas, methods and other aspects encourage us to explore a new classification needed in the present day. The paper is largely based on an examination of the 1975 BSO, along with making reference to the preceding Chinese papers on the 1978 BSO. (KK)

#117 **A very distinctive document classification system: a review of BSO** [In Chinese]. / Dehai Lin. – *Journal of the Guangdong Society of Library Science* (ISSN 1001-8069), 7(3)1987, p.5-12.

Gives a brief introduction of the purpose and development of BSO. Discusses in detail the structural characteristics of BSO, which covers order of main classes, facet structure, optional facets, and time and place facets. Illustrates notational characteristics by examples. Explains the rules for notational combinations. Mention is made of the problem of how to translate the name of BSO into Chinese, and points out that there are at least seven equivalents. Chinese translation of the BSO 3rd revision (See #69) is introduced in the section of references. (KK)

#118 **An introduction to the Broad System of Ordering** [In Chinese]. / Zhanghua Ma. – *Journal of the Library Science Society of Sichuan* (ISSN 1003-7136), (6)1987, p.22-28.

Description is mainly based on the following sources: the BSO 3rd revision (1978), the BSO Manual (1979) and Coates' review article on the activities of the FID/BSO Panel (1986). Traces the development of BSO, which began with the idea of a switching language in the 1960s and ends with the Panel's plan of machine-readable form of BSO. Discusses characteristics of BSO, by making reference to the order of main classes, facet structure and notational combination. Mention is made of the BSO consistency test (1977), the BSO Switching Test (1981) and the BSO Referral Test (1982-83). Concludes that (1) the development of BSO brought new ground in the standardization of retrieval language, (2) BSO realized structural simplicity and operational easiness in faceted classification, and (3) the process of careful development of BSO is instructive for those who will attempt at constructing a new classification. (KK)

#119 **A review of the Broad System of Ordering** [In Chinese]. / Hanqing Hou. – *Information Science* (ISSN 1000-8489), 9(5)1988, p.77-83.

After an introduction of Chinese literatures on BSO, the following are discussed: the origin and development, the merits and demerits of a broad classification, and the selection of subject fields and their order. Concludes that BSO has some defects, but it is a new general classification that incorporates many of the theoretical and practical research results obtained for the last 20 or 30 years. (KK)

#120 **BSO – General scheme of classification (Broad System of Ordering)** [In Croatian]. **BSO – Opca sema za razvrstavanje (Broad System of Ordering)**. / Maja Jokic. – *Informatika* (ISSN 0019-9923), 21(4)1987, p.235-240.

It is believed, on the whole, that BSO as a general ordering scheme is up to the criteria of modern classification theory such as universality, keeping up with the current stage of science, openness, faceting and computer analysis, archiving and browsing the information. A positive side of BSO is its brevity of subject indication. Its usual length is 5 to 7 digits, which is particularly suited to computer manipulation. The order of subjects is congruent with the natural state of affairs from the natural (exact) sciences towards the humanistic ones. The products of human activity, technology, linguistics, arts and spirituality are in continuation of the social sciences. The tables begin with the basic methodological sciences and techniques applicable to the majority of the subject fields. The BSO Panel, a body attached to FID, permanently manages BSO. (Original Croatian abstract – translated by S. Maricic)

#121 **BSO: (Broad System of Ordering): General scheme of classification: master's thesis** [In Croatian]. **BSO: (Broad System of Ordering): opca shema za razvrstavanje: magistarski rad.** / Ana Krnjaic [voditelj rada Ivan Bauer]. – Varazdin, Croatia, A. Krnjaic, 1992, 145p.

MA thesis submitted to the University of Zagreb, Faculty of Organisation and Informatics Varazdin, Joint Postgraduate Study of Information Science. Traces the development of BSO which started as an FID/SRC project early in the 1970s. Describes testings of BSO chronologically: field test, switching test, referral test and testing at the National and University Library in Zagreb. Explains the ordering structure of BSO, and how to combine composite subjects and how to treat multi-aspect ones. Examines BSO in the light of faceted

classification, which is accompanied by a comparison of BSO with UDC, Bliss and Colon classification respectively. (KK)

#122 Reflections on the problems of classification [In Hungarian]. **Gondolatok az osztalyozas kerdeseirol.** / Gedeonne Dienes. – *Konyvtari Figyelo* (ISSN 0023-3773), 29(3)1983, p.256-261.

The FID Committee on Classification Research (FID/CR) organized the 4th International Conference, Augsburg, 28 June-2 July 1982. The 1st conference was held in Dorking in 1957, the 2nd in Elsinore in 1964, and the 3rd in Bombay in 1975. Surveys theoretical and practical developments and actual problems of classification theory which were discussed at the previous conference. Discusses problems of general classification theory, the semantic and conceptual basis of classification, the possibilities of systematization, and computerized information systems using natural languages. A presentation is given of UDC, BC/BC2, PRECIS and BSO. BSO is mentioned regarding the following topics: origin, development, order of sciences, facet structure and basic rules of combination. (Original abstract – amended by KK)

#123 Broad System of Ordering [In Hungarian]. **Az atfogo targykori osztalyozas (Broad System of Ordering: BSO).** / Gedeonne Dienes. – *Konyvtari Figyelo* (ISSN 0023-3773), 30(3)1984, p.285-293, 328, 331, and 335.

Based on the BSO Manual which was issued by FID in 1979, describes the structure of this UNISIST indexing language, called the Broad Subject Classification in Hungary. Presents the BSO development efforts which began in the mid-60s and to which experts from intergovernmental organizations have contributed. Traces the system's evolution stages; notably the determination of the volume and the composition of the conceptual framework. Describes the working groups' activities in gathering and classifying words and constructing the system from them. Gives the BSO designations and notations and its full scheme. Reviews the world's journal papers which contain estimates of the system and proposals for upgrading. (VINITI-IA 85.1.215)

#124 BSO (Broad System of Ordering) – an international system of broad subject classification [In Japanese]. / Shojiro Maruyama. – *Current Awareness* (ISSN 0387-8007), (6)1980, p.1-2.

Introductory article on BSO to those who are interested in classification. Mention is made of the purpose, development, degree of broadness, and procedure for organization of terms collected for BSO. To understand these and other topics in detail the BSO Manual published in 1979 is recommended to read. (KK)

#125 Broad System of Ordering [In Japanese]. / Keiichi Kawamura. – In his: *Subject indication for information retrieval: the contributions of Eric Coates.* – Tokyo, Nichigai Associates, 1988, p.145-258. (ISBN 4-8169-0774-2).

This book is the most comprehensive study on the work of Eric Coates ranging from 1960 to 1987. It consists of three parts: (1) Development of the theory of subject headings, (2) British Technology Index (BTI), and (3) Broad System of Ordering (BSO). The third part includes the following nine chapters: Purpose and development; Theoretical foundations of BSO scheme; Subject analysis and combination order; Notation and filing order; Consistency test; Referral

test; Switching test; Future prospects for the management of classification; and Uses of BSO. (KK)

#126 **The Broad System of Ordering as a switching language** [In Korean]. / Kyung-Ho Lee. – *Journal of Korean Library and Information Science Society* (ISSN 1225-0902), 14, 1987, p.149-179.

The concept of a “switching language” between different indexing languages and information retrieval systems has been discussed since the mid-1960s. Some preliminary investigations into the feasibility of switching between different information languages by means of such a mediating tool yielded positive results. The Broad System of Ordering (BSO), a general classification scheme for information exchange and switching, has been under development as a joint FID/UNESCO project since 1973. The purpose of this study is to find out the origin, development, definition, and principle of BSO. The results of the study can be summarized as follows: (1) BSO is a switching language for the purpose of interconnection of information systems which are located different regions, or using different indexing languages. (2) BSO is in effect, fully faceted and broad classification system. (3) BSO is not only a subject code but also an ordering system. (4) BSO can be used information retrieval system because the notation of composite subjects is formed by combining notation. (5) BSO has to some extent sacrificed brevity by leaving large unused notational gap for future use. (6) The structure of the scheme is in no way dependent upon the notation. (Original abstract)

#127 **Rules for use of BSO (Broad System of Ordering)** [In Polish]. **Zasady korzystania z BSO (Broad System of Ordering)**. / Ewa Chmielewska-Gorczyca. – *Zagadnienia Informatyki Naukowej* (ISSN 0324-8194), (2)1982, p.103-115.

Describes the objectives of the BSO, its history and structure. Presents the BSO facets, including the recently introduced facet of information source type (its incorporation into the system was dictated mainly by users' requests). Points to the arbitrary character of the BSO indexing, which lacks any semantic links among the elements; this ensures its stability and ease of use, which is all the more helpful as this classification scheme is oriented towards the end-user, rather than the computer. Dwells on the rules for presentation of compound topics and establishing links among codes. Indicates that the BSO is gaining in popularity as time goes on, which is borne out by the fact that BSO codes can be found in many information science publications in many countries along with the mandatory UDC numbers and national classification. (VINITI-IA 84.2.243)

#128 **Faceted classification, rubricators, switching language (BSO)** [In Slovak]. **Fazetove klasifikacie, rubrikatory, prepojovacie jazyky (BSO)**. Anna Kucianova. – In: *Informacna analyza – klasifikacia a indexovanie*. Martin, Slovenska Narodna Kniznica, 2005. Available online at: <<http://www.snk.sk/?Pr>>. Accessed 15 February 2011. Also directly available at: <<http://www.pulib.sk/kis/kucianova/Spracovanie2/SpracII7.pdf>>. Accessed 15 February 2011.

The seventh syllabus for use in a course of “Information analysis – classification and indexing” held at the University of Presov and the University of Zilina for internal and external undergraduates, which started in 2005 and is still going on. The syllabus content is: Faceted classification definition, information about Ranganathan, his five laws of library science and

the structure of faceted classification; Information on rubricators, including Rubricator of MSVTI (Medzinarodneho Systemu Vedeckych a Technickych Informacii = International System of Scientific and Technical Information). Ordering language – BSO, sponsored by UNESCO, provides information about advantages, the structure and the facets it contains. (A. Kucianova)

40 HISTORICAL STUDIES

#129 **Dewey Decimal Classification, Universal Decimal Classification, and the Broad System of Ordering: the evolution of universal ordering systems.** / Hans H. Wellisch. – In: *Major classification systems – the Dewey centennial: papers presented at the Allerton Park Institute Number 21, held November 9-12, 1975, Allerton Park, Monticello, Illinois.* / ed. Kathryn Luther Henderson. – Urbana-Champaign, University of Illinois Graduate School of Library Science, 1976, p.113-123. (ISBN 0-87845-044-0).

Traces the development of UDC from its origins in Dewey, and shows how the two schemes developed until the 1930s when they grew further apart and can now no longer be reconciled. That this was allowed to happen can only be deplored, because a unified scheme might have resulted, long ago, in a worldwide system for the identification and effective retrieval of recorded information independent of language barriers. Only now is such a system taking shape in the UNESCO-sponsored Broad System of Ordering. Discusses the present position of UDC, covering reforms, restructuring and the various editions. BSO is being developed for UNISIST, and contains about 2,000 headings, a number deliberately kept small to keep the system broad. Since the scheme is still tentative, notation has not yet been assigned. It is possible to say that BSO would never have been a reality without UDC, which, in turn, arose out of the genius of Dewey. (LISA 77/1145)

#130 **UDC and BSO.** / Geoffrey A. Lloyd. – *DK-Mitteilungen* (ISSN 0011-4987), 20(5-6)1976, p.11-12.

Paper presented on the occasion of both awarding the Carl Walther Prize to the author on 11th January 1976 and the Dewey Decimal Classification centenary (DDC, 1st ed. 1876). The author, formerly Head of the Classification Department of FID, looks briefly at the recent development and prospects of the 80-year old UDC in relation to the ever-growing need for interconnection of information systems and to BSO which is the newest arrival on the international classification scene. Suggests that complementary use of UDC for deep subject retrieval, with BSO as the interconnecting ordering system, could certainly prove a convenient solution for many an information center or service without any preferred particular scheme of its own. Concludes that whatever the fate of BSO, there can be no doubt that UDC will continue to fulfill a valuable function in the information community. (KK)

#131 **The Broad System of Ordering, or Bishop Wilkins redivivus: a review article.** / Hans H. Wellisch. – *Library Quarterly* (ISSN 0024-2519), 49(4)1979, p.444-452. For comments by the FID/BSO Panel, see #109.

Describes that when Latin as the common language of learned discourse was gradually displaced by the European vernaculars in the late 16th and early 17th centuries, some of the

best minds in Europe endeavoured to create universal languages. Among artificial languages, bishop John Wilkins' "Philosophical Language" was the most elaborate one that had all the attributes of later library classifications, but it became extinct with the death of its inventor. The notion of an artificial universal language is still attractive to Europeans. The concept of a switching language between different indexing languages has been discussed since the mid-1960s. The Broad System of Ordering (BSO) is the outcome of a project funded by UNESCO and FID. While recognizing merits and innovative features of BSO, the author raises some questions, of which two are discussed in detail. One is the long-standing and ingrained aversion of American librarians to classification, because the bulk of information services is now being produced and disseminated in USA, and virtually all of them are predicated on the use of keywords, descriptors and other verbal indexing languages. The other, more serious, is the lack of institutional support. There were not a few instances that followed the fate of Wilkins' language, such as Cutter's "Expansive Classification," Bliss' "Bibliographic Classification," Rider's "International Classification," and so on. Only three (DDC, UDC and LCC) have survived, not so much because they were better than any of the others, but because of strong institutional support. Concludes that the question of institutional support will decide the success or failure of BSO. (KK)

#132 Short account of the development of information retrieval systems after the Second World War [In Czech]. **Strucny prehled vyvoje poradacih systemu po druhe svetove valce.** / Jiri Toman. – *Knihovna: vedecko-teoreticky sbornik* (ISSN 0139-5335), (11)1979, p.7-28.

Outlines the development of information retrieval systems since the Second World War. Discusses the progress made by Taube with his uniterms, Ranganathan with his colon classification and the work of the London CRG in the development of faceted classifications and their attempts at the compilation of a universal faceted system. UDC has undergone a period of criticism but so far no other universal scheme exists to replace it. The current trend is the use of thesauri constructed for individual subject fields. In the USSR work started in 1974 on the development of a new universal hierarchical classification scheme designed with machine processing in mind. It will provide the basis for thesauri of individual specializations and ensure their linkage. It will serve as a tool for the construction of a unified automated information system. Another system discussed is the Broad System of Ordering (BSO) started by FID in 1970. It is in principle a universal code that would provide a superstructure over existing branches of knowledge and their classifications and thesauri. A list is presented of the 263 main classes. Ends with a brief description of classification principles and theory. (LISA 80/4735).

#133 A brief introduction to the development and the tendency in classification [In Chinese]. / Hanqing Hou. – *Information Science* (ISSN 1000-8489), 2(1)1981, p.58-63, and 30.

More than 2,000 years ago Xiang Liu and Xin Liu devised the first library classification for the Seven Outlines ("Qi Lue" in Chinese) in the Han Dynasty of China. The progress in library classification has been slow in its long history. But there was a drastic change in the 1960s due to the rapid development of science and technology, an increase in number of publications and the advanced information processing technology. Looking back on the theoretical studies and practical activities in library classification for last 10 or 20 years, as a result of the drastic

change, the following are recognized: (1) the trend towards faceted classification, (2) unified view of classification and indexing, (3) mechanization and automation, and (4) standardization. Illustrates these trends with their examples, and analyses the foreign and domestic situations. BSO is introduced as a switching language for the UNISIST programme in the section of standardization. While discusses methods of switching between different indexing languages in international perspective, its lack of specificity is regarded as a serious defect. Suggests the combined use of BSO with UDC in order to overcome the defect. (KK)

#134 Integration of information languages, the end of Babel [In Spanish]. **La integracion de los lenguajes documentarios, fin de Babel.** / Rafael Rodriguez Delgado. – *Revista Espanola de Documentacion Cientifica* (ISSN 0210-0614), 3(4)1980, p.333-340. For review of the BSO 3rd revision by the author, see #64.

The paper traces the main lines of development of scientific and technical terminology (STT) and the sub-languages of individual scientific and technical subjects. It is emphasized that for a long time virtually every branch of science and technology developed in isolation and has evolved its own closed terms system. In the 20th century, when sciences are interpenetrating on a wider scale and new and promising research trends emerge at disciplines' interfaces, the interactions of isolated terms systems has wrought havoc in the STT sphere. This tells on the evolution of indexing languages, both classificatory and descriptor ones. The situation is aggravated by the fact that most indexing languages have been developed to serve the needs of one organization or a group of organizations and seldom crossed national boundaries. Main merits and demerits of the UDC are discussed and an assertion is made that the underlying principles and main scheme of this classification are not consonant with the present-day condition of scientific knowledge. It is pointed out that the Broad System of Ordering (BSO) has a big role to play in perfecting STI exchange processes and in information organization in major information centers, above all international ones. However, BSO is not without fault either, its chief drawbacks being a strong influence of Anglo-American STT, an overly pragmatic nature, the difficulty of classifying multisubject documents, and a potentially strong dependence on political and ideological factors. A crisis of traditional hierarchical classification is postulated. The rapid proliferation of thesauri adversely affects STI exchange and the use of large information networks. It also happens that practically all thesauri, including international ones, are semantically and logically incompatible even where they refer to one knowledge area. It is suggested that the basic concepts of hierarchical classifications and upper-level descriptors be integrated, and thesaurus systems be established on a common conceptual and logical basis. Latin American nations provide a good testing ground for such a global-scale experiment. (VINITI-IA 81.7.187)

#135 Information languages: approach to the historical evolution of the concept [In Spanish]. **Lenguajes documentales: aproximacion a la evolucion historica de un concepto.** / Maria Jose Lopez-Huertas Perez. – *Boletin de la ANABAD* (ISSN 0210-4164), 41(1)1991, p.61-70.

Emphasizes the latent activity concerning the modern concept of information language prior to such prominent figures as Cutter and Dewey in the 19th century. Points out that the activity occurred when the number of documents in libraries came to be so great that persons were unable to locate required ones. This historical study sets forth three stages: the embryonic

period (BC1 to 16th century), the pre-scientific period (17th century to 18th one), and the scientific century (19th century to the present). The diversity of modern information languages means the end of Babel. A connecting language, such as BSO, is needed in order to integrate information systems using different information languages, but so far there exists no example functioning on a large scale. (KK)

#136 Library classification in [the] computer age. / P. Dhyani. – *DESIDOC Bulletin of Information Technology* (ISSN 0971-4383), 19(3)1999, p.5-13.

As a contribution to a special issue of this journal devoted to the relevance of classification and cataloguing in the information age, discusses how library classification has been metamorphosed by computer technology. Sees library classification as constantly influenced both by the multifaceted, multidimensional growth of literature and changing user demand. Notes how Dewey and subsequent classification schemes showed the way in the classification of organized knowledge and attempts to delve into the art of contemporary classification in the computer age. (LISA 00/760)

BSO is a faceted general classification and is greatly influenced by Ranganathan's idea. The scheme was designed to function as a switching language, but it has not proved to be a success and remains only a theoretical proposition. Concludes that the problem of compatibility still remains the potential subject for further research. (KK)

50 THEORETICAL STUDIES

50.10 Need for and functions of BSO

See also 00.30 References made to BSO project

See also 80 Applications and testings

#137 Universal classification systems at the start of the eighties. / E. Scibor. – *International Forum on Information and Documentation* (ISSN 0304-9701), 6(1)1981, p.22-23.

Contribution to a section on current trends in classification research. Contrasts the visible crisis of universal classification systems in the last four or five decades with their significant development during 1876-1907. Points out some signs of revival in the 1970s, i.e. the appearance of several broad (general) classification systems having up to 3,000-4,000 headings. In many cases the creation of new schemes was closely related with planning and developing large (national, international, world) information systems, e.g. BSO for UNISIST, MISON Rubricator for ISSTI, and Polish Subject-field Classification (Polish acronym PKT) for SINTO. Stresses the need for (broad) universal classifications and enumerates their main applications. Distinguishes the levels of specificity of universal classification systems and discusses their future prospects. Argues that broad general classifications will not be competitive to descriptor languages but to a great extent complementary to them. (Original abstract – amended by KK)

#138 The tasks of retrieval languages in national and international systems of scientific and technical information [In Czech]. *Ukoly selekcnych jazyku v narodnich a mezinardnich*

soustavach vedeckych a technickych informaci. / Ladislav Kofnovec. – *Ceskoslovenska Informatika* (ISSN 0322-8509), 17(10)1975, p.246-251.

Discusses the possibility of establishing interrelations between the retrieval languages in national and international scientific information systems. Mutual convertibility is possible and useful only when there is an intersection of the subject fields processed by different retrieval languages. A number of basic types of retrieval language which are in use or might be used in national and international information systems are discussed, together with the functions they should perform. (LISA 76/3009)

It is also possible to divide the functions of retrieval languages into the primary and secondary ones. The primary functions of BSO are: (1) formation of blocks of information in macro-indexing, (2) definition of thematic scopes of information centers in macro-indexing, and (3) interconnection of different retrieval languages on macro-level, and the secondary function is (4) systematization of blocks of information in micro-indexing. (KK)

#139(#138) **The functions of indexing and retrieval languages in national and international systems of scientific and technical information** [In Italian]. **Le funzioni dei linguaggi di indicizzazione e di reperimento nei sistemi nazionale ed internazionali dell'informazione scientifica e tecnica.** / Ladislav Kofnovec. – In: *Atti del seminario di studi sulla CDU: Roma, 22 settembre 1975.* / a cura di Maria Pia Carosella. – Roma, Consiglio Nazionale delle Ricerche, 1977, p.24-34. A revised and Italian version of #138 included in the proceedings of a seminar of studies on UDC.

Possibility of establishing interrelations between the retrieval languages in national and international scientific information systems. Mutual convertibility is possible and useful only when there is an intersection of the subject fields processed by different retrieval languages. A number of basic types of retrieval language which are in use or might be used in national and international information systems are discussed, together with the functions they should perform. (Original abstract)

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#140(#138) **The functions of indexing languages and retrieval of information in national and international systems of scientific and technical information** [In Portuguese]. **Funcoes das linguagens de indexacao e recuperacao da informacao nos sistemas nacionais e internacionais de informacao cientifica e tecnica.** / L. Kofnovec. – *Ciencia da Informacao* (ISSN 0100-1965), 7(1)1978, p.43-50. A revised and Portuguese version of #138.

Possibility of establishing interrelations between the retrieval languages in national and international scientific information systems. Mutual convertibility is possible and useful only when there is an intersection of the subject fields processed by different retrieval languages. A number of basic types of retrieval language which are in use or might be used in national and international information systems are discussed, together with the functions they should perform. (Original abstract)

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#141 **Compatibility of information retrieval languages (intermediate languages and switching languages)** [In Russian]. / S.K. Vilenskaya. – *Nauchno-Tekhnicheskaya Informatsiya, Seriya 2* (ISSN 0548-0027), (5)1977, p.16-21.

A literature survey based on papers presented at FID's Third International Study Conference on Classification Research, Bombay, January 1975, plus related papers. The author concludes that: (1) the development of a unique common information language is not feasible because of the wide variety of uses to which it would be put; (2) translating from one indexing language into another (or first into an intermediate language) may result in the loss of too much information; (3) the only practical solution for today is a switching language operating at a 'crude' level. This is seen as an apparatus with whose help it would be simple to re-address an enquiry from one information centre to another by converting the enquiry from natural language or from the terms of the enquirer's indexing language into the broad terms of the switching language. (LISA 78/3102)

Points out that a practical example of the third type language is BSO that has been developed for UNISIST. Outlines the purpose and design of BSO and refers to the fact that a report by the chairman of the working group and its secretary was presented at the Bombay Conference. Mentions that almost simultaneously with the development of BSO, the same project of the International System of Scientific and Technical Information (ISSTI) began in the USSR for the member countries of the Council for Mutual Economic Assistance (CMEA). Since then the problems of language compatibility were studied with special care. (KK)

#142(#141) **Information retrieval language compatibility. (The intermediary language and the switching language).** / S.K. Vilenskaya. – *Automatic Documentation and Mathematical Linguistics* (ISSN 0005-1055), 11(2)1977, p.54-62.

This is English translation of #141. All the four figures included in the original Russian text are translated, but several footnotes are omitted. (KK)

#143 **Lexical tools for information exchanges in a mechanised environment – Some considerations relative to the Broad System of Ordering.** / E.J. Coates. – In: *Information, communications and technology transfer: proceedings of the 43rd FID Congress held in Montreal, Canada, 14-18 September 1986.* / ed. Elmer V. Smith and Stella Keenan. – Amsterdam, Elsevier, 1987, p.461-467 (includes discussion, p.467). (FID publication 663) (ISBN 0-444-70296-2).

The paper considers the past and current status, and future possible roles of lexical tools (information languages) in mechanized information retrieval. Although modern classification principles lay down procedures which are eminently suitable for computer handling, the trend (with some notable exceptions) following pre-mechanization and pre-Ranganathan ideas has been to assume that information language construction is to such an extent an intuitive art that

it must be placed firmly on the human side of the human-machine interface. The scale effects of mechanization have been such that the role of lexical tools in ameliorating non-technical communication barriers may become significant. Such a role was initially contemplated for the Broad System of Ordering. The results of an experiment using a BSO-based lexical aid for the referral step in processing queries at an online retrieval terminal are reported. (Original abstract)

#144 **Classification for connecting varied information sources** [In Croatian]. **Klasifikacija za povezivanje raznorodnih informacijskih izvora.** / Sinisa Maricic. – In: *Tekuće bibliografije u Jugoslaviji: zbornik savjetovanja u Beogradu, 18-19 novembra 1986.* / ur. Ivana Milosavljevic i Aleksandar Marinkovic. – Beograd, Jugoslovenski Bibliografski Institut, 1987, p.39-51. (ISBN 86-7187-003-0).

On UNESCO's and FID's initiative, a Broad System of Ordering (BSO) was worked out 10 years ago, in order to link varied information sources within the UNISIST programme. A panel reporter of the BSO, Eric Coates, has recently given two reports on this issue. They have served as the basis of this report on the differences between the BSO and some other classification systems, and on the application of the BSO so far. In particular, the report presents the experience with the classification of the Croatian Research Workers' Bibliography, as well as the potential role of the BSO in linking the four segments comprising the Scientific Information System of the SR Croatia. Advantages and difficulties of the BSO application to the connection of varied bibliographical sources are considered in the light of Yugoslav specific features, and in order to achieve (a) a unified reference to uniform "information blocks", and (b) the search of such sources. (Original abstract)

Report presented at a conference on current bibliographies in Yugoslavia. The Croatian Research Workers' Bibliography mentioned above was arranged by BSO and maintained in a machine-readable form. The author made contribution to applications of BSO in a mechanized environment at the National and University Library in Zagreb and made use of BSO as an analytical tool for scientific research (See #251 and #252). (KK)

#145 **The macrovocabulary.** / F.W. Lancaster – In his: *Vocabulary control for information retrieval*, 2nd ed. – Arlington, VA, Information Resources Press, 1986, p.202-207. (ISBN 0-87815-053-6). Spanish translation: **El macrovocabulario** / tr. Alejandro de la Cueva Martin. – In: *El control del vocabulario en la recuperacion de informacion*, 2a ed. – Valencia, Universitat de Valencia, 2002, p.215-219. (ISBN 84-370-5444-3)

This is a section of the chapter 19: "Compatibility and convertibility" ("Compatibilidad y convertibilidad" in Spanish). The author regrets that many of the criticisms that followed the appearance of the 1978 BSO related to minor structural features. Emphasizes that more important is to understand the limitations of the scheme in terms of its possible applications, and says, "The BSO does have potential uses." Besides the role of a switching language, the author discusses such applications of BSO as: (1) Organization of a small multidisciplinary library or segmentation of multidisciplinary databases; (2) Categorization of information sources within a general referral center and of the contents of a large databases within a large online network; (3) Switching or transmitting broad categories of records between machine-readable databases; (4) Feeding journal articles in a general machine-readable file

covering all fields of knowledge into the more specialized secondary information services; and (5) Suggestion of useful terms to retrieve information on particular subjects from a variety of databases, which leads to a profile of the terms from a specific database that are associated most frequently with the broad code. Concludes that whether any of these uses materializes is largely dependent on the attitude of UNESCO. (KK)

#146 **Topic relevance and BSO switching effectiveness.** / Florence E. DeHart. – *International Classification* (ISSN 0340-0050), 9(2)1982, p.71-76.

A report of a case study which attempted to obtain further insight into topic relevance, a concern of indexers, searchers, and those who construct thesauri and ordering schemes. "Topic relevance" is distinguished here from "relevance to a user's need." Utilizing one search topic and two groups of searches, the experiment aimed to determine whether statistically significant differences existed in the proportion of matches against 50 articles on the topic and present in three information sources. Each group had a different set of strategies and used specified combinations of search techniques and fields of the Basic Index. This report emphasizes the second group of searches. Reasons behind retrieval performance are analyzed for the resultant 16 statistically significant differences. The study also set out to examine potential usefulness of the Broad System of Ordering (BSO) as a switching mechanism on the Section Heading level relative to the topic. The Section Headings available in two computerized databases used in the study are examined in light of the BSO number assigned to the topic. Possible consequences of subsequent use of certain relevant Section Headings in searching on a more specific level are also explored. Topic relevance may be a more serious problem in switching effectiveness than suspected. (Original abstract)

#147 **The Broad System of Ordering as a model for an artificial intelligence.** / W.G. Stiles. – In: *Information, communications and technology transfer: proceedings of the 43rd FID Congress held in Montreal, Quebec, Canada, 14-18 September 1986.* / ed. Elmer V. Smith and Stella Keenan. – Amsterdam, Elsevier, 1987, p.453-460. (FID publication 663) (ISBN 0-444-70296-2).

The Broad System of Ordering is examined in view of its language switching potential. It is possible that this facility opens the door to a true artificial intelligence, and accordingly its structure is seen as concealing a schema similar to a progression through the categories of Ranganathan, beginning with Time. The order is seen as conducive to improvement in cognition, with personality interpreted as the idea of order itself. Use of the schema to encompass a total knowledge classification, which in turn is coded into a computer memory, may endow a machine, through the order provided, with the means of ratiocination. Ranganathan's chaining technique would permit exhaustive scanning of the inputted knowledge base. (Original abstract)

#148 **Typology of interdisciplinarity and classificatory structures** [In Japanese]. / Keiichi Kawamura. – *TP&D Forum Series* (ISSN 0918-404X), (16)2007, p.3-15.

In the West interdisciplinary research occurred early in the 20th century and research on interdisciplinarity started after World War II. While there have existed Japanese translation of "inter-disciplinary" and "cross-disciplinary," there has been little progress in argument on what

they mean in Japan. This paper discusses typology of interdisciplinarity and problems associated with classification. First, terminology and term frequency as to typology of interdisciplinarity are examined through the Internet. Term that are prefixed by Inter-, Multi-, Trans- and Cross- rank high. Second, analysis is made of typologies of interdisciplinarity suggested by researchers of interdisciplinarity. There are three levels of interdisciplinarity such as Multidisciplinarity, Interdisciplinarity and Transdisciplinarity. Last, assessment is made of the Broad System of Ordering (BSO) and the Information Coding Classification (ICC) that are general classifications designed to cope with interdisciplinary subjects. BSO does meet the requirements in that it will be able to cope with composite subjects by the internal combination, interdisciplinary subjects by the external combination and multidisciplinary subjects by the phenomena classes. ICC which is a matrix-type classification lacking syntactic rule should be improved on the model of the periodic table of elements. (Original abstract)

50.20 Problems in classification making

For “Introduction” to BSO 3rd revision, see #57

#149 **Classification in information retrieval: the twenty years following Dorking.** / E.J. Coates – *Journal of Documentation* (ISSN 0022-0418), 34(4)1978, p.288-299.

There has been no further breakthrough in understanding of classification at a fundamental level, but there has been much practical activity in making new classifications and updating old ones. Perhaps the most important realization in the syntactic refinement process has been that facets are functions or superficial manifestations of relations between concepts belonging to different facet categories. Implementation has mainly been concerned with catching up with the theory. It is already clear that the 2nd edition of the Bliss Bibliographic Classification (BC2) is a major success. Previous to 1970 the nearest approach to a working faceted classification was that used in BNB but since 1970 the PRECIS index has removed the facility for broad searches and for browsing by patterned collocation. Practice has not overtaken theory as there has been little theory to overtake. (LISA 79/2475)

BSO, like BC2, incorporates many of the advances in the theory of the last half century. It is faceted, with provision for facet combination across discipline boundaries under the control of relational considerations. It is based upon disciplines, but also provides for entities and phenomena treated in a multidisciplinary manner. It was compiled on the basis of institutional warrant, not documentary warrant, the cut-off principle employed being that a subject which has an organized information source devoted to it solely should be represented specifically in BSO. This principle led to a compilation of just over 4,000 terms. The design attempts to optimize on the factor of ease of updating and maximum predictability in dealing with future new knowledge. The 1978 BSO has a non-expressive numeral notation devised for human users. A completely hospitable, completely expressive notation, repulsive to humans, but possibly advantageous for computer handling, could be substituted for the present notation without disrupting the structure of the system. (Excerpt from original text)

#150 **Broad System of Ordering.** – In: Classification Research Group Bulletin, No.11. – *Journal of Documentation* (ISSN 0022-0418), 34(1)1978, p.42-44.

Coates has reported regularly on progress with BSO at CRG meetings and has given opportunities to discuss difficult matters in relation to his experiences. Among other things, considerable interest was given to the provision of a class for Human needs. This was one feature of BSO and was closely related to the problem of disciplines and phenomena to deal with interdisciplinary subjects. The feeling of many members of CRG was that BSO would fall between two stools of disciplines and phenomena. Coates maintained that the arrangement provided some interesting collocations and attempted to get the best of both worlds. (KK)

#151 Faceted classification and logical division in information retrieval. / Jack Mills. – *Library Trends* (ISSN 0024-2594), 52(3)2004, p.541-570.

The main object of the paper is to demonstrate in detail the role of classification in information retrieval (IR) and the design of classificatory structures by the application of logical division to all forms of the content of records, subject and imaginative. The natural product of such division is a faceted classification. The latter is seen not as a particular kind of library classification but the only viable form enabling the locating and relating of information to be optimally predictable. A detailed exposition of the practical steps in facet analysis is given, drawing on the experience of the new Bliss Classification (BC2). The continued existence of the library as a highly organized information store is assumed. But, it is argued that it must acknowledge the relevance of the revolution in library classification that has taken place. BSO is introduced as the other modern general classification which, too, is fully faceted. It was first designed as a switching language. Its lack of detail stems from an institutional warrant that is the criterion for initial subject inclusion. One feature of BSO is the break it makes with the generally recognized fields of knowledge, such as Communication and information, Management, Human needs, concepts of which are normally distributed under different contexts. It also has a Phenomena class for works that cannot be accommodated in any of the disciplinary main classes. Adds that BSO has been very influential in the development of BC2. (Original abstract – amended by KK)

#152 United Kingdom: Meetings of CRG – CRG 233 (March 5, 1981). – *International Classification* (ISSN 0340-0050), 8(2)1981, p.97.

The discussion on the paper by Mr. Langridge (on the logical structure of main classes) and on the Class K of BC2 were continued. Mr. Mills stated that he had outlined this arrangement of a detailed schedule for the phenomena ‘environment,’ ‘culture,’ ‘social process’ and ‘structures and institutions in general.’ He also explained the Class KPQ Food, Shelter, Clothing (according to the BSO) and KQB Collectivities. The new draft outline of Class K in BC2 was attached to the minutes. (Original text)

#153 Comments on the Leon Manifesto [dated 2007.08.02 and 2007.08.13]. / B.C. Vickery. – In: *The Leon Manifesto*. Available online at: <<http://www.iskoi.org/ilc/leon.htm>>. Accessed 15 February 2011.

Summarizes the steps between the world and classification as follows: (1) the world (= phenomena), (2) people’s activities (= disciplines), (3) reports of practical or theoretical activities, (4) subjects of reports and of topics within them, and (5) classification of subjects – which will need both disciplinary and phenomenal aspects. While benefited from the Integrative Level

Classification (ILC) constructed by Claudio Gnoli, which is based on the argument that all phenomena should be separated out to form a series of new main classes, also finds helpful BSO developed by Eric Coates. Shows a feeling that phenomena should be separated out, but that parallel to that listing there could be a second listing of human activities. Discusses the nature of both phenomena and activities. (KK)

#154 **The structure of subject classifications for document retrieval.** / B.C. Vickery. – In his: *Brian Vickery at home*. Posted in 2008 at: <<http://www.lucis.me.uk/classification.htm.start>>. This website was closed after the death of the author (1918-2009). The ISKO Italian Chapter revived the online paper on 15 April 2010. Available at: <<http://www.iskoi.org/ilc/vickery.htm>>. Accessed 15 February 2011.

Presents a tentative proposal for the structure of a future general classification, which is stimulated both by the Integrative Level Classification (ILC) devised by Claudio Gnoli and by BSO constructed by Eric Coates. Traditionally, general classifications have grouped terms first within a set of “main classes.” These main classes are known as “disciplines.” Each discipline is an area of subject matters, and is the object of study by groups of scholars. But subject areas taught in education curricula is a secondary characteristic in need of a regular supply of educated entrants to the profession. The principal characteristic is that subject areas are human activities pursued by each group of professionals. Each subject is about “what people do and what they do it to.” This is reflected in classification of subjects – which will need both activity and phenomenal aspects. In fact the commonest five facets in BSO can be divided into two groups: activities and phenomena. Outside the main classes of BSO, Coates made a place for entities and phenomena discussed from many viewpoints. In favour of a new structure of classification, Gnoli has implemented a draft of ILC based on phenomena rather than on main classes. But it is not clear how “human activities” fit into the schedule, either as main classes of facets. The author proposes a solution of “free faceting.” There could be two schedules: one listing phenomena in all their variety, the other listing viewpoints (activities) in all their variety. The phenomena classes would list what is known to exist in the world, the entities and their characteristics. The activity class would list in what ways men interact with phenomena, seeking to understand them and to direct and use them to meet human needs. In accordance with the idea that there are two types of human needs, areas of human activities to meet all these needs are summarized. (KK)

#155 **[Book review].** / E.J. Coates. – *International Classification* (ISSN 0340-0050), 10(1)1983, p.41-42. The following is reviewed.

Research on classification systems: summarizing report on research on classification systems and their application. / Ejnar Wahlin. – Stockholm, Swedish Council for Building Research, 1978, 129p. (FID/CR Report 17) (ISBN 91-540-2917-1).

Mentions that Wahlin has made proposals for constructing general classification schemes, which could date back as far as 1949. He has an almost infallible eye for picking out the really crucial and far-reaching issues in general classification, such as phenomena versus disciplines, the collocation of technologies with their parent sciences or alternatively their separation, conceptual tool subjects (e.g. mathematics, logic, communication) upon which the sciences depend, and the fact that the above tool subjects themselves are products of human culture. His

proposals begin with the tabulation of a “concept series” reflecting a Comtean “filiatory” order, passing down from Energy, Matter, Inanimate nature, and to Human beings. As a result, 4 Universal Systems (US) are presented. In US2 a new class individual and family is included, which anticipates the phenomena class 470 Human needs in BSO. Concludes that the report contains many valid insights, but they are not integrated into a coherent theory of general classification. (KK)

#156(#155) **Letter to the Editor.** / Ejnar Wahlin. – *International Classification* (ISSN 0340-0050), 11(3)1984, p.172-173.

Comments on Coates’ review cited as #155. Claims that the review was not based on the FID publication that was approved in 1975 and published in 1979, but on an identical edition printed in 1978. Enumerates some points where the author’s opinion differs from that of Coates as to the construction of general classification. Points out that there is much resemblance between BSO and the author’s proposals as remarked by Eric de Grolier in his contribution to the 4th FID/CR Conference in Augsburg in 1982 (See #182), but there are decisive differences between them. Argues that there exist as many opinions as there are classificationists. Suggests that we should keep hold of the differences and act for clearing up different problem areas by analyzing the reasons for different aims, background, etc. (KK)

50.30 Influence of Ranganathan and CRG

For BSO’s potential for AI in connection with Ranganathan’s categories, see #147

#157 **Trends in research on universal classification.** / D.J. Foskett. – *Library Science with a Slant to Documentation* (ISSN 0024-2543), 16(2)1979, p.62-64.

Review article occasioned by Ingetraut Dahlberg’s book “Ontical structures and universal classification,” (Bangalore, Sarada Ranganathan Endowment for Library Science, 1978, 64p.). Highlights the recent developments in classification research done by the Documentation Research and Training Centre, the Classification Research Group, and the West German School. Identifies the interrelationship of philosophical, psychological and linguistic approaches in the design of classification schemes, thesauri and indexing languages. Mention is particularly made of the idea of “integrative levels.” Emphasizes that BC2 and BSO do in many respects reflect the works of CRG. (Original abstract – expended by KK)

#158 **S.R. Ranganathan’s faceted classification and its influence on the system of subject ordering** [In Czech]. **Fasetove trideni S.R. Ranganathana a jeho vliv v systematickem poradani.** / Ludmila Silarova. – *Technicka Knihovna* (ISSN 0049-3171), 23(5)1979, p.143-151.

Ranganathan’s Colon Classification is discussed under the following headings: The characteristics of faceted classification; Ranganathan’s general theory of library classification (basic terms, postulates); Colon classification in greater detail; The influence of the facet principle; Broad System of Ordering (for UNISIST); The Soviet Library and Bibliographical Classification (a variant for public libraries published in 1977 using auxiliary tables based on facets); and Conclusions. (LISA 80/3265)

#159 **Development of classification theory in the British Classification Research Group (CRG)** [In Japanese]. / Tsuneo Yamada. – *Tokyo Daigaku Toshokan Johogaku Semina Kenkyu Shuroku* (ISSN 0287-1602), (19)1982, p.249-320. Reprinted in: *Classification, indexing and databases: a collection of papers in memory of Tsuneo Yamada*. – Tokyo, Publishing Committee for the Work of Tsuneo Yamada, 1990, p.1-111.

Traces the development of classification theory in a discussion group of the Classification Research Group (CRG) in London that was influenced by the thought of Ranganathan. A thorough examination of the work of CRG consists of the following sections: the nature of CRG, background of the establishment, special classifications, Dorking Conference, problems of notation, cross-classification, relational analysis, alphabetical subject catalogues, Cranfield project, new general classification, Kyle Classification, theory of integrative levels and general systems theory, PRECIS, BSO and BC2. The paper is appended by a list of special classifications devised by members of CRG. (KK)

#160 **Semantic validity: concepts of warrant in bibliographic classification systems.** / Clare Beghtol. – *Library Resources and Technical Services* (ISSN 0024-2527), 30(2)1986, p.109-125.

Paper occasioned by E.J. Coates' review article on classification (See #149). Argues that the semantic axis of bibliographic classification systems can be found in the various warrants that have been used to justify the utility of classification systems. Classificationists, theorists, and critics have emphasized the syntactic aspects of classification theories and systems, but a number of semantic warrants can be identified. The evolution of four semantic warrants is traced through the development of 20th century classification theory: (1) literary warrant, (2) scientific/philosophical warrant, (3) educational warrant, and (4) cultural warrant. Mentions that members of CRG narrowed Hulme's original idea from "literary warrant" to what might be called "terminological warrant" in order to base systems on the terminology of a subject field, instead of basing systems on the subjects of books. Argues that BSO tries to combine the idea of "terminological warrant" and of "institutional warrant," both of which emerged from CRG's early work on special classification systems, while at the same time depending upon the advances in syntactic theory and techniques identified by Ranganathan and refined by CRG. It is concluded that further examination of semantic warrants might make possible a rationalized approach to the creation of classification systems for particular uses. (Original abstract – amended by KK)

#161 **The United Kingdom contribution to subject cataloguing and classification since 1945.** / Eric J. Hunter. – *International Cataloguing* (ISSN 0047-0635), 16(3)1987, p.31-34.

The following developments in subject cataloguing and classification in the United Kingdom since 1945 are reviewed: the contributions of Ranganathan and Palmer; the work of the Classification Research Group (CRG); the development of PRECIS; research into indexing language performance; automatic indexing and classification; major events in the sphere of general classification scheme; and the publications of monographs on the subject approach. (LISA 88/956)

In the section of major events in the sphere of general classification scheme, excepting the work on the development of a new outline for a general classification by CRG, three events are introduced: a revision of BC2, the compilation of BSO and new edition of UDC. Following a

description of characteristics of BSO, the author emphasizes that E.J. Coates and G.A. Lloyd were among the original three members of the FID/BSO Panel, so the scheme had a considerable United Kingdom input. (KK)

#162 **Current problems in classification and indexing: inferences drawn from observations of some British expertises linked to the thought of S.R. Ranganathan** [In Japanese]. / Keiichi Kawamura. – *TP&D Forum Series* (ISSN 0918-404X), (1)1992, p.28-52.

This paper begins with an account of the following 3 significant events in the sphere of subject indication in the United Kingdom soon after World War II, each of which was closely related to the thought of S.R. Ranganathan: the commencement of the British National Bibliography (BNB) in 1950, the appearance of a book entitled “The fundamentals of library classification” in 1951, and the establishment of the Classification Research Group (CRG) in 1952. Then, after reviewing BNB, BCMC, BTI, PRECIS, Thesaurofacet, BC2, and BSO along with the underlying philosophy of each system, it is pointed out that there are 3 principles by which documents may be collocated in a classification scheme (i.e. by topic, by form of knowledge, or by field of interest) and that BSO’s institutional warrant deserves careful study. Attention is also drawn to the resemblance between Bliss’ notion of gradation by specialties and the theory of integrative levels, the potentiality of which was recently investigated by CRG as a framework for helpful arrangement. Discussion goes on such grey areas as the need of subject analysis as human intellectual work, the effectiveness of relational analysis to assist with the handling of compound terms as well as composite subjects, the usefulness of chain procedural method in mechanized environment, and the tangle of cross-references seen in both most thesauri and the BS 5723 and ISO 2788 standards. It is argued that while there has been progress in classification syntactics by making use of the notion of facet/category, the semantic side of indexing languages has been neglected for many years. This is an area of research to be urgently undertaken so long as one can recognize the problematic reference structures of present thesauri. (Original abstract)

50.40 Comparison with other information languages

#163 **Towards a syndetic information retrieval system.** / Eric de Grolier. – In: *Classification research for knowledge representation and organization: proceedings of the 5th International Study Conference on Classification Research, Toronto, Canada, June 24-28, 1991.* / ed. Nancy J. Williamson and Michele Hudon. – Amsterdam, Elsevier, 1992, p.223-234. (FID publication 698) (ISBN 0-444-89343-1).

This work could be regarded as a sequel to the author’s well-known book “A study of general categories applicable to classification and coding in documentation” published in 1962. The present work focuses on switching languages that have been devised for about 30 years. Languages discussed are: Gardin’s SYNTOL, BSO, Wolff-Terroine’s Macrothesaurus, Soviet “Rubricator” GASNTI, Jolley’s Holotheme, Scheele’s Universelle Facetten-Klassifikation, Dahlberg’s Universal Classification System [i.e. ICC], Wahlin’s AR-Complex, German Einheitsklassifikation, and Dutch NBC. Adds that the author translated the original English BSO into French. Regards BSO as a kind of remarke [sic] of UDC, with some traits taken from BC2. (KK)

#164 **BC2 and BSO: presentation at the Thirty-Sixth Allerton Institute, 1994 Session on preparing traditional classifications for the future.** / E.J. Coates. – *Cataloging and Classification Quarterly* (ISSN 0163-9374), 21(2)1995, p.59-67.

Paper presented at the Thirty-Sixth Allerton Institute, 23-25 October 1994, Allerton Park, Monticello, Illinois. Discusses 2 general classifications, the revised version of the Bliss Classification Scheme or Bliss 2 (BC2), and the Broad System of Ordering (BSO), detailing a number of the technical aspects of the latter. Highlights important areas of difference between these 2 schemes and UDC and DDC, and asserts that these 2 schemes are in part a challenge to the latter 2 and incorporate a modern view of the world in contrast to them. (LISA 96/8797)

#165(#164) **Allerton Institute on New Roles for Classification in Library and Information Networks.** / Nancy Williamson. – *Knowledge Organization* (ISSN 0943-7444), 21(4)1994, p.235.

Report of a conference held at the Robert Allerton Park and Conference Center, Monticello, Illinois, 1994. There were about 100 participants from many countries. Following keynote addresses a second segment of the conference focused on 'Preparing traditional classifications for the future.' There were five speakers, of whom Eric Coates spoke on the Bliss Bibliographic Classification and BSO. (KK)

#166 **Comparison of BC and BSO: seminar work** [In Czech]. **Srovnání BC a BSO: seminární práce.** / Anna Janikova. – Slezská Univerzita v Opavě, Filozoficko-Přirodovědecká Fakulta, Ústav Informatiky, Opava, Czech Republic, 2007, 14p.

Outlines the history and development of Bliss Classification (BC) and BSO. Describes the structure of each system, together with combined subjects as examples. Enumerates both advantages and disadvantages of BC and BSO when used as subject ordering system at different types of library. Concludes that BC is adaptable to libraries and good for students, but there is a problem of complexity and that BSO is simple and understandable, but it is just a switching language. (KK)

#167 **Core requirements for automation of analytico-synthetic classifications.** / Aida Slavic and Maria Ines Cordeiro. – In: *Knowledge organization and the global information society: proceedings of the 8th International ISKO Conference, 13-16 July 2004, London, UK.* / ed. Ia C. McIlwaine. – Burzberg, Ergon Verlag, 2004, p.187-192. (Advances in knowledge organization 9) (ISBN 3-8991-3357-9). Also available online at: <http://arizona.openrepository.com/arizona/handle/10150/105814>. Accessed 15 February 2011.

Analytico-synthetic classifications have great potential in information retrieval (IR). This kind of classification is expected to offer in-context post-coordinate searching as well as browsing facilities. However, automation of analytico-synthetic classifications requires a level of formality in data representation that is more demanding than that of enumerative schemes. Analyses the data representation structure of BC2, BSO and UDC. In classification schemes notations usually bring together semantic content and syntax. A comparison of synthesized notations of these three classifications shows that the class hierarchy is not expressed in BC2 and BSO but is fully recorded in UDC. For this reason a feature of UDC notation that may be cumbersome for shelf ordering is ideal for machine processing and automation of number

building. Mentions that there are two ways of treating notations that are represented as “simple text strings”: one is the decomposition of complex notations on the basis of notational syntax; the other is an enhanced encoding of classification data at its source which the authors defend. Concludes that (1) the requirement for automation of analytico-synthetic classifications is “the need to fully declare and encode each compositional element of a synthesized notation” and that (2) a fundamental principle underpinning automation is “the independence and integrity of data elements.” (KK)

#168 **Sharing and re-use of classification systems: the need for a common data model.** / Aida Slavic and Maria Ines Cordeiro. – *Signum* (ISSN 0355-0036), 37(8)2004, p.19-24. Also available online at: <<http://arizona.openrepository.com/arizona/handle/10150/105132>>. Accessed 15 February 2011.

This paper focuses on issues of automation of analytico-synthetic classifications such as UDC, BC2 and BSO. When a classification scheme is made available electronically not as “simple text” but as “structured, machine-readable data,” it is possible to manage and control concept hierarchies and vocabulary facets and sub-facets. This opens the door to the automation of “classmark building” in the process of indexing and to the exploitation of classification in information retrieval (IR), e.g. search expansion, facet browsing, post-coordinate searching. However, if the definition of adequate data representation is left to each specific application and implementation, such as a proprietary format of UDC or MARC format for classification data which is so far designed for DDC and LCC, solutions are both costly and limited. The way forward is to standardize data structures used to automate classification systems. Analyses the data representation structure of UDC, BC2 and BSO. While the class hierarchy is recorded in UDC, it is not expressed in BC2 and BSO. Concludes that (1) the central requirement for automation of analytico-synthetic classifications is “the full declaration and encoding of each compositional element of a synthesized notation” and that (2) this requirement corresponds to a fundamental principle in automation, i.e. “the independence and integrity of data elements.” Adds that a common data standard would help in automating classification schemes such as BC2 and BSO, or other special schemes that have been scarcely used in IR systems. (KK)

#169 **Classifying the communication domain according to the theory of integrative levels** [In Italian]. **Classificare il dominio della comunicazione secondo la teoria dei livelli di integrazione.** / Enzo Cesanelli. – Graduate thesis excerpt and adaptation, Facolta di Scienze della Formazione, Laurea in Scienze della Comunicazione, Universita degli Studi di Trieste, 2008, 58p. Also available online at: <<http://eprints.rclis.org/14632/>>. Accessed 15 February 2011.

In order to organize a collection of web articles in the domain of communication studies, some knowledge organization systems have been considered, including folksonomies, the Universal Decimal Classification (UDC), the Bliss Bibliographic Classification 2nd edition (BC2), and the Broad System of Ordering (BSO). Special attention is paid to the Integrative Level Classification (ILC), a system under development allowing an interdisciplinary approach to information. This seems especially suitable for the domain of communication, where several levels of reality are involved at the same time, like those of signals, societies, organizations, cultures, and recorded knowledge. The theory of levels of reality as developed by James Feibleman, Nicolai Hartmann and others, and applied to classification by the Classification

Research Group, is illustrated. Tentative ILC notation for a sample of articles dealing with mass communication is constructed and discussed. (Original abstract)

BC2 and BSO are selected for the reason that they are based on the theory of integrative levels. While UDC is not based on the theory, its synthetic nature is similar to free combination of classes in ILC. (KK)

#170 Relational systems in indexing and classification: a study of conceptual relations necessary for information retrieval [In Japanese]. / Keiichi Kawamura. – *Journal of Japan Society of Library and Information Science* (ISSN 1344-8668), 48(2)2002, p.73-93.

Both facet analysis and relational analysis are methods of subject analysis in the European tradition. The former is based on categorization of the terms themselves and the latter analyzes the meaning of the spaces between terms in syntactic structures in indexing. The purpose of this paper is to find a satisfactory solution to the problem of how many relations are, in principle, necessary for information retrieval. Nine relational systems (Farradane's Relational Indexing, Perry/Kent's WRU system, Kervégant's supplementary system for UDC, Leroy/Braffort's system for CEA, Gardin's SYNTOL, Coates' BTI, Lynch's ASI, Austin's PRECIS and Coates' BSO) were surveyed and an inventory was made of the relations used in these nine systems, which amounted to 170 in all. Based upon the assumption that the nine systems as a whole cover the necessary relations, the author proposes that a comparison of these relations should be made at concept level by making use of a fully faceted general classification, and expects that the most suitable scheme for the comparison will be BSO whose structure lays stress on facet relations rather than facet categories. (Original abstract)

#171 Integration of distributed terminology resources to facilitate subject cross-browsing for library portal systems. / Libo Eric Si, Ann O'Brien and Steve Proberts. – In: *Content architecture: exploiting and managing diverse resources: proceedings of the 1st National Conference of the United Kingdom Chapter of the International Society for Knowledge Organization (ISKO), University College London, 22-23 June 2009.* / ed. Vanda Broughton. – *Aslib Proceedings* (ISSN 0001-253X), 62(4-5)2010, p.415-427. Online pre-prints available at: <<http://www.iskouk.org/conf2009/proceedings.htm>>. Accessed 15 February 2011. Also directly available at: <http://www.iskouk.org/conf2009/papers/si_ISKOUK2009.pdf>. Accessed 15 February 2011.

In order to cope with the problem of lacking a subject cross-browsing service in current library portal systems, the research investigated the case for such a system and developed a prototype middleware framework between different terminology resources. Presents four requirements for switching language: (1) it has great granularity and covers most subject areas; (2) it should be well-known across different communities; (3) it should be encoded in a well-defined interchange format, such as XML; and (4) it should have excellent concept synthesis capability. Different information languages, such as DDC, LCC, LCSH, UDC, Bliss, BSO, etc. were compared in the light of the four requirements, and DDC was tentatively chosen as a switching language. The prototype involved mapping between the computer science schedule of DDC which acted a spine and two controlled vocabularies, UKAT and ACM Computing Classification. Based on a combination of literature review, findings from the research, and self-reflection, five recommendations are presented. The first of the

recommendations is concerned with a better option of switching language than DDC, where Bliss and BSO are nominated for further investigation by reason that they are advanced faceted classification schemes with great notational synthesis capability. (KK)

50.50 Criticisms of BSO or switching language

See also paper by Dagobert Soergel (#107)

#172 **The Broad System of Ordering (BSO) as a basis for an integrated social sciences thesaurus?** / Ingetraut Dahlberg. – *International Classification* (ISSN 0340-0050), 7(2)1980, p.66-72.

Revised version of a paper presented at the Consultative Meeting on the Establishment of an Integrated Thesaurus in the Social Sciences, Paris, Unesco, 9-11 June 1980 (See #204 and #205). Among works on BSO, apart from those by the BSO Panel, this paper has been the most frequently cited. (KK)

Investigation of the feasibility of using relevant parts of the BSO as the basis for an integrated thesaurus of the social sciences comprising all existing thesauri and classification systems in this area. BSO's coverage of the social sciences was found to be relatively small compared with the corresponding classes of the Dewey Decimal Classification, the Bliss Classification and the UNESCO Thesaurus. BSO falls short in its structural features as exemplified by its method of class formation and concept arrangement with its reversing rule for citation order. BSO was not designed for the purpose of integrating other systems. It cannot therefore be blamed for its non-suitability for such an application. (LISA 81/3632)

#173(#172) **Letter to the Editor.** / E.J. Coates. – *International Classification* (ISSN 0340-0050), 8(1)1981, p.46.

On behalf of the FID/BSO Panel the author makes a counterargument to the paper given by Ingetraut Dahlberg who is Editor of the *International Classification* and had been a member of the former FID/SRC Working Group from March 1973 to September 1974. Argues that BSO would have no legitimate claim even to describe itself as a classification if such shortcomings as the paper enumerated are substantiated. Claims that the paper misrepresents the attitudes and intensions of the BSO Panel towards their product, by recourse to the unscrupulous and discreditable tactic of selective quotation out of context. Points out that there are misstatements and confusions as to: (1) the starting point of the newly organized FID/BSO Panel, (2) decision on placing topics in schedules, (3) characteristics of division, and (4) the inversion principle. Concludes that the paper does not provide any useful data because of inadequate methodology which confines itself to sightings at topmost hierarchical levels that are defined for BSO not for the other schemes. (KK)

#174 **Library catalogs in the Internet: switching for future subject access.** / Ingetraut Dahlberg. – In: *Knowledge organization and change: proceedings of the 4th International ISKO Conference, 15-18 July 1996, Washington, DC, USA.* / organized by the Office of the Director for Public Service Collections, Library of Congress [and] the ISKO General Secretariat, and OCLC Forest Press. / ed. Rebecca Green. – Frankfurt am Main, INDEKS Verlag, 1996, p.155-164.

(Advances in knowledge organization 5) (ISBN 3-8867-2024-1).

Proposal to the International Society for Knowledge Organization (ISKO), for a project to create a switching system, using the author's Information Coding Classification (ICC) as a central switching language. Six major universal classification schemes would be mapped to it: DDC, UDC, LCC, Bliss, Colon, and Russian LBC. Major principles on which a switching language must be built are presented as: (1) main classes should not be based on disciplines but on general objects of being, (2) order of main classes should follow the theory of integrative levels, (3) facets for subdivisions of areas of general objects of being should be prepared, and (4) notation should be decimal and combinable. Contrasts the principles with the Broad System of Ordering (BSO), and insists that while ICC embodies all these principles, BSO does not. Stresses that neither (2) nor (3) is applied to BSO and that the greatest handicap for easy use of BSO is its centesimal notation. (KK)

#175 **Current issues in the subject control of information.** / Elaine Svenonius and Helen F. Schmierer. – *Library Quarterly* (ISSN 0024-2519), 47(3)1977, p.326-346.

The idea of a switching language appears to have originated with the Groupe d'Etude sur l'Information Scientifique in Marseilles. Their switching language was called the Intermediate Lexicon, and UK CRG showed particular interest in this project. Proposals to achieve convertibility of indexing vocabularies have recognized two methods: (1) constructing a switching language, and (2) mapping or translating directly from the vocabulary of one indexing language to that of another. An example of a switching language is BSO that is developed for UNISIST. BSO was understood to be an "umbrella classification" or a "mechanism for shallow indexing." Properly speaking BSO is not a switching language which is intended to translate the vocabulary of one indexing language into those of several others. A switching language must necessarily use a vocabulary more specific than that of any of the languages to be translated. A model of a switching language that is specific in its vocabulary is D. Soergel's Universal Source Thesauri (UST). UST is conceived as a cumulative thesaurus that includes the vocabularies of several languages. An alternative to constructing a switching language is simply to translate or map one indexing language to another. This method requires the construction of a conversion table. There had been working examples of an umbrella classification and a conversion table in USA in the 1960s. The former was the Committee on Scientific and Technical Information (COSATI) Subject Category List, and the latter was "Dictionary of Equivalents" made for the Armed Forces Technical Information Agency (ASTIA) and Atomic Energy Commission (AEC) vocabularies. (KK)

#176 **Compatibility of retrieval languages: introduction to a forum.** / Elaine Svenonius. – *International Classification* (ISSN 0340-0050), 10(1)1983, p.2-4.

This introductory paper at a conference on the compatibility between indexing and retrieval languages held at Columbus, Ohio, 17 October 1982, is the proposal that led to the mounting of the conference. Asks to what extent retrieval languages are compatible and outlines some early work. Notes that the 2 approaches generally considered are: switching language construction; or one to one translation. Recent research and development includes: the Broad System of Ordering, the Intermediate Lexicon for Information Science, Eurodicautom, PRECIS, TITUS II, a Canadian Subject Authority Control project, the Integrated Energy Vocabulary, CONIT, and

an integrated consistent authority file service. Considers a number of problems which have been encountered. (LISA 84/2558)

Argues that while various methods of retrieval language compatibility have been developed, there have been few evidences of effectiveness and cost justification and that this could lead to wasted efforts as was earlier the case with machine translation. Maintains that compatibility is a form of vocabulary control, and that vocabulary control always seems to prove less effective than anticipated. Points out the lack of theoretical underpinnings, one of which is the problem of a broad classification. The author has an opposite opinion that a switching language must necessarily use a vocabulary more specific than that of any of the languages to be translated. (KK)

#177 Use of classification in online retrieval. / Elaine Svenonius. – *Library Resources and Technical Services* (ISSN 0024-2527), 27(1)1983, p.76-80.

Paper presented at the RTSD/CCS Subject Analysis Committee seminar: Subject Analysis in the Online Environment, 13 July 1982. It is sometimes argued that with the development of computerized information retrieval it is possible to dispense with traditional methods of organizing information, in particular, classification. Looks at ways in which classification can be used in on-line information retrieval systems: for example, to broaden searches, improve recall and precision. (LISA 84/1478)

Points out that classification can also be used to achieve compatibility of retrieval languages by serving as a mediating or switching language. But argues that to develop a new mechanism, such as BSO, rather than to use ones already existing, such as DDC, seems inappropriate. It is as inappropriate as to develop a new language such as Esperanto. Emphasizes that a classificatory language should have both traditional and financial backings. (KK)

#178 Integration of information data banks and compatibility of indexing languages [In French]. **Fusion de banques de donnees documentaires et compatibilite des langages d'indexation.** / Jacques Maniez. – *Documentaliste* (ISSN 0012-4508), 34(4-5)1997, p.212-224 (includes a report of the research seminar "Compatibility and integration of order systems, Warsaw, 13-15 September 1995," p.222-224).

Discusses the apparently unattainable goal of compatibility of information languages. While controlled languages can improve retrieval performance within a single system, they make cooperation across different systems more difficult. The Internet and downloading accentuate this adverse outcome and the acceleration of data exchange aggravates the problem of compatibility. Defines this familiar concept and demonstrates that coherence is just as necessary as it was for indexing languages, the proliferation of which has created confusion in grouped data banks. Describes 2 types of potential solutions, similar to those applied to automatic translation of natural languages: harmonizing the information languages themselves, both difficult and expensive, or, the more flexible solution involving automatic harmonization of indexing formulae based on pre-established concordance tables. However, structural incompatibilities between post-coordinated languages and classifications may lead any harmonization tools up a blind alley, while the paths of a universal concordance model are rare and narrow. (LISA 98/2733)

Emphasizes that despite the competence of the designers, BSO has not been used as an

intermediate language because it does not respond to the requirements. (KK)

#179(#178) **Database merging and the compatibility of indexing languages.** / Jacques Maniez. – *Knowledge Organization* (ISSN 0943-7444), 24(4)1997, p.213-224 (includes a report of the research seminar “Compatibility and integration of order systems, Warsaw, 13-15 September 1995,” p.221-223). English version of #178.

After defining the notion of information compatibility, shows that it meets the same requirements of semantic coherence as information languages themselves. Drawing on the lessons of linguistics and automatic translating, describes 2 types of viable solutions: the harmonization of several information languages (a difficult and costly process); and the automatic harmonization of indexing formulae through prefabricated concordance tables, an easier solution which can however be hampered by structural discrepancies. Lastly, sketches a critical view of the concept of a switching language. (LISA 98/6921)

Quotes Dahlberg’s remark that BSO was used in some applications, mostly for demonstration purposes, but could not be used as an intermediate language. Attributes these conditions not to the structure of BSO which Dahlberg pointed out, but to the inadequacy of the idea of switching language. (KK)

#180 **Layers of meaning: disentangling subject access interoperability.** / Joseph T. Tennis. – In: *Advances in classification research, volume 12: proceedings of the 12th ASIST SIG/CR Classification Research Workshop held at the 64th Annual ASIST Meeting, November 2-8, 2001, Washington, D.C.* / ed. Efthimis N. Efthimiadis. – Medford, NJ, Information Today, 2004, p.113-129 (includes discussion, p.123-129). (ISBN 1-57387-198-2)

Argues that the conceptual framework of the subject access interoperability mechanism should be multilayered and that a single layer found in switching languages, including Dahlberg’s Information Coding Classification (ICC) and the Broad System of Ordering (BSO), is not sufficient to cope with problems inherent in switching between two vocabularies. The problems were identified by F.W. Lancaster in 1986 as: (1) overlap of subject matter, (2) specificity, (3) degree of pre-coordination, and (4) hierarchical, synonymous and other relationship structure. In order to address these problems, a multilayered semantic layer consisting of a concept layer, a subject layer and a class layer, is proposed. (KK)

#181 **BSO (Broad System of Ordering).** / Birger Hjørland. – In his: *Concepts in library and information science and knowledge organization*. Last updated 12 February 2008. Available online at: <<http://www.dbstud.dk/k05pebr/knowledge/info.asp?subjectid=34>>. Accessed 15 February 2011.

Following a brief description of the development of BSO, discusses the theoretical assumptions behind the idea of switching language. Points out that BSO did not develop to fulfill the wishes behind its construction. Concludes that BSO does also not escape from inherent problematic assumptions in the concept of switching language. (KK)

60 STRUCTURE

See also 50.20 Problems in classification making

60.10 Order of main classes

#182 **Classifications as cultural artefacts.** / Eric de Grolier. – In: *Universal classification 1: subject analysis and ordering systems: proceedings, 4th International Study Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e. V., Augsburg, 28 June-2 July 1982.* / ed. Ingetraut Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1982, p.19-34. (FID publication 615) (Studien zur Klassifikation 11) (ISBN 3-88672-010-1).

Quantitatively investigates a sample of bibliographic classifications to ascertain their correlations with the characteristics of the literary output. Classifications investigated are those which were appeared from the old Egyptian times to the 20th century. Remarkable findings are: (1) The difference between the schemes of the late 19th century (Harris, Dewey, Cutter, etc.) and those of pre-World War I (LC, Bliss) is that the proportions of the science and technology and the social sciences and humanities have been almost completely reversed. (2) The decline of ideological group, which has been in progress in Europe since the Renaissance, has now reached a point where this field represents a bare 3% or even less in Western schemes. In BBK, Marxism has just replaced theology as the first division. (3) Most classifications reflect an anterior pattern of publications, but some of them appear to be in advance, anticipating on future trends. (4) Whether it is reasonable to attempt at devising classification schemes intended to serve both macro-documentation and micro-documentation depends upon further studies in this direction. The last comparison concerns four contemporary schemes which are Grolier's scheme (1953), Soviet BBK (1960-68), Wahlin's two schemes (1969 and 1974) and BSO (1978). It appears that (a) BBK and BSO are rather similar, except for the reduction of the ideological group in the latter for the benefit of technology, (b) Wahlin (1969) resembles BSO, the main difference is almost reverse positions of science and technology, and (c) in micro-documentation level BSO does not seem to give sufficient space to the social sciences and humanities complex. (KK)

#183 **Analysis of different ordering principles (Appendices to paper included in Vol.1, p.114-124).** / Ejnar Wahlin. – In: *Universal classification 2: subject analysis and ordering systems: proceedings, 4th International Study Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e. V., Augsburg, 28 June-2 July 1982.* / ed. Jean M. Perreault and Ingetraut Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1983, p.68-70. (FID publication 615) (Studien zur Klassifikation 12) (ISBN 3-88672-011-X).

The paper includes two appendices to the author's paper published in Volume 1 of the proceedings. Appendix 1 is concerned with the "Analysis of classification systems," and a comparison is made between the International Standard Industry Classification (ISIC), UDC and BSO using the TIM-system. TIM is three aspects of production: Technology (T), Industry (I) and Material Culture (M) which are used as analyzing instruments. When BSO is analyzed with TIM it appears that: (1) ISIC 1 (Agriculture etc.) is connected with the sciences botany and

zoology in BSO which is a useful contact, and that (2) other parts of ISIC 1 within BSO 600-890 are distributed in three parts: (a) General technology of production in 620, (b) Production of buildings and certain vehicles together with the object reduced, and at the end (c) Mining and process industries in 780-870 together with the materials produced, followed by 890 Manufacture of particular products. Returning to agriculture, the final products, i.e. food-stuffs are placed in BSO 471 – Human needs (M). The intermediate stage, i.e. the food and drink technology (T, D) is placed in 840. The same order is used in UDC: 63 – 663/664 – 641. Concludes that the ordering principle in BSO could be expressed in TIM terms as: T – T+M – I (excluding Agriculture etc.). (KK)

#184 A decade of research in classification. / Jacques Maniez – *International Classification* (ISSN 0340-0050), 18(2)1991, p.73-77.

Contribution to a special Festschrift issue devoted to Eric de Grolier's 80th birthday on 25th June 1991. The 7 reports written by Eric de Grolier for the FID/CA Committee 'General theory of classification' between 1953-60 are an important record of the author's thoughts and of the state of classification issues in the 1950s. The main content of these reports is a general and evolutive project devised as a basis for a new universal standard classification. An original type of alphanumeric and pronounceable symbolization is advocated which would allow a flexible division of main classes between the domains of knowledge. (LISA 92/4003)

Mentions that Eric de Grolier devised a tentative classification scheme called ALSYN (ALphabetical and SYNthetic) based on his principles. Refers to a table of the ALSYN 2nd version (1954) which is made up of 12 main classes. Points out that the order of the main classes is logical and aims at achieving a collocation of related subject fields. Recognizes that there is some degree of similarity between ALSYN and BSO regarding order of main classes. (KK)

#185 The selection and order of main classes in general classification schemes: considerations on the philosophical and socio-historical backgrounds [In Japanese]. / Keiichi Kawamura. – *Journal of Japan Society of Library and Information Science* (ISSN 1344-8668), 50(1)2004, p.2-25.

Discusses the philosophical and socio-historical backgrounds concerning the selection and order of main classes in general classification schemes, examining 28 schemes published in book form since Harris' scheme of 1870. All the schemes base their main classes on disciplines encountered in the real world, but they differ in number and order because of world view on the one hand and notational constraints on the other. A home made scheme devised for its own library is obliged to reflect its collection, but a unified or common scheme for nationwide use has to take account of the general socio-historical background. Only a universal scheme can thus remain true to its philosophical principles. Concludes that the schemes of Brown (1906), Ranganathan (1933), Bliss (1940), the BCA/CRG BC2 (1977) and UNESCO/FID BSO (1978), the bodies of which all begin with the natural sciences, create a new history of universal classification based on evolutionary ideas. (Original abstract)

60.20 Facet structure

#186 **Broad System of Ordering: a switching language** [In Czech]. **Propojovací jazyk BSO.** / Ladislav Kofnovec. – *Ceskoslovenska Informatika* (ISSN 0322-8509), 21(9)1979, p.245-248.

The structure and usage of BSO are described. According to its designers, BSO was to become a broad subject classification to serve as a switching mechanism between information systems and services using a variety of indexing languages. A list of main classes (100-979) is given. The classes are not hierarchically ordered (710 Construction engineering, 740 Transport engineering, while there is no class 700 Engineering). Subclasses of main classes are represented by two-digit numbers separated by a comma, e.g.: 360 Agriculture, 360,20 Agricultural biology. Second level subclasses are designated in a similar way. There are no hierarchical relations among subclasses either. Compound subjects are built by the number combination device. Three kinds of combination can be employed, depending on the subject field and whether combination is intra- or inter-field. Most of BSO classes, except 600-890, are “combination fields” within which compound numbers are formed by ascribing, through a comma, subclass numbers ordered inversely to the classification schedule order. For example, 252,28 Use of space craft for astronomical purposes; 252,72 The sun and solar phenomena; 252,72,28 Study of the sun by space craft. When two numbers belonging to classes 600-890 are combined both are used whole with a zero placed in between; within a compound number the commas are placed so that all the groups of digits other than the first one are two-digit. For example, 710 Construction engineering (also includes Design); 811,12 Chemical production plant; 811,12,07,10 Design of chemical factories. The third method of combining numbers belong to different subject fields is to link main class numbers using a hyphen e.g., 535 Sociology, 460 Education, 460-535 Sociology of education. When building compound numbers by this method the following rule should be observed: first comes the number indicating the scope of application, aim, end product, system as a whole, etc., then goes the number indicating point of view, approach, method, a part of the whole, etc. BSO incorporates auxiliary facets for information sources, time and place which are not used on their own. The information source number is separated from the main number by a space, and the time and place numbers are separated by a hyphen (both from the main and auxiliary numbers). (VINITI-IA 80.2.135)

#187 **Broad System of Ordering (BSO)** [In Italian]. / Claudio Gnoli. – In his: *Classificazione a faccette*. – Roma, Associazione Italiana Biblioteche, 2004, p.26-27. (Enciclopedia tascabile 26) (ISBN 88-7812-080-4).

Following a brief description of the mission of BSO, a list of main classes (100-970) is introduced. Gives an explanation of a cyclic form of knowledge in BSO, which is the basis of the order of main classes. Points out that the scheme is easy to handle and that the structure incorporated many of the principles set up by CRG. Each class consists of five facet categories: Objects or systems, Parts, Processes or interactions, Operations, and Equipments. They can be combined freely. A sample of internal combination that has only to follow the simple inversion principle is given. Also a sample of external combination that requires analysis of relation between facets is given. (KK)

#188 **[Book review]** [In Italian]. / Silvia Bonfietti. – *Bollettino AIB* (ISSN 1121-1490), 45(1)2005, p.98-99. Also available online at: <<http://www.aib.it/aib/boll/2005/0501098.htm>>. Accessed 15 February 2011. The following is reviewed.

Faceted classification [In Italian]. **Classificazione a faccette**. / Claudio Gnoli. – Roma, Associazione Italiana Biblioteche, 2004, 44p. (Enciclopedia tascabile 26) (ISBN 88-7812-080-4).

Describes that the pocket book deals with: the origin of faceted classification; the development of faceted classification with particular reference to the Classification Research Group in London; the method of analytico-synthetic classification and notation; individual schemes such as CC, BC2, BSO, ICC and DDC; and applications of facet analysis in various fields. (KK)

#189 **Facet analysis**. / Kathryn La Barre. – *Annual Review of Information Science and Technology* (ISSN 0066-4200), 44, 2010, p.243-284. (ISBN 978-1-57387-371-0)

The author explores the past and present of facet theory which is composed of facet analysis and faceted classification. First, discusses how to carry out facet analysis, the role of fundamental categories in facet analysis, and the relation between facet analysis and faceted classification. Second, describes the development and trends in facet theory, along with notable faceted classifications and thesauri. Last, introduces facets or facet-like structures in such cognate areas as psychology, linguistics and computer science. As a notable exemplar of faceted general classification the Broad System of Ordering (BSO) is introduced. The facets used in BSO are: (1) Tools or equipment for carrying out operations; (2) Operations (purposive activities); (3) Processes, interactions; (4) Parts and/or subsystems of (a) objects of action, (b) study, or (c) products; (5) (a) Objects of action or study, (b) products, or (c) total system. Regrettably, of the five facets of BSO the third one is failed to be presented. (KK)

#190 **302nd meeting, British Classification Research Group**. – *Knowledge Organization* (ISSN 0943-7444), 23(1)1996, p.36.

The meeting was held on Friday, 3rd November 1995 at the University College London with eight members present. Jack Mills tabled and introduced a draft schedule for physics of BC2. The presentation showed how the part has been organized into four major facets, which follows the structure of BSO: Operations and agents, Processes and properties, Substantive matter, and Bulk matter. (KK)

70 NOTATION

For discussion of BSO notation from the viewpoint of mechanization, see #109, #167 and #168

#191 **On the mark system of BSO** [In Chinese]. / Dehai Lin. – *Library Journal* (ISSN 1000-4254), 7(4)1988, p.19-21.

This paper tries to define or characterize the notation of BSO. BSO is fully faceted, but the notation does not depend upon facet indicators nor does it reflect the hierarchical structure. In BSO schedules the first division is coded by three-digit Arabic numerals, and divisions to follow are consecutively coded by two-digit numerals. This results in a basic 3,2,2,... pattern and the

two-digit centesimal code (00-99) gives sufficient capacity for new subject. As a result the BSO notation gains simplicity, hospitality and flexibility, so that users are easy to grasp and handle the notation. Describes the facet structure of BSO and procedures for internal and external combinations. Mentions the influence of CRG's thought on notation. Concludes that the notation of BSO is unique in that it is an integer ordinal notation in the 3,2,2,... pattern but partially reflects the hierarchical structure. (KK)

80 APPLICATIONS AND TESTINGS

See also 50.10 Need for and functions of BSO

80.05 Application fields identified by BSO Panel

#192 **A future for BSO?** / E.J. Coates. – A talk given at the BSO Open Meeting, Lyngby, Denmark, 22nd August 1980, 8p.

Mentions that BSO as a classification is in a sense traditional, yet it has many features of modernity, and possibly one or two original features. Argues that the author's revolutionary tendencies are attracted to the management of classifications rather than to the classifications themselves. Figures that the administration of BSO could be self-supporting if 550 users would pay an annual amount of 350 Dutch florins for systems maintenance and computer service. Refers to test exercise of BSO, which is related to possible applications of BSO, and discusses eight categories of BSO application as given below. (KK)

- (1) Quasi-standardisation of indication of subject.
- (2) Overview of knowledge.
- (3) Aid to the compiling and switching between information languages.
- (4) Switching of subjects of files of document records.
- (5) Switching of queries between centers in co-operating networks.
- (6) Referral tool in multiple database online systems.
- (7) Broad indexing as a second indexing process.
- (8) A sole indexing tool.

#193(#192) **BSO Open Meeting in Copenhagen.** – *International Classification* (ISSN 0340-0050), 7(3):1980, p.146.

The Open Meeting of the BSO Panel, chaired by Jens Friis-Hansen, was held on 22nd August 1980 on the occasion of the FID Conference in Copenhagen. Geoffrey Lloyd outlined the development of BSO, Harada spoke about 'UNESCO and FID', and Eric Coates tried to answer the question "Has the BSO a future?" Lloyd reported on the planning of a switching test. Coates presented eight application fields of BSO. During the discussion such a ninth application field was identified that BSO was used in the teaching program of an American library school. (KK)

#194 **Broad System of Ordering.** – The Hague, FID, 1984, 4p. (FID publication 638). For a slightly adapted version, see #79.

This is the blue-coloured publicity leaflet published by FID in August 1984. BSO is regarded

as: (a) an information language conversion tool, (b) a general classification system, (c) a referral tool, and (d) a knowledge base. Following an account of publications on BSO, past and present policy, features of BSO and testing of BSO, nine distinct categories of BSO application are given as below. Asterisked items refer to known operational usage. (KK)

- (1) Overview of knowledge (*).
- (2) Subject indication quasi-standard, directory codes, codes for disseminated reports, trade literature.
- (3) Aid to compiling information languages (*).
- (4) Medium for switching between information languages.
- (5) Referral tool for online terminals.
- (6) Adjunct subject code for files using computer title-word search for in-depth subject retrieval (*).
- (7) Sole subject code for information files (*).
- (8) Knowledge base for expert systems research (*).
- (9) Teaching model for classification studies in schools of library and information science (*).

80.10 Switching mechanism between information languages

For subject cross-browsing facility in library portal systems, see #171

#195 **BSO switching exercise.** – *FID News Bulletin* (ISSN 0014-5874), 30(1)1980, p.1. Reprinted in: *International Classification* (ISSN 0340-0050), 7(1):1980, p.9.

FID and UNESCO have under consideration the possibility of carrying out a test-exercise to obtain factual information on the ability of BSO to serve a switching medium. Enquiries are invited from special libraries or documentation centers which might be interested in taking part in such an exercise. Each center would supply to the other, via the FID/BSO Panel which will undertake index switching, a sample of 500 document entries index in its home indexing language. The two centers participating would not have identical core subjects, but they would have appreciable areas of marginal subjects in common. The role of the centers would be confined to supplying copy of their indexed input and to preparing an evaluation report. (KK)

#196 **Broad system test.** – *Library Association Record* (ISSN 0024-2195), 82(3)1980, p.113.

FID and UNESCO have under consideration the possibility of carrying out a test-exercise to obtain factual information on the ability of BSO to serve a switching medium. Inquiries are invited from special libraries or documentation centers which might be interested in taking part in such an exercise. The two centers participating would not have identical core subjects, but they would have appreciable areas of marginal subjects in common. The role of the centers would be confined to supplying copy of their indexed input and to preparing an evaluation report. The actual switching would be undertaken by the FID/BSO Panel. (KK)

#197 **BSO as a switching mechanism: Test exercise – Panel's report 1981.** / Eric J. Coates, Geoffrey A. Lloyd and Dusan Simandl. – Published by FID/BSO Panel for FID and UNESCO, 1981, 30p.+appendices.

The test compared the results of direct switching between the two local indexing languages,

and BSO-mediated switching between them. The core subject areas of the two centers were Ferrous metallurgy and Welding. One center used UDC and the other used a specialist thesaurus in the field of Welding. Two 250-batch samples of indexed research reports were switched. The results showed that there was no great difficulty in switching between two local information languages of different kinds, but that there were considerable problems in handling exhaustively indexed material in which the set of descriptors assigned to a given document entry contains no signal identifying those particular descriptors that, in syntactic combination, encompass the theme of the document as a whole. The results also showed that the mediating language performed best when used for switching material of marginal interest to both parties but that, even in these areas, BSO was often not specific enough to switch in a manner entirely adequate to meet the needs of the recipient center. There were fairly marked directional effects in the effectiveness of the switching. This effect was attributable both to the size of the output language relative to that of the input, and to the non-relative factor of the incidence of structural ambiguity in the output language. (Excerpt from original text of #81)

#198 **From Unibiblio to Hypernet: an experience of integration between library systems** [In Italian]. **Da Unibiblio a Hypernet: un'esperienza di integrazione fra sistemi bibliotecari.** / Nicola Palazzolo. – In: *Il Servizio Bibliotecario Nazionale per l'Università: uno strumento per la ricerca: atti del Convegno, Roma 5-7 novembre 1991.* / organized by Istituto centrale per il catalogo unico delle biblioteche italiane e per le informazioni bibliografiche. – Roma, ICCU, 1992, p.191-196. Also available online at: <http://www.cruui.it/CRUI/forum-bibl/riferimento.htm>. Accessed 15 February 2011.

Paper delivered at the conference of “National Library Service (Italian acronym SBN) for universities: a tool for research” held in Rome, 5-7 November 1991. Unibiblio is a software for automatic library management, which allows one to handle all library processes and services. It incorporates international standards for libraries and data processing. The University of Catania, which is a co-owner of Unibiblio, first adopted the distributed architecture among universities in Italy. However, the problem of integration between online catalogues is not just a problem of networking. An experiment that is being conducted in Catania is the project of Hypernet, which is the integration of various classification systems, using BSO as an “interpreter.” Emphasizes that the control of authority files for authors and titles as well as a classification functioning as an “interpreter” is key to the success of the Hypernet project. (KK)

#199 **From Unibiblio to Hypernet: an experience of integration between library systems** [In Italian]. **Da Unibiblio a Hypernet: un'esperienza di integrazione fra sistemi bibliotecari.** / Nicola Palazzolo. – Catania, Università di Catania, 1991, 19p. (Quaderni 2).

Unibiblio is a software for automatic library management that is co-owned by the University of Catania. It allows one to handle all library processes and services. It incorporates international standards for libraries and data processing. The package of Unibiblio runs on several OSs, including UNIX and MS-DOS. The University of Catania first adopted the distributed architecture among universities in Italy. This choice has been followed by other university libraries, such as those in Pisa, Abruzzi, Bari and Messina. The user group was formed for cooperation. However, the problem of integration between online catalogues is not just a problem of networking. An experiment that is being conducted in Catania in this

direction is the project of Hypernet, which is the integration of various classification systems, using BSO as an “interpreter.” Another aspect of the project is the normalization of access keys for authors and titles. Emphasizes that the control of authority files as well as a classification functioning as an “interpreter” is key to the success of the Hypernet project. (KK)

#200(#199) **[Book review]** [In Italian]. / Maurizio di Girolamo – *Biblioteche Oggi* (ISSN 0392-8586), (9)1993, p.88. Also available online at: <<http://www.bibliotecheoggi.it/1993/19930908801.PDF>>. Accessed 15 February 2011.

Mentions that the work was first delivered at the conference of “National Library Service (Italian acronym SBN) for universities: a tool for research” held in Rome, 5-7 November 1991. Unibiblio is a software for automatic library management, which was developed by the University of Catania and a computer company Copin. The choice made by the University of Catania, followed by the University of Pisa, Abruzzi, Bari and Messina, was that of distributed architecture system, which is a series of computers of different capacities and powers linked through the university network. Hypernet which is linking databases should allow anyone to interrogate any catalogue as if it were a mere extension of the catalogue of a user’s library, without having to know all the different systems of interrogation. It is necessary to strive for standardizing the access keys to authors and titles and a classification which functions as an “interpreter,” allowing the exchange of information between different systems. In this respect BSO is tested in Catania. (KK)

#201 **Interconnection of online catalogues: a strategy for Hypernet** [In Italian]. **Interconnessione di cataloghi in linea: una strategia per Hypernet.** / Anna Maria Tamaro. – Catania, Università di Catania, 1992, 65p. (Quaderni 5).

Discusses the necessary tasks and instruments required for a fruitful interconnection of online catalogues. The latter includes communication protocol, network architecture, software, hardware, and so on. The project of Hypernet is conducted at the University of Catania and financed by the Ministry of Universities and Scientific and Technological Research (Italian acronym MURST). It aims to make library systems interconnected by heterogeneous networks and to allow effective search in catalogues by natural language to be translated into other ones. In this respect indispensable are a metalanguage of interrogation, such as BSO, and authority files to be used for access keys to authors and titles. Stresses that Hypernet is not an alternative to the National Library Service (Italian acronym SBN) but a necessary part of it, from which some university libraries are excluded for various reasons. (KK)

#202(#201) **[Book review]** [In Italian]. / Maurizio di Girolamo – *Biblioteche Oggi* (ISSN 0392-8586), (3)1994, p.52. Also available online at: <<http://www.bibliotecheoggi.it/1994/19940305201.PDF>>. Accessed 15 February 2011.

Describes that the author of the book possesses deep knowledge of “internetworking” and that she addresses nodal points of online network. The project of Hypernet is conducted at the University of Catania, which aims to make library systems interconnected. Essential are the existence of a metalanguage of interrogation, such as BSO, and authority files for authors and titles. Points out that mention is made of communication protocol, network architecture, software, hardware and the relation between Hypernet and the National Library Service

(Italian acronym SBN). (KK)

80.20 Compatibility with other information languages

#203 **UNESCO's project for the establishment of an integrated thesaurus of the social sciences.** / Jury I. Litoukhin. – In: *The CONTA Conference: proceedings of the Conference on Conceptual and Terminological Analysis in the Social Sciences held at the Zentrum für Interdisziplinäre Forschung (ZIF), Bielefeld, FRG, May 24-27, 1981.* / ed. Fred W. Riggs. – Frankfurt am Main, INDEKS Verlag, 1982, p.202-206. (ISBN 3-88672-200-7).

UNESCO's Division for the International Development of Social Sciences decided in 1980 to launch a project for the establishment of an integrated thesaurus of the social sciences (SS). The preparatory work included: (1) Comparative analysis of the available documentary languages in SS by J. Meyriat; (2) Study of the applicability of BSO to SS by I. Dahlberg; (3) Study of the compatibility of BSO, UDC and MISON Thesaurus sponsored by the Working Group 3 of the European Cooperation in Social Science Information and Documentation (ECSSID project); and (4) Compilation of the bibliography of mono- and multi-lingual vocabularies and thesauri in SS by M. Krommer-Benz. As a first step a Consultative Meeting of experts was held in Paris from 9-11 June 1980. The meeting adopted recommendations covering objectives to be implemented through 1981-83. Tasks to be undertaken are: (a) to prepare guidelines for the establishment of comparison and compatibility matrices between thesauri and classifications; (b) to test the guidelines; and (c) to develop a computerized descriptor bank which will include data on each term and serve a variety of purposes. Guidelines have been accepted by UNESCO. But there exists an organizational defect, including financial problem, as an international project. (KK)

#204(#203) **Consultative Meeting on the Establishment of an Integrated Thesaurus in the Social Sciences, Paris, Unesco, 9-11 June 1980.** – In: *Information note, No.15.* – Paris, Unesco, Social Science Documentation Centre, November 1980, p.7. (SS-80/WS/43).

Entry included in the section of "Studies, reports and papers produced in the Social Science Sector, January-June 1980." The contents are: (1) List of participants; (2) Agenda; (3) Introductory paper; (4) Social science documentary languages – a comparative analysis (J. Meyriat); (5) Bibliography of mono- and multi-lingual vocabularies and thesauri in the social sciences (M. Krommer-Benz); (6) ECSSID activities in the field of compatibility of information languages (M. Palnicov); (7) Study of applicability of the Broad System of Ordering (BSO) to the social sciences (I. Dahlberg); and (8) Final report. (KK)

#205(#204) **Editorial: classification and the social sciences.** / Ingetraut Dahlberg. – *International Classification* (ISSN 0340-0050), 7(2)1980, p.55.

There was a meeting of the UNESCO Division for the International Development of the Social Sciences, Paris, 9-11 June 1980, which aimed at the development of an integrated thesaurus of the social sciences. J. Litoukhin delivered an introductory paper. J. Meyriat carried out a quantitative analysis of some 60 information languages. I. Dahlberg investigated whether BSO could provide the structural framework for such an integrated system. M. Palnicov attempted at establishing compatibility between MISON, UDC and BSO. M. Krommer-Benz compiled a bibliography of the existing mono- and multi-dictionaries and

thesauri in the social sciences. The first three papers are included in this issue, but the remaining two are excluded by reason of space. For papers included, see #172, #206 and #207). (KK)

#206 Toward an integrated thesaurus of the social sciences. / J. Litoukhin. – *International Classification* (ISSN 0340-0050), 7(2)1980, p.56-59.

Introductory remarks concerning papers and deliberations of a meeting of the UNESCO Division for the International Development of the Social Sciences, Paris, 9-11 June 1980, intended to pave the way toward an Integrated Thesaurus of the Social Sciences. Developmental steps toward clarification of social sciences terminology had been undertaken at UNESCO in 1952. Since then dictionary projects and attempts at concept identification have been undertaken, but the non-existence of an overall classification system of the social sciences identifying its scope and interrelationships has hampered the terminology work considerably. Proposals for valid methods were sought so that in 1981-83 a macrothesaurus/classification system for the social sciences could be worked out possibly based on an integration of existing thesauri and classification systems in these fields. (LISA 81/3630)

The imperfection of existing classifications in the social sciences constantly encourages the search for a new solution. At present there are three basic views: (1) to develop a new, standard and complete classification or thesaurus, (2) to adopt one of the present classifications as a basis and perfect it, and (3) to combine (or to make compatible with each other) the existing tools. Dahlberg's study on BSO for UNESCO was based on the second approach (2). One of the activities of the Working Group 3 of the ECSSID project, i.e. compatibility of UDC, MISON and BSO in order to establish conversion tables and recommendations concerning amendments or modifications of these systems, is based on the third approach (3). (KK)

#207 Social science information languages: a comparative analysis. / Jean Meyriat. – *International Classification* (ISSN 0340-0050), 7(2)1980, p.60-65.

Preliminary report presented at the Consultative Meeting on the Establishment of an Integrated Thesaurus of the Social Sciences, Paris, Unesco, 9-11 June 1980. Report of an analysis of 60 information languages of the social sciences, regarding the distribution of these languages within the social sciences. Discusses purpose and empirical method used. For each of 41 subject fields the number of terms in significant information languages are given. Makes suggestions for further investigations and for the preparation of a General Indexing Language in the social sciences. (LISA 81/3631)

Regarding general classifications, BSO is included in the 60 information languages. Large general classifications, such as DDC and LCC, are excluded for the reason that they are intended not for information retrieval but for book arrangement. UDC is also excluded for the reason that more or less complete editions in a number of languages are out of date as far as social sciences are concerned, and a complete version is under way. (KK)

#208 ECSSID activities in the field of information languages compatibility. / Marat Palnicov. – Paper presented at the Consultative Meeting on the Establishment of an Integrated Thesaurus in the Social Sciences, Paris, Unesco, 9-11 June 1980, 8p. (SS/CS/26/80/6).

Describes the activities of the Working Group 3 of the European Cooperation in Social Science

Information and Documentation (ECSSID). Details a study of the compatibility of indexing and retrieval languages in the social sciences and, as a first step, a comparison of UDC, MISON Rubricator and BSO is undertaken in order to establish conversion tables and recommendations concerning amendments or modifications of these systems. (KK)

#209 European co-operation in social science information and documentation: a process of maturation. / Gyorgy Rozsa. – *International Social Science Journal* (ISSN 0020-8701), 33(3)1981, p.559-565.

Reviews the structure, aims, and activities of the European Cooperation in Social Science Information and Documentation (ECSSID) that was established in 1977. As to the Working Group 3, which was formed for “Compatibility of automated systems,” describes that efforts were being made to compare UDC (Class 3: Social sciences), MISON Rubricator and BSO. Points out that the work was hindered by many ideological, professionally conservative, traditional and linguistic obstacles. (KK)

#210 ECSSID WG 3. / Marat Palnicov. – In: *The CONTA Conference: proceedings of the Conference on Conceptual and Terminological Analysis in the Social Sciences held at the Zentrum fur Interdisziplinare Forschung (ZIF), Bielefeld, FRG, May 24-27, 1981* / ed. Fred W. Riggs. – Frankfurt am Main, INDEKS Verlag, 1982, p.346-348. (ISBN 3-88672-200-7).

The European Cooperation in Social Science Information and Documentation (ECSSID) launched in 1977 with the help of UNESCO. The ECSSID Working Group 3 was set up in 1979 for the project on information languages compatibility. In 1980 the UNESCO's Division for the International Development of the Social Sciences initiated the establishment of an integrated thesaurus on the social sciences. It invited the ECSSID WG 3 to join the project, and activities of the WG 3 have become integrated in a broader UNESCO project. The following comparisons have been made: (1) UDC and MISON Rubricator, (2) MISON Rubricator and BSO, and (3) UDC, MISON Rubricator, BSO and UNESCO Thesaurus. During the testing period three problems should be worked on: (a) methods of establishing compatibility matrix, or concordance tables, between UDC and MISON Rubricator, and between BSO and MISON Rubricator. (b) methods of merging classification schemes of the different types, and (c) methods of using BSO as a switching language. Comparisons were to cover all social sciences. Later on research has been concentrated on a few disciplines to save the time and to prepare methodological tools. Comparisons are finished in the USSR, Hungary and Czechoslovakia, and their results were discussed at the WG 3 meeting in Moscow in September 1981. Other reports are expected from the FRG, Bulgaria and Poland. The results of the compatibility project carried out by the ECSSID WG 3 will be published in the ECSSID Occasional Papers, a new series launched by the Vienna Centre that is sponsor of ECSSID. (KK)

#211 ECSSID WG3 Group in Prague. – *International Classification* (ISSN 0340-0050), 8(1)1981, p.32.

From 9-11 September 1980, members of the Working Group 3 of the European Cooperation in Social Science Information and Documentation (ECSSID) met in Prague to discuss projects on “Compatibility of information languages” and to review new proposals. Papers presented dealt mainly with compatibility of BSO-MISON and of UDC-MISON. Marat Palnicov chaired the

first plenary session and E. Coates the concluding one. In between, 20 people were divided into three discussion groups on different topics. It was agreed that UDC-MISON comparison should be continued till the end of 1981, and BSO-MISON to the end of 1982. (KK)

#212 **BSO-MISON Rubricator comparisons in Poland.** / Elzbieta Artowicz. – Paper prepared for the ECSSID WG 3 Meeting, Prague, 9-11 September 1980, 19p.

Reports that a combination of the Russian MISON and BSO is in use in Poland. (KK)

#213 **Parallel indexing with the MISON Rubricator and BSO as applied in Bulgaria.** / Iskra Dimitrova. – Paper prepared for the ECSSID WG 3 Meeting, Prague, 9-11 September 1980, 25p.

Reports that a combination of the Russian MISON and BSO is in use in Bulgaria. (KK)

#214 **On the compatibility of different information retrieval languages within the integrated information system.** / S.K. Vilenskaya. – In: *New trends in documentation and information: proceedings of the 39th FID Congress, University of Edinburgh, 25-28 September 1978.* / ed. Peter J. Taylor. – London, Aslib, 1980, p.315-325. (FID publication 566) (ISBN 0-85142-128-8).

Considers experience acquired in developing linguistic devices for 3 automated social science information systems (MISON, ASION and INION). Switching languages must be broad and flexible and fit for automatic and manual retrieval. Switching language structure should be determined by concrete tasks and functioning conditions. At Bachum University classification and descriptor languages have been combined in a single system. The system consists of a 3-level classification or rubricator and a Basic Thesaurus. Discusses compatibility problems in the context of the Rubricator and Thesaurus. (LISA 81/2690)

Reports a comparative study of main division of MISON, BSO and UDC. Basically these 3 classifications are compatible and comparison of the history and economics divisions in MISON and BSO has shown their considerable compatibility (66% on history, 56% on economics). The lack of correspondence is concerned with a number of divergences, of ideological and methodological character on the one hand, and with a different level of specificity on the other. (KK)

#215 **Testing the compatibility matrix in the field of culture.** / Marianne Dienes. – In: *The CONTA Conference: proceedings of the Conference on Conceptual and Terminological Analysis in the Social Sciences held at the Zentrum für Interdisziplinäre Forschung (ZIF), Bielefeld, FRG, May 24-27, 1981.* / ed. Fred W. Riggs. – Frankfurt am Main, INDEKS Verlag, 1982, p.224-233. (ISBN 3-88672-200-7).

The research attempts to examine what methods can be used to compare information languages and to establish compatibility between them. For illustrative purposes, two information thesauri and two classification systems are used: (1) UNESCO Thesaurus, (2) MISON Rubricator, (3) UDC and (4) BSO. The subject chosen for the research is “culture.” The field is defined differently by different authors. Thesaurus descriptors are verbal form of concepts. Then UNESCO Thesaurus and MISON are chosen as the master systems for comparison, and accepted what they used in their respective treatments of “culture.” Structural differences in these four information languages in the field of culture are investigated. The

procedure used to extract from indexing languages and compare cultural concepts is described. A conceptual and verbal compatibility matrix is built up, in which UNESCO Thesaurus descriptors are followed by their equivalents in each of the other languages. Proposals are made for methods by which compatibility can be ascertained. (KK)

#216(#215) Structural differences in classification systems and the testing of the compatibility matrix in the field of culture. / M. Dienes. – In: *Universal classification 2: subject analysis and ordering systems: proceedings, 4th International Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e.V., Augsburg, 28 June-2 July 1982.* / ed. Jean M. Perreault and Ingetraut Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1983, p.112-125. (FID publication 615) (Studien zur Klassifikation 12) (ISBN 3-88672-011-X). An expanded version of #215.

The research attempts to examine what methods can be used to compare information languages and to establish compatibility between them. For illustrative purposes, two information thesauri and two classification systems are used: (1) UNESCO Thesaurus, (2) MISON Rubricator, (3) UDC and (4) BSO. The subject chosen for the research is “culture.” The field is defined differently by different authors. Thesaurus descriptors are verbal form of concepts. Then UNESCO Thesaurus and MISON are chosen as the master systems for comparison, and accepted what they used in their respective treatments of “culture.” Discusses a wide diversity of definition of culture among researchers and of the treatment of cultural concepts in the four information languages. For some reasons “culture” in this research is limited to “cultural anthropology.” Structural differences in the four information languages in connection with culture are investigated. The procedure used to extract from indexing languages and compare cultural concepts is described. A conceptual and verbal compatibility matrix is built up, in which UNESCO Thesaurus descriptors are followed by their equivalents in each of the other languages. Proposals are made for methods by which compatibility can be ascertained. (KK)

#217 Polish Subject-field Classification – Broad ordering system for use on a national scale. / E. Scibor. – In: *Universal classification 2: subject analysis and ordering systems: proceedings, 4th International Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e.V., Augsburg, 28 June-2 July 1982.* / ed. Jean M. Perreault and Ingetraut Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1983, p.133-138. (FID publication 615) (Studien zur Klassifikation 12) (ISBN 3-88672-011-X).

A two-level system of indexing languages for the Polish National System of Scientific, Technical and Organizational Information (Polish acronym SINTO) is being built up. The system of indexing languages will consist of: (1) the Polish Subject-field Classification (PSC) on the upper level and (2) the so-called autonomous indexing languages (descriptor languages, special classifications, etc.) on the lower level. The paper outlines the general principles of PSC's structure and notation, contents of the main and auxiliary PSC tables, and its syntax. PSC resembles both the Rubricator of the International System of Scientific and Technical Information (ISSTI) and the Broad System of Ordering (BSO). PSC is at a midpoint between them. Two directional concordances between PSC and the ISSTI Rubricator have been compiled in 1981. Similar concordances for PSC and BSO and for PSC and UDC are soon to follow.

(Original abstract – amended by KK)

80.30 Referral tool for online terminals

#218 **The Broad System of Ordering: with some reference to its possible use as a referral tool in connection with on-line systems.** / E.J. Coates. – *Scientia Yugoslavica* (ISSN 0350-686X), 7(3-4)1981, p.177-187.

Paper delivered at the Conference of “Universities in World Network of Information and Documentation,” held at the Inter-University Centre of Postgraduate Studies, Dubrovnik, Yugoslavia, 1981. An account is given of the development of BSO from a UNISIST brief directed at the compilation of a switching language for exchange of information between centers employing different local indexing/retrieval languages. The chief features of BSO are briefly discussed. Tests of the system that have taken place are described, and some proposals for a test of BSO as a referral tool in connection with multiple online systems are given. (Original abstract)

#219 **U.K.: CRG meeting 242.** – *International Classification* (ISSN 0340-0050), 10(2)1983, p.93.

The 242nd meeting of CRG was held at UCL on 3rd February 1983. On the problem of “The role of classification in online searching,” two discussion sections were devoted. In the first section, E.J. Coates described a project to compare human efforts in searching databases relying upon personal knowledge and the thesaurus, using BSO as control. In the second one, B.C. Vickery reported on experiences made by students in searching MARC database. The discussion touched upon the possibility of using a faceted classification in such a search. (KK)

#220 **FID/BSO Broad System of Ordering.** / E.J. Coates. – *FID News Bulletin* (ISSN 0014-5874), 33(9)1983, p.68-69.

Description of the method of the BSO Referral Test carried out by the University of London Central Information Service (LUCIS), which will be completed by mid-September 1983. The test is a comparative performance test between the BSO referral index, the Dialindex and conventional referral techniques. A revised version of the BSO referral index which was produced on the computer of the European University Institute in Florence and an expansion of BSO with about 1,500 terms are expected. The task has to be completed by the end of November 1983. (KK)

#221 **U.K.: CRG meeting 248.** – *International Classification* (ISSN 0340-0050), 11(3)1984, p.162-163.

At the 248th CRG meeting Eric Coates explained the BSO Referral Test which examined the possibility to use BSO for referral services in searching databases. In 1983 a series of test were started at the University of London, Central Information Service. The interesting results of the test are reported in an annex to the minutes of the 248th CRG meeting. The use of BSO referred the user to more databases than Dialindex. The BSO-aided referral method produced more relevant references than conventional or Dialindex-aided referral. Coates stated that BSO failed most often when grouping codes were much more specific than BSO. (KK)

#222 **BSO Referral Test: Panel's report 1983.** / FID/BSO Panel: E.J. Coates, G.A. Lloyd, D. Simandl and J.E. Linford. – Published by FID/BSO Panel for FID and UNESCO, 1985, 27p.+appendices. (FID publication 635).

This publication is the report of the BSO Referral Test carried out by the FID/BSO Panel in collaboration with the University of London Central Information Service in 1982/3, and with the financial support of UNESCO. The test investigated the effect upon retrieval of the use, during the referral step of on-line searches, of an index to 36 databases in the DIALOG host system. The index was prepared by converting the individual database category codes or subject summaries to a common form via BSO. The results suggest that while the BSO-based index would not effectively substitute for the dialogue between intermediaries and enquiries and with the machine system, its effect was that more databases were consulted than in conventional referral, and that the level of performance over a set of requests is less variable when such a lexical tool is used in referral. It was not possible to test by direct comparison the effect of using both conventional dialogue and the BSO Referral Index in the referral step, but it seems that in many circumstances the combination would enhance ultimate retrieval performances. (Excerpt from original text of #224)

#223 **BSO Referral Index: a subject index to 36 data-bases in the DIALOG system.** / FID/BSO Panel: E.J. Coates, G.A. Lloyd, D. Simandl and J.E. Linford. – Published by FID/BSO Panel for FID and UNESCO, 1985, 211p. (FID publication 634).

This publication is an expanded version of the BSO Referral Index as used in the test. It contains about 9,000 entries, some of which anticipate a revised and expanded version of the BSO classified schedules which will be available from FID in machine-readable form during 1986. It covers most areas of knowledge, but gives some emphasis to the Biological and Applied Sciences. It is likely to be of substantial value to intermediaries servicing users' queries at on-line terminals. (Excerpt from original text of #224)

#224(#222, #223) **Broad System of Ordering (BSO).** – *FID News Bulletin* (ISSN 0014-5874), 36(3)1986, p.24.

Announces that two new publications on BSO are available from FID in The Hague. The first is "BSO Referral Test: Panel' report 1983" (FID publication 635), and the second is "BSO Referral Index: a subject index to 36 data-bases in the DIALOG system" (FID publication 634). (KK)

#225(#222, #223) **[Book reviews]** [In Croatian]. / S. Maricic – *Informatika* (ISSN 0019-9923), 21(1)1987, p.43-46.

Although the original title of BSO does not indicate its nature, this is in fact a new general (hence – broad) classification of human knowledge. The semantic (very useful) details are explained first. The primary application field of BSO was supposed to be a "netting" of various information sources with their own information languages (i.e. classifications, thesauri, and the like) along the lines assumed by UNISIST. The rapid development of computerized information systems brought BSO to the front of its role. It is the referral role of BSO that had been recognized also by others outside of the FID/BSO Panel. Though BSO can (and has to) be

utilized at the input side of the databases, in this experiment its applicability was investigated at the output side, i.e. its referral role in the selection of the most appropriate databases with regard to the questions posed. The BSO Referral Index is byproduct of the BSO Referral Test. It will be quite helpful for those who are using the DIALOG databases. In the main part of this review the experimental set-up is explained, followed by analysis of the results obtained and conclusions. (S. Maricic)

#226 Database selection in online information retrieval: lessons learned from the results of the BSO Referral Test [In Japanese]. / Keiichi Kawamura. – *Online Kensaku* (ISSN 0286-3200), 6(4)1985, p.143-156.

The more databases are available by online terminal, the more difficult is the task of selecting appropriate ones. With regard to the subject approach to information, a lexical referral tool based on a new general classification is urgently needed. The BSO Referral Test was carried out by the FID/BSO Panel in collaboration with University of London Central information Service (LUCIS) in 1982 and 1983. The test was comparative study of four search methods, using 36 databases in the DIALOG system. The result showed that the use of the BSO-based subject index did decidedly enhance the retrieval performance and would ensure consistent referral procedure. Accounts are also given of the role of classification in online systems and the benefits to be derived from the BSO Referral Index, of which the revised edition is now available. (Original abstract)

#227 BSO Referral Test [In Japanese]. / Takayuki Totsuka. – *Joho Kanri* (ISSN 0021-7298), 29(3)1986, p.248-251.

Announces that the editorial board of the *Joho Kanri*, which is published monthly by the Japan Information Center of Science and Technology (JICST), has recently received reports of a referral test from FID. Following a brief account of the BSO Referral Test, emphasizes the necessity of such a referral tool as the BSO Referral Index for the selection of appropriate databases in the JICST Online Information System (JOIS). (KK)

#228 [Book review] [In Portuguese]. / Isa Maria Freire. – *Ciencia da Informacao* (ISSN 0100-1965), 17(1)1988, p.86-88. The following is reviewed.

Information, communications and technology transfer: proceedings of the 43rd FID Congress held in Montreal, Quebec, Canada, 14-18 September 1986. / ed. Elmer V. Smith and Stella Keenan. – Amsterdam, Elsevier, 1987, 516p. (FID publication 663) (ISBN 0-444-70296-2).

The review refers to a paper on BSO (See #143). The paper reported the results of a test exercise, using BSO to select databases in DIALOG, which was carried out at the London University Central Information Service (LUCIS). (KK)

80.40 Knowledge base for expert systems

#229 Broad System of Ordering. – *FID News Bulletin* (ISSN 0014-5874), 34(5)1984, p.43.

This is a very concise description of the project of an expert system for referral. The Director of Central Library Services and Goldsmith's Librarian of the University of London has accepted a grant over a period of 18 months from the British Library for investigation of an expert

system for referral. The work will be carried out by the Central Information Service, with Alina Vickery as project head. The purpose of the project is to develop a microcomputer program that will aid the searcher to identify the most appropriate reference books to answer a query. The program will use AI techniques, and will also embrace a knowledge base derived from BSO published in 1978. (KK)

#230 Expert system for referral: final report of the first phase of the project [CIS/BLRD/SI/G/625]. / A. Vickery, H.M. Brooks, B.A. Robinson and B.C. Vickery. – London, University of London Central Information Service, 1986, 134p. (British Library Research and Development Report 5924).

Describes the 20 month's work spent by the University of London Central Information Service, in developing PLEXUS: an expert system designed for computerized information systems in public libraries. In the initial phase of the project, it was decided that the first version of PLEXUS should be concerned with referral sources in the area of gardening and horticulture. PLEXUS comprises a series of resource files: a hierarchical classification of terms based on BSO, a dictionary of all word stems, a stoplist of words, and a database of reference and referral sources. A typical chain of classes in the PLEXUS hierarchy is: H–Horticulture; H,80–Plants; H,80,8–Flowering plants; H,80,8,6–Trees; H,80,8,6,1–Conifers; H,80,6,1,5–Pine. BSO hierarchy is used during SEARCH procedure. BSO is also used in the third strategy of GETSTART in order to indicate the subject area of user query, if no terms in the user input are found in the dictionary. (KK)

#231 A reference and referral system using expert system techniques. / Alina Vickery, Helen Brooks, Bruce Robinson and Brian Vickery. – *Journal of Documentation* (ISSN 0022-0418), 43(1)1987, p.1-23.

The issues involved in the construction of an expert system for retrieval are described, together with some of the techniques that have been used in artificial intelligence and information science to tackle them. The solutions adopted by the prototype expert system PLEXUS are described, with particular reference to the semantic processing that takes place. (LISA 87/4233)

The system employs 11 semantic categories (Object, Part, Process, Interaction, etc.) divided into 31 subcategories (e.g. the Object category is subdivided into the subcategories: individual plant type, insect or animal pest, micro-organism, disease or symptom, soil component, etc.). The classification used is BSO. To cope with specific queries it was necessary to expand the level of detail in the BSO schedules in the areas of plant names, plant pathology, crop protection and soil management. A preliminary extension to the schedules was provided by Eric Coates who was one of the original designers of BSO. (KK)

#232 PLEXUS – the expert system for referral. / A. Vickery and H.M. Brooks. – *Information Processing and Management* (ISSN 0306-4573), 23(2)1987, p.99-117.

Paper presented at the 10th Cranfield International Conference on Mechanised Information Transfer held in London, UK, 22-28 July 1986. PLEXUS is an expert system which was designed as a referral tool to be used in public libraries. It was developed by the Central Information Service at the University of London funded by the British Library. The first phase

resulting in the production of a working prototype was completed in 20 months. The second phase also funded by the British Library is now under way and will involve: testing, evaluation, and further development of the prototype. Some problems in the use of BSO were encountered. First, user terms are often at a lower level of specificity than in BSO, so the classification had to be expanded to incorporate such terms. Second, there remains problem of semantic categories where one set of categories can successfully be used both for query analysis and for classificatory facet analysis. (KK)

#233 Expert systems and their applications in LIS. / Alina Vickery and Helen Brooks. – *Online Review* (ISSN 0309-314X), 11(3)1987, p.149-165.

A discussion of the underlying principles of expert systems is followed by a description of PLEXUS: a prototype, microcomputer-based expert system developed by the Central Information Service, London University. (LISA 88/442)

A gardening expert system called PLEXUS is described at length. The system was developed for referral functions within a library environment. In order to be able to assist the user, PLEXUS has to carry out five tasks: (1) constructing a model for the user: so the system comes to know a particular user or group of users and can adapt its response accordingly, (2) obtaining a description of the user's problem, (3) formulating, and, if necessary, reformulating a search strategy, (4) presenting the results of the search to the user, (5) explaining: the users should be provided (on request) with explanations of the system's capabilities, the system's activities and the search outcome. One the first of these tasks has been developed at the time of writing. Each task, or function, has been implemented as a separate system module with its own set of knowledge resources. Although each module has its own knowledge base(s), certain resources can, and need be used by the whole system. These include: a dictionary of terms, the database of referral resources in gardening, a hierarchic classification of concepts in the subject domain based on the BSO classification system, and a stoplist of terms. (Excerpt from VINITI-IA 87.11.335)

#234 Expert system for referral. / A. Vickery, H.M. Brooks, B.A. Robinson and J. Stephens. Consultant: B.C. Vickery. – London, British Library, 1988, 233p. (Library and Information Research Report 66) (ISBN 0-7123-3146-8).

Describes the development and evaluation of PLEXUS, an expert system used to aid microcomputer retrieval of referral sources. The function of the system is to give inexperienced users the kind of aid that a skilled search intermediary would provide. The system helps to formulate a search, create a search strategy, modify the search strategy as required, and present the results of the search. To carry out these tasks the system uses the techniques of artificial intelligence – knowledge representation, production rules, inference and control, a natural language interface, and some simple user modeling. (Original abstract)

BSO is used in PLEXUS as knowledge base. For the purpose of the PLEXUS prototype, part of the whole BSO schedules relevant to gardening and related subjects have been extracted. The BSO class Horticulture is made the 'master class' in the PLEXUS. All non-gardening classes extracted from BSO are subsumed under the master class. The BSO-based hierarchy is used in PLEXUS during SEARCH procedure as one of the means of modifying a search statement. At appropriate stages in MODIFY process, a consultation of BSO takes place. (KK)

#235 **A comparison of knowledge-based and statistically-based techniques for reference retrieval.** / Stephen Wade, Peter Willett, Bruce Robinson, Brian Vickery and Alina Vickery. – *Online Review* (ISSN 0309-314X), 12(2)1988, p.91-108.

Reports on a comparative evaluation of two computerized reference retrieval systems, INSTRUCT and PLEXUS. INSTRUCT is a statistically-based system based on best much searching and automatic index term weighting while PLEXUS uses expert systems techniques to improve access to a conventional Boolean search system. Retrieval effectiveness of the two systems was compared using a set of 19 queries and 512 documents on the subjects of gardening. The best results were obtained by using the terms suggested by the PLEXUS system as the basis for an INSTRUCT search. PLEXUS uses an online dictionary of gardening terms that consist of the BSO-based classified terms and a list of stopwords. (Original abstract – amended by KK)

#236 **Knowledge-based information retrieval.** / Nigel Ford. – *Journal of the American Society for Information Science* (ISSN 0002-8231), 42(1)1991, p.72-74.

Discussion of information retrieval focuses on theoretical and empirical advances in knowledge-based information retrieval. Topics discussed include the use of natural language for queries; the use of expert systems; intelligent tutoring systems; user modeling; the need for evaluation of system effectiveness; and examples of systems, including CANSEARCH, IOTA, PLEXUS, and INSTRUCT. (ERIC EJ-421695)

BSO is used as knowledge base in PLEXUS which is conducted at the University of London. (KK)

#237 **Expert systems** [In Lithuanian]. **Ekspertines sistemas.** / Vanada Pindlova [transliterated from the original Polish name Wanda Pindlowa]. – *Informacijos Mokslai* (ISSN 1392-0561), 1, 1994, p.57-68.

The expert systems were developing as on-line systems. They may be defined as intellectual systems based on knowledge. They help to make decisions in special fields of knowledge. Analyses the main factors which stimulated the development of the expert systems, the essence and structure. Gives the examples of such systems and their activity. The great attention is paid to the expert systems used in library and information work. Makes detailed description of PLEXUS which is an expert system designed at the Central Information Service of London University where BSO is used as a hierarchical classification. (Original abstract – amended by KK)

80.50 Agents in digital library architecture

#238 **Building the University of Michigan Digital Library: interacting software agents in support of inquiry-based education.** / Daniel E. Atkins, William P. Birmingham, Edmund H. Durfee, Eric Glover, Tracy Mullen, Elke A. Rundensteiner, Elliot Soloway, Jose M. Vidal, Raven Wallace and Michael P. Wellman. – 1995. Available online at: <<http://ai.eecs.umich.edu/people/wellman/pubs/Building-UMDL.html>>. Accessed 15 February 2011. A revised version appeared in: *Computer* (ISSN 0018-9162), 29(5)1996, p.69-76. See #242.

The University of Michigan Digital Library (UMDL) is a large-scale effort to provide information services for research and education, in university and high school environments. Supporting our wide range of users and uses presents daunting problems of scale and heterogeneity. We address these issues in the UMDL by designing an open, distributed system architecture where interacting software agents cooperate and compete to provide library services. The distributed architecture promotes modularity, flexibility, and incremental development, and accommodates diversity in current and future library environments. At the same time, distribution presents difficult problems in interoperability, coordination, search, and resource allocation. We coordinate activity in the UMDL by dynamically forming agent teams to perform complex library tasks. A virtual economy of information goods and services directs resource allocation in the distributed system. We report some of the main concepts and results from our efforts to date in designing and implementing a large-scale digital library using this approach. In particular, experience in deploying the UMDL in high school classrooms has driven our requirements for developing specialized agent services. (Original abstract)

Among several agents, the BSO agent uses a hierarchy of terms to broaden or narrow a topical search. For a single task, the query planner gets a query that matches entries in the registry. In a more difficult query, the query planner consults the BSO and thesaurus agents. They then reformulate the query in terms of topics about which some collections have professed capability. (KK)

#239 Task Planning Agents in the UMDL . / Jose M. Vidal and Edmund H. Durfee. – In: *Proceedings of the CIKM-95 Workshop on Intelligent Information Agents, December 1-2, 1995, Baltimore, Maryland, USA*. / ed. Tim Finin and James Mayfield. An extended version dated 17 February 1996 is available online at: <<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.16.7346>>. Accessed 15 February 2011.

The University of Michigan Digital Library (UMDL) is a project of library services in a digital networked environment. The project chose to implement the library as a collection of interacting agents, each of which is specialized to perform a particular task. There will be many Task Planning Agents (TPAs) within the UMDL. This architecture promotes modularity by distributing the responsibility of achieving tasks among the different agents, and flexibility by allowing the formation of different teams of agents to accomplish specific tasks. Describes a class of TPAs who are responsible for decomposing tasks and forming teams of agents to accomplish them. Concentrates on a particular instance of a TPA that specializes in query planning tasks. A query planning TPA is ultimately responsible for finding one or more collections based on the needs of a user; in order to do so, it communicates with many agents in the UMDL. There is a Broad System of Ordering Agent (BSOA) that uses a locally developed subject hierarchy specializing in earth and space sciences. Another one is a Thesaurus Agent (TA) that uses data, including synonyms and related terms, from the NASA thesaurus. The semantic knowledge of what terms are related, and which terms are broader or narrower than others is given by BSOA. (KK)

#240 University of Michigan Digital Library Project Quarterly Report 3 . / Daniel E. Atkins. – November 1995. Available online at: <<http://www.si.umich.edu/UMDL/publications/qr3.html>>.

Accessed 31 August 2010.

The project director describes the following matters: Architecture where BSO was used as Agent to provide thesaurus lookups and to broaden and narrow queries; Conspectus search and retrieval where BSO was used as knowledge base agent; Intellectual property and economic issues; User interface agent Working Group where BSO was used as a controlled subject vocabulary to enable UMDL users to describe the specific topics; Evaluation; Education and deployment; Collection development; Project partnership; and Meetings and visitors. (KK)

#241 University of Michigan Digital Library Project Quarterly Report 4. / Daniel E. Atkins. – May 1996. Available online at: <<http://www.si.umich.edu/UMDL/publications/qr4.html>>. Accessed 31 August 2010.

Report of the UMDL project during the period from February 1996 to May 1996. This report describes: Architecture; Advanced user interface; Collection development; Collection search and retrieval where BSO was incorporated as an agent for use by the User Interface Agent and Task Planner; Education, deployment and evaluation; Intellectual property and economics; Testbed construction where they have started adding facilities for browsing general thesaurus agents, such as BSO and NASA agents, to aid in the query formulation process. (KK)

#242 Toward inquiry-based education through interacting software agents. / Daniel E. Atkins, William P. Birmingham, Edmund H. Durfee, Eric J. Glover, Tracy Mullen, Elke A. Rundensteiner, Elliot Soloway, Jose M. Vidal, Raven Wallace and Michael P. Wellman. – *Computer* (ISSN 0018-9162), 29(5)1996, p.69-76. A revised version of #238.

The University of Michigan Digital Library (UMDL) project is creating an infrastructure for rendering library services over a digital network. When fully developed, the UMDL will provide a wealth of information sources and library services to students, researchers, and educators. Tasks are distributed among numerous specialized modules called agents. The three classes of agents are user interface agents, mediator agents, and collection interface agents. Complex tasks are accomplished by teams of specialized agents working together - for example, by interleaving various types of search. The UMDL is being deployed in three arenas: secondary-school science classrooms, the University of Michigan library, and space-science laboratories. The development team expects the scale and diversity of the project to test their technical ideas about distributed agents, interoperability, mediation, and economical resource allocation. (Original abstract)

Among several agents, the BSO agent uses a hierarchy of terms to broaden or narrow a topical search. For a single task, the query planner gets a query that matches entries in the registry. In a more difficult query, the query planner consults the BSO and thesaurus agents. They then reformulate the query in terms of topics about which some collections have professed capability. (KK)

#243 The agent architecture of the University of Michigan Digital Library. / E.H. Durfee, D.L. Kiskis and W.P. Birmingham. – *Software Engineering. IEE Proceedings* (ISSN 1364-5080), 144(1)1997, p.61-71. Reprinted in: *Readings in agents.* / ed. Michael Huhns and Munindar Singh. – San Francisco, Morgan Kaufmann, 1998, p.98-108. (ISBN 1-55860-495-2).

The University of Michigan Digital Library (UMDL) architecture encapsulates the many

functionalities required in a digital library as a population of modular, goal-oriented, specialized 'agents.' These agents participate in markets for exchanging goods and services, and team their abilities to compose complex services. Realizing the UMDL agent architecture requires us to provide sound mechanisms to encapsulate functions as agents, protocols to support the evolution of teams and agent interactions through markets, and protocols to enable interoperability among library agents that are teamed. The software-engineering aspects of our effort (the tools, techniques and experiences gained) are the focus of this paper. (Original abstract)

BSO functions as taxonomy and vocabulary in different architectures in the UMDL. (KK)

#244 DIIM: a foundation for translating loosely-specified queries into executable plans in large-scale information systems. / Anisoara Nica and Elke Angelika Rundensteiner. – In: *Proceedings of the Second IFCIS International Conference on Cooperative Information Systems, CoopIS'97: Kiawah Island, South Carolina, June 24-27, 1997.* / ed. Arbee L.P. Chen, Wolfgang Klas and Munindar P. Singh. – Los Alamitos, CA, IEEE Computer Society, 1997, p.213-222. (ISBN 0-8186-7946-8). An expanded version appeared as: **Loosely-specified query processing in large-scale information systems.** – *International Journal of Cooperative Information Systems* (ISSN 0218-8430), 7(1)1998, p.77-103.

Typically user queries are loosely-specified. The paper gives an innovative solution for semantic query planning in such large-scale information spaces as digital libraries or the World Wide Web. The DIIM (Dynamic Information Integration Model) designed in the University of Michigan Digital Library (UMDL) system lays the foundation for the translation algorithm that maps a loosely-specified query into the set of semantically equivalent queries. The UMDL system has a small part of the reference space which contains a thesaurus database, a Broad System of Ordering (BSO) database, a general name authority index, an IEEE index of all the authors that published in an IEEE journal, and a metadata database containing information of various online journal collections. They are stored at different external sites and have their own search engine and query interface that permit integration into the system via Interface Agents. When there is a user query the system will have to use the information sources described above to formulate the answer. If the first step of going directly to the metadata database fails, then it should consider other alternatives for subject searching, like going to the thesaurus or BSO database for reformulating the query using a synonym or a broader term instead of the initially used ones. (KK)

80.60 Subject code for information files

For reference to machine-readable BSO-based bibliography, see #144

#245 Bibliographies published in periodicals from Croatia – I (1981-1986) [In Croatian and partly in English]. **Bibliografije objavljene u casopisima Hrvatske – I (1981-1986).** / Branka Sorokin i Sinisa Maricic. – *Scientia Yugoslavica* (ISSN 0350-686X), 15(3-4)1989, p.137-172.

This is a bibliography of bibliographies that are collected from periodicals published in Croatia. Items are coded and arranged according to the classification schedules of the Broad System of Ordering (BSO). The part II was not published owing to the civil war in Yugoslavia.

(KK)

#246 **Works in progress on the general subject heading list** [In Hungarian]. **Az általános tárgyszójegyzek munkalatairól.** / Tibor Horvath. – *Könyvtari Figyelo* (ISSN 0023-3773), 38(4)1992, p.610-617. Also available online at: <<http://www.ki.oszk.hu/kf/kfarchiv/1992/4/horvath.html>>. Accessed 15 February 2011.

The development of the Hungarian general subject heading list has been started as a joint effort of more national special libraries, university and county libraries with financial support from the Ministry of Culture and Education. Presents the conception of the work, and analyses some fundamental theoretical problems. The subject heading list will be built on four levels. Level-1 will correspond to BSO, containing a few thousand generic terms; it will by itself satisfy the practical needs of smaller libraries. Level-2 details this material; it may be used by larger libraries, too, for the indexing of documents that do not belong to their main collection interests. Level-3 is constituted by specific subject headings; this is the material to be gathered first, and the terms of level 1 and 2 should be extracted from this. Level-4 is built up of sectorial thesauri (already existing in part); these have been compiled independently of the main system, but their generic terms will be included in upper levels, and this ensures their linking with the system. Subject headings will be supplemented with qualifiers and synonyms as well as with the code of the level and cluster; there will be (symmetric) “see also” references in the system, too. Clusters will represent the relations within a subject field. However, clusters may be created only after 3-4 years of practical indexing (there are experiments going on in the field of cluster analysis). So long a temporary subject classification based on BSO is applied for the ordering of the material. Indexing rules give the syntax of the system. (Applying syntax means that subject headings themselves may be very simple, but it does not mean uniterm system). A three or four level indexing manual will be elaborated. Each level may be applied at any level of the subject heading list as necessary. The application of the simplest indexing method may be learned by librarians individually, while the deepest level of syntax originates in PRECIS. (HLISA H2308)

#247(#246) **Development of a Hungarian general subject heading list** [In Hungarian]. **A magyar nyelvű általános tárgyszójegyzek munkalatai.** / Marta Kornyei. – *Tudományos és Muszaki Tajekoztatás* (ISSN 0041-3917), 39(10)1992, p.455-456.

Summarizes the theoretical-methodological issues raised by Tibor Horvath. Informs that BSO has already been translated into Hungarian as a part of the preparations, and that Hungarian and foreign sources (subject heading list, thesauri) are expected to be collected, and the dictionary handling software is to be chosen in 1992. Further tasks are outlined: (1) collecting lexical units, their selection and ordering; (2) supplementary collection of terms; (3) supervising the terms; (4) elaboration of relations among lexical units; (5) marking levels; and (6) development of rules of applications (indexing). (HLISA H2308)

#248 **Epigraphical and papyrological sources about Roman law: a new hypertextual edition on optical disk.** [In Italian and partly in English]. **Le fonti epigrafiche e papirologiche del diritto romano: una nuova edizione ipertestuale su disco ottico.** / Nicola Palazzolo. – Description of research project submitted to the Ministry for Universities and Scientific and Technological

Research (Italian acronym MURST), 1999. Available online at: <http://www.lex.unict.it/cir/progetti/1999/modello-Palazzolo.htm>. Accessed 15 February 2011.

Describes a two-year research program to set up a data bank of Roman law documents, where every document of the archive is indexed both by outside data (typology, language, title, etc.) and by its content. The first stage of the research (12 months) will be directed towards revising the thesaurus of "Bibliotheca Iuris Antiqui (BIA)" on CD-ROM which consists of 9,000 terms and to indexing the first core of documents included in BIA. The second stage (next 12 months) will be to devise a knowledge base to run an information program that will serve as verification system of indexing and as automatic indexing of the additional documents of the data bank. This program will be carried out through cross-references between all the keywords of the thesaurus and the words of documents. The research will be particularly focused on testing BSO that allows to add on every consequential level further chronological, geographical or biographical specification. This will eventually lead to a more specific indexing system of the documents and consequently to better documents retrieval. (KK)

#249 **The development of a MeSH-based biomedical termbase at Hogeschool Gent.** / Joost Buyschaert. – In: *Acquiring and representing multilingual, specialized lexicons: the case of biomedicine – Proceedings of the LREC 2006 Satellite Workshop W08, Geneva, Italy, 23rd May 2006.* / ed. Pierre Zweigenbaum, Stephen Schulz and Patrick Ruch. – [Geneva, the Workshop, 2006], p.39-43. Also available online at: <http://estime.spim.jussieu.fr/~pz/lrec2006/Buyschaert.pdf>. Accessed 15 February 2011. A slightly adapted version appeared as: **Exploiting an English-and-Dutch biomedical termbase: the search for an ideal format.** / Joost Buyschaert. – *Equivalences* (ISSN 0779-5599), 33(1)2006, p.33-42.

While the development of general, multilingual lexicons and dictionaries has received much interest, less attention has been paid to multilingual lexicons and dictionaries in specialized domains. The paper reports on an ongoing long-term project at Hogeschool Gent in Belgium to build an English-and-Dutch termbase, using terms of the MeSH (Medical Subject Headings) as input. It is argued that the traditional detailed working method, based on explicit evidence and recording a wealth of information on synonyms, variants, usage and reliability, can also be profitable to natural language processing (NLP) applications. The current database will have to act as a common repository from which various extractions can be made, through conversion, for different applications. To facilitate conversions, it would be expedient for future projects to work towards a uniform standard from the start. It is speculated that TermBase eXchange may be the most promising emerging standard at the moment. The terminological record used at Hogeschool Gent is called the GenTerm-record. In each record a BSO code is assigned to the subject field to which a MeSH term is belonged. (Original abstract – amended by KK)

80.70 Analytical tool for data processing

#250 **Systems applications and concepts in the field of classification.** / Cordelia R. Cavalcanti. – In: *Universal classification 2: subject analysis and ordering systems: proceedings, 4th International Conference on Classification Research, 6th Annual Conference of Gesellschaft für Klassifikation e.V., Augsburg, 28 June-2 July 1982.* / ed. Jean M. Perreault and Ingetraut

Dahlberg. – Frankfurt am Main, INDEKS Verlag, 1983, p.52-60. (FID publication 615) (Studien zur Klassifikation 12) (ISBN 3-88672-011-X).

Makes statistical tabulations of the topics of the 4th FID/CR Conference held in Augsburg with those of the previous three FID/CR Conferences held in Dorking, Elsinore and Bombay. The study is based on keywords-in-titles of each paper presented at the four conferences. The word “classification” achieves the highest frequency, and the second in the ranking is the word “system.” Systems concept emphasizes the integration of all activities towards the accomplishment of overall objectives. Classification as an over-all system may be considered as a discipline with many aspects. One of the main objectives in the seven years time span between Bombay and Augsburg was to develop ordering systems, either as a new documentary language or as a switching language bridging existing classification systems. The Broad System of Ordering (BSO) is this new available tool. Makes an attempt at correlating the results with BSO classes in order to show the shift in interests and changes in terminology along with the data of compatibility. (KK)

#251 Cluster analysis of citation histories from an institutional setting. / Anuska Ferligoj, Sinisa Maricic, Greta Pifat and Jagoda Spaventi. – *Scientia Yugoslavica* (ISSN 0350-686X), 14(3-4)1988, p.159-169. Reprinted with a documentary addition of the most outstandingly cited paper of G. Alaga from: *Information research: research methods in library and information science: proceedings of the International Seminar on Information Research, Dubrovnik, Yugoslavia, May 19-24 1986.* / ed. Neva Tudor-Silovic and Ivan Mihel. – London, Taylor Graham, 1988, p.174-200. (ISBN 0-9475-6826-3).

The purpose of the research is an evaluation of a research community in a developing country from the viewpoint of international science communication. The present objective is to determine the citation patterns of 583 scientific papers covering all the natural sciences, published from 1955 to 1964 by the scientists of the Rudjer Boskovic Institute founded in 1950. Citation counts for each paper were collected from cumulative and annual volumes of the Science Citation Index (SCI), beginning with the 10th year after the source paper publication year, till 1985. All the papers were classified into research/subject groups according to the Broad System of Ordering (BSO). BSO was chosen for the reason that it was constructed without going into detailed classification and was felt suitable to enable aggregation of individual papers under well-defined research topics. (Original abstract – amended by KK)

#252 A methodology for cluster analysis of citation histories / Vesna Luzar, Vesna Dobric, Sinisa Maricic, Greta Pifat and Jagoda Spaventi – *Quality and Quantity* (ISSN 0033-5177), 26(4)1992, p.337-365.

In order to develop analytic tools for analyzing the scientific output from a multidisciplinary institute in the fields of natural sciences, collected were late citation data to all the 558 papers published from 1955 to 1964 after a 10-year lapse since the publication years. All the papers were classified into 31 research/subject groups according to the Broad System of Ordering (BSO), but 3 of them had no such late citations at all. For the remaining 28 groups of papers three indicators were defined for the purpose of measuring the citation efficacy, citation intensity and citation longevity. The hierarchical cluster analysis was performed with subject groups. As a result the 28 subject groups were found to belong to three clusters. Appendix I

presents a list of BSO-based 28 subject groups which consists of three columns: (1) simplified grouping codes in the Roman alphabet (A to Z, AA and AB), (2) verbal subject headings, and (3) corresponding BSO codes. (Original abstract – amended by KK)

80.80 Aid to compiling information languages

#253 **CS SOS – Classification System for Science of Science: Schedule and Index.** / IRU Science of Science – Zagreb, The Research Library, National and University Library, 1982, 26p.

CS SOS is a special classification scheme devised for the Science of Science Bibliography (“Bibliografiju Znanost o Znanosti” in Croatian). The scheme is constructed according to the knowledge structure of BSO. IRU stands for Information Resource Unit, the head of which was Dubravko Horvat. The scheme was not published but distributed as an in-house report to research colleagues both at home and abroad. (KK)

80.90 Use of BSO categories and vocabulary

#254 **Australian Libraries Gateway: subject used in ALG.** – Canberra, National Library of Australia, last modified 7th October 2009. Available online at: <http://www.nla.gov.au/libraries/help/subjects_help.html>. Accessed 15 February 2011.

The Australian Libraries Gateway (ALG) records information about the collecting levels of Australian libraries using 24 broad subject categories. These categories have been subdivided into approximately 250 subjects. The original collecting level information in ALG was derived from Australian Conspectus reports provided by 50 libraries. These reports contained data at a very fine level of subject detail, representing about 10,000 individual subject lines. In order to make this information accessible through the web, ALG has mapped these 10,000 lines of data to approximately 250 subject categories. While developed specifically for use within ALG, in some cases these categories closely follow the arrangement of DDC and in other cases they combine aspects of DDC and LCC. BSO was used as a guide in developing these categories. (KK)

#255 **BSO Category Chooser.** – [Syracuse, NY, ProZ.com]. Available online at: <http://www.proz.com/inc/item/inc_item_bso_chooser.html>. Accessed 15 February 2011.

Two kinds of knowledge diagram derived from BSO schedules are exhibited on the website. One is a cyclic form of 76 classes that begins with 112 Philosophy and ends with 992 Esoteric practices. The other is a cyclic form of 7 top-level classes consisting of General sciences, Natural sciences, Non-human organisms, Humans, Society, Material products, and Language, arts, religion. To use the two diagrams is to help locating an appropriate category. A brief descriptive outline of BSO follows. (KK)

#256 **Facet analytical theory in managing knowledge structure for humanities.** / created and maintained by Aida Slavic. – London, University College London, School of Library, Archive and Information Studies. Posted 2002 and updated 2003. Available online at: <<http://www.ucl.ac.uk/fatks/>>. Accessed 15 February 2011.

Facet Analytical Theory in Managing Knowledge Structure for Humanities is an online

collection of information about the Arts and Humanities Research Board-funded (AHRB) project entitled, "Towards a knowledge structure for high performance subject access and retrieval within managed digital collections." The project is funded under the AHRB's Innovation Awards Scheme from April 2002 to March 2003, and is conducted by the School of Library, Archive and Information Studies, University College London (UCL/SLAIS). The project goal is to explore the use of a faceted vocabulary in a joint humanities portal between U.K. humanities gateways: AHDS (<http://www.ahds.ac.uk>) and Humbul (<http://www.humbul.ac.uk>). The source for building this vocabulary will be classifications such as BC2, BSO and UDC, and thesauri (e.g. AAT, HASSET, etc.). The vocabulary will be maintained as a standalone authority file with entirely machine processable data and will be integrated into the portal architecture. It will support both browsing and retrieval across heterogeneous AHDS and Humbul resources. The project's website includes: A summary of the proposal; Project contacts; and details of publications by the project participants. There is also a page listing links to online resources relating to: other projects; vocabularies; portal technologies; and metadata standards. (KK)

#257(#256) **Facet analytical theory for knowledge structure in humanities.** / Aida Slavic. – *LIBRES* (ISSN 1058-6768), 12(2)2002. Available online at: <<http://libres.curtin.edu.au/libres12n2/news.htm>>. Accessed 15 February 2011.

In the news and announcement section a new research project carried out at the University College London (<http://www.ucl.ac.uk/fatks>) is introduced. The project goal is to explore the use of a faceted vocabulary in a joint humanities portal between U.K. humanities gateways: AHDS (<http://www.ahds.ac.uk>) and Humbul (<http://www.humbul.ac.uk>). The source for building this vocabulary will be classifications such as BC2, BSO and UDC, and thesauri (e.g. AAT, HASSET, etc.). The vocabulary will be maintained as a standalone authority file with entirely machine processable data and will be integrated into the portal architecture. It will support both browsing and retrieval across heterogeneous AHDS and Humbul resources. (KK)

90 MISCELLANEOUS

90.10 Memorial tributes

#258 **In Memoriam: Geoffrey Arthur Lloyd.** / E.J. Coates. – *FID News Bulletin* (ISSN 0014-5874), 41(5)1991, p.83-84 (includes a portrait of the deceased). Reprinted without a portrait in: *International Classification* (ISSN 0340-0050), 18(3)1991, p.166.

Geoffrey Arthur Lloyd (1911-91) was the rapporteur of the FID/BSO Panel from September 1974 to August 1977. After graduating BA at the Cambridge University, Lloyd studied librarianship at the University of London and entered library practice. In 1948 he joined the British Standards Institute (BSI) where he was responsible for all documentation standards including the editing and publishing all English editions of UDC. In 1963 he left BSI for the post of Head of the Classification Department with FID in The Hague. During the period 1963 to 1976 he had as his essential task which demanded a combination of technical skill in classification making, persuasiveness, and ability in negotiation. He was a man of wide vision. In the early 1970s he joined a hypothetical FID/SRC and later became the secretary of the new

FID/SRC Working Group, and next became the rapporteur of the FID/BSO Panel until 1977. He kept the key importance to the BSO projects until his death at the home in Maarsse, Netherlands. (KK)

#259 **Ing. Dusan Simandl – his life and work** [In Czech]. **Ing. Dusan Simandl – život a dílo.** / Ladislav Kofnovec. – *Ctenar* (ISSN 0011-2321), 59(2)2007, p.56-58 (includes a portrait of the deceased). In advance of the printed article, an online version without a portrait appeared in: *Ikaros* (ISSN 1212-5075), 10(10)2006. Available at: <<http://www.ikaros.cz/node/3645>>. Accessed 15 February 2011.

Traces the life and work of Dusan Simandl (1924-2006). He was born in Znojme on 25 December 1924 and died on 30 July 2006. Emphasis is put on his professional activities regarding UDC at both UVTEI and FID/CCC. Mention is made of his concern with FID/SRC and FID/BSO. He kept good relation with other members, i.e. E.J. Coates and G.A. Lloyd, also in cooperation with FID/CCC and attended a number of meetings particularly held in The Hague and London. (KK)

90.20 Scientific biographies

#260 **Downsizing the hunch element in subject indication: my first meeting with Ranganathan.** / E.J. Coates. – In: *Proceedings of the 1998 Conference on the History and Heritage of Science Information Systems.* / ed. Mary Ellen Bowden. – Medford, NJ, Information Today, 1999, p.258 (with a portrait of the author). (ISBN 1-5738-7080-3). Also available online at: *Pioneers of information science: scrapbook.* <<http://www.libsci.sc.edu/bob/ISP/scrapbook.htm>>. Accessed 15 February 2011.

Looking back to ask Coates himself what was the most significant episode in his professional life, he instantly recalls his first meeting with Ranganathan. This resulted in a complete turnabout in his thinking about classification. The year was 1950 when the British National Bibliography was launched. It moved Coates from cautious scepticism to a confidence. To conclude he stresses that BC2 and BSO are demonstrations of what coherent general classifications can offer to the age of mechanized retrieval and of the Internet. (KK)

#261 **A long search for information.** / Brian Vickery. – Champaign, IL, Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, 2004, p.12-13. (Occasional papers 213) (ISBN 0-87845-123-4).

The autobiographical notes include a brief account of six figures out of the people who participated in discussions mainly at CRG meetings during the 1950s. The six figures referred to are: S.R. Ranganathan, Douglas Foskett, Jack Mills, Eric Coates, Jason Farradane and Robert Fairthorne. With regard to Coates the following account is given: “Eric Coates was working as a cataloguer and classifier at the then recently established *British National Bibliography*. Earnest, sometimes a little severe, transparently sincere and humane, Eric later became the first editor of the *British Technology Index* and wrote a book, *Subject Catalogues: Headings and Structure*, much influenced by facet ideas. He has also played a major part in constructing and testing the *Broad System of Ordering*, a high-level classification system.” (KK)

#262 **Ranganathan and after: Coates' practice and theory.** / Keiichi Kawamura. – In: *Knowledge organization and the global information society: proceedings of the 8th International ISKO Conference, 13-16 July 2004, London, UK.* / ed. Ia C. McIlwaine. – Burzburg, Ergon Verlag, 2004, p.337-343. (Advances in knowledge organization 9) (ISBN 3-8991-3357-9).

This paper studies the works of Eric Coates who put into practice and advanced Ranganathan's thought mainly through the British National Bibliography (BNB), the British Technology Index (BTI) and the Broad System of Ordering (BSO). Following a description of these three systems demonstrated are: (1) how his works are connected with each other, (2) why his achievements should be estimated by a global standard, and (3) which of his contributions will throw light on unsolved problems in knowledge organization. The conclusion is that the underlying conceptual coherence in the work of Coates should be highly regarded as the persistent survival of interest and concern about classification despite its marginalization. (Original abstract)

#263 **Biography of Sinisa Maricic, PhD.** / Sinisa Maricic. – Created 9th September 2005 and modified 30th October 2005. Available online at: <http://www.borut.com/sinisa_maricic/biography.htm>. Accessed 15 February 2011.

The author was born in Skopje, Macedonia in 1926 and moved to Zagreb, Croatia in 1941. Graduated from the University of Zagreb in 1951 and started his research career in chemical technology and later biophysics until 1978. In 1978 he joined the National and University Library in Zagreb where he founded a modern research department, and was also active in research about scientific communication. Served with several national and international associations, including Editor-in-chief of the *Scientia Yugoslavica*. The National and University Library in Zagreb mentioned above has been a user of BSO in a mechanized environment. In 1984 he became a member of the FID/BSO Panel. (KK)

90.30 ISKO London Conference of 2004

#264 **ISKO 8 Conference report.** / Vanda Broughton. – *DigiCULT.Info* (ISSN 1609-3941), (9)November 2004, p.41-42. Available online at: <http://www.digicult.info/downloads/digicult_info_9_xs.pdf>. Accessed 15 February 2011.

The author was Conference Chair of the 8th International ISKO Conference held at the University College London on 13-16 July 2004. Describes in the penultimate paragraph that on the last afternoon of the conference, Eric Coates and Jack Mills, pioneers of UK classification theory in the 20th century, joined as honoured guests. Their presence allowed the taking of an historic group photograph featuring the editors of BSO, BC2, DDC and UDC (See #268). (KK)

#265 **Eighth International ISKO Conference, London UK, 13-16 July 2004 (Report).** / Nancy Williamson. – *Knowledge Organization* (ISSN 0943-7444), 31(3)2004, p.188-195.

Report of the 8th International ISKO Conference held at the University College London, 13-16 July 2006. Describes that in the session of "Theories of knowledge and knowledge organization," Keiichi Kawamura examined the work of Eric Coates in a paper entitled, "Ranganathan and after: Coates practice and theory." Continues that he looks at Eric Coates'

contributions through an examination of the British National Bibliography, the British Technology Index and the Broad System of Ordering. (KK)

#266 Knowledge Organization and the Global Information Society: 8th International ISKO Conference, Londra, 13-16 luglio 2004 [In Italian]. / Claudio Gnoli. – *AIDAinformazioni* (ISSN 1121-0095), 22(4)2004, p.79-82. Also available online at: <http://www.aidainformazioni.it/indici/tuttonline/2004-4.pdf>. Accessed 15 February 2011.

Report of the 8th International ISKO Conference held at the University College London, 13-16 July 2006. Enumerates the names of active and prominent participants who were from many countries. Mention is particularly made of three women of UCL: Ia McIlwaine, President of the UDC Consortium; Vanda Broughton, Vice-chair of BC2; and Aida Slavic, a PhD student of Croatian origin and principal architect of FATKS. FATKS implemented faceted indexing of arts and religion in digital environment. They integrated vocabularies of UDC, BC2 and BSO, and added their own expressive notation which seems to be suitable for automation. In the last section of the history of classic knowledge organization, an episode of Ranganathan in London was given and the glorious presence of Eric Coates and Jack Mills at the conference. The report ends with a remark of “The time will come,” which Keiichi Kawamura responded to someone who asked the question of contemporary relevance to Eric Coates’ work that he presented. (KK)

#267 8th International ISKO Conference [In Slovenian]. **8. Mednarodno Posvetovanje ISKO.** / Matjaz Zalokar. – *Organizacija Znanja* (ISSN 1580-979X), 9(3)2004, p.150-153. Also available online at: http://home.izum.si/COBISS/OZ/2004_3/html/clanek_12.html. Accessed 15 February 2011.

Report of the 8th International ISKO Conference held at the University College London, 13-16 July 2004. Describes that there were more than 100 participants at the conference and 60 papers were presented. Of 60 papers 30 are summarized in this report. Among others, Aida Slavic analyzed the data representation structure of BC2, BSO and UDC for automation of classification systems. Keiichi Kawamura described the work of Eric Coates who was a classification expert and theorist in UK. Coates implemented the British National Bibliography, the British Technology Index and the Broad System of Ordering based on ideas put forward by Ranganathan. (KK)

90.40 Historic group photograph

#268 Editors of general classification schemes: an historic group photograph [In Japanese]. / Keiichi Kawamura. – *Online Kensaku* (ISSN 0286-3200), 26(4)2005, p.176-179 (includes a group photograph).

Introduces an historic group photograph taken on the occasion of the 8th International ISKO Conference held in London, July 2004. It features 5 editors of 4 major general classification systems: Eric Coates, Broad System of Ordering (BSO); Jack Mills and Vanda Broughton, Bliss Bibliographic Classification, 2nd Edition (BC2); Ia McIlwaine, Universal Decimal Classification (UDC); and Joan Mitchell, Dewey Decimal Classification (DDC). (LISA 06/10371)

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Keiichi Kawamura, 2011
BSO – Broad System of Ordering: an international bibliography