PDF, CSV, RSS and other Acronyms: Redefining the Bibliographic Services in the German National Library

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Abstract:

In January 2010, the German National Library discontinued the print version of the national bibliography and replaced it with an online journal. This was the first step in a longer process of redefining the National Library's bibliographic services, leaving the field of traditional media – e. g. paper or CD-ROM databases – and focusing on publishing its data over the WWW. A new business model was set up – all web resources are now published in an extra bibliography series and the bibliographic data are freely available. Step by step the prices of the other bibliographic data will be also reduced.
In the second stage of the project, the focus is on value-added services based on the National Library's catalogue. The main purpose is to introduce alerting services based on the user's search criteria offering different access methods such as RSS feeds, integration with e. g. Zotero, or export of the bibliographic data as a CSV or PDF file.
Current standards of cataloguing remain a guide line to offer high-value end-user retrieval but they will be supplemented by automated indexing procedures to find & browse the growing number of documents. A transparent cataloguing policy and well-arranged selection menus are aimed.

1. NEW BUSINESS MODEL

A new business model was set up in 2010 – all series of the bibliography have been freely available online via the library's catalogue, but now also bibliographic data as PDF are free of charge for our users.

1.1. THE NATIONAL LIBRARY'S COLLECTION

The library's collection mandate goes back to 1912 and it is based today on the Law regarding the German National Library.[1] This legal regulation of Germany's legal deposit was extensively re-enacted in 2006. The requirements of the collection mandate are further explained and specified by the Legal Deposit Regulation

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[1] http://bundesrecht.juris.de/dnbg/index.html

(Pflichtablieferungsverordnung 2008) and our collection guidelines (Sammelrichtlinien)[2]. The function of these guidelines are to specify which publications from Germany and abroad are to be collected, as the continually growing volume of publications and the large number of online publications are causing restrictions by formal criteria. To give an idea of the volume, Germany had about 100,000 newly released titles on the publishers' book market in 2009. All in all the National Library recorded about 640.000 publications last year.

Since 1913 the Deutsche Nationalbibliothek has been collecting

- works published in Germany
- works published abroad in German
- translations into other languages of German works published abroad
- Germanica - i.e. works about Germany published abroad in other languages
- printed works written or published between 1933 and 1945 by German-speaking emigrants

The collection includes works in various media, both in physical and non-physical form, i.e. publications in paper form but also microforms, sound recordings, physical works on electronic data carriers and online publications. The library's online database https://portal.d-nb.de/ provides access to bibliographic indexing and thus fulfils the library's legal instruction of bibliographic description of all publications issued in Germany. We have an internationally rather special situation, where the library's collection and online catalogue is nearly equivalent to the national bibliography.

In addition to the online catalogue, the Deutsche Nationalbibliothek publishes the German National Bibliography - Deutsche Nationalbibliografie – which periodically documents the library's new acquisitions. The National Bibliography consists traditionally of several series with varying reporting periods and different types of subject access[3]:

- Series A - Monographs and periodicals from the publishers' book trade. Books, magazines, non-music recordings, further AV media, microfiches and electronic publications. From 2004 on, this series also includes translations and Germanica which until then were issued separately in Series G. Issued weekly.
- Series B - Monographs and periodicals from outside of the publishers' book trade. Books, magazines, non-music recordings, further AV media, microfiches and electronic publications. Issued weekly.
- Series C - Maps. Issued quarterly.
- Series H - University Publications. Dissertations and postdoctoral theses at German universities and dissertations and postdoctoral theses in German at universities abroad. Issued monthly.
- Series M - Printed Music. Issued monthly.
- Series O - Online Publications. Issued monthly.
- Series T - Recorded Music. Issued monthly.

1.2. THE GERMAN NATIONAL BIBLIOGRAPHY FROM 2010 AS AN ONLINE JOURNAL

Until 2009 the Deutsche Nationalbibliographie was published as a print journal and later on CD-ROM. The Deutsche Nationalbibliothek didn't publish the bibliography on its own; instead this was done by the MVB (Marketing- und Verlagsgesellschaft des Buchhandels) who was responsible for publication, sales and distribution. Due to high production costs for the printed bibliography and a significant reduction in the number of subscribers – also caused by the increasing electronic provision of bibliographic data by the DNB, the

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[2] http://files.d-nb.de/pdf/sammelrichtlinien.pdf
[3] For subject access see chapter 3.

MVB decided to discontinue the publication in printed form after a publication history of more than half a century and the same applies for the CD-ROM version. Thus subscriptions of individual series of the Deutsche Nationalbibliografie in printed form or on CD-ROM ended in 2009. New electronic services replaced these versions and do now also reflect users' changing needs.

From 2010, the database of the Deutsche Nationalbibliografie is universally accessible via the online catalogue https://portal.d-nb.de/.
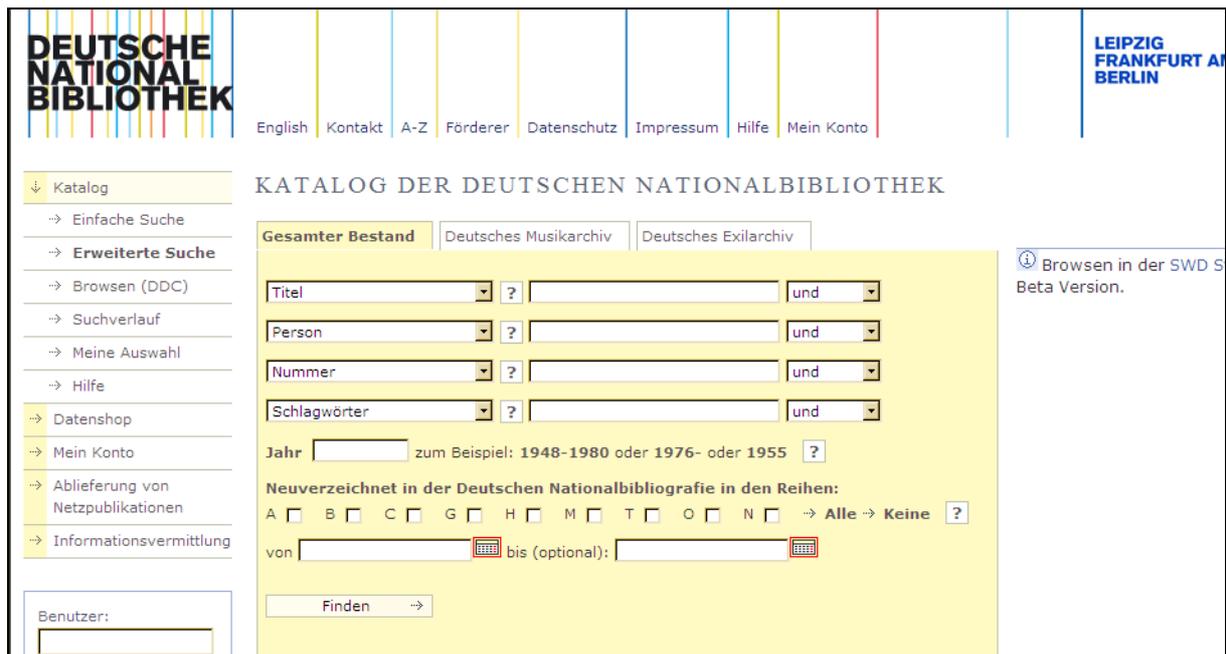
Fig.1 https://portal.d-nb.de/ Search Interface with filter options for bibliography series and years

The National Library hopes that this will satisfy the needs of those customers who wish a delivery of the recently added data in certain intervals or who do not need a particular publication form. The catalogue features additional options such as applying filters to the individual series of the bibliography, searching for bibliography volumes, selecting specific types of media such as online publications or dissertations, saving search profiles or exporting hit lists to HTML files. RSS feeds and alert services are also planned.

Certain customer groups – however – asked specifically for a continuation of the periodically published lists of new media in the library's collections. In order to allow for a smooth transition, we remodelled the earlier printed edition of the bibliography as a pure online journal published in PDF format. Compared to the former version, its content was simplified somewhat. The division into series A, B, C, H, M and T and the new release service remains unchanged. The frequency of publication was not altered either. A new series O for online publications has been started (see 2.)
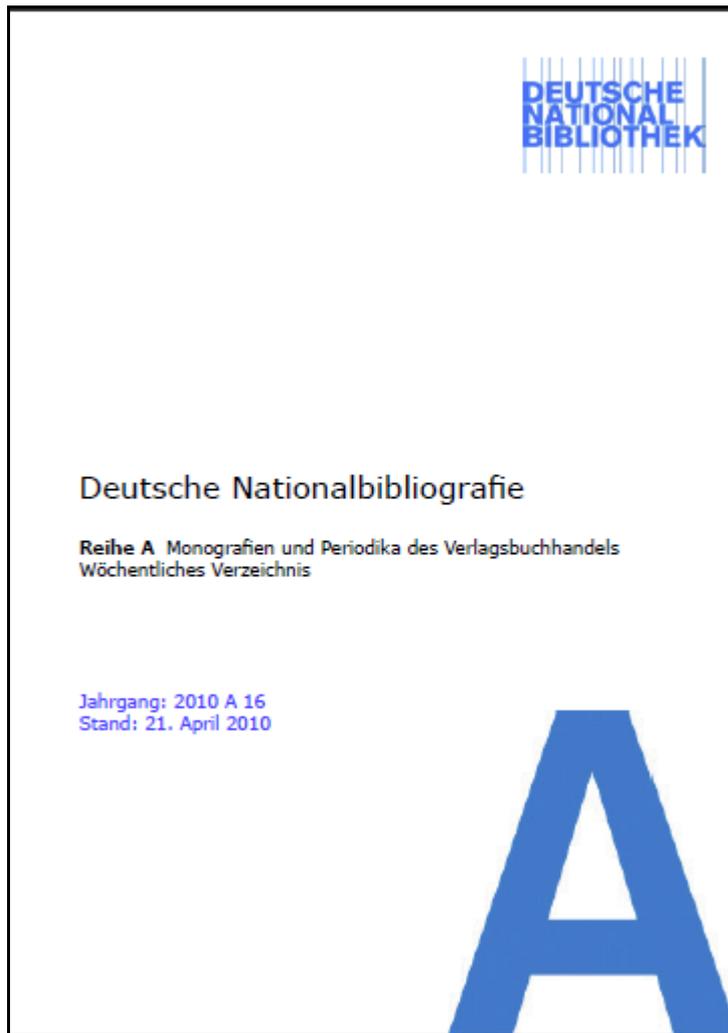
Fig.2 Layout of the online journal

When revamping the bibliography into an online journal, it was an important requirement to make use of the possibilities offered by the publication as an electronic medium. As a result, all bibliographic descriptions contain hyperlinks to corresponding records in the online catalogue. Those hyperlinks not only provide access to the online bibliographic description, but also to value-added material, such as tables of contents, abstracts, and jacket or full texts.

000 Allgemeines, Wissenschaft

<000>   XA-DE-BY
http://d-nb.info/995823227 ∞   09,N35
Großer, Hartmut: Top secret : Geheimprojekte und Technologien der Supermächte / Hartmut Großer. - Marktoberdorf : Argo, 2010. - 271 S. : Ill., graph. Darst., Kt. ; 23 cm . - Literaturangaben . - Inhaltsverzeichnis - ISBN 978-3-937987-87-3 Pp. : EUR 24.00 - EAN 9783937987873
SW: UFO ; Geheimunternehmen
DDC: 001.942

<000;610;150>   XA-CH
http://d-nb.info/1001405730 ∞
Huter, Carl: Der Gebildete auf der Höhe : gesundes Urteil und starke Nerven / Carl Huter. Bearb., eingeleitet, mit Ill. vers. und hrsg. von Fritz Aerni. - Zürich : Carl-Huter-Verl., 2010. - 182 S. : Ill. ; 20 cm . - Literaturangaben - ISBN 978-3-03741-122-3 Pp.

004 Informatik

<004;650;S>   XA-DE-NW
http://d-nb.info/958233527
Basiswissen IT-Berufe [Medienkombination]. - Troisdorf : Bildungsverl. EINS . - Teilw. im Verl. Stam, Köln
SW: Informationstechnik ; Beruf ; Berufsschule ; Schulbuch
DDC: 004.6
http://d-nb.info/999106864   10,N03

nitz>: Tagungsband / Chemnitzer Linux-Tage 2010 : 13. und 14. März 2010 / Team der Chemnitzer Linux-Tage ; Technische Universität Chemnitz. - Chemnitz : Univ.-Verl., 2010. - 136 S. : graph. Darst. ; 21 cm . - Literaturangaben . - Inhaltsverzeichnis - ISBN 978-3-941003-10-1 kart. : EUR 15.10
SW: LINUX ; Kongress ; Chemnitz <2010>
DDC: 005.432

<004;330>   XA-DE-HE
http://d-nb.info/999102338 ∞   10,N03
Deck, Klaus-Georg: Java-Grundkurs für Wirtschaftsinformatiker : die Grundlagen verstehen - objektorientierte Programmierung - fortgeschrittene Konzepte kennenlernen - betriebswirtschaftlich orientierte Beispiele ; [mit Online-Service] / Klaus-Georg Deck ; Herbert Neuendorf. - 2., aktualisierte und verb. Aufl. - Wiesbaden : Vieweg + Teubner, 2010. - XII, 456 S. : graph. Darst. ; 24 cm . - (Studium) . - Literaturangaben . - Inhaltsverzeichnis . - Inhaltstext - ISBN 978-3-8348-1222-3 kart. : EUR 31.95 - EAN 9783834812223
SW: Java <Programmiersprache> ; Wirtschaftsinformatik
DDC: 005.133

<004>   XA-DE
http://d-nb.info/1000571130 ∞
Grill, Ortrun: Überzeugend präsentieren mit PowerPoint 2007 / Ortrun Grill ; Charlotte von Braunschweig. - 1. Ausg. - Bodenheim ; Wien : Herdt-Verl. für Bildungsmedien ; Dübendorf : Herdt-Verl. Schweiz, 2010. - 172 S. : Ill., graph.

<004>   XA-DE
http://d-nb.info/1000058611
Peyton, Christine: Internet & E-Mail : [mit Windows 7 ; Sehen & Verstehen - das visuelle Praxisbuch] / Christine Peyton. - Düsseldorf : Data-Becker, [2010]. - 284 S. : Ill. ; 24 cm . - (Genial einfach!) . - Inhaltsverzeichnis - ISBN 978-3-8158-1904-3 kart. : EUR 14.95
SW: Internet ; Ratgeber ⊔ E-Mail ; Ratgeber
DDC: 004.678 ⊔ 004.692

<004>   XA-DE
http://d-nb.info/1000571491
Raith, Michael: Windows 7 : Systembetreuer: Workstation / Michael Raith. - 1. Ausg. - Bodenheim ; Wien : Herdt-Verl. für Bildungsmedien ; Dübendorf : Herdt-Verl. Schweiz, 2010. - 189 S. : Ill. ; 29 cm . - (Herdt Classics) . - Inhaltsverzeichnis - kart.
SW: Windows 7
DDC: 005.44

<004>   XA-DE
http://d-nb.info/1000876144 ∞
Reuscher, Dominik: PC & Windows 7 für Einsteiger : [Sehen & Verstehen ; das visuelle Praxisbuch] / Dominik Reuscher. - Düsseldorf : Data-Becker, [2010]. - 288 S. : Ill. ; 19 cm . - (Genial einfach!) . - Inhaltsverzeichnis - ISBN 978-3-8158-1902-9 kart. : EUR 14.95
SW: Personalcomputer ; Windows 7
DDC: 005.446

<004>   XA-DE-HE
http://d-nb.info/999819429 ∞   10,N05
Ringels, Holger: Smart clients mit Eclipse

Fig.3 Layout and structure of the bibliographic records in the online journal with URIs and hyper-links to tables of contents and abstracts

Other points we took into consideration were accessibility for visually impaired users and the suitability for digital long-term preservation. When developing the PDF version, it was an important criterion that the contents can be consumed using screen-readers or other assistive technologies. The produced volumes comply with most accessibility criteria and the process is currently under revision in order to ensure that it will be fully accessible. Another important criterion was the suitability for digital long-term preservation. Under the new mandate, the Deutsche Nationalbibliothek collects all digital publications issued in Germany – including its own. In order to ensure that the documents are suitable for long-term preservation, the pdf version of the national bibliography complies with the PDF/A-1[4] standard. This standard specifies how pdf documents must be structured in order to be reproducible even in a distant future.

Apart from this freely accessible online journal in PDF format, which also focuses on end-users, the bibliographic data are offered as data files in MARC 21 and MAB, as printed title cards and via the data shop. The data shop allows users to select and download bibliographic data in structured formats and particularly addresses library customers who want to reuse the bibliographic data provided by the Deutsche Nationalbibliothek.

So far, it seems that the new online journal is well accepted by our customers. We were somewhat surprised that there still is a large demand for a printed version. In order to cater for this, we now also offer printouts from the pdf files. Apart from that, there have been only minor inquiries. We were asked to increase the font size in the section with bibliographic data, which isn't really necessary since one advantage of electronic publications is that users can do it themselves when reading on a computer screen. Another question was why we removed the consecutive numbering of the entries in each volume. Originally the numbering was an aid to find a bibliographic record through a (cumulative) index. Since the index was discontinued some time ago and users can search for bibliographic information in the online catalogue, there is no need for the explicit numbering any more.

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[4] http://www.pdfa.org/

There are other complementary services, which have been specially devised taking customers' requirements into account.

1.3. NEW SERVICES FOR ACCESS TO BIBLIOGRAPHIC DATA

In addition to the traditional ways of accessing bibliographic data, the Deutsche Nationalbibliothek also investigates novel access and distribution channels. Those new services are focused on researchers and students who need to find, collect, and maintain literary data and who want to be kept up-to-date with the new publications in their area of research.
One point of focus is the integration with citation management software. As a first step, the bibliographic descriptions in the online catalogue will from summer 2010 on contain metadata encoded in the COinS format to allow our patrons to download and maintain the data using the Firefox add-on Zotero. Integration with other services, e. g. RefWorks and EndNote, are planned.

Another new service is the possibility to save a search query and to subscribe to the query result as an RSS feed. This will enable specialist customers to receive updates on recent publications using a custom-made query such as "publications in series A dealing with chemistry (SG 540)" or "records with music by Beethoven" directly into their feed reader. The service does not provide full-blown bibliographic records but concentrates on the core bibliographic description using the oai_dc format.[5]

Further, it will shortly be possible to export a search result as a PDF file similar to the PDF version of the national bibliography. This service is intended for librarians and other customers who want to work with a particular subset of the bibliographic data and prefer to read the title information in an ISBD-like format. For librarians searching for new publications on a specific topic, this service is particularly useful in combination with the extended search functions allowing the user to search in one or more bibliography series while restricting the search to a specific date range. This feature automatically translates the date range into the proper volume of the national bibliography while taking into account, that not all series in the bibliography are published at equal intervals: e. g. when searching for monographs on and sheet music by Stravinsky published between January and March 2010, the user would have to take into account that the series A and B are published weekly, whereas the series M (sheet music) is only published monthly; thus the search needs to cover the volumes 1-13 (2010) of series A and B, and the volumes 1-3 (2010) in series M, which can be hard to formulate as a query. The date-search feature relieves the user from this task.

1.4. CURRENT COSTS AND CONDITIONS OF BIBLIOGRAPHIC DATA

The Deutsche Nationalbibliografie as an online journal in PDF format is available via the online catalogue. In other words, the new business model allows anyone to get all bibliographic series and data free of charge as PDF.

Users have to pay for data only for special provision or selection services.

PDF files can be purchased and downloaded via the WWW or from the FTP server of the Deutsche Nationalbibliothek. These provisions are EUR 5.00 per download.

We also offer the PDF content in hard copy in response to user requests (bound and hole-punched). The price depends on the average extent of a single volume – which varies between the different series (series A is generally much more voluminous than e. g. series C) – and ranges between EUR 4.00 and 14.00 per delivery depending on the series (including national postage).

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[5] http://www.d-nb.de/hilfe/katalog/datenshop.htm#daten

The bibliographic data services are supplied in MAB, UNIMARC or MARC 21 format. The series listed in the Deutsche Nationalbibliografie and the New Release Service is also available as HTML version in ISBD format.

After six month's implementation we can notice, that this price model is accepted by our customers. Deutsche Nationalbibliothek is gradually opening up access to its data free of charge and eventually title and authority data will be freely available, with only some exceptions such as commercial use, or preparation of datasets by DNB staff according to the customer's own search criteria when this requires operating effort. Since Deutsche Nationalbibliothek didn't publish the printed bibliography itself, it is difficult to determine the fiscal impact of its discontinuation. The library does waive the commission on the sales of the printed bibliography which due to the decreasing sales towards the end wasn't a substantial amount.

Looking at the whole data business model, it should be noticed, that acquisition of authority data is also free of charge since March 2010. Authority records can be delivered in MARCxml and MABxml-1 format via SRU web protocol (Search / Retrieve via URL). That allows comfortable reuse of all data. Starting in May 2010, the DNB also provides the authority data as Linked Open Data using Semantic Web formats and protocols.

2. WEB RESOURCES IN THE NATIONAL BIBLIOGRAPHY

For the first time there is an extra series of the German National bibliography for web resources. The bibliographic data creation is fully automated.

2.1. COLLECTION OF ONLINE PUBLICATIONS AT THE GERMAN NATIONAL LIBRARY

The National Library has been collecting online publications since 1998 on a voluntary basis, especially online published doctoral theses. When the new Law regarding the Deutsche Nationalbibliothek came into force in 2006, the library's mandate was expanded. In addition to its duty to collect printed material, it received the task to collect, catalogue, index and archive non-physical media works.

The collection covers all text, image and sound-based works made available on public networks. The submission obligation covers both web publications with corresponding printed versions and also web-based media works. Examples include electronic magazines, e-books, university theses, digitised content, music files and also websites. Temporary pre-publications, pure software or application tools, and radio and TV programmes are not collected. Neither are online publications which only serve private or commercial purposes.

Suitable procedures for the large-scale collection, cataloguing and archiving of online publications will be developed gradually. The objective of the current stage of development is the collection of individual online publications like e-books. The current procedure includes for instance the expansion of existing distribution channels, implementation of different deposit interfaces for the submission of individually identifiable online publications and expansion of file formats currently supported.

The National Library aims at making the submission of online publications as convenient as possible. There are currently two possible ways of submitting online publications: delivery via a web form and delivery using an OAI-PMH harvesting method. The web form is suitable for smaller numbers of online publications, whereas OAI-PMH harvesting is the better option for larger quantities.

At the moment no websites can be collected and digitally preserved on a regular basis. However, we recently initiated a special project analysing harvesting methods and workflows for the collection of websites and dynamic applications.

Metadata core sets for different types of publications are defined.[6] The definitions contain a minimal set of metadata elements for the delivery of metadata of electronic resources. Here the core set of metadata elements for monographs is given, which are submitted via web form. For automatic harvesting the minimal set will be less extended.

- URL of the web resource, where accessible (mandatory)
- Content information - DDC-oriented notation of the national bibliography OR notation of the publishers' book trade system (mandatory)
- Type of web resource (monograph, dissertation, periodical) (mandatory)
- Date of publication (mandatory)
- Rights information – free or restricted accessibility of original and stored publication (mandatory)
- Title (mandatory)
- Publisher (mandatory)
- Place of publishing (mandatory)
- Content information – other classification or thesauri (optional)
- Name of the issue/edition (optional)
- Author (optional)
- Notes (optional)
- Corporations (optional)
- Hierarchical work relations (complete work) (optional)
- Note of dissertation and university (optional)
- Publication language (optional)

2.2. BIBLIOGRAPHY SERIES O

Regarding online publications the German National Library has two main objectives. The first is automatic cataloguing of online publications on the basis of the collected metadata, see also 3.3. The second is using persistent identifiers to ensure permanent addressing and long-term quotability of online publications. The German National Library assigns and administrates URNs from the namespace "urn:nbn:de" and offers a URN-resolving service for Germany, Austria and Switzerland. All online resources, archived by the German National Library, are assigned a URN from the namespace "urn:nbn:de". Compared to URLs, URNs offer a unique and permanent identification of digital objects, independent from their storage location. This is an important factor in maintaining the long term preservation.

Since 2010 all new submitted online publications have been recorded in the National Bibliography, in an extra series O. In April 2010 the series O already contained about 20,700 titles. Due to this large number no extra PDF version is available for these new publications. They can – however – be searched via the catalogue and patrons will – if preferred – be able to create an individual PDF booklet with bibliographic descriptions in ISBD format.

3. CATALOGUING STANDARDS AND INDEXING POLICY

Current standards of cataloguing will be the guide line to offer end-users high-value retrieval possibilities. A transparent and consistent indexing policy is as important as the application of automatic indexing methods to discover the growing number of documents.

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[6] http://www.d-nb.de/eng/netzpub/ablief/kernset_metadaten.htm#header

3.1. MEDIA PROCESSING AND INDEXING POLICY

As we have already mentioned above, the Deutsche Nationalbibliothek fulfils its role as the national bibliographic information centre of Germany on the basis of new acquisitions through legal deposit copies. On a division-of-labour basis, media processing occurs only once for both locations – Frankfurt or Leipzig. Publishers supply two deposit copies of monographs and periodicals to the location responsible for them. Responsibility is organised by regional principle: the Leipzig site of the German National Library processes all publications from the federal states Berlin, Brandenburg, Mecklenburg-Vorpommern, Nordrhein-Westfalen, Sachsen, Sachsen-Anhalt and Thüringen. The Frankfurt site is responsible for the states Baden-Württemberg, Bayern, Bremen, Hamburg, Hessen, Niedersachsen, Rheinland-Pfalz, Saarland and Schleswig-Holstein. After processing, the second copy is supplied "ready for storage" to the other library for use and archiving. In addition single copies of works published in German abroad, translations of German originals not submitted as deposit copies, and foreign-language works about German subjects are processed in Leipzig. The processing of printed music and sound recordings is carried out exclusively in the department Deutsches Musikarchiv (DMA) – in August 2010 still in Berlin; from December 2010, the DMA will be part of the Leipzig site of the Deutsche Nationalbibliothek.

All publications are catalogued based on the German Rules for Alphabetical Cataloguing (RAK). Subject cataloguing is based on the German Rules for the Subject Catalogue (RSWK) and the Dewey Decimal Classification (DDC). In addition, the German National Library makes use of authority files for subjects, persons and corporate bodies in whose development and maintenance it plays a leading role. The future use of Resource Description and Access (RDA) is planned and will change the present rules as the implementation of the international data exchange format MARC21 already did.

The present indexing policy is published online.[7] Each publication is assigned to at least one subject class (Sachgruppe) of the German National Bibliography. The publications released by the publishing trade (series A of the bibliography) are catalogued using subject headings based on the RSWK-rules. The authority files for subjects, persons and corporate bodies - SWD, PND and GKD[8] - are used here. Besides indexing with subject headings, there has also been classificatory cataloguing based on the DDC since 2007. Nearly all publications are fully DDC annotated. Not included here are school text books, fiction and children's books. Medical dissertations are classified on an intermediate level of the DDC.

Fig.5 Example of a single bibliographic record

[7] http://www.d-nb.de/eng/wir/ueber_dnb/inhaltserschl.htm
[8] http://www.d-nb.de/eng/standardisierung/index.htm

3.2. STRUCTURE OF THE NATIONAL BIBLIOGRAPHY

Since the bibliographic year 2004 the German National Library has been structuring the different series of the national bibliography in accordance with the Dewey Decimal Classification (DDC).

The structure of the series A, B, C and H (see 1.1.) is based for the most part on the two top hierarchical levels of the DDC (the Hundred Divisions or Second Summary). Some differences are made by integrating the third level (the Thousand Sections or Third Summary) of DDC and even the forth level whenever it was necessary to accommodate former subject groups such as military science (Class 355) or comics, cartoons, caricatures (Class 741.5). In 2010 we started a new class 333.7 for natural resources, energy and environment to meet the users' needs of searching for works on environmental protection and conservation.

In two disciplines several DDC Classes of the Second Summary were combined to preserve the context of well known disciplines such as philosophy (Class 100, comprising DDC Classes 100, 110, 120, 140, 160, 170, 180 and 190) and theology, Christianity (Class 230, comprising DDC Classes 230 - 280).

School textbooks and children's books are exempted from the DDC structure, as they would be separated and scattered over many different classes. Fiction can be selected separately, but is integrated into the classes 800 - 890 according to DDC. Thus three more classes, called S, K and B are searchable.

Series M (Printed Music and Music Publications) and T (Recorded Music) of the bibliography are also organised according to DDC. Deeper hierarchical levels of DDC up to six digits are used here offering retrieval possibilities similar to previous structures.

3.3. AUTOMATIC INDEXING PROCEDURES

In 2009 the German National Library started testing automatic indexing procedures with aim of linking conventional media processing and automatic procedures. In fulfilling the legal mandate of indexing *all* publications, there is no alternative for trusting in software applications. The rapidly growing number of printed titles, as well as the enormous number of web resources under the .de-domain, requires new workflows and a speed-up of usual cataloguing mechanisms. Wherever possible, computer-supported procedures should help indexers and help saving human resources for what is really needed to improve online retrieval.

At the moment we are testing and comparing new indexing and classification software systems. Within different scenarios, we analyse different media and document types, their cataloguing requirements and the quality of searching for those automatically indexed publications. There is one scenario targeting at creating the bibliography's subject structure (see 3.2.) automatically. This is a kind of an automatic classification. Methods of automatic verbal indexing are analysed within another scenario.

A further step of automatic media processing is reusing data from authors, publishers or other libraries and catalogues. This should be done automatically by loading structured data in different formats and using mappings. Also bibliographic data of different versions of works, e.g. of corresponding print and online versions can be copied automatically.

We have already changed cataloguing policy of online publications in 2010. Because retrieval of full texts is possible and delivered metadata are re-used, no other intellectual cataloguing process is carried out by us for this type of media.

Within the framework of these activities, a modular and expandable indexing system may arise, that can distinguish between various media and that can be controlled by well-defined quality criteria.