

Information in erster Linie

Münchener DigitalisierungsZentrum Digitale Bibliothek

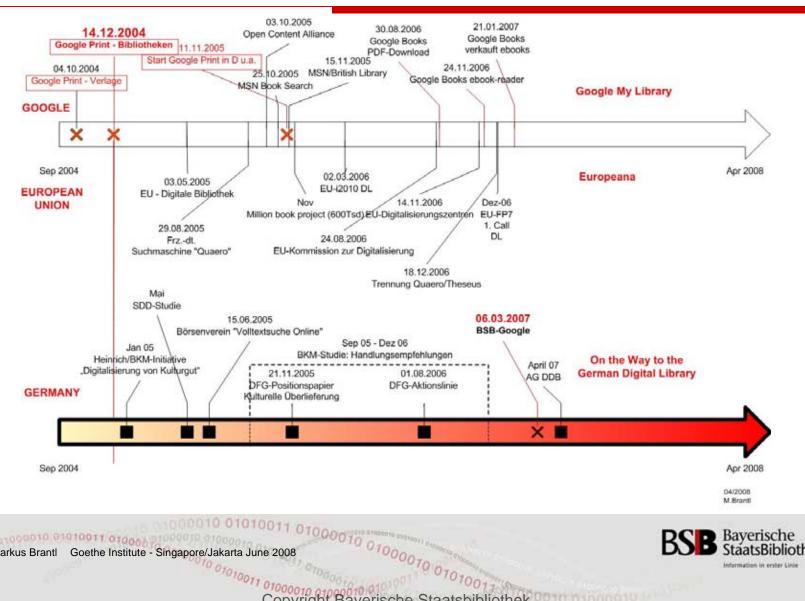
Mass Digitisation and Long-term Preservation – Processes and Production at Munich Digitisation Centre



Dr. Markus Brantl Copyright Bayerische Staatsbibliothek

Digitale Bibliothek

Who invented Mass Digitisation?





10 01000010 01000011 01000010 01000000 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Agenda

- 1. The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production
- 4. Projects, examples

5. Outlook

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008

Agenda

- 1. The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production
- 4. Projects, Examples

5. Outlook

A Boot A Contraction of the cont

Digitale Bibliothek

5

The Free State of Bavaria and Munich



10 01000010 0100011 01000h 01000010 01000010 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Münchener DigitalisierungsZentrum Digitale Bibliothek

Bavarian State Library: Some Key Facts & Figures

- Founded in 1558 by duke Albrecht V.
- □ 680 employees
- 43 million euro/annual budget
- Inventory ~10 million volumes with an annual increase ~ 150.000 volumes
- ~1 million visitors in the reading room

□ ..

6

450 BSB Bayerische StaatsBibliothek

01000010 01010011 01000h 01000010 010000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

01010011 01000010







Major Functions of BSB

- □ International research library of worldwide importance
- Central regional and archival library of the Free State of Bavaria
- Head of the Bavarian Library Network (BVB) and Leader of the Bavarian Library Consortium
- One of three partner of the "German Virtual National Library" (together with Staatsbibliothek zu Berlin and Die Deutsche Nationalbibliothek in Frankfurt/Leipzig)





Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Münchener DigitalisierungsZentrum

Digitale Bibliothek

BSB as a Gateway to Cultural Heritage Resources

- Collections: Timeframe from 8th to 21th century
- Manuscripts and Rare Books Collection of world importance
 - 89,000 Manuscripts (number 4 worldwide)
 - 19,000 Incunabula (top position in the world)
 - 130,000 16th century prints (largest collection in Germany)
 - Illuminated Reichenau Manuscripts part of the UNESCO Memory of the World since 2004





Digitale Bibliothek

The Munich Digitisation Centre (MDZ)

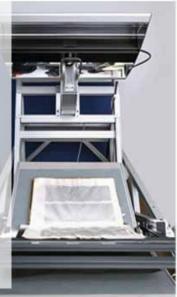




2003 integrated as division in the department of Acquisition, Collection **Development and**

National competence center for digitisation and long-term preservation Central innovation und digital production unit of







01000010 01010011 01000h 01000010 010000h Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200 Digitale Bibliothek

MDZ Tasks within the Framework of "The Digital Library"

- Research & Development
- Production
- Consulting (e.g. Workflows)
- Service Provider (e.g. scanning technology, Open-Source-Software for digitisation)

in

- ☐ (Retro-)Digitisation
- Long-term Preservation
- Subject Specific Portals



Digitale Bibliothek

MDZ – Some Facts

- Digitisation expertise in materials from 8th to 21th century
- □ ~32 M. files successfully processed
- = ~ 10 M. pages 27,000 books
- ~ 60 Terabyte of digital data stored and long-term preserved in cooperation with Leibniz Supercomputing Centre (Munich-Garching)
- = the largest operating long-term preservation archive in Germany
- Complete production line from capture until longterm preservation based on own-developed Software ZEND
- Comprehensive Hardwareequipment, e.g. for the processing of the Google Books Search image copies





Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

11

e 2008 01000010 010010 Copyright Bayerische Staatsbibliothek

ta June 2008

Examples of running R&D Projects at MDZ

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

term preservation of digital objects in Germany (German Research Foundation)

Digitale Bibliothek

Münchener DigitalisierungsZentrum

Long-term Preservation

- BABS II next step in deployment of practical long-term preservation (German Research Foundation)
- ...

12

- Digitisation
 - IMProving Access to Text Innovation in OCR
 - Development in new book scanning devices for fragile books
 - Automated book scanners for 16th century books development partnership with theTreventus company

Development of organisational and business models for the long-

- Book cradles
- 3D-Animation of books via WWW







MDZ as Part of the Department of Acquisition, Collection Development and Abteilungsleitung Cataloguing Sekretariat Stabsstelle für IT-Stabsreferat; Geschäftsstelle Anwendungen BА Länder- und Formal- und Sach-Zeitschriften und Digitale Bibliothek Fachreferate erschließung Elektronische Medien (MDZ) (ZEM) Referenten Referenten Referenten Digitale Monographien ZEM Bibliothek Referenten Fach koordination (ViFas)

Koord nation

ZEM and DB

Elektronische

Medien

Zeitschriften-

verwaltung und

Benut-

zungsdienste

Erschließung

von Print-

periodika

Digitalisierung /

Produktion

"Operative

Projekt-

koordination"

Langzeit-

archivierung

Digitalisie-

rungs-und Fotostelle



Normdateien

(GKD, PND, SWD)

Bayerische

Bibliographie

kooperatives Datenmanagement

90

Koordination

Medienbearbeitung

Deutsch-

sprachiger

Zugang

Englisch-

sprachiger

Zugang

Zugang in

sonstigen

Sprachen

Einbandstelle

Qualitäts-

sicherung

Medienbear-

beitung

Unberech-

neter Zugang

Sonder-

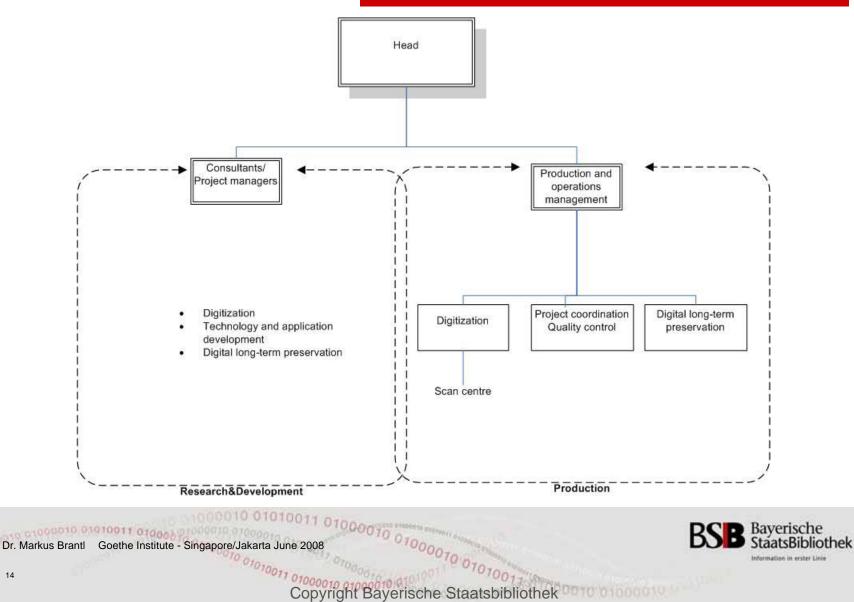
geschäfts-

gänge

Digitale Bibliothek

14

MDZ Today's Organisation Unit in Detail



MDZ Staff & Financing

□ 5 fulltime and 1 part-time established posts

- 70 full- and part-time temporary employees (44,5 FTE) financed by third-party grants from:
 - European Union
 - German Research Association (DFG)
 - The Free State of Bavaria/Ministery of Science



Digitale Bibliothek

www.munich-digitisation-centre.de



Library

Update: The programme of the presentation session of the Scan Robot Days on June 19 2008 is complete.

↗ to the programme [13.06.2008]

↗ Other News AMDZ-News via RSS

1000010 01010011 01000010 01000010 01000010 01010011 01000010 0100011 01000h 01000010 0100000.

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Copyright Bayerische Staatsbibliothek

Collections of the Bavarian State

Agenda

- 1. The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and production
- 4. Projects examples
- 5. Outlook

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008

Münchener DigitalisierungsZentrum Digitale Bibliothek

Digitisation Strategy

Objective of retrodigital collection development at **BSB**:

to digitize and make accessibly – free of charge – all copyright-free library holdings

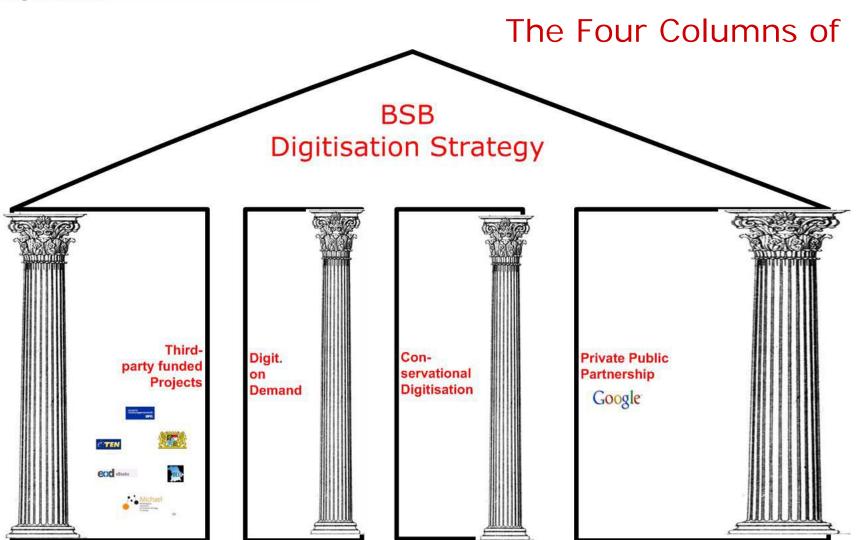


1010011 01000010 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

000010 01010011 0100010 01000010 010000

18

Digitale Bibliothek





Digitisation Strategy of the BSB

Third-party funds, Dig. On Demand, Conserv. Dig.	8th-16th century Manuscripts, incunabula, special collections
Public-Private Partnership with(Google)	17-19th century
Third-party funds	20-21st century (new programmes in the context of German Digital Library approach)



Münchener DigitalisierungsZentrum Digitale Bibliothek

Münchener DigitalisierungsZentrum Digitale Bibliothek

What is Mass Digitisation?



Production of more than a million

pages?

volumes?



"Definition" today (in Germany)

production of more than a million pages within a limited time

and tomorrow ...?

1010011 01000010 01000010 01010011 010001 01000010 01000 00010 0101001 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200



Digitale Bibliothek

What have we done before Mass Digitisation?

"Boutique"-digitisation

- □ Since 1997
- Small medium sized projects
- Explorative projects learning and experimenting
- Selective picking of special objects under marketing aspects
- Deeper indexing of objects

000010 01000011 0100000 0100000 010000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

Manual work

Mass digitisation

- □ Started in 2006 with pilot
- Large projetcs with 1 million pages
- Using technology and automation whenever possible
- No selection
- Dynamic indexing starting at low level; deeper indexing when technically possible (e.g. Blackletter script)



010011 01000010 01

Mass Digitisation: Plans for Quantities?

German Research Foundation (DFG) target for digitisation of 16th.-18th. books

\sim 1 M. titles =

~250 M. pages

Duration: Next 5-? years



0 01000010 01010011 01000A 01000010 0100000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Münchener DigitalisierungsZentrum Digitale Bibliothek

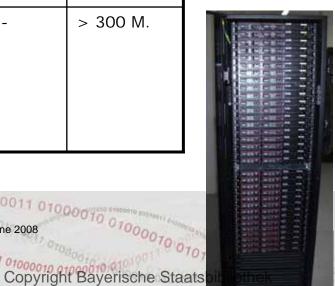
Current Mass Digitisation Projects at MDZ

Project	Volumes	Date	Pages
VD16digital -1	~4.300	2006 -2008	~ 1 M.
Deutsche Forschungsgemeinschaft DFG			
VD16digital -2	~37.000	2007-2009	~ 7.5 M.
Deutsche Forschungsgemeinschaft DFG			
Inkunabeln	~ 9.000	2008-2012	~ 1,6 M.
Deutsche Forschungsgemeinschaft DFG			
Private Public Partnership mit	> 1.2 M.	2008-	> 300 M.
Google			

1000010 01010011 01000010

3 ScanRobots in the MDZ-Scancentre





200

Linux-Cluster of the **MDZ for Processing** the Google book copy



Digitale Bibliothek

Mass Digitisation: Main Challenges

- Logistics: book pulling, transport, book-loan charging, quality management, return transport, book putting ...
- Integration of metadata
- Storage and preservation approx. 300,000 images per day
- Automated processing, e.g. automated book scanning devices

Digitale Bibliothek

Mass Digitisation and Long-term Preservation

□ MDZ data production

- 1997-2004 over 3.000
 CD-ROMs
- 2004 migrated from CD-ROMs to tapes at Leibniz-Computing Centre
- 2005 Start of the newly built Scan-Centre → fast growing archive



New challenges: ScanRobots and Googles output – more and more Terabytes

BSB Bayerische StaatsBibliothek

Copyright Bayerische Staatsbibliothek

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Processes and Production Cycle

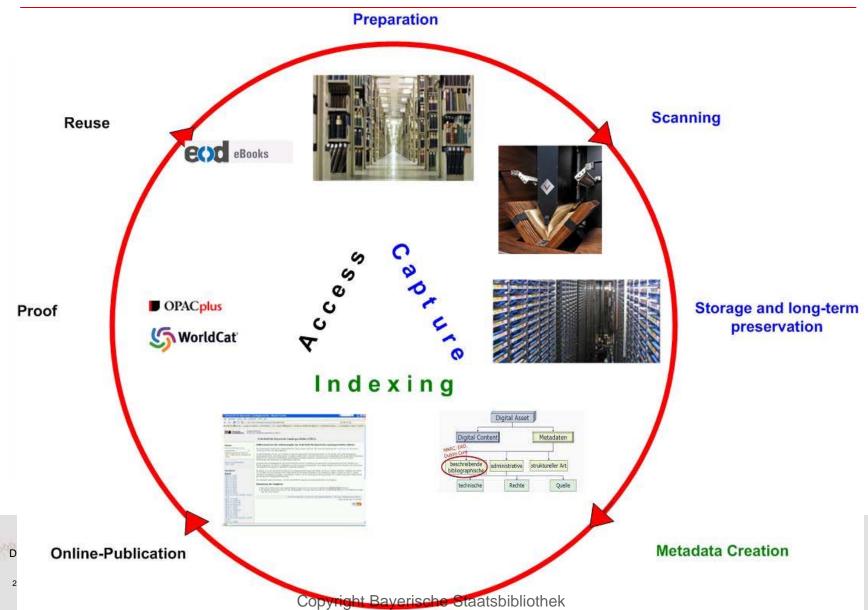
- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

Digitale Bibliothek

Processes and Production Cycle



e 2008 01000010 01001 Copyright Bayerische Staatsbibliothek

01000010 01010011 01000010 01000010 01000010 01000010 0

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

- Selection of all relevant titles for digitisation project from the collections
- Block the selected items for other forms of use (lending order e.g.)
- Printing of order-forms for collecting the relevant items from the shelves
- Checking the scanability of the selected items under conservational aspects
- Register the reason for non-scanability for every respective item
 - Correction of the catalogue if necessary
- Printing scanning order forms with Digital Identifier
 - Check if the books for scanning fit to the metadata of the selected title
- Delivery of the books of one charge together with scanning order forms to the Scan Centre
- ... Scanning ...

. . .

29

- Take the books back from the Scan Centre and check the completeness and actual condition of the books
- Putting the books in the shelves
- Unblocking lending orders



Preparation



Copyright Bayerische Staatsbibliothek

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



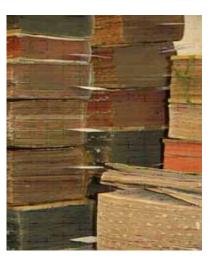
Agenda

Handling of Different Material Types

- BSBs case: Wide range of materials from 8th-21th century
 - Manuscripts
 - Incunabulas
 - Early and rare prints
 - Historical Maps
 - Photographic material (slights; glass plates etc.)
 - Monographs
 - Newspapers
 - Magazines
 - •••









01000010 01010011 01000010 01000010 01000011 01000070

Handling: Central Risks

Damages by

- Manually treatment of the originals
- Room climate, e.g. during transport and reproduction
- Light





Handling: Damages by Opening Angle of 180°

120° opening angle
spine streched, but fold still okay

The same book:

- **180°** opening angle
- fold broken





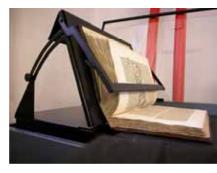
Books Handling during Reproduction

- BSBs Goal: Reduction of central risk factors of damage
- No fixation during reproduction under glass-plate
 - Deformation of books body
- Close cooperation with the Institute for Book and Manuscript Restoration at BSB
 - Cooperation in the selecting process of scanning devices
 - Obligartory use of
 - Cool ligthing
 - Of different bookcradles for gentle book handling
 - Disadvantage: Higher setup time













Copyright Bayerische Staatsbibliothek

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

010011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Processes and Production Cycle

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

000010 01010011 Copyright Bayerische Staatsbibliothek

Münchener DigitalisierungsZentrum Digitale Bibliothek

The MDZ Scan-Centre

- Especially for books and special collection materials before 1800 (Modern books in outsourcing)
- □ 2005 developed from reorganisation of the anlaogue reproduction services

Since 2005



0.01000010 01010011 01000A 01000010 010000. Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008





until2004







Scan Facilities

14 bookscanners

 3 automated bookscanners, "ScanRobots"

10 01000010 01010011 01000L 01000010 0100000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

- 2 special bookscanners for rare manuscripts and treasure holdings -"Grazer camera table"
- Formats up to ~0,85 * 1,18 meters (DIN A0)
- High resolution up to 600 ppi

1000010 01010011 01000010







e 2008 01000010 010001 Copyright Bayerische Staatsbibliothek

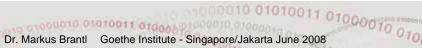
Digitale Bibliothek

Image Scanning: Our Philosophy

"Do it right the first time"

- scanning at the best possible quality
- Reuse mulitple
 - Facsimile, reprint

 - Digitisation on Demand
 - □ ...
- Images
 - Digital master files: TIFF
 - Derivates for WWW-Presentation: JPEG and PDF
- Extensive automation of workflows







Information in erster Linie

e 2008 01000010 010001 Copyright Bayerische Staatsbibliothek

Digitale Bibliothek

Image Quality and Scanning Parameters

High resolution digitisation in relation to the original size of

- Manuscripts, early printed books, historical Maps, special materials
 - colour (24 Bit)
 - 400 up to 600 ppi
 - Digital Master: TIFF uncompressed
 - Use of
 - Colour Management Software (ICC-Profiles)
 - □ Size and Colour Targets
- Modern prints of 19th and 20th centuries in dependency of the original
 - Text only: black and white (1Bit)
 - Text/images: 1 Bit and grayscale (8) Bit) and/or colour
 - 300 up to 600 ppi (600 ppi only 1 Bit and TIFF-G4 compressed)

Image storage size between 100 Kilobyte up to 800 Megabyte per image

10 01010011 01000010 01000010 01010011 0 01000010 01010011 0100010 01000010 0100000.

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

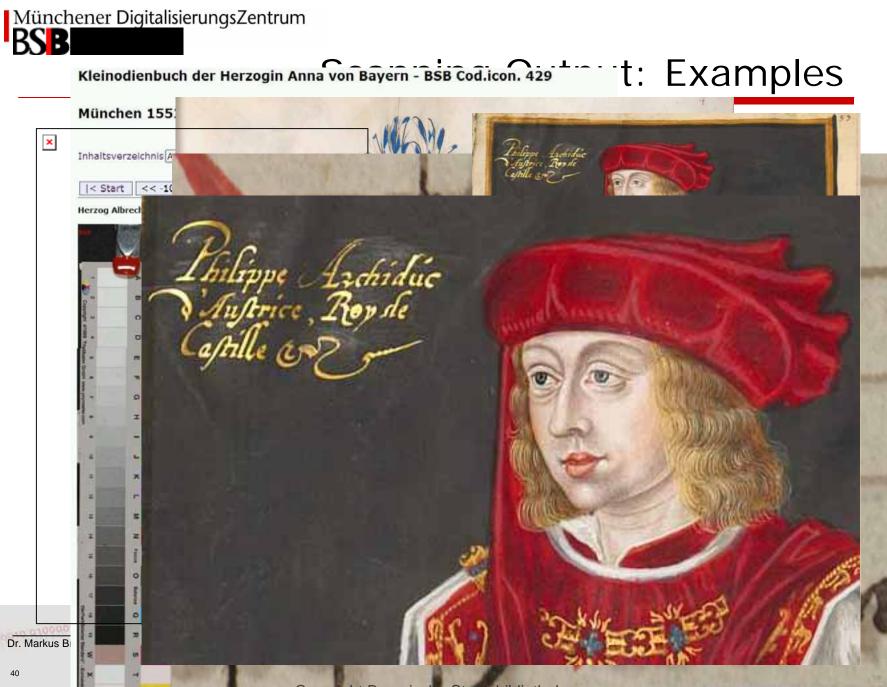
Detail pictures (same image enlarged) In 24 Bit, 1 Bit, 8 Bit







Copyright Bayerische Staatsbibliothek



Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda



Digitale Bibliothek

Digital Long-Term Preservation

Still in experimental phase, no allround solution

- Different approaches
 - Migration
 - Emulation
 - Computer museum
- □ In cooperation on national and international level
 - nestor the german Network of expertise in Digital long-term preservation
 - Institute of Informatics University of the German Federal Armed Forces
 - European Union
 - USA
- MDZ focuses on
 - Digital long-term perservation in practice with the Leibniz Computing Centre
 - Trusted Repositories Certification for long-term archives



Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

MDZ: Milestones in long-term preservation

1999: First project concerning removable media – testbed of a computer museum (Institute of Informatics, GFAF)

- 2004: 1. Migration of CD-ROM stored digitisation data to a large-scale archiving system of the Leibniz Supercomputing Centre (LRZ) in Munich (IBM Tivoli Storage Manager)
- 2005: automatical storage procedures are implemented, connecting the storage/archiving system of the LRZ and MDZ-production infrastructure (ZEND-Software)
 - Daily online transfer of new data
 - Secure storage of multiple copies
 - Long-term preservation
 - Rapid restore functions



Digitale Bibliothek

Long-term Preservation: The Archival System of the LRZ

2 x IBM TS3500 (3584)

20 LTO II drives 35 MByte/s transfer rate 5,000 tape slots 200 GByte per tape 990 TByte total capacity Maximum possible capacity: 6.900 tape slots,

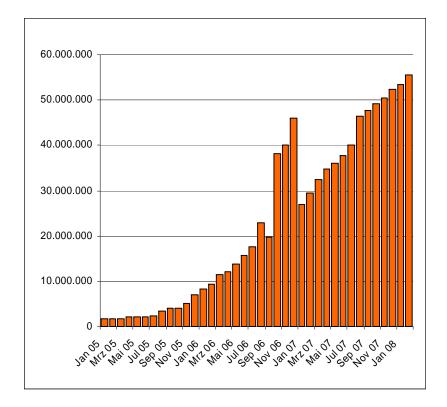
1,400 TByte

STK SL8500

16 titanium drives
120 MByte/s transferrate
4,900 tape slots
500 GByte per tape
2,400 TByte total capacity (eq. 3,8 M CDs)
Maximum possible capacity: 300.000 tape slots, 146,000 TByte

Digitale Bibliothek

MDZ: Increase of Long-Term Preserved Data



Expected annual increase: at last 100-150 Terabyte





Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- **3. Processes and Production**

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

Indexing – Metadata Creation

- Metadata will needed for
 - Search and Retrieval
 - Navigation/Browsing

Creation of

- 1. Bibliographical (descriptive) Metadata = from OPAC
- 2. Structural metadata = stage model for indexing a book
 - a) Only Images
 - b) Image and text of the table of contents
 - c) Images, text of the table of contents and indices
 - d) Images and "hidden text" (with errors)
 - e) Complete, layout-proof, nearly error-free text
- **3**. Technical MD = How the data were created?
- 4. Administrative MD = When the data were changed? By whom?

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Standards for Document formats and Character Set

□ XML as data exchange format with

Metadata Encoding Transmission Standard (METS)

Text Encoding Initiative (TEI)

□ Character set

Unicode, UTF-8 encoding

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

010011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

Münchener DigitalisierungsZentrum Digitale Bibliothek

Building the WWW-Interfaces

In dependence of projects requirements and the depth of indexing for

Search and Retrieval

Navigation/Browsing

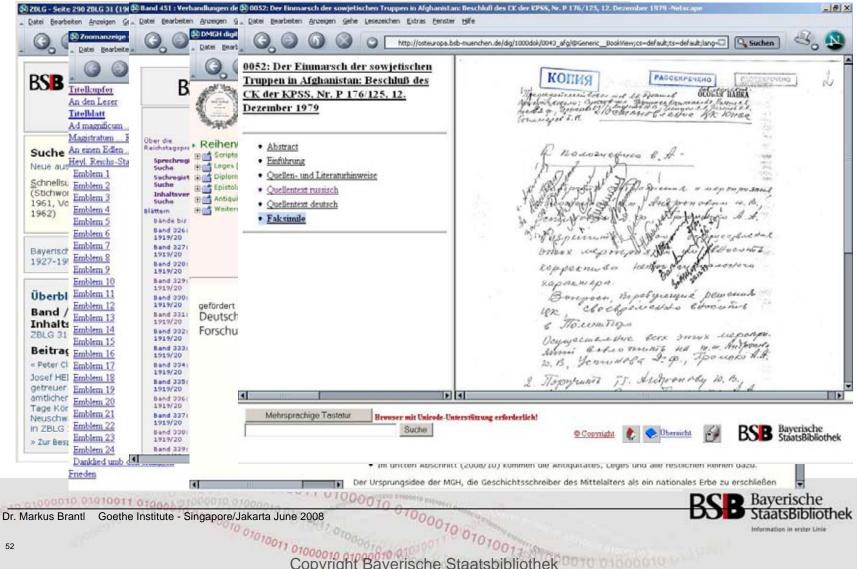
□ Usability

□ Accessibility

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



BSB Examples of Different Online Publications



Copyright Bayerische Staatsbibliothek

Münchener DigitalisierungsZentrum

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation

3. Processes and Production

010011 01000010

4. Projects

5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

Digitale Bibliothek

Proofs of Digitisted Items in Catalogues, Subject Gateways ...

tei Bearbeiten Ansicht Chronik Leseze	Data Bashatan Ancicht Chronik Laranaichan Extras Milfa dal kinus
• 🗼 • 😋 💿 🏠 📑 🔜 🔯 http://www GSprtools 懸 leo-dict 🖱 Bibglossar 🗈 Biblwi	💠 - 🔶 😳 🙆 🔡 🥁 🕫 http://www.worldcat.org/wcpa/oclc/159823447?page=frame&url=http%3A%2F%2Fnbn- 💌 🔊 😂 world cat
WorldCat [OCLC - Ho D Constantir	and and the second of the seco
(5 WorldCat	(** Zurust, zu den Tansanstan Ø
3	Data and Desart - Ante
Startseile - Suche -	Seutter, Matthäus: Constantinopolia, amplifilma, potentifilma, et magnificentifilma Urbs et Sedes Imperatoris Turcici in Provincia Romania ad Bosphorum Thraciae sitae, Augsp.//Augsburg//s.e. [zwischen 1730 u. 1760] Biserische
	um nbn de tvt: 12-bsb00002104-1 © Bayerische Stantsbötethek Digitalisat-Bestellung BSB-Katalog > 2 Mapp. 168,2-80
	150% Meinteransiete 3001 6/01 14 5 3 4 441 56 . 450 440 45 7 8 Bibler 1
Constantinopolis : amplißima, potentiß sitae	
von Matthäus Seutter	CONSTANTINOPOLIS
(hoch nicht beverlet)	
Typ Verleger Augsp //Augsburg// s.a. (zwischen 173)	
Ausgaben: 3 Auflagen	
OCLC: 159823447 Literaturformate. Zitierformat für dieses Mindium I nach E	
Zusätzliche Info Voltext Voltext	
Anzeigen Sp	
15 Thei in anderen WorldCal-Bibliotheken finden Die Sol	
1.00	
Bibliotheken Einzelheiten Ausgaben	
Bibliotheken Einzelheiten Ausgaben	make the second s
	the second stars a start a start the
Der angegebene Ort wurde leider nicht. Bitte geben Sie die	
Anleitungen:	Fertig Notizbuch offnen
	tleitzahl, einen Bundesstaat (USA) oder ein Land ein. Klicken Sie dann auf den "Gehe zu" Button.
Beispiele:	
Postletzahl: "43017" (USA) oder "S7K-5X2" (Kanada Bundastand "Ohio" oder "Ohi"	
Bundesland "Ohio" oder "OH"	ib

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND

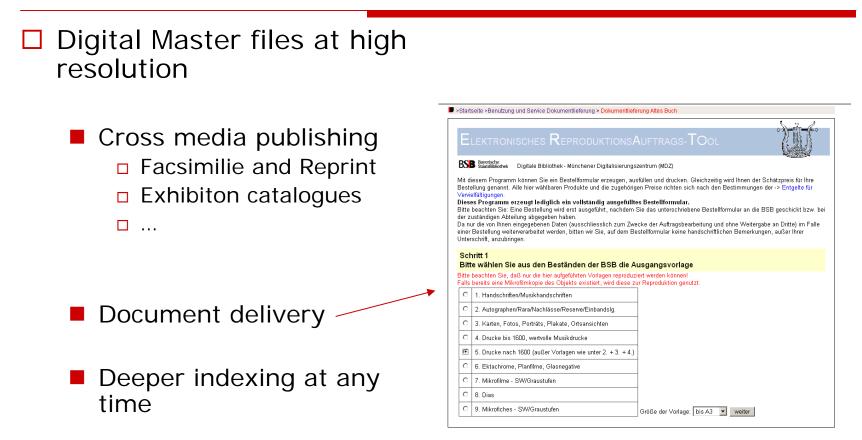


Agenda

55

Münchener DigitalisierungsZentrum Digitale Bibliothek

Reuse



3D

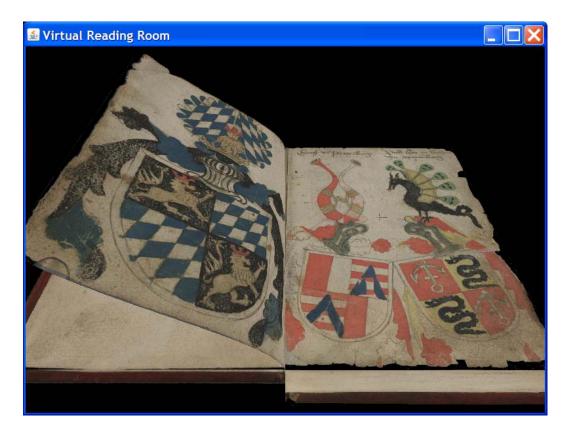


Digitale Bibliothek

Reuse: Example 3D-Animation with an Book of Arms

□ Testbed in collaboration with







Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Last but not least: Quality Control

Everywhere in production at defined points

- But: 100% accuracy from "Boutique"digitisation times is unrealistic for mass digitistion (only spot checks)
- New approaches, e.g.
 - checking page number sequence with OCR during scanning for completness
 - Involving the users in QC by offering a comment form with each image
- Problem: Each reprocessing increases costs



1000010 01010011 0100010 01000010 01000

Münchener DigitalisierungsZentrum Digitale Bibliothek

- The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

0100011 01000010

- 4. Projects
- 5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse

b) ZEND Production Software

c) Example of a Production Workflow with ZEND



Agenda

ZEND Production Software

ZEND = **Z**entrale Erfassungs- und **N**achweis**D**atenbank [central acquisition and proof database]

- ZEND developed by MDZ since 2003
- Electronic Publishing System with modules for
 - Document-Management
 - Web-Content-Management
 - Workflow-Management
 - Long term preservation of digital media
- Based on Open-Source-Software
 - LinuxApacheMySQLPHP (bzw. Perl)
 - Cocoon– XML-Publishing Framework von Apache

...

- Flessible (for different media types)
- □ Scaleable and expandable (e.g. Cross Server Architecture)

1010011 01000010 01000010 01010011 01000h 01000010 01000 000010 0101001 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200



Münchener DigitalisierungsZentrum Digitale Bibliothek

- Mapping of the entire production cycle and its processes in a modular system
- □ Different service providers (scanning, text capture) can supply unlimited data to ZEND
- Workflow-control
- Every item of the BSB, which will be digitised, follows only the ZENDworkflow
- Time and cost reduction through extensive automation

01010011 01000010 0 01000010 01010011 0100010 01000010 010000 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Preparation

ZEND-Goals



Metadata creation

ZEND-Main Features

- Web-based user interface and administration
- Specific job control
- Collaborative working
- Import of scanned books processed by different, unlimited service providers
- Automatic URN allocation with linkresolving via German National Library
- OAI Data Provider
- Bibl. metadata-Import data via interface Z.39.50
- XML support for all common standards (for example, TEI, METS)
- Rights management: inhouse digital reading room or WWW publication
- Long-term archiving
- Search and Retrieval
- OCR server (works only for latin print type)
- PDF on Demand
- . . .

1010011 01000010 1000010 01010011 010001 01000010 01000 000010 0101001 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200



ZEND – Automated Processes

Full-automatic processes

- Collection of image data from different service providers
- Image conversion
- Fast supply of an simple working turning-pages version of the book (XML)
- Regular bibliographical data updates (ZEND from the OPAC)
- □ OCR
- Long-term archiving of master files at LRZ and
- subsequent deleting of master-fiels on the MDZservers...

01000010 01010011 0100010 0100010 0100000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

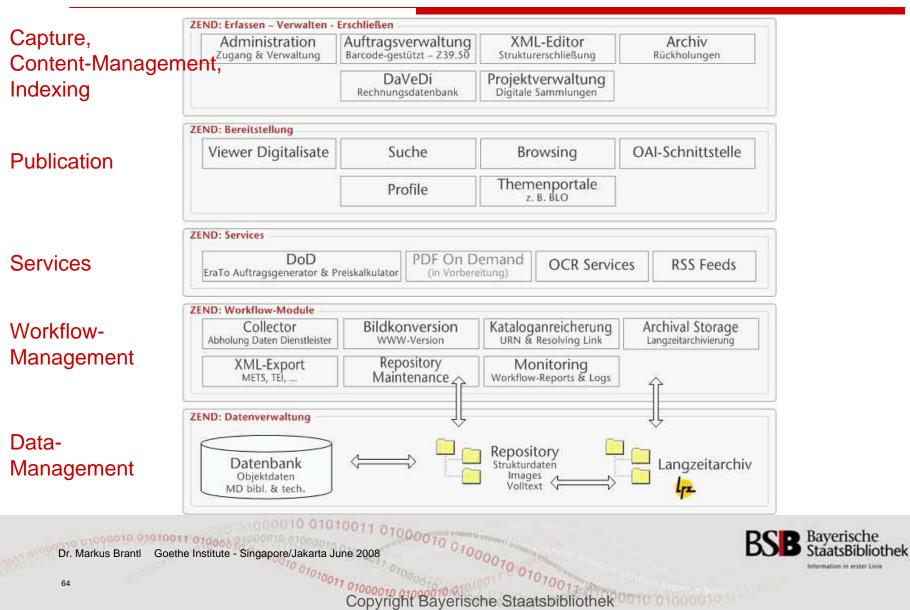
0 01010011 01000010

Semi-automatic processes

- Loading of large amounts of bibliographic metadata from catalogue
- Re-import lists of the URNs in the catalogue
- Import of prepared Excelsheets for the creation of ToCs in ZEND
- Allocation of page numbers to digitised books (for navigation)
- Transfer of digital master back from the long-term archive



ZEND-Layers



Münchener DigitalisierungsZentrum Digitale Bibliothek

The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)

2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation

3. Processes and Production

0100011 01000010

4. Projects

5. Outlook

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

a) Production Cycle and Subprocesses

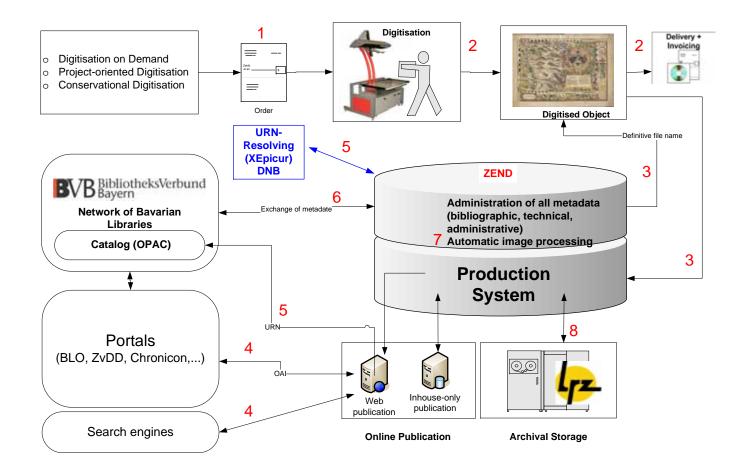
- Preparation
- Handling of Originals
- Scanning
- Storage and Long-term
 Preservation
- Metadata Creation
- Online Publication and Data Management
- Proof
- Reuse
- b) ZEND Production Software
- c) Example of a Production Workflow with ZEND



Agenda

Digitale Bibliothek

Overview: ZEND-Production





Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Digitale Bibliothek

ZEND: Capture/Management (1)

Startseite >Benutzung und Service Dokumentlieferung > Dokumentlieferung Altes Buch

		r -	1- Z	7
E	LEKTRONISCHES REPRODUKTIONS	NUFTRAGS-TOOL		
BS	Bayerische StaatsBibliothek Digitale Bibliothek - Münchener Digitalisierungs:	zentrum (MDZ)	CONTRACTOR OF	
Besti /ervi D ies Bitte	esem Programm können Sie ein Bestellformular erzeugen, aus Ilung genannt. Alle hier wählbaren Produkte und die zugehörig elfältigungen. es Programm erzeugt lediglich ein vollständig ausgefüllte beachten Sie: Eine Bestellung wird erst ausgeführt, nachdem S uständigen Abteilung abgegeben haben.	en Preise richten sich nach den Bestimmungen der -> E s Bestellformular.	Entgelte für	
Da ni einer	r die von Ihnen eingegebenen Daten (ausschliesslich zum Zwe Bestellung weiterverarbeitet werden, bitten wir Sie, auf dem Be schrift, anzubringen.			
	rritt 1 a wählen Sie aus den Daständen der DSD die A	regangevorlage		
Biff	e wanien Sie aus den Bestanden der BSB die A			
Bitte	e wählen Sie aus den Beständen der BSB die A beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu	ert werden können!		
Bitte	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi	ert werden können!		
Bitte Falls	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu	ert werden können!		
Bitte Talls O	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften	ert werden können!	with	
Bitte Falls O	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften 2. Autographen/Rara/Nachlässe/Reserve/Einbandslg.	ert werden können!		-Services
Bitte Falls O O	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften 2. Autographen/Rara/Nachlässe/Reserve/Einbandslg. 3. Karten, Fotos, Porträts, Plakate, Ortsansichten	ert werden können!		-Services
Bitte Falls O O O	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften 2. Autographen/Rara/Nachlässe/Reserve/Einbandslg. 3. Karten, Fotos, Porträts, Plakate, Ortsansichten 4. Drucke bis 1600, wertvolle Musikdrucke	ert werden können!		-Services
Bitte Falls O O O	beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften 2. Autographen/Rara/Nachlässe/Reserve/Einbandslg. 3. Karten, Fotos, Porträts, Plakate, Ortsansichten 4. Drucke bis 1600, wertvolle Musikdrucke 5. Drucke nach 1600 (außer Vorlagen wie unter 2. + 3. + 4.)	ert werden können!		-Services
Bitte Falls O O O O O	 beachten Sie, daß nur die hier aufgeführten Vorlagen reproduzi bereits eine Mikrofilmkopie des Objekts existiert, wird diese zu 1. Handschriften/Musikhandschriften Autographen/Rara/Nachlässe/Reserve/Einbandslg. Karten, Fotos, Porträts, Plakate, Ortsansichten Drucke bis 1600, wertvolle Musikdrucke Drucke nach 1600 (außer Vorlagen wie unter 2. + 3. + 4.) Ektachrome, Planfilme, Glasnegative 	ert werden können!		-Services

Dr. Markus Br

Digitale Bibliothek

ZEND: Capture/Management (2)

Result of order form: Process slip with barcode

Digitisation on Demand - Varia ...

Bayerische Staatsbibliothek, Ludwigstr. 16, 80539 München - Abt. BA-ES-DB - Wittke

Digitalisierungsauftrag (Fotostelle)

Signatur :Bavar. 4466 v - Soolbad und klimatischer Höhenkurort Berchtesgaden im Bayerischen Hochland, 600 - 1100 m u. d. M.- [1910] urn:nbn:de:bvb:12-bsb00002232-1

Digitalisierungsparameter:

Auflösung: 400 ppi - Farbe	
Dateiname der ersten Seite	bsb00002232_00001.tif
Anzahl der Seiten pro Imag	6; 1
Nachbearbeitung:	
Besonderes:	

Lieferinformationen (Umfang:vollständig!):

Ausdruck			CD-ROM
Originalgröße	Vergrößert	Verkleinert	DVD
	Auf DIN A 4	Auf DIN A 3	Mikrofilm

Lieferung der Tif-Dateien an:

FTP-SERVER mdz1.bib-bvb.de Kennung Samba-Laufwerk

Bayerische

München, den 17. 01. 2008



00001.tif

Bayerische StaatsBibliothek

Information in erster Linie

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta J

0000010 01010011 0100010 01000010 01000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

ZEND: Capture/Creation of File Name and URN (3)

- Automated assignment with creation of the process slip
 - Of the definitive file name
 - Example: bsb00001119_00001.tif

0100011 01000010

and at the same time

- Assignment of a persistent identifier by use of the National Bibliography Number Example : urn:nbn:de:bvb:12- bsb00001119
- Assignment is done locally, but the administration of the URN and the central link resolving is part of the duties by the DNB: http://nbn-resolving.de/urn/resolver.pl?urn= urn:nbn:de:bvb:12- bsb00001119



a June 2008 ⁰⁰71 01000010 0100010 Copyright Bayerische Staatsbibliothek

70

ZEND: Capture/Management-3

in ss list:	6-38_00001.tif	4 74.1458-1 [Hbh/Kp 146-1]/Capodilista: De viris illustribus/ BV018036378	Н	Fotostelle	1		Titelaufnahme in ZEND	x	
	4-55_00001.tif	Cod.icon. 394 a	Н	Fotostelle			Titelaufnahme in ZEND	Р	x
2006-08-02-11-4	1-25_00001.tif	4 Mus.pr. 23189#Beibd.2	М	Fotostelle			Titelaufnahme in ZEND	= 9	x
2006-06-29-15-2	?7-46_00001.tif	Cod.icon. 181 FERTIG	н	Fotostelle		Š	Titelaufnahme in ZEND	Р	x
2006-06-12-09-3	36-50_00001.tif	Res/4 H.ref. 804,2; Ajn neuwe disputatz; BV 001407073	н	Fotostelle			Titelaufnahme in ZEND	x	
2006-05-16-16-1	7-10_00001.tif	Cod.icon. 173	н	Fotostelle			Titelaufnahme in ZEND	Р	x
2006-05-16-16-1	1-33_00001.tif	Cod.icon. 141 FERTIG	н	Fotostelle		S	Titelaufnahme in ZEND	Р	x
2006-05-02-12-1	4-17_00001.tif	Cod.icon. 399 a FERTIG	н	Fotostelle		S	Titelaufnahme in ZEND	Р	x
2006-04-05-14-1	5-48_00001.tif	Ana 350.12.A. Auerbach, Erich FERTIG	н	Fotostelle		S	Titelaufnahme in ZEND	Р	x
2006-03-07-13-3	39-17_00001.tif	Bavar. 4466 w/Berchtesgaden/B∨020124764	BA-ES-DB	Fotostelle			Titelaufnahme in ZEND		x
2006-02-14-12-0)9-00_00001.tif	Clm 2936 FERTIG	Н	Fotostelle		F	Titelaufnahme in ZEND	x	
	SS list: 2006-08-02-11-4 2006-06-29-15-2 2006-06-12-09-3 2006-05-16-16-1 2006-05-16-16-1 2006-05-02-12-1 2006-04-05-14-1 2006-03-07-13-3	ss list:	5-38_00001.tif 146-1]/Capodilista: De viris illustribus/ BV018036378 2006-08-02-11-41-25_00001.tif Cod.icon. 394 a 2006-06-29-15-27-46_00001.tif 4 Mus.pr. 23189#Beibd.2 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG 2006-06-12-09-36-50_00001.tif Res/4 H.ref. 804.2; Ajn neuwe disputatz; BV 001407073 2006-05-16-16-17-10_00001.tif Cod.icon. 173 2006-05-16-16-11-33_00001.tif Cod.icon. 141 FERTIG 2006-05-02-12-14-17_00001.tif Cod.icon. 399 a FERTIG 2006-04-05-14-15-48_00001.tif Ana 350.12.A. Auerbach, Erich FERTIG 2006-03-07-13-39-17_00001.tif Bavar. 4466 v/Berchtesgaden/BV020124764	5-38_00001.tif 146-1/Capodilista: De viris illustribus/ BVD18036378 H 4-55_00001.tif Cod.icon. 394 a H 2006-08-02-11-41-25_00001.tif 4 Mus.pr. 23189#Beibd.2 M 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H 2006-06-12-09-36-50_00001.tif Cod.icon. 181 FERTIG H 2006-05-16-16-17-10_00001.tif Cod.icon. 173 H 2006-05-16-16-17-10_00001.tif Cod.icon. 173 H 2006-05-02-12-14-17_00001.tif Cod.icon. 399 a FERTIG H 2006-05-02-12-14-17_00001.tif Cod.icon. 399 a FERTIG H 2006-03-07-13-39-17_00001.tif Bavar. 4466 wBerchtesgaden/BV020124764 BA-ES-DB	5-38_00001.tif 146-1/Capodilista: De viris illustribus/ BV018036378 H Fotostelle 4-55_00001.tif Cod.icon. 394 a H Fotostelle 2006-08-02-11-41-25_00001.tif 4 Mus.pr. 23189#Beibd.2 M Fotostelle 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-12-09-36-50_00001.tif Res/4 H.ref. 804.2; Ajn neuwe disputatz; BV 001407073 H Fotostelle 2006-05-16-16-17-10_00001.tif Cod.icon. 173 H Fotostelle 2006-05-02-12-14-17_00001.tif Cod.icon. 141 FERTIG H Fotostelle 2006-04-05-14-15-48_00001.tif Cod.icon. 399 a FERTIG H Fotostelle 2006-04-05-14-15-48_00001.tif Bavar. 4466 wBerchtesgaden/Bv020124764 BA-ES-DB Fotostelle	5-38_00001.tif 146-1//Capodilista: De viris illustribus/ BVD18036378 H Fotostelle 4-55_00001.tif Cod.icon. 394 a H Fotostelle 2006-08-02-11-41-25_00001.tif 4 Mus.pr. 23189#Beibd.2 M Fotostelle 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-29-15-27-46_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-12-09-36-50_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-06-12-09-36-50_00001.tif Cod.icon. 181 FERTIG H Fotostelle 2006-05-16-16-17-10_00001.tif Cod.icon. 173 H Fotostelle 2006-05-16-16-17-10_00001.tif Cod.icon. 141 FERTIG H Fotostelle 2006-05-02-12-14-17_00001.tif Cod.icon. 399 a FERTIG H Fotostelle 2006-04-05-14-15-48_00001.tif Ana 350.12.A. Auerbach, Erich H Fotostelle Image: Comparison of the termine of the termine of termine o	5-38_00001.tif 146-1//Capodilista: De viris H Fotostelle Image: Comparison of the c	3-38_00001.tif 146-1//Capodilista: De viris illustribus/ EV018036378 H Fotostelle Image: Comparison of the comparison o	5-38_00001.tir 146-1/Capodilista: De viris illustribus/ EV018036378 H Fotostelle In ZEND X 4-55_00001.tir Cod.icon. 394 a H Fotostelle Intelaufnahme in ZEND P 2006-06-02-11-41-25_00001.tir 4 Mus.pr. 23189#Beibd.2 M Fotostelle Intelaufnahme in ZEND P 2006-06-29-15-27-46_00001.tir Cod.icon. 181 FERTIG H Fotostelle Intelaufnahme in ZEND P 2006-06-12-09-36-50_00001.tir Res/4 H.ref. 804.2; Ajn neuwe disputatz; BV 001407073 H Fotostelle Intelaufnahme in ZEND X 2006-05-16-16-17-10_00001.tir Cod.icon. 173 H Fotostelle Intelaufnahme in ZEND P 2006-05-16-16-17-10_00001.tir Cod.icon. 141 FERTIG H Fotostelle Intelaufnahme in ZEND P 2006-05-16-16-17-10_00001.tir Cod.icon. 141 FERTIG H Fotostelle Intelaufnahme in ZEND P 2006-05-02-12-14-17_00001.tir Cod.icon. 399 a FERTIG H Fotostelle Intelaufnahme in ZEND P 2006-03-07-13-39-17_00001.tir Bavar. 4466 WBerchtesgaden/BV020124764 BA-ES-DB Fotostelle Intelaufnahme in ZEND Intelaufnahme in ZEND Intel

Copyright Bayerische Staatsbibliothek

ZEND: Indexing (4)

Import of	Inahme eines Titels in die ZEND						
bibl. Metadata	avar. 4466 v	Signatur immer eingeben, auch wenn nicht damit gesucht wird!					
เขายิเลนิลเลิ	BV020124764	Verbund ID (MFC: Fremdnr.)- Eingabe, wenn damit gesucht werden soll!					
.53		BSB ID (MFC: Katalognr.) - Eingabe, wenn damit gesucht werden soll!					
		Titelphrase nur eingeben, wenn der Titel über die Signatur und die Verbund-ID nicht gefunden wird					
		Bibliothekssigel (nur wenn die Recherche im Verbundsyst durchgeführt werden soll)					
- 22	Digitisation on Demand Neue Projekte müssen zunächst im Digitalis	Projekt sierungszentrum angemeldet werden!					
	2006-03-07-13-39-17_00001.tif	Anmerkung (für Benutzer sichtbarl)					
	Absenden						

1000010 01010011 01000010 10 01000010 0100011 010001 01000010 010000010

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



01000010 01010011 Copyright Bayerische Staatsbibliothek

Digitale Bibliothek

ZEND: Indexing (5)

Wittke / BA-ES-DB / D(2006-03-07-13-39-17_00001.tif)
1 Treffer
00567 nM2.01000024 h
001 8278021
002 20051227000000.0 003 2008011000000.0
030 zz5d rz 37
040 B∨020124764 050
051 z 070 B∨B
077 a12c1
078 a99996455006bBavar. 4466 vod0e0f0 231. Seelleed und klimatischen Häherkungt Barakteringen im Baugrischen Hackland, 500, 1100 m.u.d. M
331 Soolbad und klimatischer Höhenkurort Berchtesgaden im Bayerischen Hochland, 600 - 1100 m u. d. M. 335 [Herausgegeben vom] Fremdenverkehrsverein Berchtesgaden-Land. [Umschlagtitel.]
410 (Berchtesgaden)
412 L. Vonderthann u. Sohn 425 [ca.1910]
425a1910
433 1 Taf. 18 S. 512 m
655 http://nbn-resolving.de/urn/resolver.pl?urn=urn:nbn:de:bvb:12-bsb00002232-1
Signatur: -Verbund ID: BV020124764-BSB ID: 8278021Jahr: [ca.1910]
Ist das der richtige Datensatz? Ja, weiter / Neue Suche / Abbruch



Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

ZEND: After Scanning and Import of the Digital Master Files of the production System (6)

- □ Creation of an index file for the online publication of the images
- □ Automatic production of image formats for the web presentation (JPG, PDF etc.)
- Creation of the browsing structure for the object (ToC-Editor)
- □ OCR processing of the images (optional)
- Storage of all the data in the Leibniz Supercomputing Centre for long-term preservation



Digitale Bibliothek

ZEND: Indexing after Import (7)

Soolbad und klimatischer Höhenkurort Berchtesgaden im Bayerischen Hochland, 600 - 1100 m u. d. M. [Herausgegeben vom] Fremdenverkehrsverein Berchtesgaden-Land. [Umschlagtitel.] (Berchtesgaden) : 1910 Verbund ID: BV020124764 BSB ID: 8278021 Signatur: Bavar, 4466 v Bereitgestellt am: 2006-03-29 Vorläufiger Dateiname: 2006-03-07-13-39-17 00001.tif URN – National Endgültiger Dateiname: bsb00002232_00001.tif URN: urn:nbn:de:bvb:12-bsb00002232-1 bibliography number Resolving URL: http://nbn-resolving.de/urn/resolver.pl?urn=urn:nbn:de:bvb:12-bsb00002232-1 000000000 Digitisation on Demand - Varia

Datensatz ändern

http://mdz1.bib-bvb.de/db/bsb00002232/images/

Korrekturen

n Archiv

х

BSB Bayerische StaatsBibliothek

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Digitale Bibliothek

75

ZEND: Indexing - ToC Editor (8)

Seitenzählung Massenänderungen Excelliste hinzufügen Soolhart und klimatischer Höhenkurort Berchtesgaden im B [Vmschlagtitel.], (Berchtesgaden) 1918	Freigeben! Freigabezurücknehmen! Benutzeran: ayerischen Hochland, 600 - 1100 m u. d. M., [Her		aden-Land. Bayerische StaatsBibliothek
Vorderdeckel	titlepage Titelblatt	chapter 💌	
vorderer Spiegel			
Titelblatt	Speichern < << 5-10- 10+ 5+ >> > Miniaturan		
Abb.: St. Bartholomä am Königssee			
Lage			
Klima und Kurmittel	Sootbad und klimati	scher flöhenkurort	
Berchtesgaden als Sommerfrische			
Berchtesgaden als Winterstation	BERCHTE	ISGADEN	
Unterkunft und Verpflegung in Berchtesgaden-Land	im Bayerischen Hoch	nland 600-1100 m Ld.M.	
Gottedienst Unterhaltungen			
Reiseverbindungen und Verkehrsmittel	1/ Water and Balance		
Inseraten-Anhang	1.		
rückwärtiger Spiegel	3 00		
Rückdeckel	1 Alton		
	and		
	A Contraction of the second se		
Adding structural	A THERE 2 -		
Adding structural	the second the second filling	and the second	
nformation and	and the second of the		
nformation and			
anabling	and ska		
enabling	a City of City		
NWW-access '			
r.			

Copyright Bayerische Staatsbibliothek

Digitale Bibliothek

Immediate availability of the link inside the local catalogue (OPAC) and the Bavarian Union Catalogue

	e/InfoGuideClient/dispatch.do		🗾 🤗 Wechseln zu 🛛 Links 🖉 🔩 🗣
OPACplus			BSB Bayerische StaatsBibliothek
		Anmelden Aktu	elles Anfragen Hilfo
Suche → Merkliste	Konto 🛌 📔 Magazinbestellung	weitere Angebote >	
Einfache Suche Erweitert	e Suche Suchhistorie		
Suchanfrage	Vollanzeige: BSB-Katalog		Direkthilfe
in BSB-Katalog	Weitere Möglichkeiten:		
-	 Suchanfrage verändern 	WEITER SUCHEN (Fernleihe u.a.) Solution	kauswahl ändern 💿 Ausgabe 🤤
Titel / Stichwort = Soolbad Berchtesgaden	zurück zum Suchergebnis	 Exemplare 	
	[<] [<<] [>>] [>]		
Sortierung	[1/1] 💊 Kartenar	nzeige Bestellung / Verfügbarkeit	in
unsortiert 🔽 los	u. d. M. Untertitel [Heraus; Ort (Berchte Verlag L. Vonde Jahr [ca.1910	rthann ú. Sohn]	
BSB-Katalog 1	Umfang 1 Taf. 18 QK-Signatur Bavar. 4		
	Angaben URL URN: urr Bezugsw	::nbn:de:bvb:12-bsb00002232-1; Interna: Resolving rerk: Volltext :n-resolving.de/urn/resolver.pl?urn=urn:nbn:de:bvb	
		Jostallung / Varfügbarkait	
	▲		>
	PACplus immer mit ABMELDEN verl 1 Daten haben.	assen, damit Unbefugte keinen Zugriff auf Ihre	© 2005 Bayerische Staatsbibliothek
Ertig			💣 Internet
🛛 😹 Start 🛃 Druck-Ser 🐼 Novell-del	🖉 Zentrale 🛛 👰 WinIBW 2 🥎 Nove	Il Gr € OPACplu Mail von:	🖥 N 🧺 🖊 📴 🛒 🍡 🥪 🚰 🧶 – 11:4

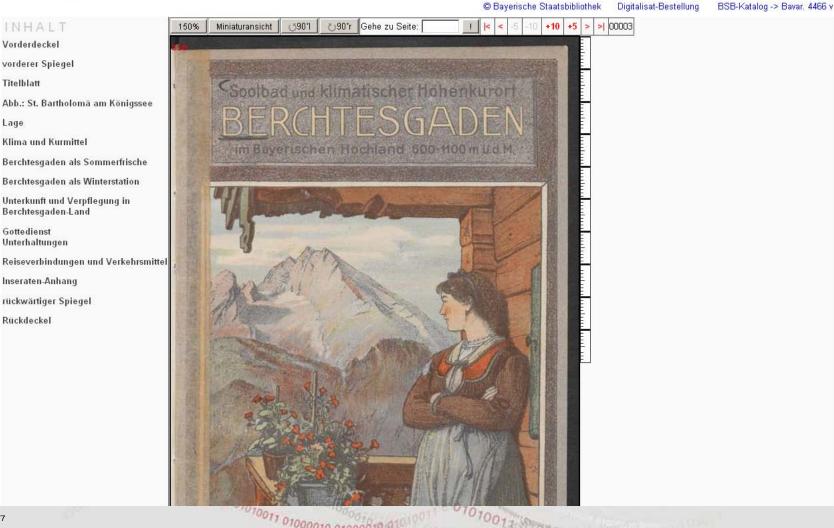
Digitale Bibliothek

ZEND: Final Online Publication (9)

Digitisation on Demand - Varia

[Projektbeschreibung] [Digitale Bibliothek] [Impressum]

Soolbad und klimatischer Höhenkurort Berchtesgaden im Bayerischen Hochland, 600 - 1100 m u. d. M., [Herausgegeben vom] Fremdenverkehrsverein Berchtesgaden-Land. BSB Bayerische StaatsBibliothek [Umschlagtitel.], (Berchtesgaden) 1910



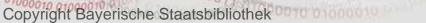
Agenda

- 1. The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production

4. Projects

5. Outlook

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008



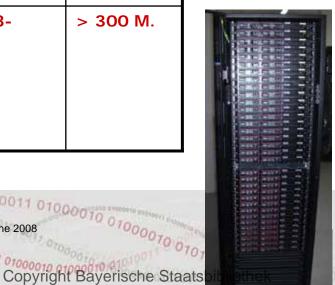
Current Mass-digitisation Projects at MDZ

Project	Volumes	Project period	Pages
VD16digit al-1	~4.300	2006 - 2008	~ 1 M.
Deutsche Forschungsgemeinschaft DFG			
VD16digit al-2	~37.000	2007- 2009	~ 7.5 M.
Deutsche Forschungsgemeinschaft DFG			
Inkunabeln	~ 9.000	2008-2012	~ 1,6 M.
Deutsche Forschungsgemeinschaft DFG			
Private Public Partnershi p mit	> 1.2 M.	2008-	> 300 M.
Google			

1000010 01010011 01000076

3 ScanRobots in the MDZ-Scancentre





200

Linux-Cluster of the **MDZ for Processing** the Google book copy



0 01000010 01010011 0100010 01000010 0100000. Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

",VD16-1 and VD16-2 digital" -Projects

Goal: Online Publication of all 16th century books which are unique in the inventory of BSB

1010011 01000010 0100010 01010011 01000 D1000010 010000 00010 0101001 Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Copyright Bayerische Staatsbibliothek

1501-1517("VD16-1")

- Pilot project for mass digitization
- Duration: 2006-2008
- Manual scanning with book scanners (A2)
- Digital Master with 300-400ppi, 24 bit, TIFF with ICC profiles, uncompressed
- 4,300 ~ ~ 20 terabytes of digital master data
- Deeper Indexing

DFG

Deutsche

Forschungsgemeinschaft

Processing from Capture to long-term preservation with ZEND Münchener DigitalisierungsZentrum Digitale Bibliothek

1518-1600("VD16-2")

 Cooperation partner for long-term storage and archiving Leibniz
 Supercomputing Centre



- Duration: 2007-2009
- Scanning with automatic book scanners
- Digital Master with
 300ppi, otherwise like
 V16-1
- □ 37000 titles = ~ 175 terabytes of digital master
- ZEND processing





Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

Scanning Difficulties in the "VD16-1"-Project

- Conservational requirements:
 Only 70% of books could be opened up to 90°
- □ Scanning with "normal bookscanners"
- Need for book cradle support: only one-sided scanning possible (1 Scan / click = 1 page)
- 3 process steps

000010 01010011 01000A 01000010 010000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 200

- 1. Scanning all left pages
- 2. Scanning all right pages
- 3. Assembling left and right pages



Due lack of pagination in 16th century books led to higher error rate



Reduction of throughput

1010011 01000010



e 2008 01000010 010001000 Copyright Bayerische Staatsbibliothek Scanning Throughput in the "VD16-1"-Project

Average rate **3 books per Scanner** / 8 h-working day

□ Increasing set-up time due conservational requirements

□ Set-up time =

01000010 01010011 0100010 01000010 01000

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

- Adjustment of the book before the first scan
- Scanning of the color/sharpness targets
- Adjusting of sharpness during the scan-process (only for scanning without glass-plate)
- Integration time writing the data from the CCD/firmware to harddisk
- Shut-down of the book
- □ Set-up time is changing from object to object

0100011 01000010



The Way to the ScanRobot

- Objective: optimisation of throughput for the scanning of early and rare prints with limited opening angle
- 2006 Market evaluation for automatic book scanners (hardware and software) and tender
- Development partnership with TREVEN
- □ Milestones
 - July 2007: 2 prototypes in the BSB
 - January 2008: start of production
 - March 2008: third robot
 - April 2008: Start of 4-shift operation from 07.00 a.m. to 11.00 p.m.



Münchener DigitalisierungsZentrum Digitale Bibliothek

"VD16-2": ScanRobot-Throughput

 Status now:
 10 books per ScanRobot / 8 hour working day
 Total weekly production: 300 books ~ 75,000 pages ~ 2,2 Terabyte

Interim result: The objective of a significant increase in production is achieved

Next target - optimisation of the book cradle : 500 + x titles per week





Scanning 16th centuries books with automated book scanners



Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008





Digitisation in the GBSprogramme

By Google and at the expenses of Google

Google Digital Copy Integration in Google's services

Google	Series
Links, adaptations	A Draf Terringent of the Eighteeth Century Part Fred, In Task Volumes Clariforning a Basish of
namen an	Philosophy of the Honore Mind. 3 reache which, are as for identicate and such as require
Jan hi Los	deconstruction, has been introduced, and is will galaxies ground. And alkely, the acyclical ten- dency of the age has transfer the programs of this department of philosophy in these ratios introduct, we we have remove to relate that is send; program, through official of each, have been made as its ready of the set of

Library Digital Copy Integration in the BSB services

OPACydes	B	SB South	No.
	Annalisia Albertini Maria Magazinterining Andreas Magazinterining Magazinterin	1 Automatic	1 10
Armediana Latha		714	
	an B Caleborated - Subart Statutes	1.000	
	an it internet water in the initial states] 10.000	
] 10.000] 10.000	
	P = € Saterbard and and Sate in this nations] 1000-] 1000-	
	er (international - Subschrött naturg 9 und 7 uder 7 und richt 3] 17:94] 17:94] 17:94	

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008

Google[®] Mass Digitisation

- No "Selective Picking": no prioritisation of textcorpora, shelf numbers, material types etc.
- Logistics determines procedures and tempo of digitisation (Trucks, Carts, Operating Conditions, Shifts etc. etc.)
- Selection focusses strictly on conservation purposes, formats or Copyright-issues
- Continuous optimisation of Google's Scanning technologies ("If it doesn't work today, it'll do tomorrow")
- In principle: If Google cannot digitise for technical or conservational reasons, the MDZ will do



Google Some Workflow-Facets

Organisation of a workflow with many departments for the digitization of up to 1,000 books and more on the day

- Guaranteeing the quality of the workflow and its outcome: Track every book in every step of the process
- Collection and documentation of process data (Nonscanable marks, comments...)
- The digitisation process shouldn't disturb the normal library processes



Google: The Role of MDZ

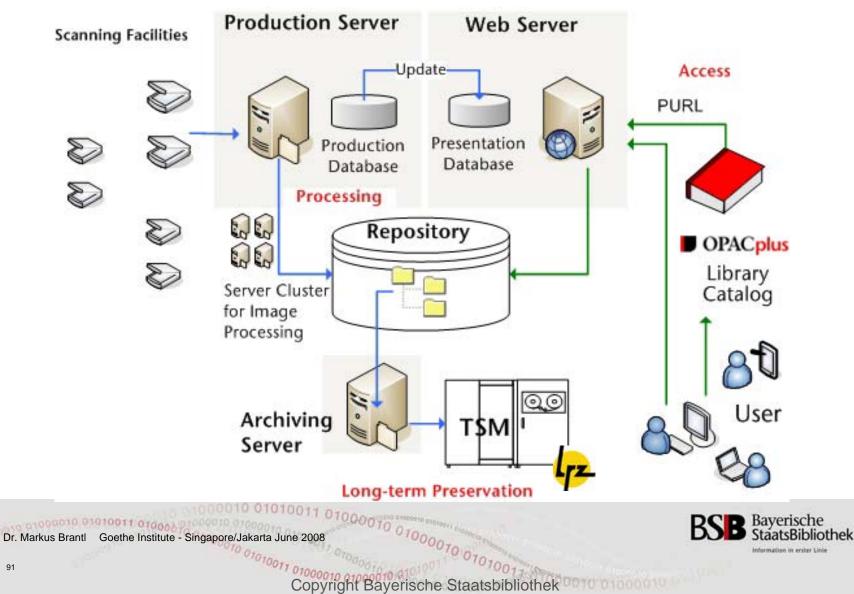
- MDZ as part of a BSB-wide (all departments involved) project organisation
- Responsible for the processing of the "Digital Library Copy" from data import to online-Publication
- Processing software: a special application of ZEND= "Google-ZEND"
- Storage und long-term preservation in cooperation with Leibniz Supercomputing Centre



Digitale Bibliothek

91

Google-ZEND in a Nutshell



Digitale Bibliothek

DLC – Preview of Online Publication by MDZ



Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008



Agenda

- 1. The Bavarian State Library (BSB) and the Munich Digitisation Centre (MDZ)
- 2. BSB Digitisation Strategy and the Challenges for Mass Digitisation and Long-Term Preservation
- 3. Processes and Production
- 4. Projects
- 5. Outlook

Dr. Markus Branti Goethe Institute - Singapore/Jakarta June 2008

Outlook

□ MDZ is just in the initial phase of mass digitisation

- Long-term preserved data can be processed in the future with new technologies
- Needs for further development and automation in
 - OCR
 - Indexing Text Mining
 - Quality Control

More online available digital content allows deeper linking between different repositories

There are still a lot of challenges ...



Digitale Bibliothek

Thank you for your attention!



muenchen.de

Dr. Markus Brantl Goethe Institute - Singapore/Jakarta June 2008

