



Naturalis
Biodiversity
Center



The Natural History Production Line

Stephanie Schnörr
Digital Collections Coordinator

Naturalis
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Naturalis Biodiversity Center

- National Herbarium Netherlands
- Naturalis
- Zoological Museum Amsterdam



Naturalis Biodiversity Center

- Collection: 37 million zoological, botanical and geological objects
- Employees: 194 fte (250 staff, 450 volunteers and research fellows)
- Museum: 9 exhibitions, 265.000 visitors
- Research: 200 publications per year
- New Museum 2018: Design by Neutelings Riedijk Architects



Digitization at Naturalis

video:
<https://youtu.be/ODtuWKoujFw>

Naturalis Collection Digitization

Funding

- € 30 M grant for collection digitization, integration and labs, funded by the Dutch government
- Digitization budget: € 13 M



Naturalis Collection Digitization

Goals by mid 2015:

- At least 7M specimens registered at object level
- Metadata for remaining 30M objects
- A permanent infrastructure to continue digitization

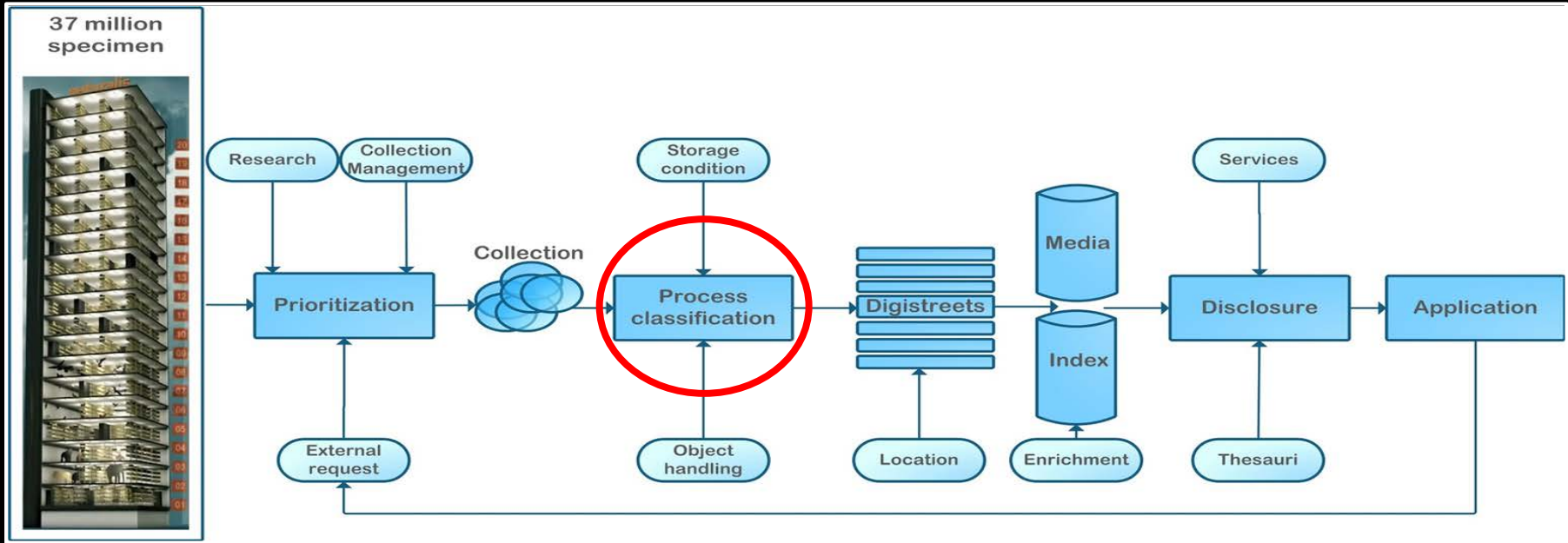




Prioritization

- Collection proposals
- Specific benefits for research, CM and exhibits
- Online selection by staff and stakeholders
- Outcome for management to approve
- List of prioritized projects
- 20% unspent for flexibility and upcoming ideas
- Digitization on Demand

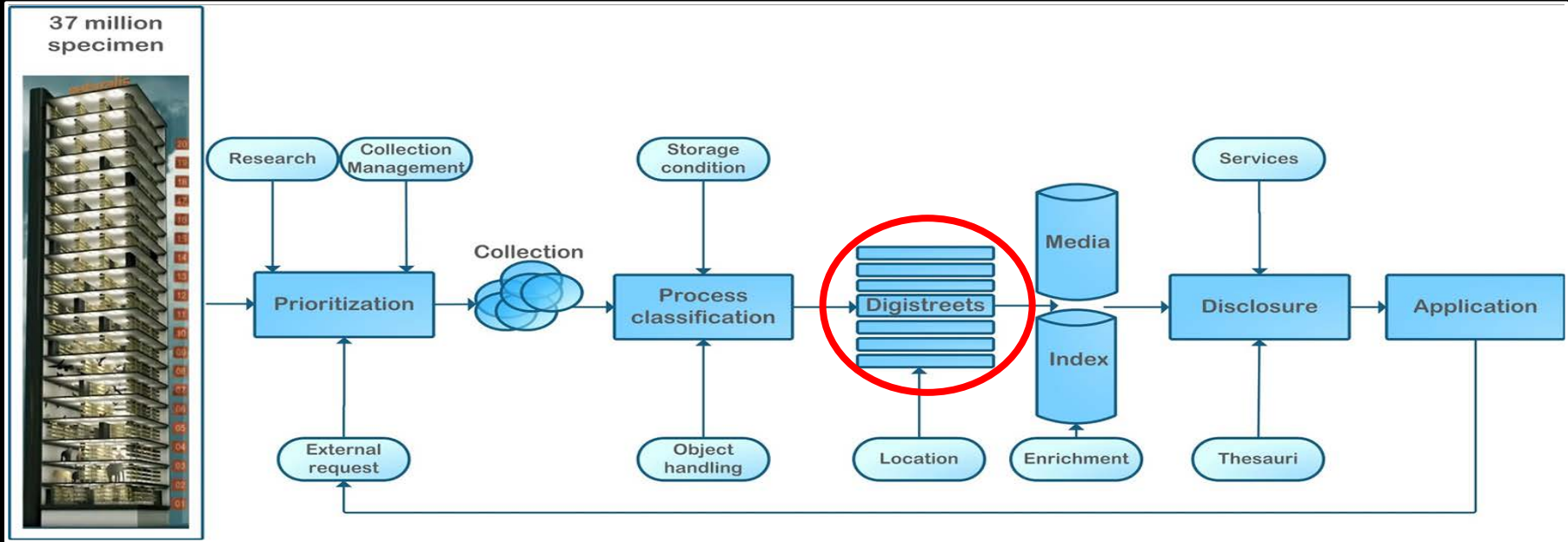
Collection Digitization Process



Process Classification

- Digitization: Quantity over Quality
- Digitization processes based on collection types, i.e.:
 - Wet collections
 - Dry collections
 - Microscopic slides
 - Printed publications

Collection Digitization Process



From tailor made to production lines

- Divide complicated and labor-intensive processes into a series of shorter tasks
- Standardize the data entry process by using one metadata standard and central registration system
- Limit metadata capture to a minimum



From tailor made to production lines

- Photographic reproduction of specimen and label information only when proven added value
- Make use of (commercial) third parties for digitization where it makes sense (price/quality driven)



Digistreets



- Industrial Production Lines
- Common: Registration, handling and safety regulations

- Herbarium sheets
- Wet Collections
- Entomology
- (In)vertebrates dry
- Paper/2D
- Geology
- Microscopic slides
- Molluscs
- Wood



Production Process

Microscopic Slides

Digistreet



Digitreet Herbarium sheets

Goal:

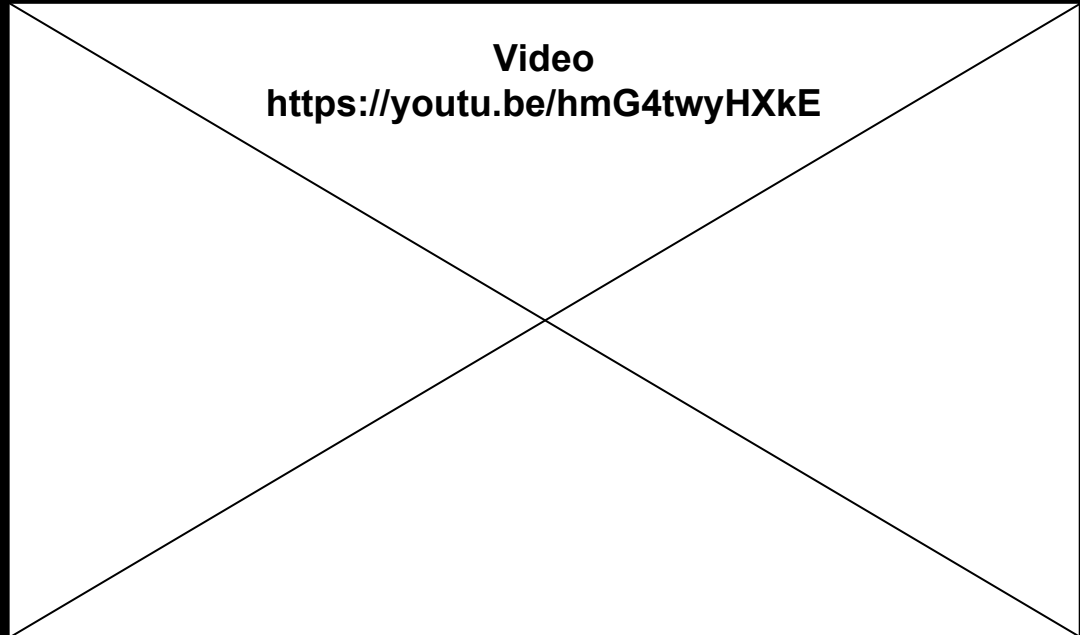
Digitization and data-registration of 4 million herbarium sheets

Mass production

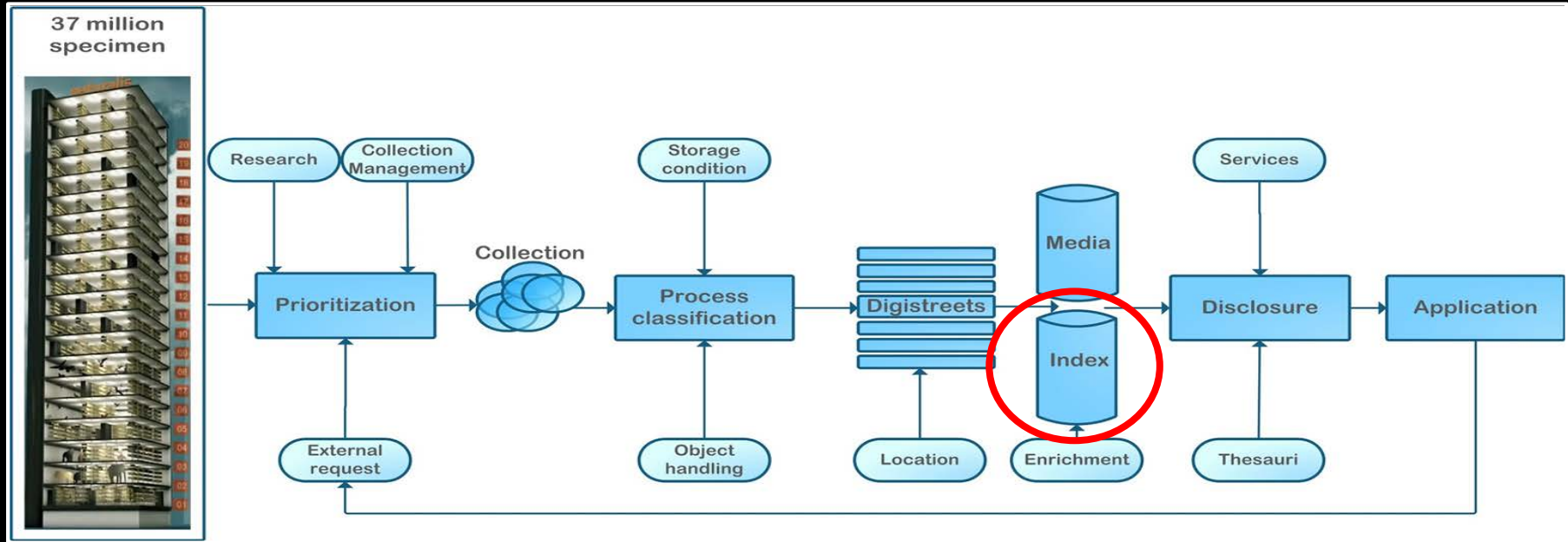
- Customised conveyer belts for scanning
- Standardized scanning process
- Automatic quality checks
- Daily transport
- 35.000 scans a day, double shifts
- Outsourcing scanning & data-entry - Picturae



Production
Process
Digistreet
Herbarium sheets



Collection Digitization Process





Application
User Interfaces



NBC Naturalis
Bus/Broker



BEELD EN GELUID

Offline
Originals

Originals

Derivatives

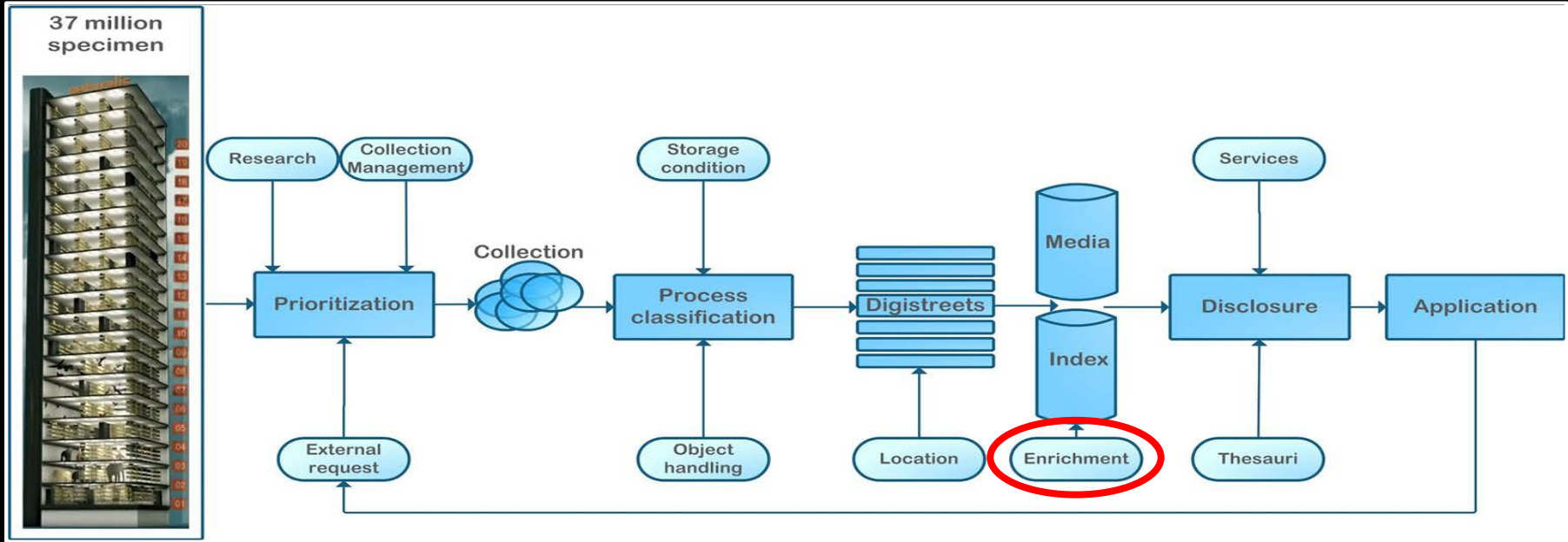


Online
Compressed

Digitization

Image
server

Collection Digitization Process



3D imaging

Why?

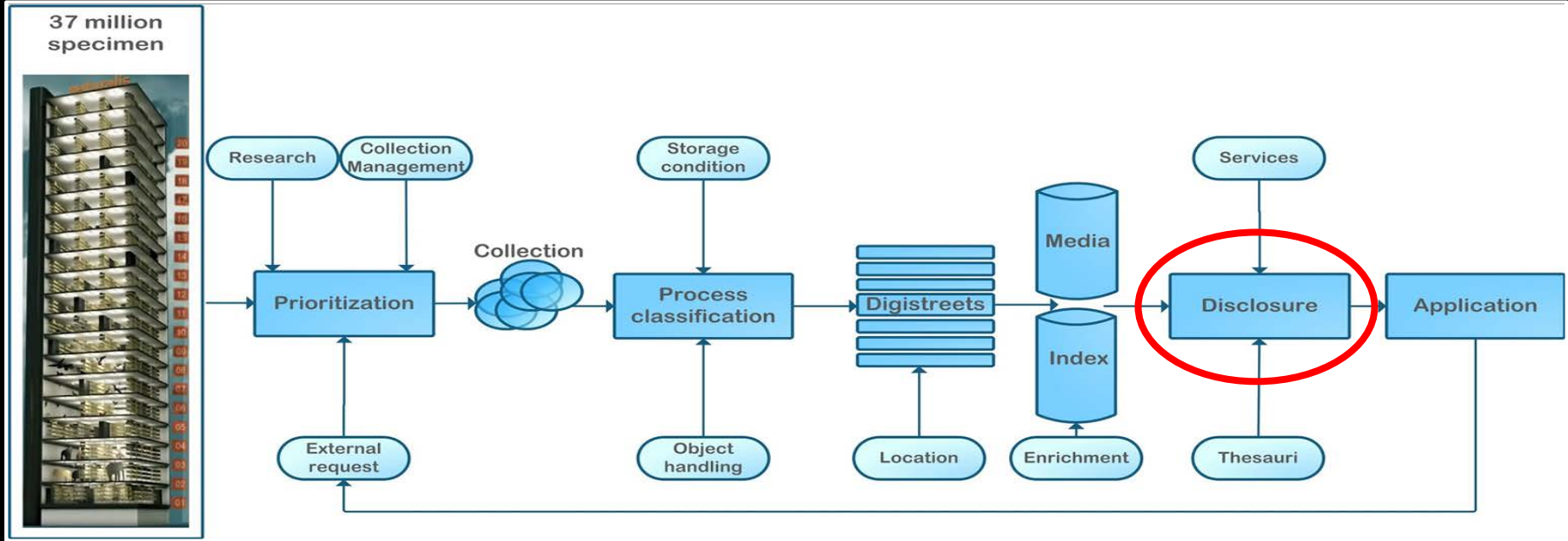
- Naturalis museum collection is very suitable for 3D publishing
- Potentially interesting for research, education, exhibition purposes
- 3D revolution, technology is now robust and affordable

Pilot Project

- 3D imaging of museum objects
- Online publishing of images
- Printing 3D objects
- All done inhouse

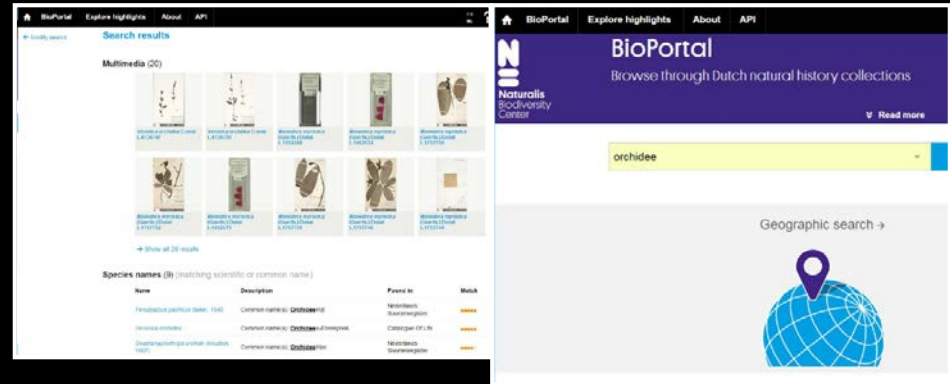


Collection Digitization Process



Disclosure

Naturalis Bioportal
<http://bioportal.naturalis.nl>



Global Biodiversity
Information Facility
(GBIF)



Challenges Collection Mass Digitization

- From project organization to line-management
- Quality versus quantity: 300 dpi versus 600 dpi
- Processing large amounts of data
- One central database for different collections with different demands
- Technical sustainability versus user-friendly
- Storage: large number of images requires large storage > Beeld & Geluid



Thank you for your attention!

Stephanie.schnoerr@naturalis.nl

<https://science.naturalis.nl/en/collection/digitization/>

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