

# Certification by Data Seal of Approval and Audit by ISO 27001

Central data archive  
University library in Bratislava  
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11 May 2018

[cda.kultury.sk](http://cda.kultury.sk)

[www.opis.culture.gov.sk](http://www.opis.culture.gov.sk)

# The ERDF framework

- European Regional Development Program
- Operational Program Informatization of Society (3.2011)
- Priority Axis 2 →
  - Improvement of systems for creating, processing, utilization and preservation of digital content and building of memory institutions infrastructure

# Project CDA

- The LTP solution for Cultural Heritage in Slovakia.
- 2011 - the University Library in Bratislava - setting up a powerful infrastructure



# Project goal

- May 2012 - officially launched
- an international standard based LTP archive
- two active ICT configurations
- one passive magnetic tape

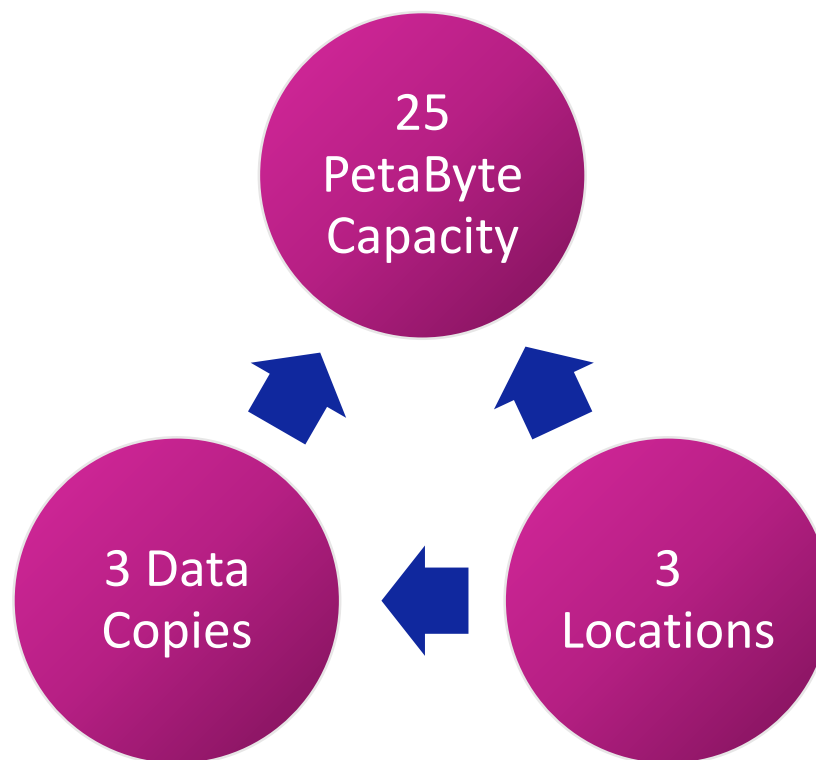
# CDA Time Schedule



# Standards

- Based on International Standards
  - OAIS ISO 14721
  - LTP ISO 16363
  - ISO/IEC 27001
- Methodical Manuals by Ministry of Culture Slovak Republic

# Capacity and copies



# Locations

- **CDA-A**
  - Data Center
  - University Library in Bratislava
- **CDA-B**
  - Data Center
  - Slovak National Library in Martin
- **CDA-C**
  - Safe Depozit
  - University Library in Bratislava





# Design

- **Redundant Technology**
- **Twins Site**
- **Components**

## Servers

IBM Power 770 / 48 proc.

HP DL 320, 360, 380

## Storage

IBM Storwize V 7000

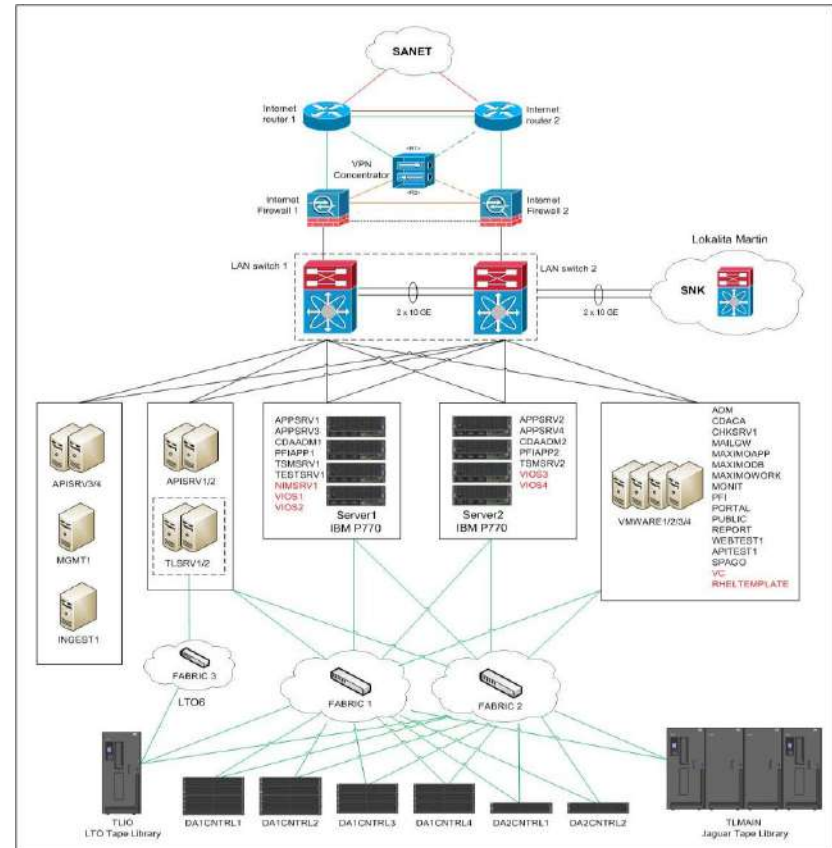
## Tape libraries

IBM 3584 25 PB

IBM 3500 LTO5, LTO6

## IBM SAN Switch

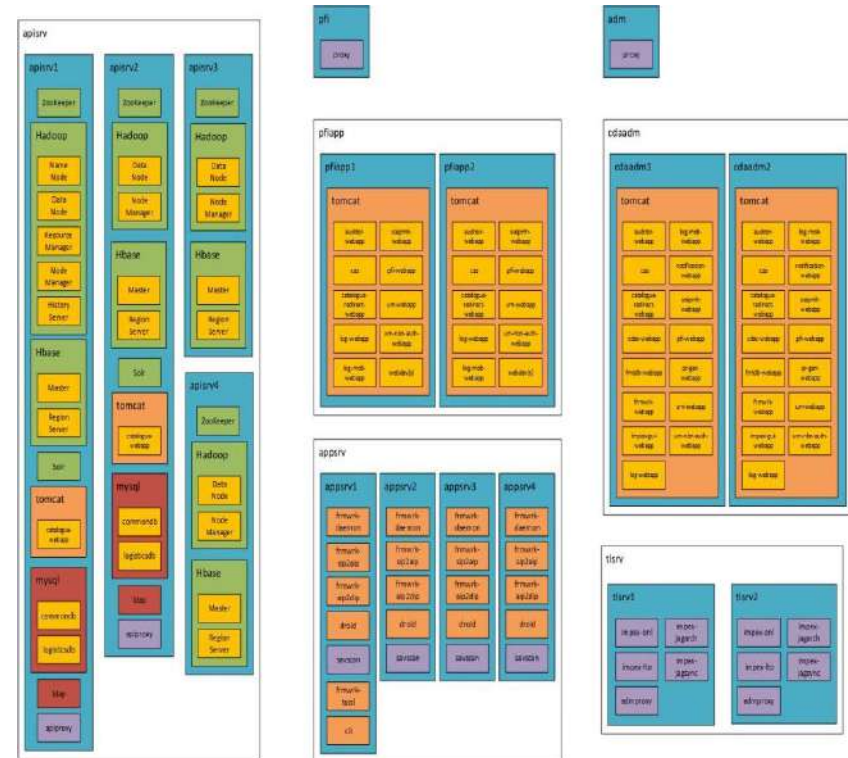
## HP Network components



# Software

- **Operational SW**
  - AIX, RedHat, Windows
- **System SW (IBM)**
  - LTFS, GPFS, HSM, TSM
- **Application SW (Tempest)**
  - CDA Application Server
  - CDA Database Server
  - CDA System Directory
  - CDA Impex (JAVA)
  - CDA Framework

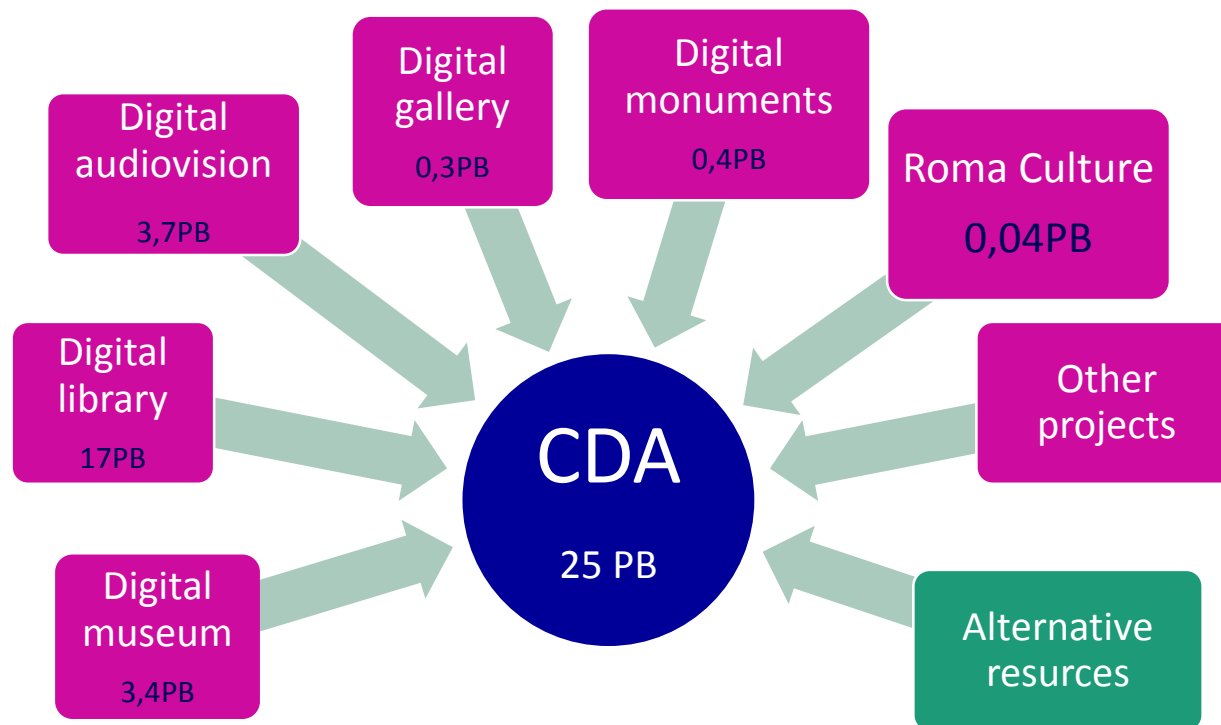
- **Deployment Diagram**



# Data origins

- **Digitized Slovak Cultural Heritage**
- **Slovak National Memory Institutions united in Designated Community**
- **Designated Community**
  - ❖ Museum of the Slovak National Uprising
  - ❖ The Monuments Board of the Slovak Republic
  - ❖ Slovak National Library
  - ❖ Slovak National Archive
  - ❖ Slovak Film Institute
  - ❖ Slovak National Gallery
  - ❖ National Education and Culture Centre
  - ❖ The State Science Library in Prešov
  - ❖ University Library in Bratislava

# CDA Designated Community





# Logistics

- **INGEST**

- Online
- Offline
  - LTO5 Magnetic Tapes
  - LTO6 Magnetic Tapes
  - special Cases
  - HDD

- **SYNCHRONISATION**

- Offline
  - Jaguar Magnetic Tapes
  - special Cases
  - between 2 CDA Sites

- **DISSEMINATION**

- Online
- Offline
  - LTO5 Magnetic Tapes
  - special Cases

- **SAFE DEPOSIT**

- Jaguar Magnetic Tapes



# User interface

## Catalogue



## Dissemination



## Ingest



## User Management



# Admin interface

## Task Management



## Media Management



```

[1] ~$ bash /home/jstrnisk/bin/ingest.sh
NodeName: jstrnisk, next date: Tue Nov 24 12:18:15 CET 2015
1/2 report od 2015-11-09
Warning: Using a password on the command line interface can be insecure.
-----
| state | step | sips | TIB | pfi | profile | LastExecDate |
|-----|-----|-----|-----|-----|-----|-----|
| FAILED | STORE_AIP_TO_HSN_CHECK | 6 | 0.000 | urn | profile01 | 2015-11-24 11:46:57 |
| FAILED | IMPORT_SIP_CHECK | 8 | 0.000 | urn | profile01 | 2015-11-24 12:17:06 |
| IN_PRO | SIP_2_AIP_METS_TRANSFORM_CHECK | 1 | 0.000 | urn | SYNC_1 | 2015-11-24 12:18:09 |
| IN_PRO | SIP_2_AIP_METS_TRANSFORM_CHECK | 24 | 0.000 | SFU | SFU_01 | 2015-11-24 12:18:09 |
| IN_PRO | SET_SIP_ARCHIVED_CHECK | 89 | 1.959 | urn | SYNC_1 | 2015-11-24 12:18:15 |
| IN_PRO | SET_SIP_ARCHIVED_ASYNC | 1 | 0.031 | urn | SYNC_1 | 2015-11-24 12:18:09 |
| IN_PRO | IMPORT_SIP_CHECK | 2231 | 0.000 | urn | profile01 | 2015-11-24 12:18:19 |
| IN_PRO | IMPORT_SIP_CHECK | 20 | 0.000 | SFU | profile01 | 2015-11-24 12:17:44 |
| IN_PRO | EXPORT_TO_COA_C_CHECK | 2 | 0.000 | SFU | SFU_01 | 2015-11-24 12:11:03 |
| IN_PRO | DUMP_ERROR | 1 | 0.000 | SFU | AppDir01 | 2015-11-24 12:10:09 |
-----
2/2 report od 2015-11-14
Warning: Using a password on the command line interface can be insecure.
-----
| day | profile | state | step | sips | TIB | MaxClosedDate |
|-----|-----|-----|-----|-----|-----|-----|
| 2015-11-20 | SYNC_1 | CLOSED | FINISHED | 2480 | 9.992 | 2015-11-20 22:47:06 |
| 2015-11-21 | SYNC_1 | CLOSED | FINISHED | 1545 | 24.877 | 2015-11-21 21:35:37 |
| 2015-11-22 | SYNC_1 | CLOSED | FINISHED | 13434 | 16.268 | 2015-11-22 22:37:00 |
| 2015-11-23 | SYNC_1 | CLOSED | FINISHED | 22104 | 17.268 | 2015-11-23 20:36:57 |
-----
[1]* stopped bash /home/jstrnisk/bin/ingest.sh
    
```

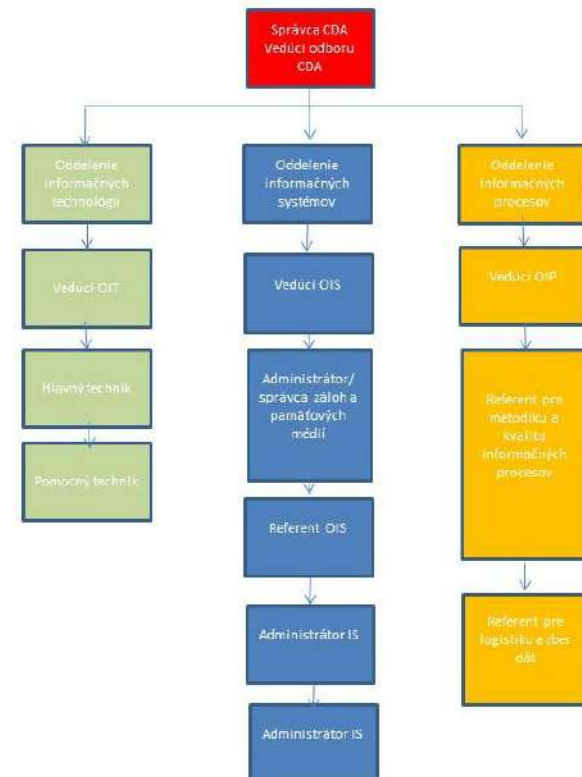
```

[1] ~$ mysql -hcomondb-a -ureadonly -preadonly -dcomon_db < A-SFU-LT06-20151124-0820_count.sql
Warning: Using a password on the command line interface can be insecure.
count(id) state step TIB
1 FAILED FINISHED ON BUSSINES_ERROR 0.000
13 IN PROGRESS EXPORT TO COA C CHECK 0.000
21 IN PROGRESS IMPORT SIP CHECK 0.000
1 IN PROGRESS SET SIP ARCHIVED ON BUSSINES_ERROR CHECK 0.000
10 IN PROGRESS SIP_2_AIP_METS_TRANSFORM_CHECK 0.000
    
```



# Human Resources

- **12 Employees in CDA**
  - 7 CDA-A, CDA,C Bratislava
  - 5 CDA-B Martin
- **3 Departments**
  - Information Processes
  - Information Systems
  - Information Technologies



# Reporting

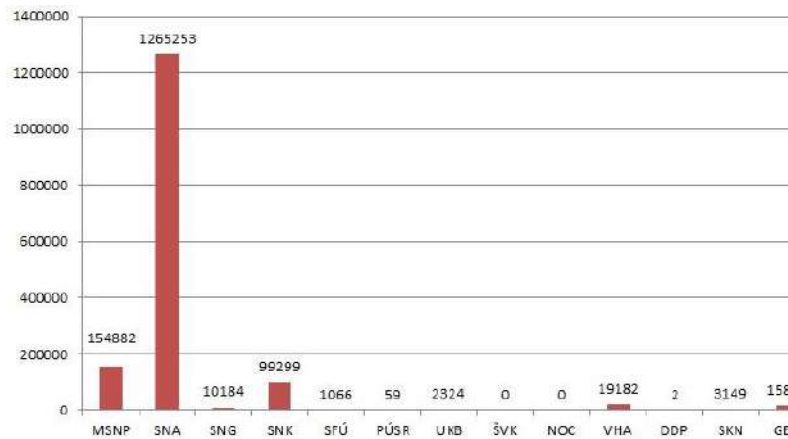
- Daily**

Ingest  
Dissemination  
Synchronisation

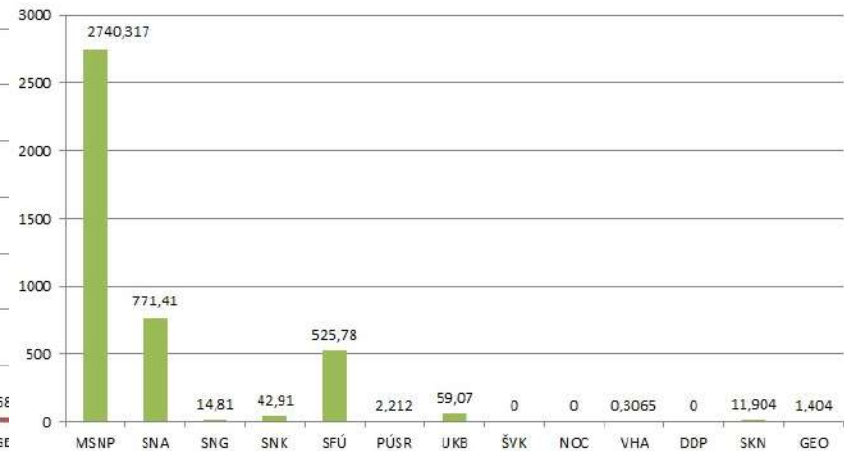
- Monthly**

SIP/DIP quantity  
TB/PB amount

SIP Total Volume (**1 571 238 SIPs**)



TB/PB Total Volume (**4170,12 TB**)



# Certification ISO 16363

- 2013 – translation of ISO standards
- 2013 – inclusion into the Slovak technical standards system
- 2014 – internal audit Moravian Library in Brno
- Compliant to ISO 16363
- Compatible with ISO 14721 OAIS

# Certification ISO 27001

## (ISMS Information Security Management Systems)

- 2014 External Audit
- 2015 Supervisory Audit
- 2016 Supervisory Audit
- 2017 New External Audit
- Documentation
- Trainings
- Risk analysis
- Disaster recovery plan
- Internal audit
- Security incidents
- Policies
- Access management
- Information and physical security
- Operations
- Asset management



# Certification by Data Seal of Approval

- guarantee of confidence
- 3 steps
  1. self-assessment through the online DSA web tool
  2. review by experts
  3. granting the DSA seal
- granted for 2 years
- Structure
  - 3 sections
  - 16 requirements
  - + 2 additional criteria
  - Compliance levels
    - (0 - not applicable -> 4 - fully implemented)



# Certification by Data Seal of Approval

- A. Organisation infrastructure
  - 1. Mission/Scope
  - 2. Licences
  - 3. Continuity of access
  - 4. Confidentiality/Ethics
  - 5. Organizational infrastructure
  - 6. Expert guidance
- B. Digital Object Management
  - 7. Data integrity and authenticity
  - 8. Appraisal
  - 9. Documented storage procedures
  - 10. Preservation plan
  - 11. Data quality
  - 12. Workflows
  - 13. Data discovery and identification
  - 14. Data reuse
- C. Technology
  - 15. Technical infrastructure
  - 16. Security
- D. Additional
  - 17. Additional information
  - 18. Applicant feedback



# Certification by Core Trust Seal

- 2017 – preparation of documentation
- 2018 – name change to Core Trust Seal
- 2018 – change of certification board
- 2018 – mandatory fee 1 000 EUR
- 2018 – the core trustworthy data repository requirements
  - the requirement compliance check



# CDA web

## cda.kultury.sk

- News
- Photos
- Project
- Operations
- Reporting
- Documents
- Presentations



### Project of the Central Data Archive

View Edit Translate



The LTP solution for cultural heritage in Slovakia.  
In 2011 The University Library Bratislava (ULB) was charged with setting up a powerful infrastructure for the long-time preservation of digitized cultural heritage across „the national memory“ institutions. The Central Data Archive (CDA) is realised in the framework of the Operational Programme Informatisation of the Society (OPIS), prevaillingly financed by the EC regional development fund (33 184 470,48 €).

- ▼ Project of the Central Data Archive
  - Project Team
  - Implementation Team
  - Collaborating Institutions
  - Prolonged of implementation...
  - Contact
  - Processing

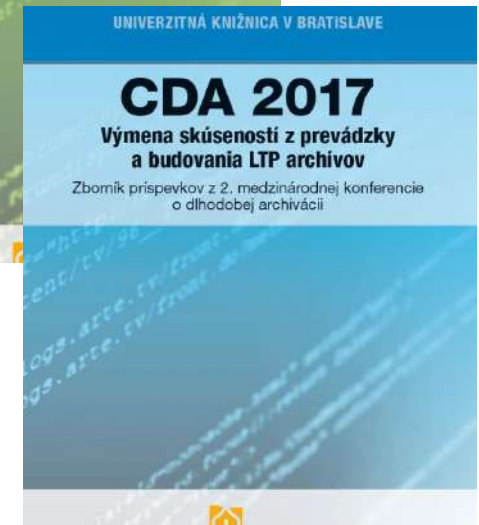
Kto je online?

There are currently 2 users online.



# CDA Conference

- **CDA´2016**
  - LTP Format Challenges
- **CDA´2017**
  - Experience Exchange from Operation and Building of LTP Archives
- **CDA´2018**
  - LTP Archives sustainability and development
  - **You are all WELCOME**





# Thank you for your attention!

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