

### Centrálny register zaverečných prác a antiplagiátorský systém ako komplexné riešenie na národnej úrovni

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# Central registry of theses and dissertations and the anti-plagiarism system as a comprehensive solution at national level

NRGL seminar, Prague, 23/10/2013

Juraj Noge Marta Dušková

## **Synopsis**

- The idea behind the establishment of the CRTD/APS,
- The stages in the CRTD/APS project,
- The document collection and verification process,
- Technical solutions and operation,
- CRTD/APS benefits and awards,
- Further development plans.



# The idea behind the establishment of the CRTD/APS

- The growth in plagiarism since 2000,
- The growth in the numbers of higher education institutions and students,
- A requirement for a central storage space for documents,
- First institutions to check originality:
  - School of Management in Trenčín,
  - Constantine the Philosopher University in Nitra,
  - Comenius University in Bratislava,
- **2006** Slovak Rectors' Conference an effort the remedy the existing situation,
- **2008** The Ministry of Education of the SR decided on the creation of a comprehensive solution at national level,
- **2009** Legislative support (amendment to the Act on Higher Education Institutions).

# Management of solutions and organisation



- Constantine the Philosopher University in Nitra (initial cooperation during the creation of the CRTD, analytical activities)
- Slovak Centre of Scientific and Technical Information (organisational management of the implementation of the CRTD/APS, implementation and operation of the CRTD/APS)
- SVOP, spol. s r.o. (technical solution contractor)
- Ministry of Education of the SR (legislative support, financing, system administration)

## CRTD/APS project solution stages

- Analytical/conceptual/organisational stage 2008
   (Constantine the Philosopher University, CRTD, SVOP, methodological regulations of the Ministry of Education, technical solution concept)
- **CRTD implementation stage 2009** (implementation of the SW and technical infrastructure of the CRTD, operator SCSTI, preparation of connected instructions, regulations)
- APS implementation stage 2009 2010 (public tender for contractor, implementation of the APS, put into operation 4/2010)
- Migration of the CRTD/APS 2011 (migration of the system to DC RD, making documents available)

# Document collection and verification process

- ETDs of higher education institutions as local storage spaces,
- Transfer of metadata to the CRTD in batches,
- Automatic downloading of full-texts of documents,
- Plagiarism comparison,
- Protocols generated and sent to higher education institutions,
- Incorporation of documents into comparison corpus,
- Commission evaluation of material.



### **Technical solution**



#### Application server

 internet communication, portal services, downloading full texts,

#### Storage server

 Storage space for original files and plain texts, output protocols, logs, ...

#### Database server

Operation of MS SQL databases

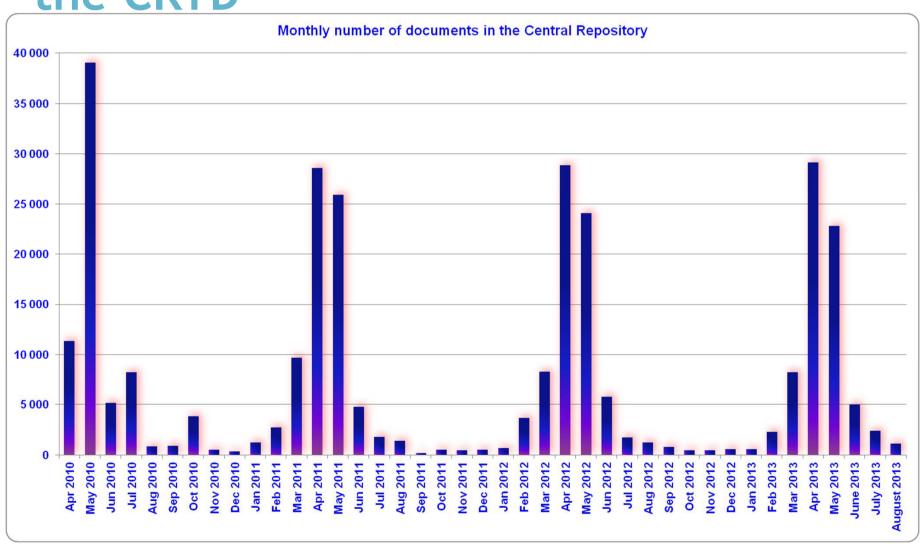
#### Antiplag server

 Indexing and scanning core of the algorithm

## **CRTD/APS** operation

- 33 higher education institutions involved,
- growth of around **75,000** documents a year,
- total of around **300,000** documents in storage,
- over **5,000,000** documents from internet sources in the corpus, around 2 TB of data,
- Organisational perspective:
  - cooperation with the administrators of local storage spaces at higher education institutions,
  - higher education institution technical support,
  - cooperation with the Ministry of Education.
- Technical perspective:
  - Non-stop operation -24/7,
  - Security and capacity DC RD,
  - Originality Report within 48h,
  - Average time for comparison and protocol generation around 10 seconds.

# Monthly increase in documents in the CRTD



### **CRTD/APS** benefits

- CRTD/APS establishment = <u>preventive/behavioural</u> effect
- making the behaviour of both students and pedagogues more responsible,
- increasing students' independence during the document creation process,
- increasing the quality of the theses and dissertations,
- more thorough work with literature, citations of used sources.
- ??? Reduction in plagiarism

### **CRTD/APS** awards



#### 2<sup>nd</sup> place:

• **2011** – ITAPA conference - competition for the best product in the digitisation of public administration in the "New Services" category

#### 1st place:

• 2013 – European Commission – "European Prize for Innovation in Public Administration" competition in the "Initiatives in Education and Research" category CORK, Ireland - €100,000



### Further development plans

- Employment of the winning algorithm in originality checks,
- Expansion of the number of licences for the Antiplag server (accelerating system response),
- Web version of the Originality Report (displaying all the matches in the text),
- Expansion of the comparison corpus with documents in Czech from internet sources,
- Comparison of documents in foreign languages (especially English) directly with internet sources,
- Provision of control services to other institutions (control of outputs from projects financed from public sources, etc.)





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## Thank you for your attention.

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