

Enhancing OJS journals with advanced online reading and viewing capabilities



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The Hellenic National Documentation Centre- EKT

The Hellenic National Documentation Centre (EKT) is the national Infrastructure for collecting, aggregating and provisioning scientific documentation, online information and support services on research, science and technology. Acts as a hub for universities, research centres, enterprises, public and private sector bodies.

Means: Development of interoperable e-infrastructures at the national level for the aggregation, organization and dissemination of scientific content

Aim: Open Access to knowledge for all



Research e-infrastructures

Open access infrastructures

repositories, journals and aggregators

→ **4M** pages of content, **x100Ks** of items locally , **>400K** aggregated items

• Digital Library for Research and Technology

– Union catalogue and interloan system for journals, data bases, e-journals

– **15K** journals, **247** libraries

• Research and Technology Indicators and CRIS systems

– publications/citations of Greek institutions in scientific journals

• Library automation technologies

– ABEKT , Greek Edition of the Dewey classification system

– **500+** libraries subscribed at ABEKT helpdesk **2.5K** installations

• Participation in European initiatives and projects

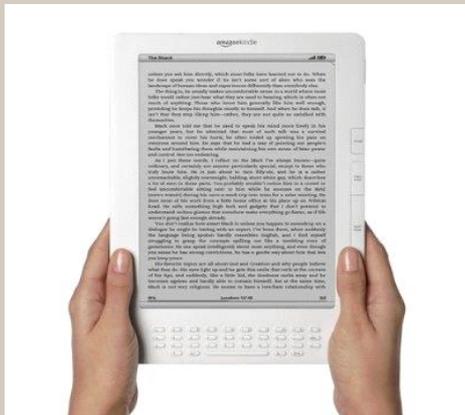
LIBER, OASPA, euro-CRIS, Driver, Open AIRE, DART Europe

- Publishing activity commenced at 2007
- 5 electronic journals, peer reviewed and newsletter, mainly in humanities
- Current issues: full electronic process
- Backissues available after digitisation
 - Generally as PDF files
- On the same period interesting developments on viewers and devices



Devices

- E-book readers
- Tablets
- Netbooks
- .. new innovative applications and user experiences





And new applications: Google books,

Thus Spake Zarathustra - ...

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LISTS
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- Initial motivation:
 - User friendly and highly intuitive reading experience
- Page flipping, thumbnail view, thumbnail reuse, etc.
 - Solution for delivery of digitised back issues
- Usually multiMB image PDF files with not intuitive browsing
- But also:
 - Page level reference and page level identification
 - Large images and datasets visualisation



Approach

<p>Journal Management System</p> <p>Editing workflow</p> <p>Metadata</p> <p>Interoperability</p> <p>etc.</p>	<p>High capability viewers</p> <p>Enhanced intuitive user experience: Page by page online reading</p> <p>Arbitrary thumbnail views</p> <p>Arbitrary zoom in /zoom out levels</p> <p>Rotation and full text search</p> <p>Open standards compliant, Native XHTML no <u>Flash</u></p>	<p>Scalable image servers</p> <p>Dynamic generation of image quality and size levels</p> <p>Open std: TIFF, JP2000,..</p> <p>Highly scalable archs.</p>	<p>Orchestration and conversion management</p> <p>Batch conversion</p> <p>Exploit multicore and server clustering</p> <p>Interface with OJS</p>
<p>OJS</p>	<p>IA Open Library BookReader</p>	<p>IA Open Library Web and Datanode Server and/or djatoka</p>	<p>OJS, jp2kdistiller (over djatoka and/or Jasper)</p>

Djatoka kakadu JP2K library only for non commercial use, JASPER JP2K library is open source needs decoding performance improvements

Interworking best of breed open source systems



Contributions

- Extensions to OJS galley publishing process -
new data structures for online reader url and
interface to jp2k-distiller
 - Shortly available at the forum
- jp2k distiller - workflow support for automatic
batch conversion from PDF (main format) and
TIFF to JP2000 and publishing to image server
 - <http://code.google.com/p/jp2k-distiller/>
- Assumes an image server infrastructure

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Language*

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All

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Galley

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Galley File Information

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 Language*
 File name
 Original file name ZIVKOVIC.pdf
 File type application/pdf
 File size 409KB
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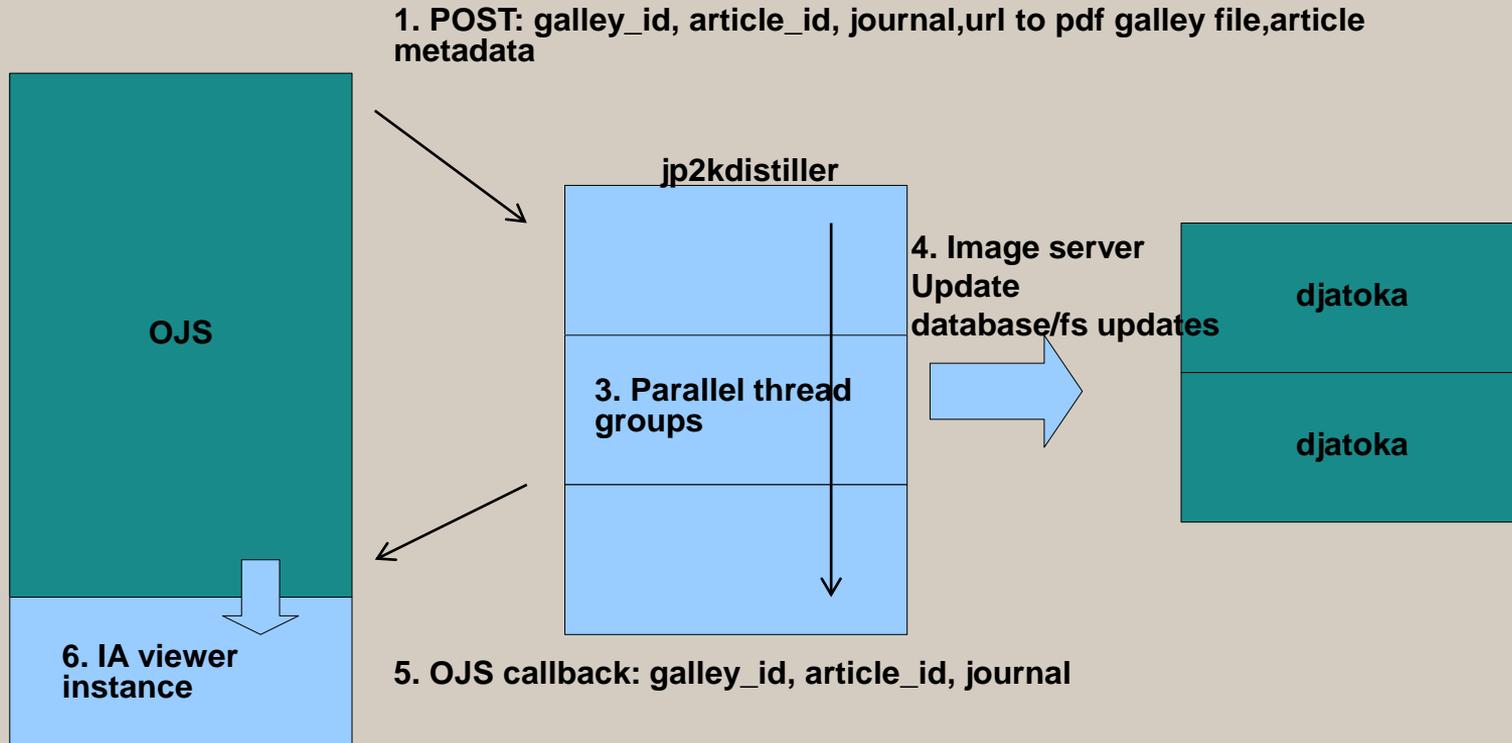
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depuis les 400 dernières années environ¹. Le passé le plus ancien des Serbes et des Croates, relaté dans ces chapitres², est au cœur d'un débat

1. L'ouvrage a été publié pour la première fois en 1611, en ayant comme base le manuscrit du XVIème siècle (*Codex Vaticanus Palatinus gr. 126*), copié par Antoine Eparchos, érudit humaniste grec venant de l'île de Corfu. À cette occasion, l'éditeur I. Meursius a défini le titre de l'ouvrage, préservé en historiographie jusqu'à nos jours; *Constantini Imperatoris Porphyrogeniti, De administrando imperio, ad Romanum f.*, éd. I. MEURSIUS, Lugduni Batavorum 1611. Le plus ancien manuscrit du *DAI*, datant du XIème siècle (*Codex Parisinus gr. 2009*), n'a été publié qu'en 1711, par A. Banduri, habitant de Dubrovnik; *Imperium Orientale sive Antiquitates Constantinopolitanae in quatuor partes distributae*, éd. A. BANDURI, Parisiis 1711. I. Bekker a republié le *DAI* en 1840, en s'appuyant sur Meursius et Banduri; *Constantinus Porphyrogenitus De thematibus et De administrando imperio*, éd. I. BEKKERUS, I-II, Bonnae 1840 (désormais: BEKKER). La meilleure édition critique de cette oeuvre est, *Constantine Porphyrogenitus De administrando imperio*, éd. R. J. H. JENKINS – Gy. MORAVCSIK (CFHB 1), Washington, D.C. 1967 (désormais: *DAI I*). Le texte a été commenté par F. DVORNIK – R. J. H. JENKINS – B. LEWIS – Gy. MORAVCSIK – D. OBOLENSKY – S. RUNCIMAN, *Constantine Porphyrogenitus De administrando imperio, II: Commentary*, London 1962 (désormais: *DAI II*). L'édition la plus récente est, *Konstantin Bagrùnorodnóy*

Block diagram and interactions



OJS modifications:

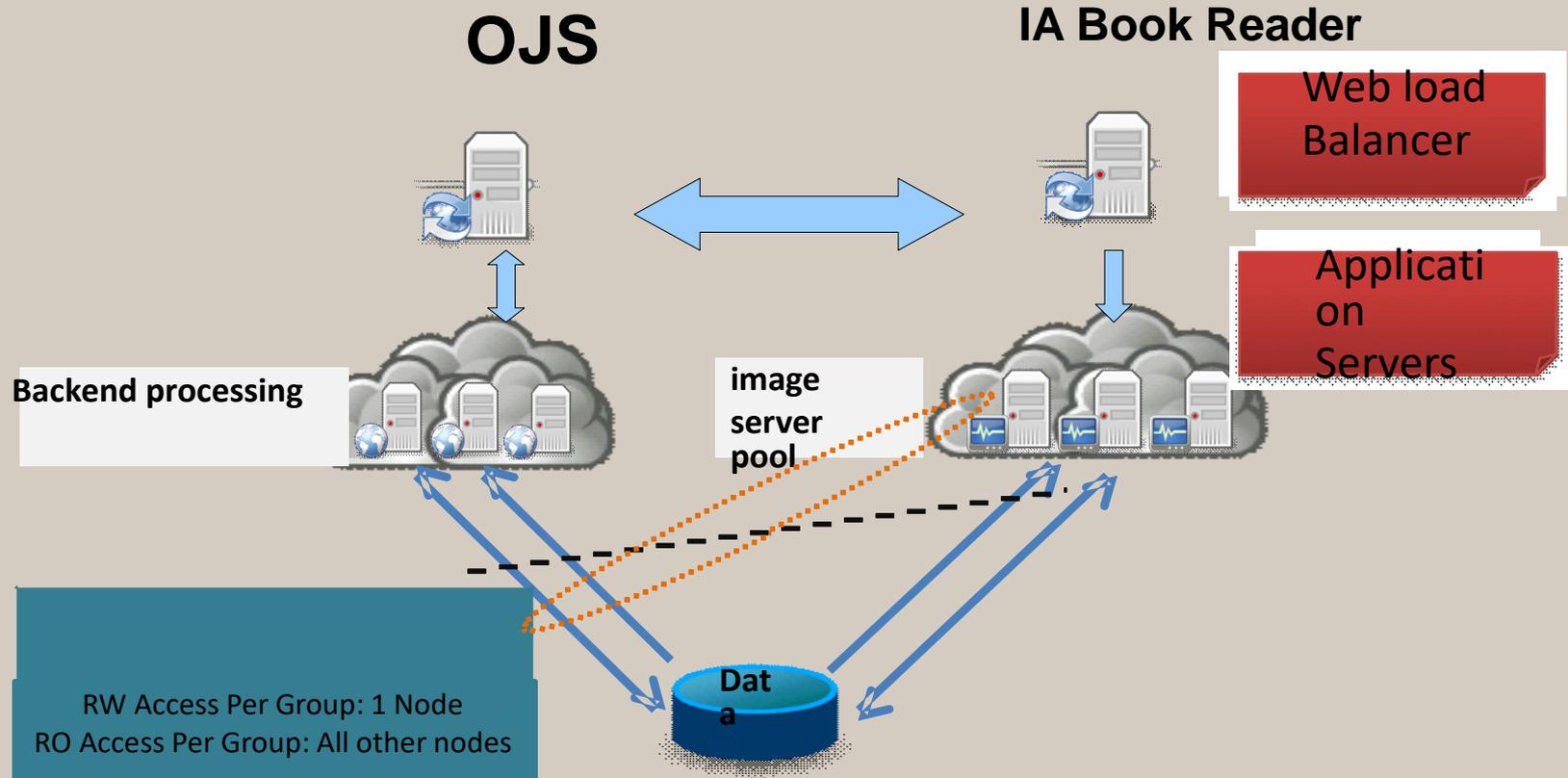
- New data stored: url of reader and flag for reader status (no reader, ready, pending)
- APIs for communication with jp2kdistiller
- Editor request a galey file conversion to online reader
- J2pkdistiller retrieves the pdf and converts in batch and in parallel
- When all threads finish calls back to OJS
- OJS sets new flag and page by page online reading activated

- Python script for batch conversion of PDF/TIFFs/JPGs to JPEG2000, publish to djatoka
 - Multithreaded application, tunable number of threads x5-x10 speed in comparison with single thread batch convert
- Interworking with OJS
 - Notification from OJS for conversion
 - Callback function to OJS in order to activate reader
 - Transparent for editor



Systems perspective

Scalable multiered architecture





.. and some other OJS extensions being developed

- Configurable browsing by any metadata field
 - Configuration through the OJS GUI by the Journal Manager
 - Distributed as an OJS plug-in
- Automatic creation of cover pages for PDFs
 - Insert article metadata into cover page template
 - Developed using a separate FOSS library created by EKT

- New browsing capabilities by interfacing with external systems
- Transparent to editors - highly scalable – automated conversion infrastructure
- Lots to wish about:
 - Full text search/highlighting is the next step
 - Linking with an enhanced repository based backed
 - Interfacing to other format conversion apps, e.g. Doc to pdf, odt to pdf, etc
 - API specifications
 - Jasper enhancements



Thank you for your attention!