

Towards Expert Content Sharing in Medical Education

E. Kaldoudi,

M. Papaioakeim, P. Bamidis, V. Vargemezis

School of Medicine
Democritus University of Thrace

INTED, March 2008



Oral presentation and full paper publication in the
proceedings of:

**INTED2008: International Technology, Education and
Development Conference, Valencia, March 3-5, 2008**

INTED2008 Abstracts Book, ISBN: 978-84-612-0192-1

INTED2008 Proceedings, ISBN: 978-84-612-0190-7

International Association of Technology, Education and
Development, <http://www.iated.org/>

contemporary medical education

facts:

- medical and biomedical information and knowledge (basic & core) is ever expanding
- medical disciplines become increasingly overspecialized
- medical educators become increasingly overspecialized

challenges:

- how to provide expert knowledge in remote institutions
- how to provide more audience to overspecialized educators located at remote institutions
- how to communicate and share skills and competences (not only knowledge)

trends & approaches

■ technological support:

↳ information technologies to harness information explosion and support teaching and e-learning

■ alternative medical education approaches:

↳ active, self-directed, student-centered, experiential, learning

↳ problem/case/task/inquiry/role/... based learning

information technology

- information dissemination

- ↳ electronic textbooks, atlases, medical & biological databases, scientific press, ...

- achieving knowledge & understanding

- ↳ creation, management and dissemination of digital teaching file collections (e.g. VPs)

- ↳ self-evaluation tools and processes

- ↳ mediation of teacher-learner communication

R&D EU Project IntraMEDnet

IntraMEDnet: A Mediterranean Research and Higher Education Intranet in Medical and Biological Sciences

↪ 2006-2007

↪ ~1.200.000 M€

↪ 6 partners from 3 EU countries

R&D grant under:

↪ INTERREG III B ARCHIMED

↪ EU Community Initiative

↪ Co-financed by the
European Regional Development Fund (ERDF)



IntraMEDnet approach

develop and share individual educational modules

↳ self contained educational units

↳ with well specified educational objectives

↳ thematically targeted and overspecialized

↳ developed by overspecialized experts

↳ available for sharing over the web

educational module repositories

- detailed descriptive information for each module

- ↪ author - copyright - life cycle

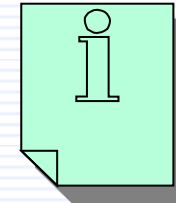
- ↪ educational goals, outcomes, content, teaching methods, workload, etc

- ↪ context, instructions of use

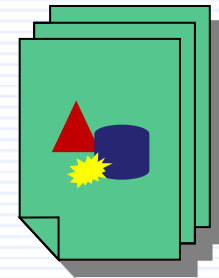
- complex educational module

- ↪ text, presentation, exams, discussion, video, chart, data, etc

offered via generic web-based,
SCORM compliant,
Learning Management Systems (LMS)



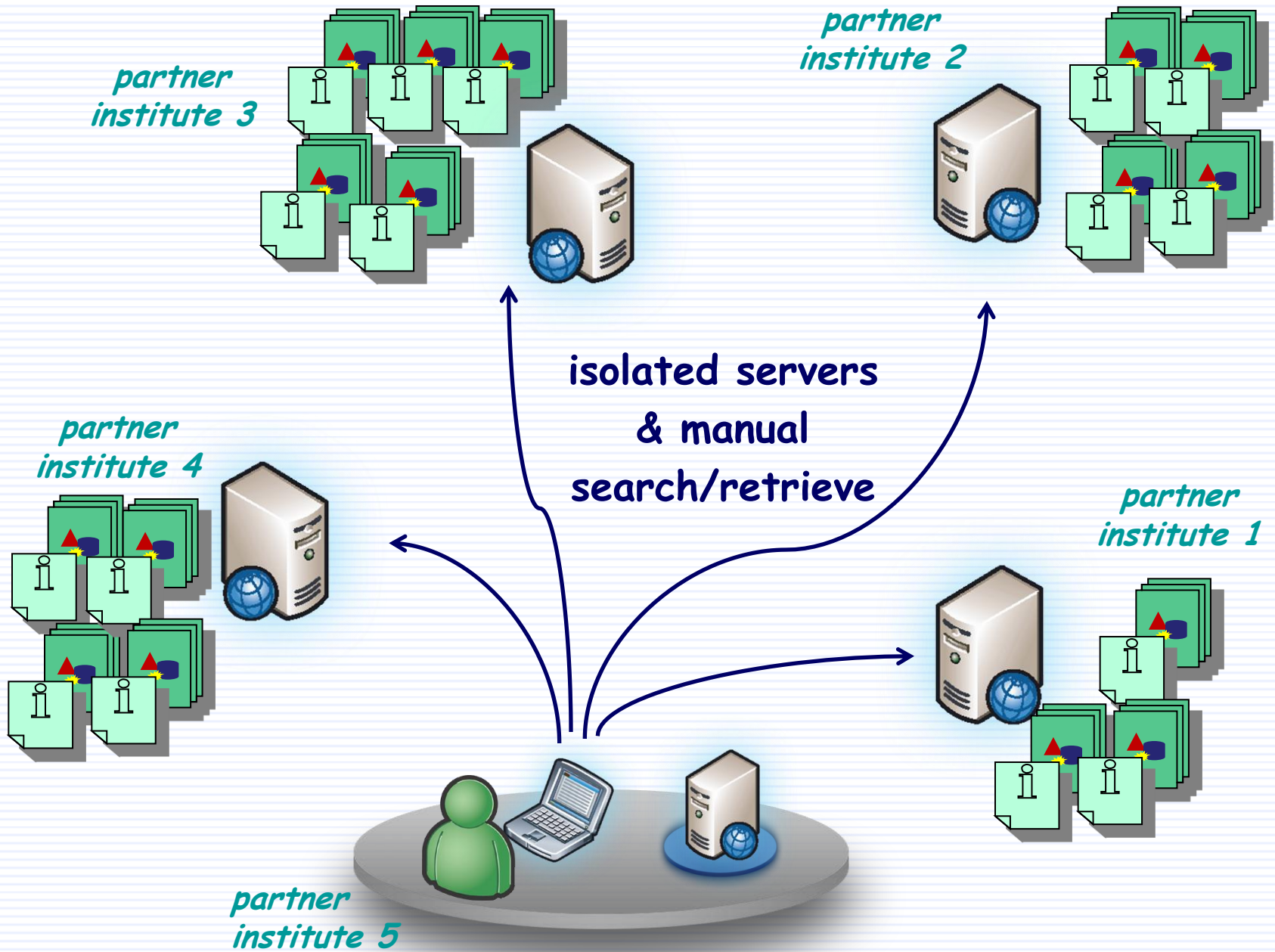
*detailed
module
info*



*complex
educational
module*



*web-based
LMS*



current status

- 6 partner institutes from 3 EU countries
 - ↳ University of Cyprus (CY)
 - ↳ Paphos Hospital (CY)
 - ↳ Democritus University of Thrace (GR)
 - ↳ University of Patras (GR)
 - ↳ Federico II University of Naples (IT)
 - ↳ Aristotle University of Thessaloniki (GR)
- more than 7 thematic areas in Health Sciences
- more than 30 educational modules

educational material available at

DUTH educational material

<http://iris.med.duth.gr/elearning/>

based on moodle

(<http://www.moodle.com>)

partner sites:

<http://moodle.cs.ucy.ac.cy/>

<http://www.e-bit.gr/moodle/>

<http://143.225.233.107/moodle/>

<http://kedip.med.auth.gr/lomiedu>

The screenshot shows the mEducator web application interface. The browser address bar displays <http://iris.med.duth.gr/elearning/>. The page title is "mEducator - Supporting Educational Content Sharing in Medicine". The user is logged in as "Admin User" with a "Logout" link and the language is set to "English (en)".

Site Administration

- Notifications
- Users
- Courses
- Location
- Language
- Modules
- Security
- Appearance
- Front Page
- Server
- Networking
- Reports
- Miscellaneous

Course categories

IntraMEDnet	5
PBL Sessions	1
Miscellaneous	1

Search courses: Go

Available Courses

- Introduction to Haemodialysis (in greek)**: This module aims to introduce students to the basic principles of renal replacement therapies, in specific haemodialysis and peritoneal dialysis.
- Introduction to Gene Therapy (in greek)**: This module aims to introduce medical students and post-graduate students in biomedical sciences into the principles of gene therapy.
- Telematics in Surgery (in greek)**: An overview of telematics applications in surgery - intended for medical students and residents.
- Molecular Imaging: Overview and Physical Principles**: An introduction to the physics of molecular imaging techniques.
- restore**: Write a concise and interesting paragraph here that explains what this course is about
- DICOM Basics - Group1 - 4/2/2008**: This PBL session is intended as a basic introduction to the DICOM protocol. The current

Calendar

March 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Internet | Protected Mode: On | 100%

IntraMEDnet approach

expert instruction is also considered
as an educational module itself

thus, the IntraMEDnet approach supports

- remote instruction of students in active learning
- collaboration of remote experts for active learning sessions development and deployment
- skills and competences progress monitoring

supporting active learning

for example, problem based learning

- develop educational problem in a wiki – various remote teachers can collaborate
- initiate discussion via problem's blog/forum
- students search for solution/knowledge via the web (and not only)
- students collaborate to solve the case via wiki
- activities & progress in terms of achieving scientific competences and skills are recorded in personal blogs

http://iris.med.duth.gr/elearning/mod/wiki/view.php?id=32&page=Sending+out+images+acquired+on+a+medical+scanner

IntrameDnet

DICOM Basics - Group1 - 4/2/2008

mEducator > PBL: DICOM - 1.1 > Wikis > DICOM Basics

Update this Wiki

Wiki

View Discuss Edit History Navigator Administration

Sending out images acquired on a medical scanner

A radiologist in a rural private diagnostic clinic decides to upgrade his service by establishing collaboration with a medical informatics research team in the Aristotle University of Thessaloniki. The objective is to process MRI brain images for lesion volume segmentation and measurement.

To set-up the protocol, the radiologist is asked to email a pilot image set to the research center. Without any further instructions, he sits in front of the MRI scanner console and tries to figure out how to email an image set.

After some time, he discovers an "Export" menu and under there a list of acronyms: "jpeg", "jpeg2000", "tif", "png", "bmp", "analyze" and the obscure "DICOM AE".

He recognizes "jpeg" as the format of images on web. So, he proceeds to export the image in "jpeg" format and email it to his collaborators.

- (1) Identify any unknown terms in the text. Collaborate to give a short definition.
- (2) What are those acronyms under the "Export Menu"? Collaborate to give a short definition.
- (3) Did the radiologist choose the right format and why?

Vote

Internet | Protected Mode: On 100%

Internet Explorer browser window showing a wiki page titled "First Page". The address bar displays the URL: <http://iris.med.duth.gr/elearning/mod/wiki/view.php?id=32>. The browser interface includes a search bar, navigation buttons (Back, Forward), and a toolbar with various utility icons.

The page content includes a navigation menu with buttons for [View](#), [Discuss](#), [Edit](#), [History](#), [Navigator](#), and [Administration](#).

First Page

TABLE OF CONTENTS

1. [DICOM Basics - Problem Statement](#)
2. [DICOM Basics - Answer Deployment](#)

DICOM Basics - Problem Statement

Problem Statement - Step 1: [Sending out images acquired on a medical scanner](#)

Problem Statement - Step 2: ...

Problem Statement - Step 3: ...

Conclusion: ...

The following paragraphs and links there in comprise the results of this PBL session outcome as developed by the group.

DICOM Basics - Answer Deployment

1η Ομάδα (Βεγουδάκης, Φραντζίδης, Κωστελίδου)

2η Ομάδα (Κωστόπουλος, Αδάλογλου)

3η Ομάδα (Μαλινδρέτος, Ντάφλη)

Internet | Protected Mode: On 100%

DICOM Basics - Group1 - 4/2/2008

You are logged in as [Eleni Kaldoudi \(Logout\)](#)

mEducator ► Blogs

Turn editing on

DICOM Basics - Group1 - 4/2/2008

Participants Blogs

[Add a new entry](#)



Eleni Dafli--PROMESIP

by [Eleni Dafli](#) - Thursday, 7 February 2008, 12:56 AM

Anyone on this site

Hello everybody!

I'm on line every evening(...usually..) and sometimes in the morning at work.I use either a dial up ,or a DSL connection(it depends on where I am at that moment).I have more time available during the weekends ,apart from that days that I'm on duty.Finally,I could work in this environment almost every day.



Frantzidis Christos

by [Χρήστος Φραντζίδης](#) - Wednesday, 6 February 2008, 03:25 PM

Anyone on this site

Hi all,
I am Frantzidis Christos.
I am connected to the internet when i work each morning in the Medical Informatics Lab.
I am available till the late evening.
I can visit this page almost every day from Monday till Friday but not at the weekend.

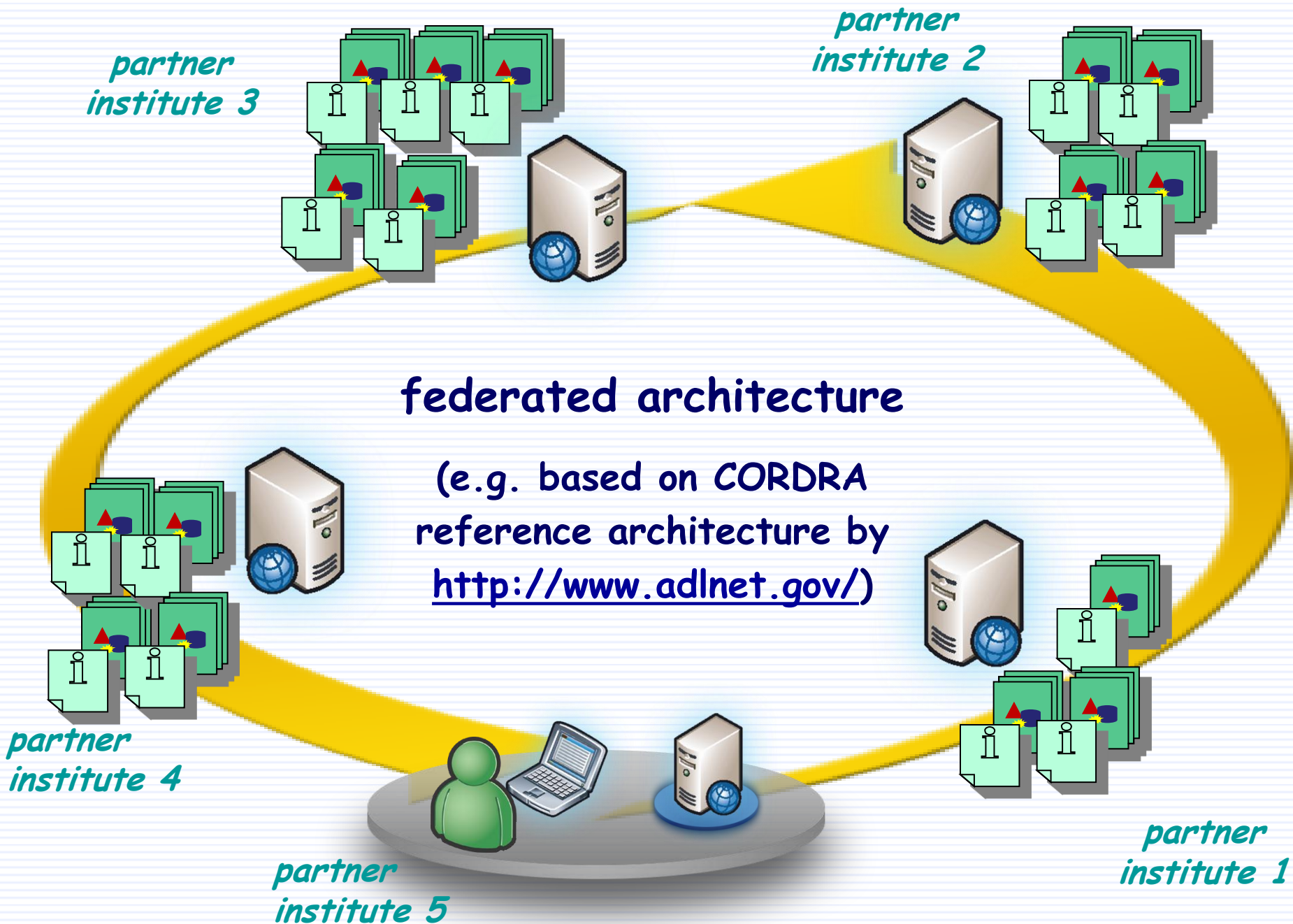


Ψηφιακή απεικόνιση και επικοινωνία στην ιατρική (Digital Imaging and Communication in Medicine DICOM)

further work

towards a federated architecture of distributed educational module repositories

- flexible & adaptive module description scheme
- dynamic establishment of federated web repositories
- educational module discovery and retrieval mechanisms
- means to evaluate, rate, renew & repurpose educational modules
- rules of engagement/collaboration, based on the notion “use content as long as you provide content”, and vice versa



acknowledgements

Reforming Undergraduate Medical Curriculum in the
School of Medicine - DUTH

The Operational Programme for
Education and Initial Vocational Training
Ministry of National Education & Religious Affairs and
the European Community
Co-financed by the
European Regional Development Fund (ERDF)



IntraMEDnet: A Mediterranean Research and Higher
Education Intranet in Medical and Biological Sciences

INTERREG III B ARCHIMED

EU Community Initiative

Co-financing by the

European Regional Development Fund (ERDF)

cite as

E. Kaldoudi, M. Papaioakeim, P.M. Bamidis, and V. Vargemezis, "Towards Expert Content Sharing in Medical Education", Proceedings of INTED2008: International Technology, Education and Development Conference, Valencia, March 3-5, 2008