Media Mixing for e-learning
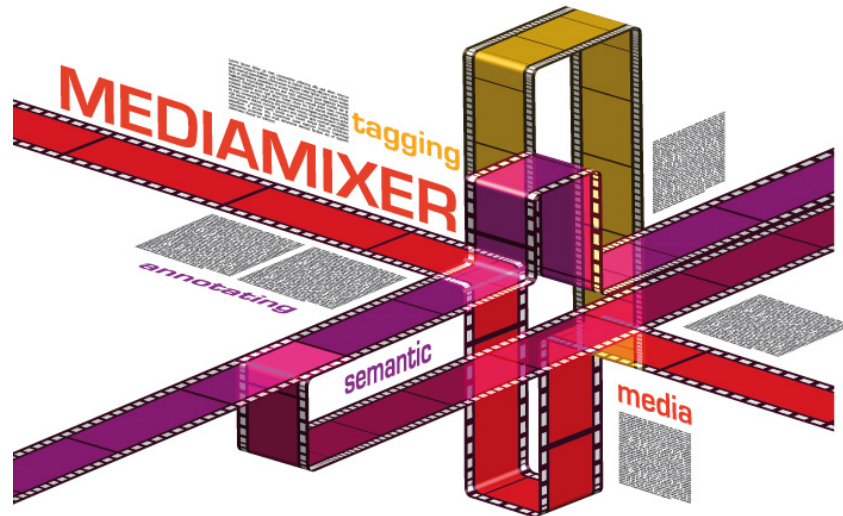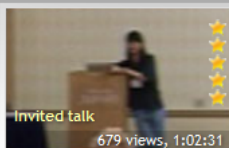

Tanja Zdolšek
tanja.zdolsek@ijs.si
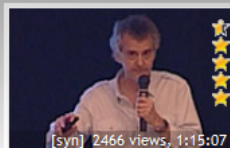
March 2014

- Start: support service
- Now: largest web portal with video edu&open access
- 18.000 videos (1-1,5h)
- 11.900 authors
- 10.000 unique visitors/day

Institut "Jožef Stefan", Ljubljana, Slovenija

Facts
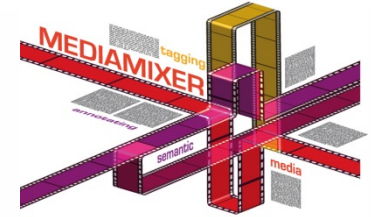
- Informal learning chanel
- Promoting science, fostering knowledge
- OER
- Mobility
- Award-winning
  - UN WSA for „e-science & technology"
  - 2009 – WSA, 2013 – WSA of the decade
- Aims
- OpeningUpEducation Initiative

OpeningUpSlovenia
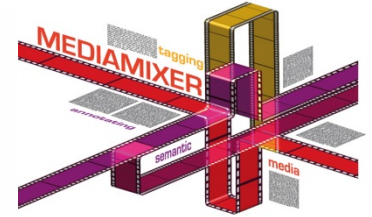
Slovenia is proposing to take a lead in OpeningUpEducation initiative set by EU by:

- Providing EU state level commitment for the programme by all stakeholders and

- offering Slovenia as a national test bed to develop, test and deploy best practices

„The OpeningUpSlovenia case study - Slovenia has strategically committed to open education on all levels and over complete scale"

Institut "Jožef Stefan", Ljubljana, Slovenija

Initiators
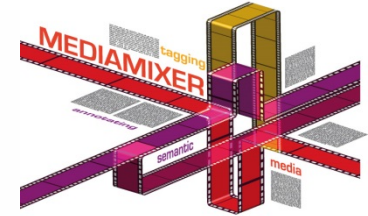
- Jožef Stefan Institute
- Knowledge 4 All Foundation Ltd.

research, research connections and infrastructure

- University of Maribor
- University of Primorska
- University of Ljubljana

Slovenian public universities

- University of Nova Gorica / **private uniersities**

- Ministry of Education, Science and Sport / **government**

- OS Savsko Naselje primary school, representative of the **national primary schools cluster**

- Vrtec Trnovo kindergarten, representative of the **national kindergarten cluster**

- Chamber of Commerce and Industry of Slovenia
- The Managers' Association of Slovenia
- Chamber of craft and small business of Slovenia

industry, business

- **ALL ACTORS in SLOVENIA BROUGHT TOGETHER**

OCWC GLOBAL CONFERENCE

LJUBLJANA, SLOVENIA
23 - 25 April 2014

Open Education for a Multicultural World

OPENING UP SLOVENIA

ANDROULLA VASSILIOU

COMMISSIONER FOR EDUCATION,
CULTURE, MULTILINGUALISM AND
YOUTH, DG EAC, EUROPEAN COMMISSION

SIGN-UP FOR OUR
NEWSLETTER
> SIGN-UP
> ARCHIVES

STAY UPDATED
FOLLOW US

FACEBOOK   TWITTER   YOUTUBE

Linkedin

First look at the schedule
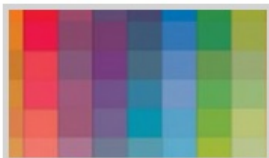
We've published preliminary Conference Schedule, with over 90 presentations and workshops.

Read more

#ocwcglobal

OCW Consortium @ocwnews   18h
Awards ceremony for OCW Consortium Awards for OpenCourseWare Excellence held on Apr. 24 at #OCWCGlobal ow.ly/v7ISY
Expand
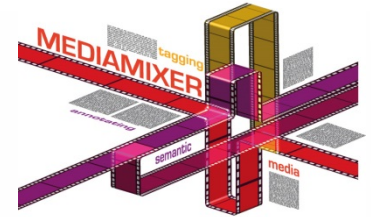
MediaMixer Project and VideoLectures MashUp

How media fragments and their re-mixing can enable new experiences for e-learners

Institut "Jožef Stefan", Ljubljana, Slovenija

Media creation & re-use in e-learning
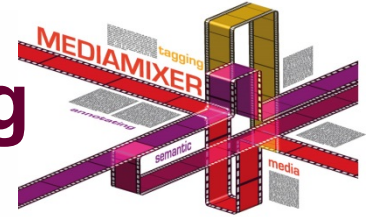
- E-learning materials are increasingly multimedia: more video recordings, more accompanying materials such as slides
  - E-learners need to be able **to search and retrieve** the material they are looking for (based on its subject)
  - Consumption trends towards mobile and on-the-go means interest **focuses on the parts of the material** of particular interest

Institut "Jožef Stefan", Ljubljana, Slovenija

The MediaMixer hub
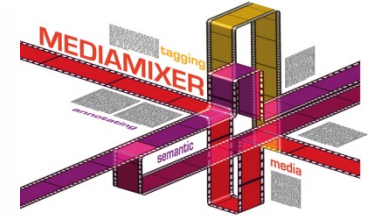
AV Content Provider

1) AV material analysis and annotation

2) Fragment Definition

3) Rights and Cost Assignment

4) Fragment Upload

5) Clearing (Sell)
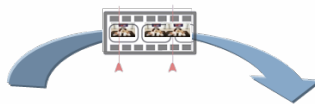
Media Mixer Repository
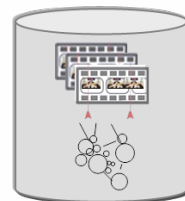
annotated & linked Media Fragments

AV Content Demander

6) Search. Browsing

7) Rights and Cost Assessment

8) Download

9) Composition of new AV materials

10) Clearing (Buy)
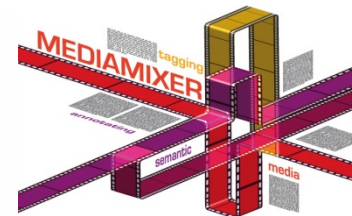
- Video analysis tools
- Video annotation tools
- Video metadata creation and publication
- Digital rights management
- Media search and retrieval
- Media negotiation, purchase and re-use

Institut "Jožef Stefan", Ljubljana, Slovenija

VideoLectures MashUp

CAMERAMAN

RECORDING AN EVENT

ADD NEW RECORDING

ADD NEW EVENT

CONTENT MANAGER

VIDEO EDITING

ADD CONTENT

VIDEO

SLIDES

DATABASE

VIDEO & SLIDES SYNC

REVIEW

PUBLISH EVENT

USER

Institut "Jožef Stefan", Ljubljana, Slovenija

Slide 10

Current USER workflow

Institut "Jožef Stefan", Ljubljana, Slovenija
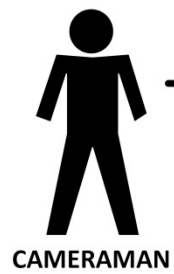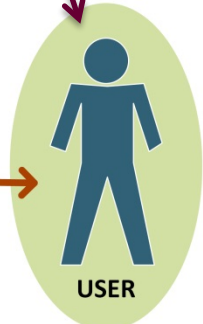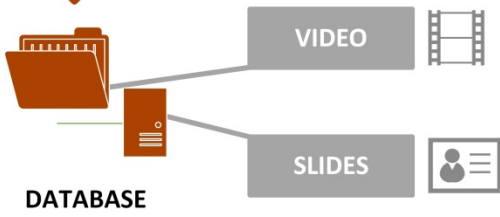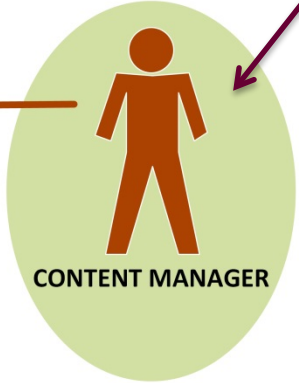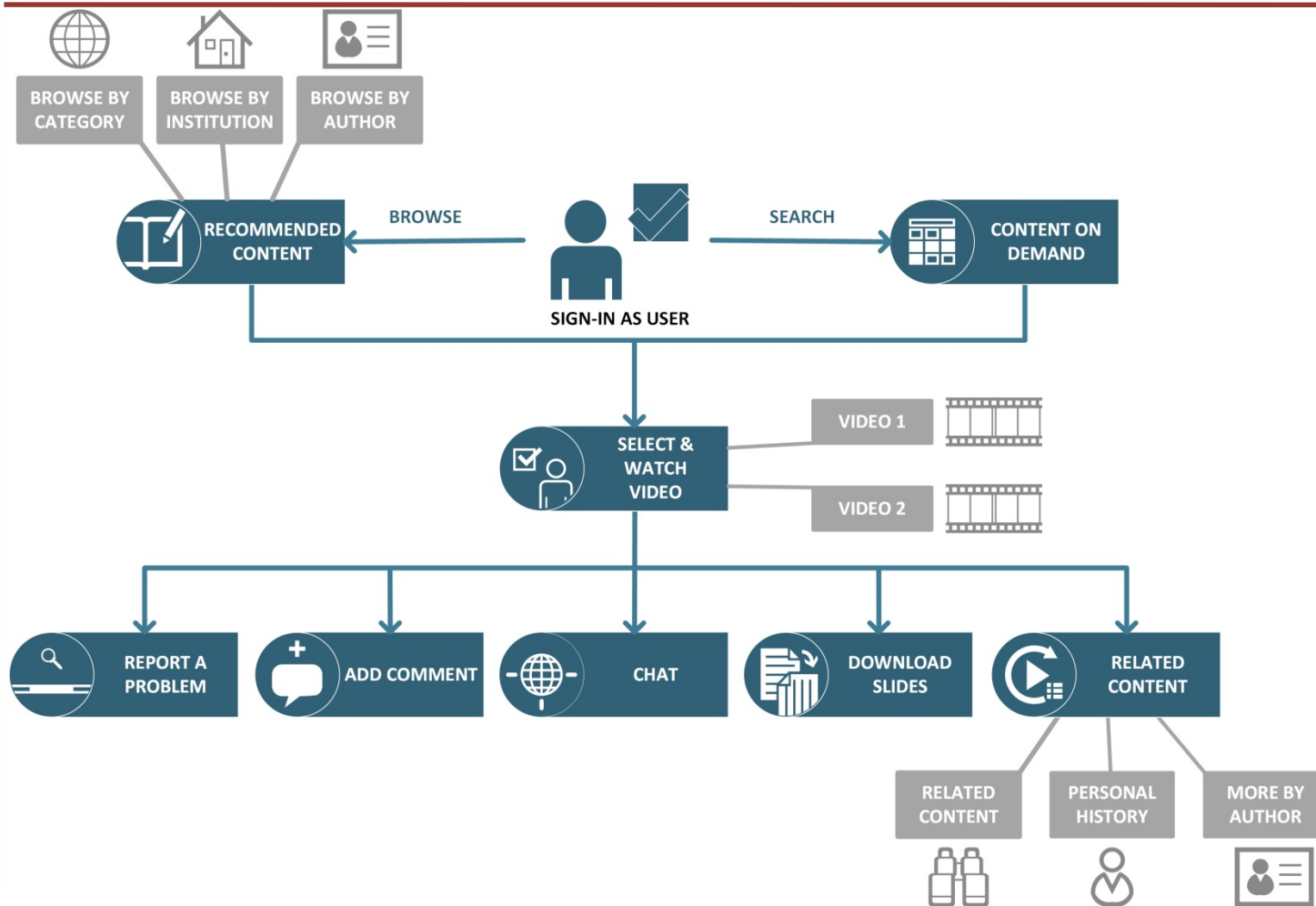
Problems
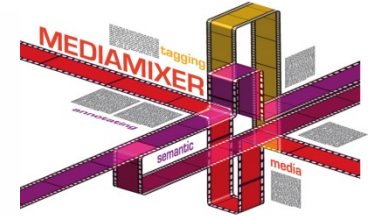
- Search (text matching only over titles, descriptions)
- Users looking for learning materials on specific topics - unique requirements
- Users looking for very specific information - fragments, not entire lectures
- Lack of time for watching, the need for mobile version
- The need for meaningful structures, curriculums
- Videolectures.NET strategy includes continuous introduction of new technologies - important initiative to provide users with access to the semantically enriched content fragments...

Institut "Jožef Stefan", Ljubljana, Slovenija

Current CM workflow
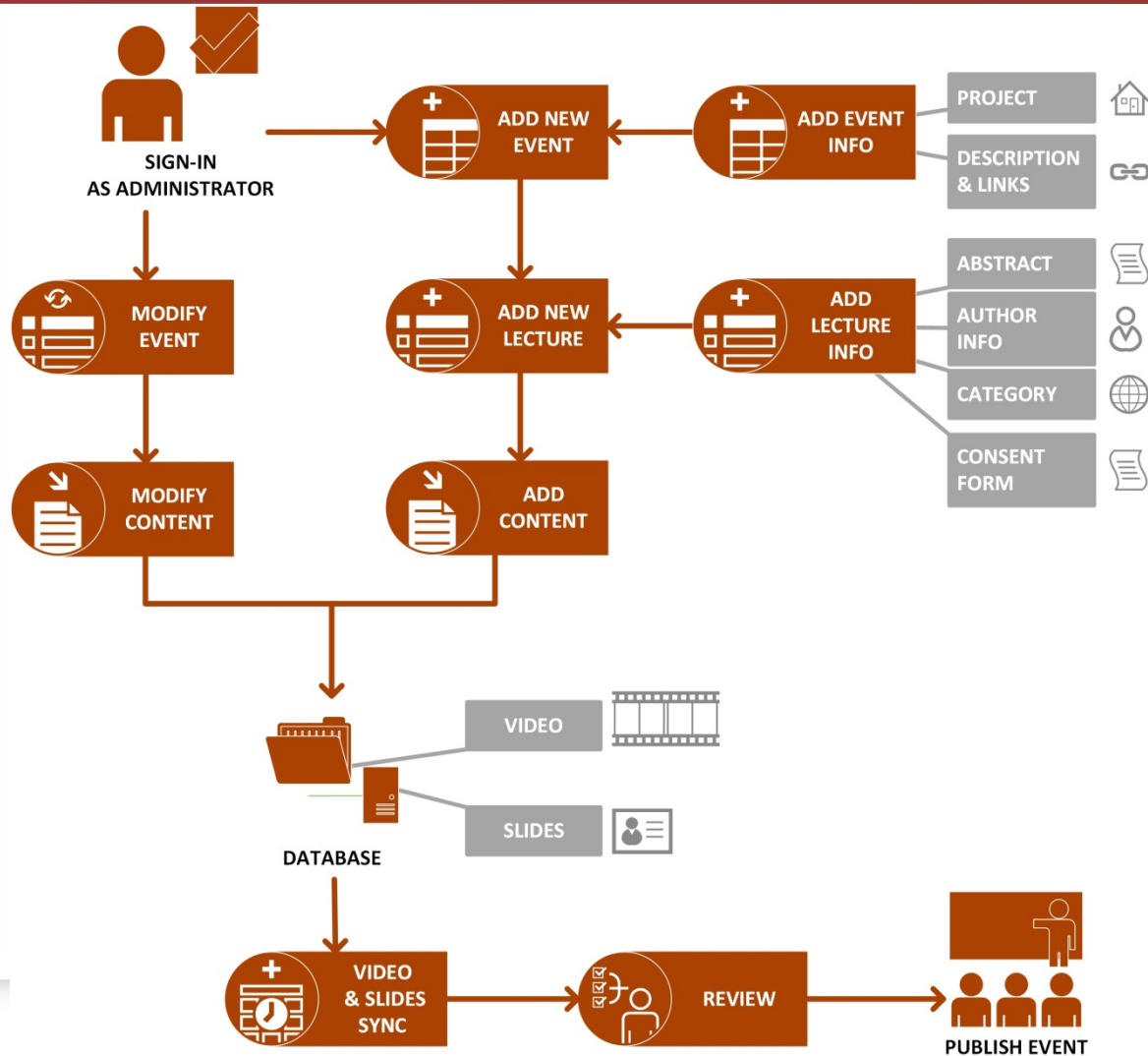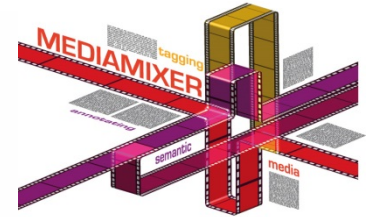
Problems
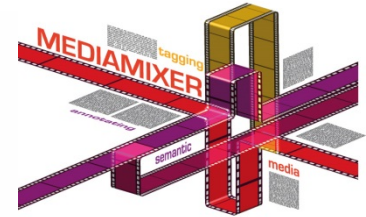
- From manual to automatic

- Save CM's time, employer money

- The need for new functionalities

(automatic textual transcriptions from speaker audio, translations (FP7 transLectures), concept extraction from slides (not just titles but textual content), video analysis, semantic annotation - video annotation process, segmentation...)

- Manually make meaningful structures, curriculums (takes too much time!)

Benefits from MediaMixer technology

- **Simplify** existing workflows
- **Improved** search and browsing in general and **retrieval of fragments**
- Fragments of learning materials from the site, ordered in a meaningful way
- **Content on demand**; easier and quicker access to specific topics of interest
- Direct intuitive access to a **single learning channel** built around the topic searched for
- Producing **new learning materials - curriculums**
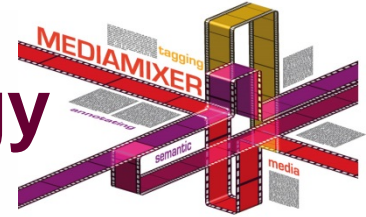- Content specifically **addressable** and hence **bookmarkable/saveable** for subsequent reference and viewing
- **New contexts** -> dynamic provision of such learning resource would be particularly useful in mobile consumption contexts
- These could subsequently form **new distribution channels** for VideoLectures (e.g. video streams / TV channels on selected topics)
- This could drive to more repeated access and win new users!

New User Workflow
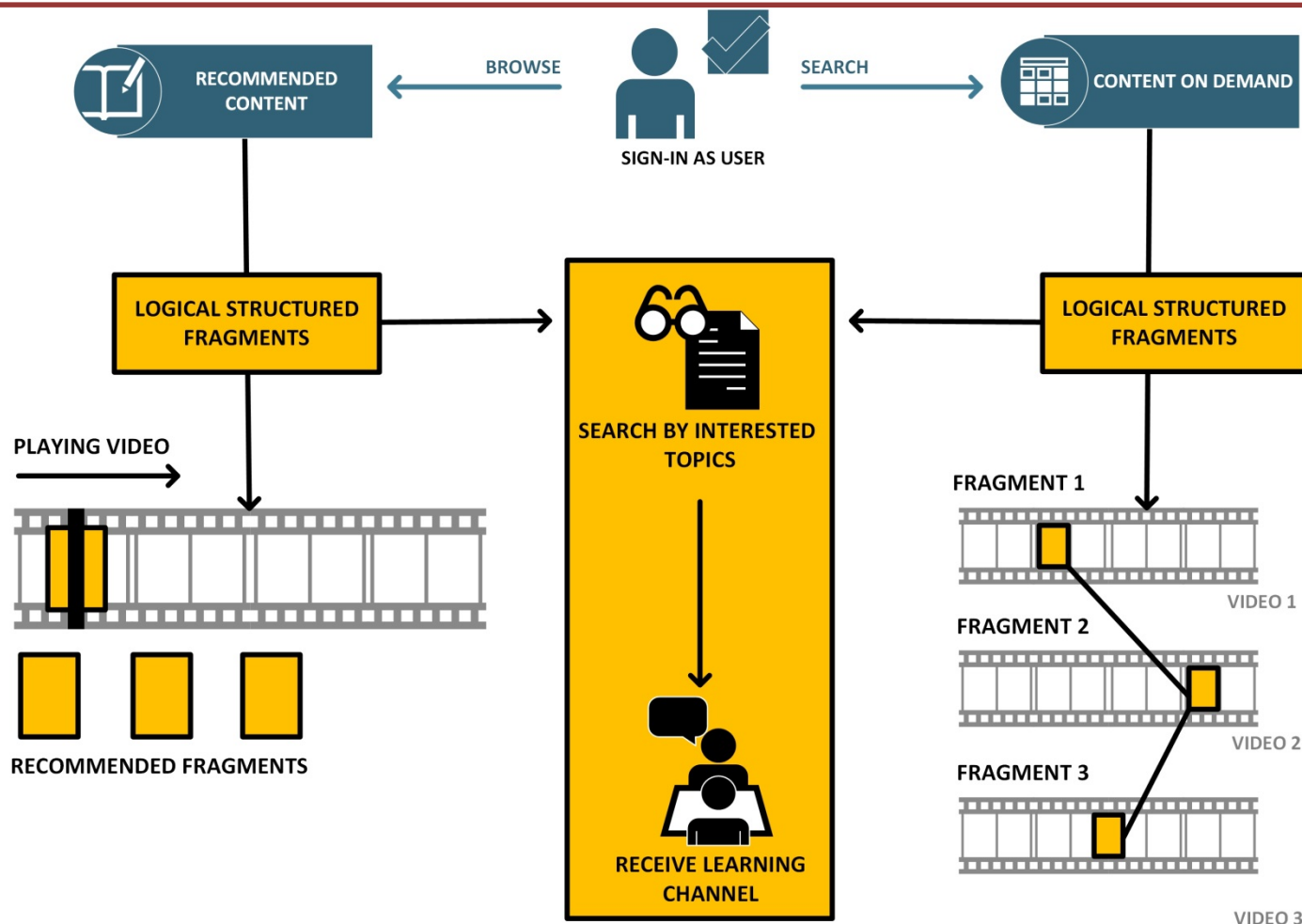
New CM Workflow
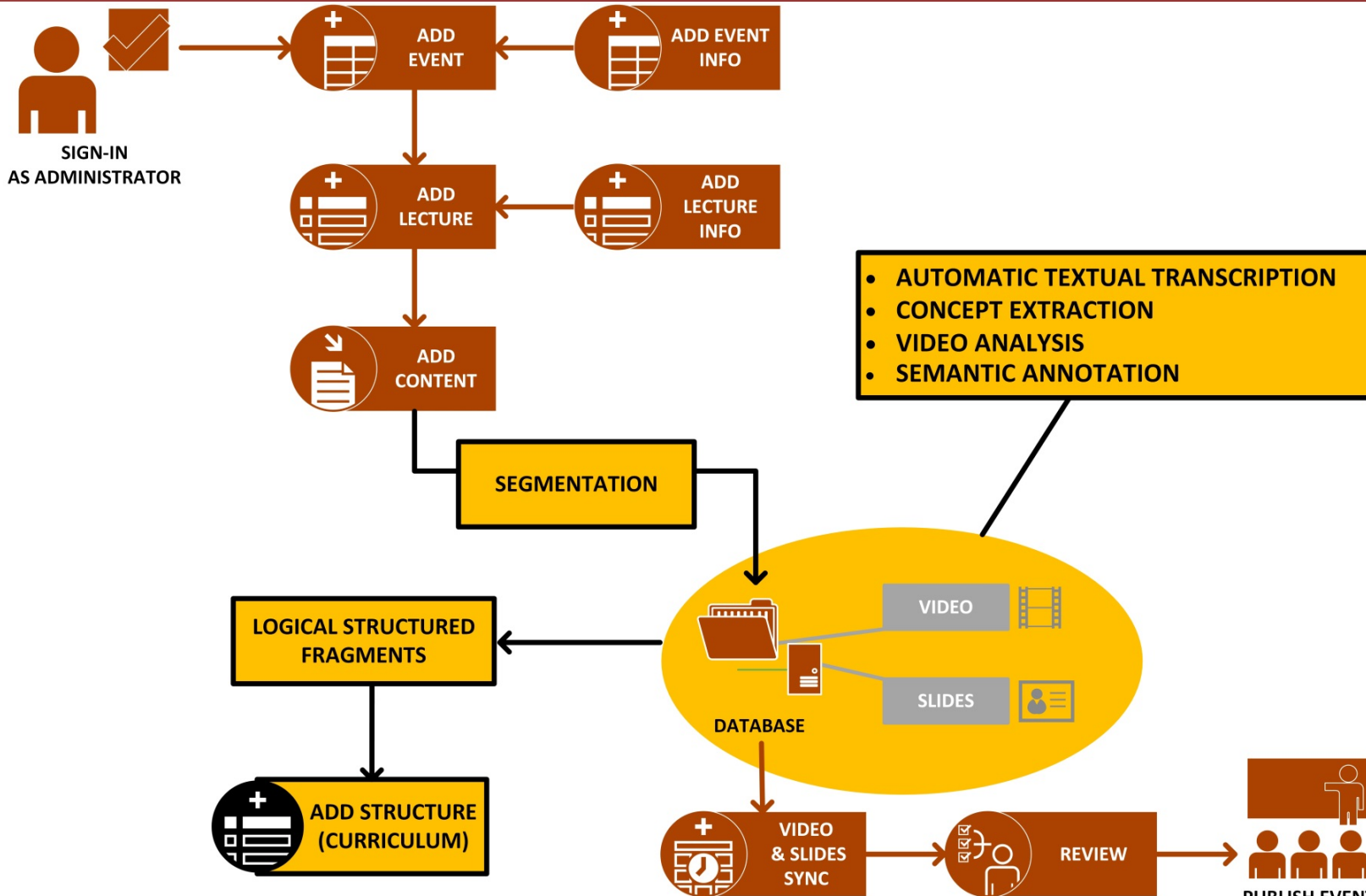
VideoLecturesMashup - demo
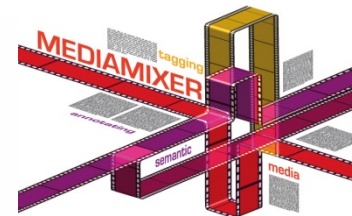
- MM technologies (semantic annotation, media fragment URIs)

Search lectures   ☐ Longer shots

Search for a correct DBpedia title, like Statistics, Machine learning, Kernel methods, Structure, ...

MediaMixer | Community set-up and networking for the reMIXing of online MEDIA fragments
Co-funded by the European Union, Nov 2012 - April 2014
© Jožef Stefan Institute, VideoLectures.NET, Viidea

Search results: Learning

Sparse Methods for Under-determined Inverse Problems [1/3]
Rémi Gribonval, 2011   (904 views)
t=36.62,43.66   t=55.17,62.12   t=1665.45,1672.1   t=3884.84,3890.18

Kernel Methods [1/3]
Bernhard Schölkopf, 2011   (2432 views)
t=127.8,131.74   t=601.12,604.27   t=802.72,808.51   t=913.37,920.9   t=1513.2,1517.61   t=1710.45,1716.15

Bayesian Inference [1/3]
Peter Green, 2011   (3979 views)
t=146.62,151.25   t=276.1,279.8   t=384.13,389.21   t=420.25,427.48   t=565.67,568.86

The Biology of the Language Faculty: Its Perfection, Past and Future
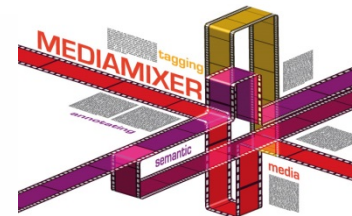Noam Chomsky, 2007   (745 views)
t=389.5,397.48

Sparse Methods for Under-determined Inverse Problems [2/3]
Rémi Gribonval, 2011   (904 views)
t=417.57,426.08

The Idea of Universality in Linguistics and Human Rights
Noam Chomsky, Elizabeth S. Spelke, 2005   (964 views)
t=665.1,672.89   t=4156.35,4162.07

Fast global convergence rates of gradient methods for high-dimensional statistical recovery
Alekh Agarwal, 2010   (398 views)
t=1116.12,1121.85

Bayesian Nonparametrics [2/3]
Yee Whye Teh, 2011   (3083 views)
t=1429.07,1433.08   t=2590.0,2596.08   t=3152.13,3160.84   t=4464.04,4472.06   t=5072.35,5078.12   t=6263.26,6267.6

Kernel Methods and Support Vector Machines [3/3]
John Shawe-Taylor, 2009   (2358 views)
t=1848.48,1855.82

Mining Large Graphs: Laws and Tools [2/4]
Jure Leskovec, 2007   (6608 views)
t=1977.02,1982.26

Bayesian Nonparametrics [3/3]
Yee Whye Teh, 2011   (3083 views)
t=2441.8,2449.84   t=2549.15,2554.38   t=3386.8,3393.0   t=3393.56,3398.2   t=3475.31,3480.82   t=3522.42,3527.86

Location: EU Supported » PASCAL - Pattern Analysis, Statistical Modelling and Computational Learning » Machine Learning Summer School (MLSS), Bordeaux 2011

Sparse Methods for Under-determined Inverse Problems

MLSS 2011 - Bordeaux

Categories

- Top » Computer Science » Machine Learning
- Top » Computer Science » Digital Signal Processing

Rémi Gribonval, INRIA Rennes - Bretagne Atlantique   September 2011

Structure of the course

- Session 1: Panorama
  ✓ sparsity: compression, inverse problems, learning
  ✓ introduction to compressed (random) sensing
- Session 2: Algorithms
  ✓ review of main algorithms & complexities
- Session 3: Guarantees for Deterministic vs Random dictionaries
  ✓ compared success guarantees for different algorithms
  ✓ robust guarantees & Restricted Isometry Property
  ✓ explicit guarantees for various inverse problems

Inria R. GRIBONVAL - SPARSE METHODS - MLSS 2011   3   SEPTEMBER 2011
lundi 12 septembre 2011

Overview   Slide timeline   Video parts   Fragments   Downloads

00:37-00:44 Learning
00:55-01:02 Learning
27:45-27:52 Learning
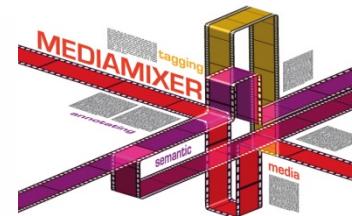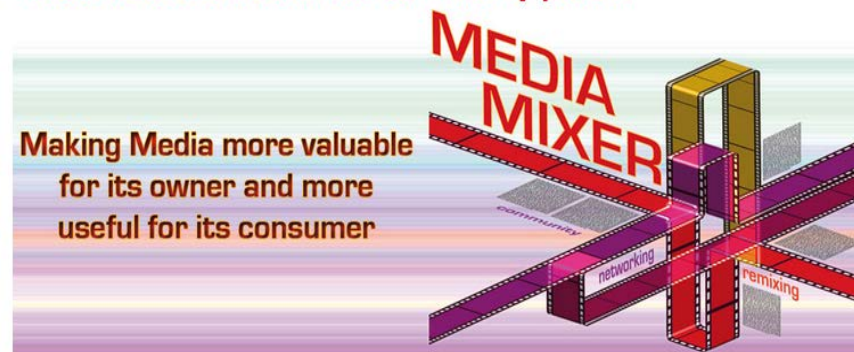01:04:45-01:04:50 Learning

http://mediamixer.videolectures.net/
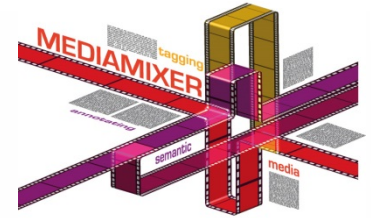
MediaMixer community portal

Free sign-up

Intro to all technology at
community.mediamixer.eu/about
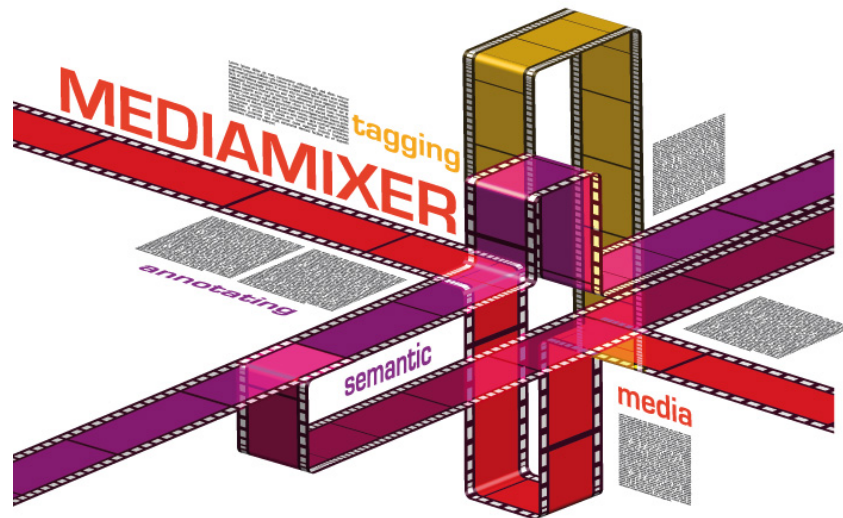
Updated with latest materials on
all Media Mixer topics:
Technology use cases
Demonstrators
Tutorials
Presentations
Software
Specifications

http://community.mediamixer.eu

Discussion fora for conversations
on Media Mixer topics
Events calendar

Thank you for your attention!

Say hello @project_mmixer

Institut "Jožef Stefan", Ljubljana, Slovenija

SEVENTH FRAMEWORK
PROGRAMME