2012

Multimedia Search Services for European portals

Integration of speech translation to enrich the cross-language information retrieval of the Quaero/MSSE prototype

Joint Working Group MSSE / CTC

Malek Boualem (Orange Labs) & al.

QUAERO CTC/CORPUS Workshop, Grenoble, April 2012

Partenaires de MSSE

- Coordination du projet;

  Spécifications du prototype, integration & tests utilisateurs

- Transcription speech to text

- Analyse musicale (résumé, similarité, classification)

- Traduction automatique, développement de connecteurs vers des sites Web, tests utilisateurs (RWTH, SYSTRAN)

- Analyse d'images et vidéos (dédoublonnage, similarité images)

- Contenus archives TV

Organisation

WP04: Audio Processing
Speech To Text: *Géraldine Damnati*
Music Analysis: *Jean-Bernard Rault*

Orange Labs, Vecsys, IRCAM

WP05: CLIR
Malek Boualem

Orange Labs, Bertin

WP06: Image & Video Processing
Alexandre Delteil

Orange Labs, LTU

WP01: Project Management
Jean-Philippe Cabanal

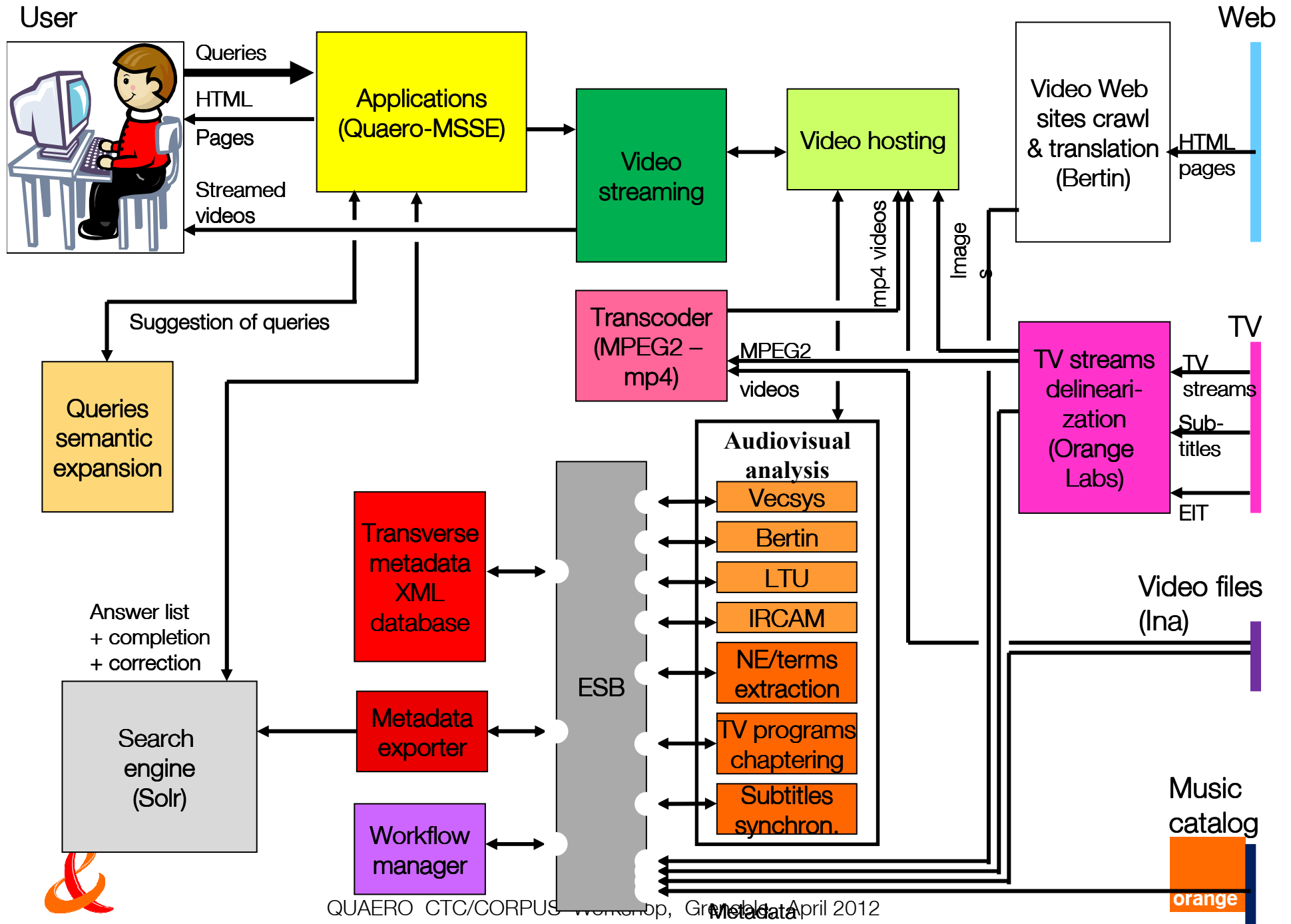Orange Labs

WP07: Ina Back-office
Jean Carrive

Ina

WP09: Prototype Integration
Nicolas Gengembre

Orange Labs

WP08: Design & Usability
Valérie Botherel

Orange Labs, Bertin

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User

Queries

HTML
Pages

Streamed
videos

Applications
(Quaero-MSSE)

Video
streaming

Video hosting

Web

Video Web
sites crawl
& translation
(Bertin)

HTML
pages

Suggestion of queries

Queries
semantic
expansion

Transcoder
(MPEG2 –
mp4)

mp4 videos

Images

MPEG2
videos

TV streams
delineari-
zation
(Orange
Labs)

TV

TV
streams

Sub-
titles

EIT

Answer list
+ completion
+ correction

Transverse
metadata
XML
database

**Audiovisual
analysis**

Vecsys

Bertin

LTU

IRCAM

NE/terms
extraction

TV programs
chaptering

Subtitles
synchron.

ESB

Metadata
exporter

Search
engine
(Solr)

Workflow
manager

**Video files
(Ina)**

**Music
catalog**

orange

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Metadata

To explain the problem, let's show it through the MSSE prototype :

http://cobalt4.rd.francetelecom.com/quaero/

CLIR, how it works now :

- Query in : French

- Results : contents from many WebTVs in : English, German, Spanish, Arabic

  In 2012, we should add : Italian, Portuguese, Russian and Chinese

Metadata (<u>titles and summaries</u>) of videos in all these languages, are translated into French in back office (BERTIN : RWTH, SYSTRAN).

- Research results : metadata in French and also in the source languages.

- If the user is interested by a result (a video) he accesses the web site containing this video.

- The text in the web site is still in the source language : the user can translate it into French (just a click, in real-time).

- *But when the user plays the video : it speaks only in the source language !*

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Launch of a Joint Working group in P4 (2011-2012)
MSSE WP5 (CLIR) – CTC WP4.2 (Speech Translation)

Objective :

Enrich the CLIR functionality of MSSE with speech translation (of videos) to allow the user to "entirely" consume the results, in his own language :
- title,
- summary,
- web site text,
- … and also the video.

Later (not planned yet) :
- Integration of TTS in French !

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MSSE WP5 – CTC WP4.2 Joint Working group

	Name	Company	Activity
1	Malek Boualem	ORANGE	MSSE / WP5 CLIR / coordinator
2	Nicolas Gengembre	ORANGE	MSSE / WP9 Prototype Integration
4	J-Philippe Cabanal	ORANGE	MSSE / Project Leader / Architecture
5	Lori Lamel	LIMSI	CTC WP 4.2 : speech translation
6	Jean-Luc Gauvain	LIMSI	CTC WP 4.2 : speech translation
7	Francois Yvon	LIMSI	CTC WP 4.1 text translation
8	Thomas Lavergne	LIMSI	CTC WP 4.1 text translation
9	Hermann Ney	RWTH	CTC WP 4.2 : speech translation
10	Stephan Peitz	RWTH	CTC WP 4.2 : speech translation
11	Catherine KOBUS	SYSTRAN	CTC WP 4.2 : speech translation
12	Jan NIEHUES	KIT	CTC WP 4.2 : speech translation
13	Nabil Bouzerna	BERTIN	MSSE integration of STT & MT services
14	Elena Lopez Garcia	VECSYSY	MSSE and CTC Speech To Text
15	Julien Despres	VOCAPIA	MSSE and CTC Speech To Text
16	Bernard Prouts	VOCAPIA	MSSE and CTC Speech To Text
17	Edouard Geoffrois	DGA	CTC and Corpus Evaluation
18	Karim Boudahmane	DGA	CTC and Corpus Evaluation
19	Ludovic Quintard	LNE	CTC and Corpus Evaluation

Available MT systems for either speech or text translation

- Arabic to French : LIMSI, RWTH, Systran (hybrid)

- German to French : RWTH, KIT, LIMSI, Systran (Rule based)

- English to French : RWTH, KIT, LIMSI, Systran

- Spanish to French : Systran

- Italian to French : ?

- Chinese to French : provider ? English as a pivot language

- Portuguese to French : Systran

- Russian to French : provider ? English as a pivot language

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<u>Available Web services and libs :</u>

- Speech To Text Web services : VOCAPIA/LIMSI

- Speech To Text software libraries : RWTH, KIT

- Machine Translation Web services : Systran, LIMSI, KIT

- Machine Translation software libraries: RWTH, Systran

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In order to know which kind of data will be transcribed :

Bertin (Nabil Bouzerna) circulated inside the JWG partners :

- English : 3 hours audio from :

  ABC News, CCTV, CNN, Euronews, France24, MSNBC, Reuters, Sky News, Dailymotion, Youtube.

- Arabic : 3 hours audio from :

  Al Arabiya, Al Jazeera, Euronews, France24, Youtube.

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Roadmap of integration of Speech To Text and Machine Translation technologies

- **Step 1 (January to March 2012) :**

  - 2 languages : German > French
  - 1 STT system : VOCAPIA static (integration in progress …)
  - 4 MT systems (German to French) :   RWTH, Systran
    KIT (in progress), LIMSI (end April)

- **Step 2 (April to May 2012) :**

  - 4 languages : German, English, Arabic > French
  - Speech-to-text :
    - German : VOCAPIA daily-updated, VOCAPIA static, RWTH (tbc), KIT (tbc)
    - English : VOCAPIA daily-updated, VOCAPIA static, RWTH (tbc), KIT (tbc)
    - Arabic : VOCAPIA static
  - Machine translation:
    - German to French : RWTH, Systran, KIT, LIMSI (tbc)
    - English to French : RWTH, Systran, KIT, LIMSI (tbc)
    - Arabic to French : RWTH, Systran, LIMSI (tbc)

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Evaluation of Speech Translation for MSSE

- **User/Subjective evaluation of speech translation in MSSE :**

  - Will be done by MSSE : June 2012.

- **Objective evaluation of speech translation in CTC :**

  - In 2012 :
    - Will be done again by CTC WP 4.2 as every year.
    - Date : July to September 2012.
  - Next period :
    - CTC WP 4.2 can adapt the evaluation of SLT :
      - German to French
      - English to French
      - Arabic to French (STT corpus available ?)
    - DGA should coordinate
    - Corpus sources :
      - German, English, Arabic : data collected by Bertin.
      - Corpus from the MSSE usage evaluation (100 videos, …)

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Reminder

- Next meeting of the JWG MSSE/CTC :

- in Grenoble

- on Wednesday, April 11, 2012

- Time : 16h to 18h.

- Place : we start the meeting on the stand of BERTIN's demo.

- Then we can join a meeting room if necessary.

- Agenda : results of step 1 + plans of step 2

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Postdoctoral position available in Orange Labs

- Subject : "Hybrid approaches of query processing for CLIR"

  The objective is to "intelligently" translate (process) only queries instead of translating systemically the whole contents.

- Date : ASAP

- Knowledge : NLP, MT, CLIR and at least French and English.

- Contact : Malek Boualem, Orange Labs

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