Semantic Technology and MXF DMS-1

A Practical Approach

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This document has been finalised in September 2010 and may not reflect the developments that may have taken place after its finalisation.

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(Not so) Frequently Asked Questions.

- What is the sense of representing semantics?
- Are RDF and OWL the right tools?
- Does it make sense to embed metadata?
- Why is MXF DMS-1 a good approach?
- How do we match OWL and DMS-1?

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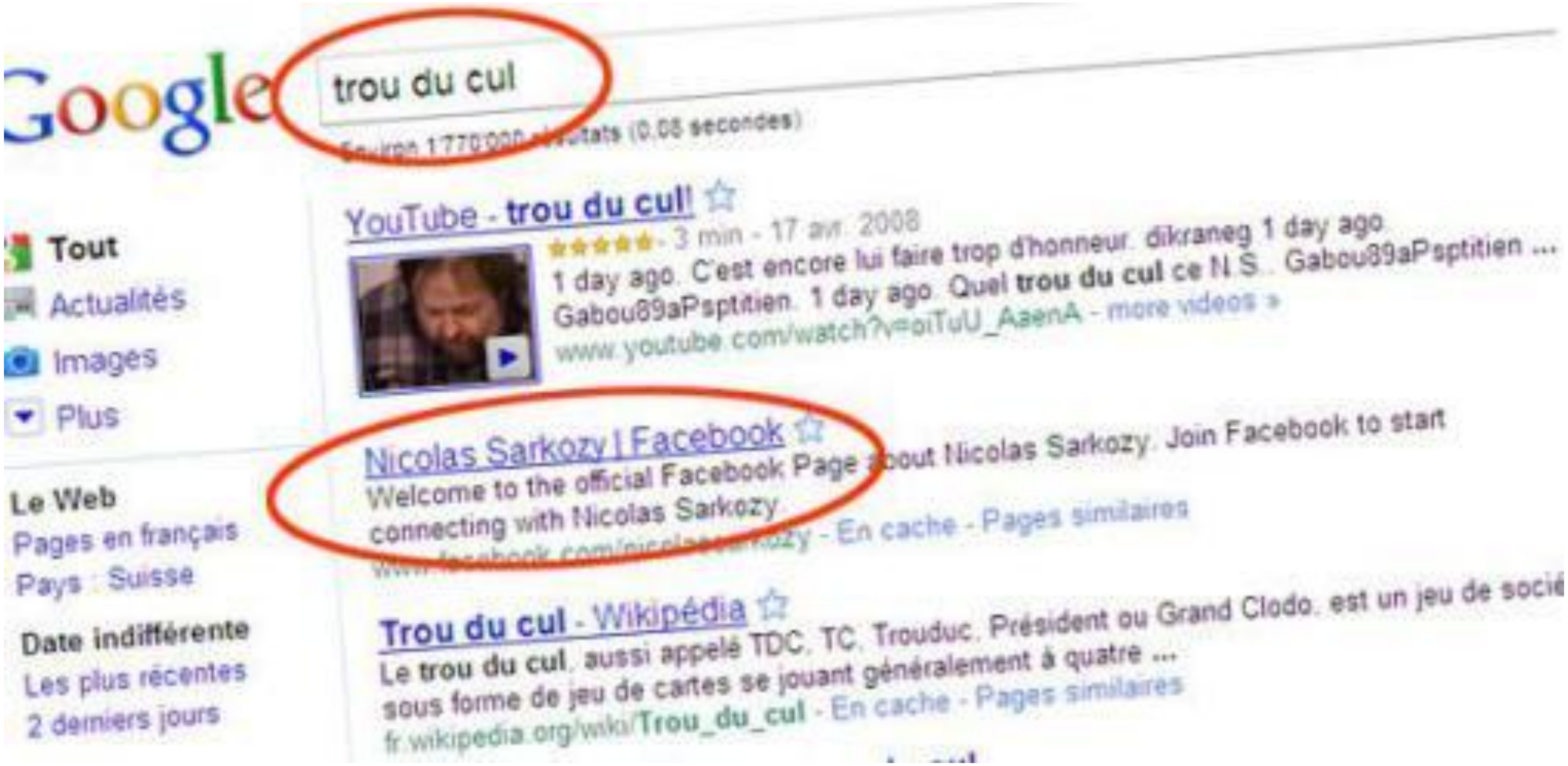
The Mayans recorded their history in hieroglyphics, a writing system that used pictures and certain symbols.

Archaeologists today are still trying to decode the many hieroglyphics found on religious temples, stairs, and the walls of homes and palaces.

Google


Google
Tout
Actualités
Images
Plus
Le Web
Pages en français
Pays : Suisse
Date indifférente
Les plus récentes
2 derniers jours

trou du cul

Environ 1 770 000 résultats (0,08 secondes)

YouTube - **trou du cul**!

★★★★★ - 3 min - 17 avr. 2008

dikraneg 1 day ago. C'est encore lui faire trop d'honneur. dikraneg 1 day ago. Gabou89aPsptitien ... Gabou89aPsptitien. 1 day ago. Quel **trou du cul** ce N.S.. Gabou89aPsptitien ...

www.youtube.com/watch?v=oiTuU_AaenA - more videos »

Nicolas Sarkozy | Facebook

Welcome to the official Facebook Page about Nicolas Sarkozy. Join Facebook to start connecting with Nicolas Sarkozy.

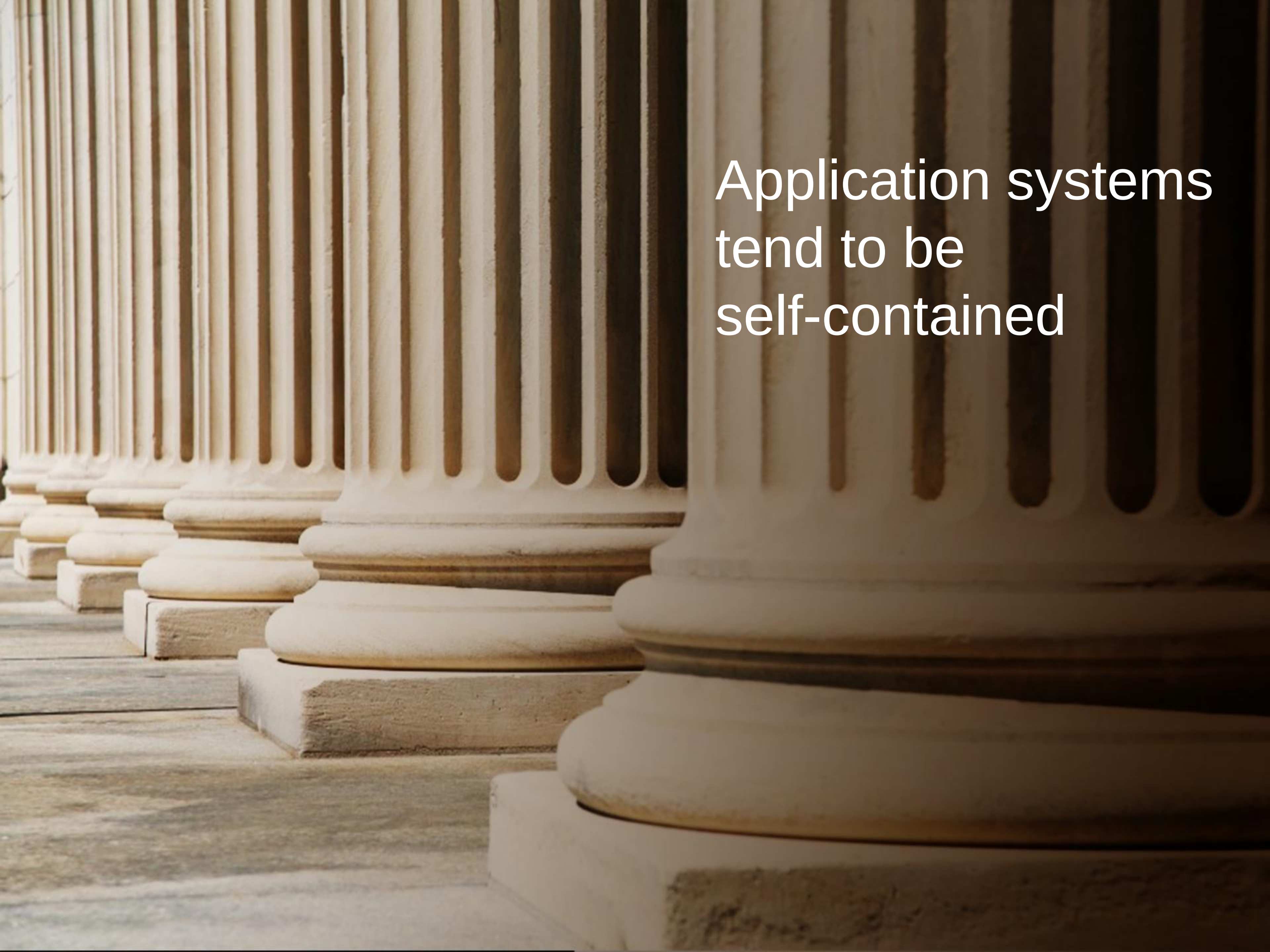
www.facebook.com/nicolassarkozy - En cache - Pages similaires

Trou du cul - Wikipédia

Le **trou du cul**, aussi appelé TDC, TC, Trouduc, Président ou Grand Clodo, est un jeu de société sous forme de jeu de cartes se jouant généralement à quatre ...

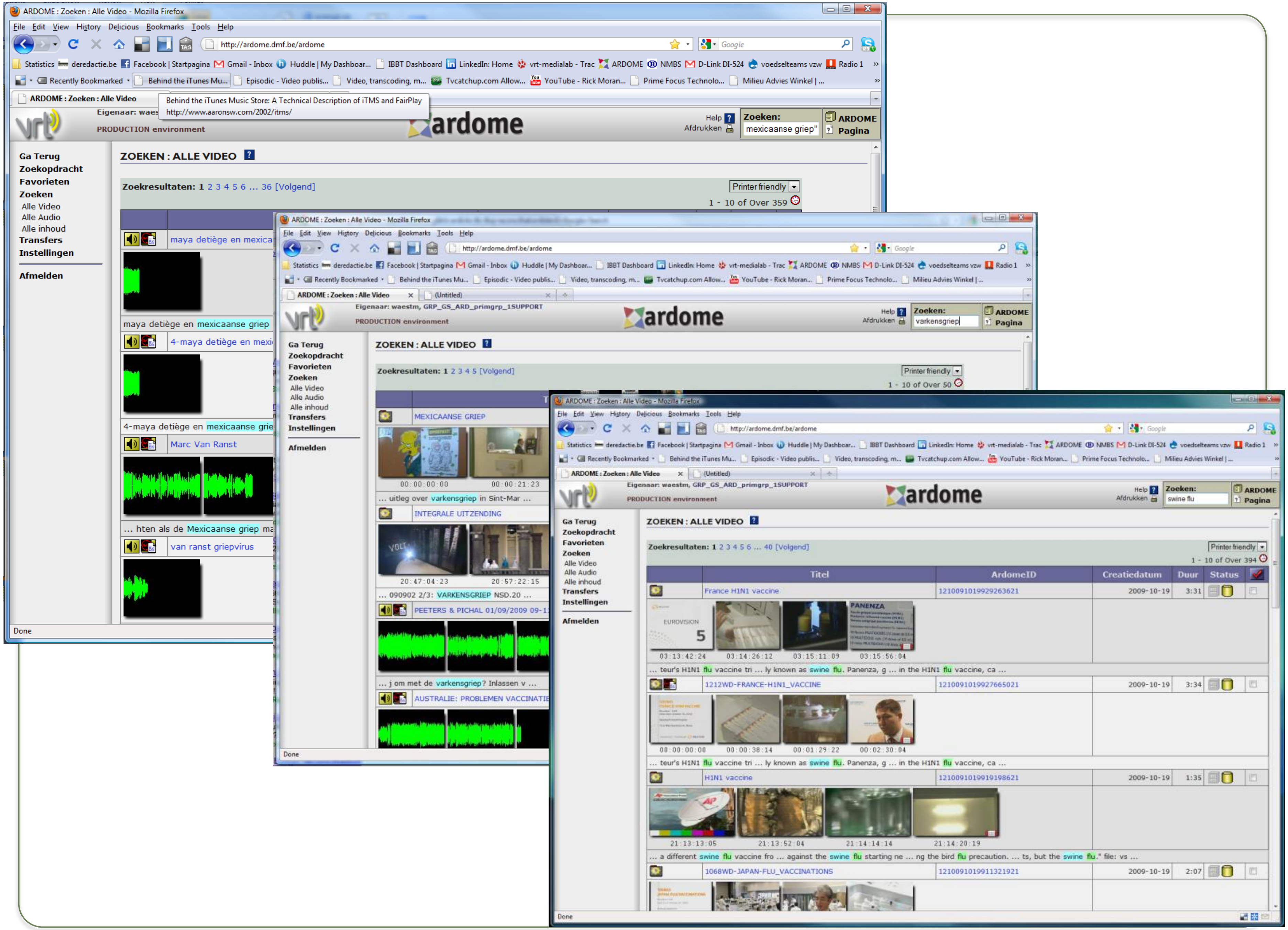
fr.wikipedia.org/wiki/**Trou_du_cul** - En cache - Pages similaires

Digitisation has just begun



Application systems tend to be self-contained

For the sake of interoperability, it is all-important to express semantics


ARDOME : Zoeken : Alle Video - Mozilla Firefox
File Edit View History Delicious Bookmarks Tools Help
http://ardome.dmf.be/ardome
Google
Statistics deredactie.be Facebook | Startpagina Gmail - Inbox Huddle | My Dashboar... IBBT Dashboard LinkedIn: Home vrt-medialab - Trac ARDOME NMBS D-Link DI-524 voedselteams vzw Radio 1
Recently Bookmarked Behind the iTunes Mu... Episodic - Video publis... Video, transcoding, m... Tvcatchup.com Allow... YouTube - Rick Moran... Prime Focus Technolo... Milieu Advies Winkel | ...
ARDOME : Zoeken : Alle Video
(Untitled)
vrt
ardome
Help
Afdrukken
ARDOME
Pagina
Ga Terug
Zoekopdracht
Favorieten
Zoeken
Alle Video
Alle Audio
Alle inhoud
Transfers
Instellingen
Afmelden
Printer friendly
Done

Behind the iTunes Music Store: A Technical Description of iTMS and FairPlay
http://www.aaronsw.com/2002/itms/

Eigenaar: waestm, GRP_GS_ARD_primgrp_1SUPPORT
PRODUCTION environment

Zoeken: mexicaanse griep"

ZOEKEN : ALLE VIDEO

Zoekresultaten: 1 2 3 4 5 6 ... 36 [Volgend]

1 - 10 of Over 359

maya detiège en mexica

maya detiège en mexicaanse griep

4-maya detiège en mexi

4-maya detiège en mexicaanse grie

Marc Van Ranst

... hten als de Mexicaanse griep ma

van ranst griepvirus

Zoeken: varkensgriep

ZOEKEN : ALLE VIDEO

Zoekresultaten: 1 2 3 4 5 [Volgend]

1 - 10 of Over 50

MEXICAANSE GRIEP

00:00:00:00 00:00:21:23

... uitleg over varkensgriep in Sint-Mar ...

INTEGRALE UITZENDING

20:47:04:23 20:57:22:15

... 090902 2/3: VARKENSGRIEP NSD.20 ...

PEETERS & PICHAL 01/09/2009 09-1

... j om met de varkensgriep? Inlassen v ...

AUSTRALIE: PROBLEMEN VACCINATI

Zoeken: swine flu

ZOEKEN : ALLE VIDEO

Zoekresultaten: 1 2 3 4 5 6 ... 40 [Volgend]

1 - 10 of Over 394

Titel	ArdomeID	Creatiedatum	Duur
France H1N1 vaccine	1210091019929263621	2009-10-19	3:31
1212WD-FRANCE-H1N1_VACCINE	1210091019927665021	2009-10-19	3:34
H1N1 vaccine	1210091019919198621	2009-10-19	1:35
1068WD-JAPAN-FLU_VACCINATIONS	1210091019911321921	2009-10-19	2:07

France H1N1 vaccine: 03:13:42:24 03:14:26:12 03:15:11:09 03:15:56:04

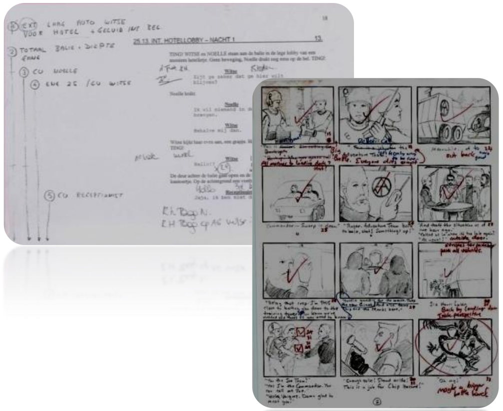
... teur's H1N1 flu vaccine tri ... ly known as swine flu. Panenza, g ... in the H1N1 flu vaccine, ca ...

1212WD-FRANCE-H1N1_VACCINE: 00:00:00:00 00:00:38:14 00:01:29:22 00:02:30:04

... teur's H1N1 flu vaccine tri ... ly known as swine flu. Panenza, g ... in the H1N1 flu vaccine, ca ...

H1N1 vaccine: 21:13:13:05 21:13:52:04 21:14:14:14 21:14:20:19

... a different swine flu vaccine fro ... against the swine flu starting ne ... ng the bird flu precaution. ... ts, but the swine flu." file: vs ...



?

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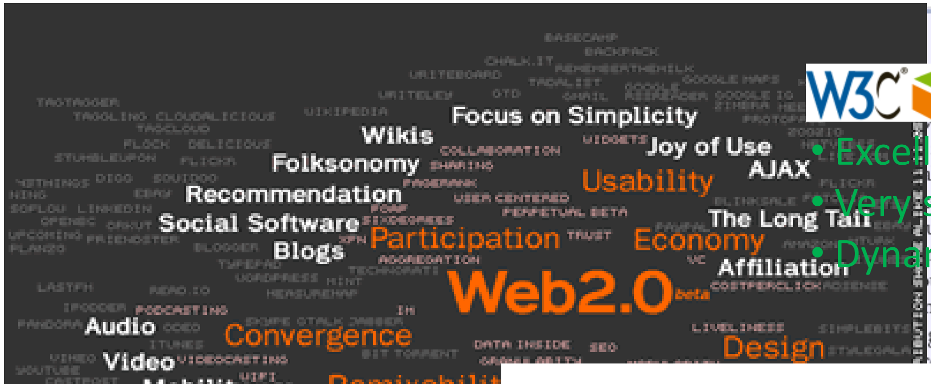
Focus on Simplicity
Wikis
Joy of Use
Folksonomy
AJAX
Usability
Recommendation
Social Software
The Long Tail
Participation
Economy
Blogs
Affiliation
Web2.0 beta
Audio
Convergence
Design
Video
Mobility
Remixabilit
RSS
OpenAPIs
DataDrive

W3C Semantic Web

- Excellent precision
- Very scalable
- Dynamic

machine began to work. He knew that they were out there already, seeing people, making telephone calls; and he knew that they must be very expensive.

At first, he took a lively, even rather self-important interest in the question of who had hired the men and their machine. Who would bother to do this to him? There was his brother, a huge exhausted man whom Denton had never liked or disliked or felt

of w
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as all done now,
way. Denton moved slowly through the
ent of his half-converted flatlet,
almed, listless, his mind as vacant as the
e filled windowpanes and the shrilly
ureless walls. Nothing bored him
All day he wandered silently
ugh the flat, not paying for it (no
ment seemed to be seriously expected),
going to his office more than once or
e a week and then not at all (and no one

stopped liking them. Whatever happened to me? thought Denton. Sometimes he would get a repeated image of himself at the age of six or seven, running for the school bus, a satchel clutched to his side, his face fresh and unanxious — and suddenly Denton would lean forward and sob huskily into his hands, and stand up after a while, and make tea perhaps, and gaze out at the complicated goings-on in the square, feeling drunk and wise. Denton thanked whoever had hired the
fore

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rum
ould
h the
Denton
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;
panes;
y and
nd
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e,
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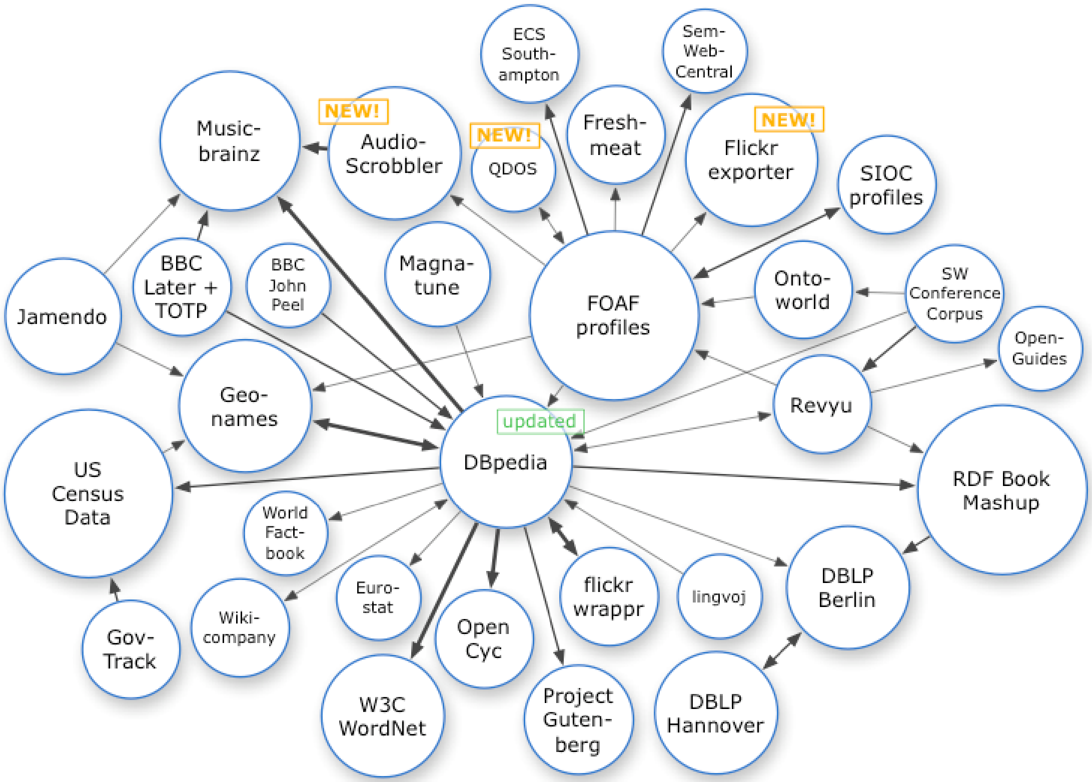

ECS Southampton
Sem-Web-Central
Music-brainz
NEW!
Audio-Scrobbler
NEW!
QDOS
Fresh-meat
NEW!
Flickr exporter
SIOC profiles
BBC Later + TOTP
BBC John Peel
Magna-tune
FOAF profiles
Onto-world
SW Conference Corpus
Jamendo
Open-Guides
Geo-names
Revyu
updated
DBpedia
US Census Data
RDF Book Mashup
World Fact-book
Euro-stat
flickr wrappr
lingvoj
DBLP Berlin
Gov-Track
Wiki-company
Open Cyc
W3C WordNet
Project Guten-berg
DBLP Hannover

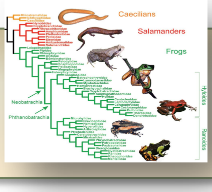
e)

Phrynobatrachidae
Petropedetidae
Pyxicephalidae
Dicroglossidae
Nyctibatrachidae
Ranidae
Rhacophoridae
Mantellidae

craft

Precision - Recall
Interoperability

W3C Semantic Web


Caecilians
Salamanders
Frogs
Neobatrachia
Pthanobatrachia
Hyloides
Ranoides

Focus on Simplicity
Wikis
Folksonomy
Joy of Use
Usability
AJAX
Recommendation
Social Software
Participation
Economy
The Long Tail
Blogs
Affiliation
Web2.0
Audio
Convergence
Design
Video
Mobility
Remixability
Standardization
RSS
OpenAPIs
CSS-Design
DataDriven
Web Standards
Microformats

"Denton's Death" - by Martin Amis

Semantic Web
- 2nd order normalisation (Relationships)
- Excellent Precision and Recall

Thesauri and taxomony
- 1st order normalisation (Concepts)
- Limited relationship-types ('BT', 'NT', 'UF', 'RT')

Tagging
- Poor normalisation
- Inconsistant

Plain text indexing
- No normalisation
- Poor precision and recall

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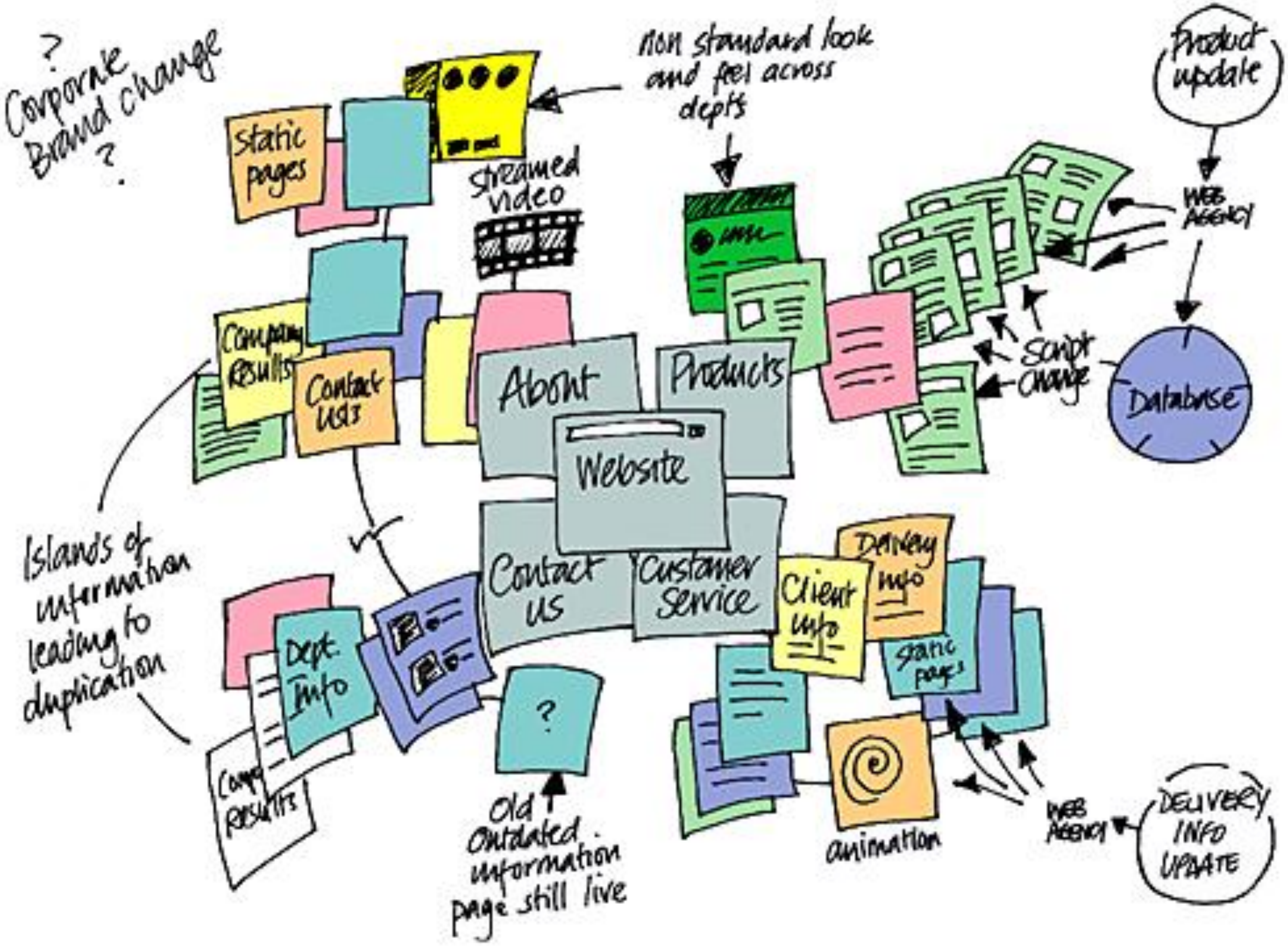
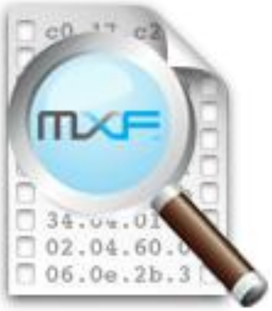
But – what was it again we were talking about?

The challenge is **not** the retrieval of text, it is about the ability to index and search fragments of audio and video.


? Corporate Brand change ?
Static pages
Non standard look and feel across depts
Product update
streamed video
WEB AGENCY
Company results
Contact us
About
Products
Script change
Database
Website
Contact us
Customer service
Client info
Delivery info
static pages
Islands of information leading to duplication
Dept. Info
Comp results
?
Old Outdated information page still live
animation
WEB AGENCY
DELIVERY INFO UPDATE

Quantum
CLNU20
QTM576


MXF
c0 17 c2
34.04.01
02.04.60.0
06.0e.2b.3

SMPTE

UMID

eyes

You beat

INT. NEAH BAY - DAY

Curtis is on the phone again in Port Angeles,
his tooth with a toothpick.

CURTIS

Hello? Yeah, this is Ed Curtis down in
Neah Bay. Yeah, I called you a couple
a days ago about buying a whale! How
much would it cost to just let someone
stand on top of one? Uh huh, uh huh...

EXT - PORT ANGELES HARBOUR DAY

MORDECAI is standing on a whale, just like in the Curtis
film. CURTIS is trying to get the frame right. MAY is
standing by. A dock-worker is standing by to observe this
in the name of the dock authorities.

CURTIS

This looks like crap.

MAY

Crap?

CURTIS

It looks bad Karl. This was a pretty
hokey idea to begin with.

MAY

No hokier than putting the young man
in an old fur.

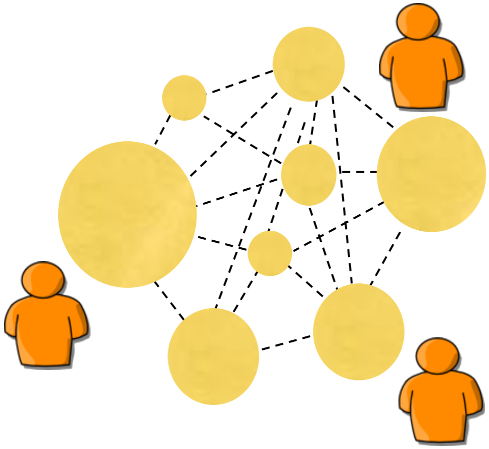
CURTIS

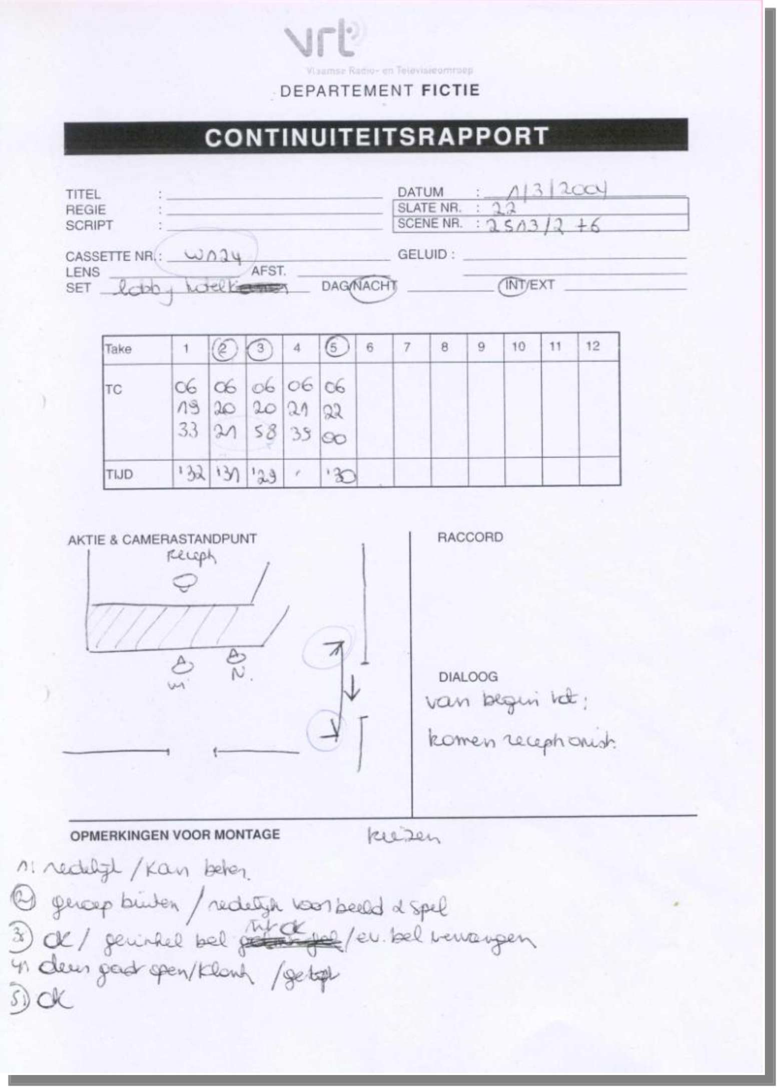
That's different.

MORDECAI

(from on top of the
you get on with it
silly like th
le is start

A typical use case (1)





Vlaamse Radio- en Televisieomroep

DEPARTEMENT **FICTIE**

CONTINUITEITSRAPPORT

TITEL :
REGIE :
SCRIPT :

DATUM : 1/3/2004
SLATE NR. : 22
SCENE NR. : 25/13/2 +6

CASSETTE NR. : W124
LENS AFST.
SET lobby hotel
DAG/[✓ NACHT]
[✓ INT]/EXT
GELUID :

Take	1	②	③	4	⑤	6	7	8	9	10	11	12
TC	06 19 33	06 20 21	06 20 58	06 21 35	06 22 00							
TIJD	'32	'31	'29	'	'30							

AKTIE & CAMERASTANDPUNT

RACCORD

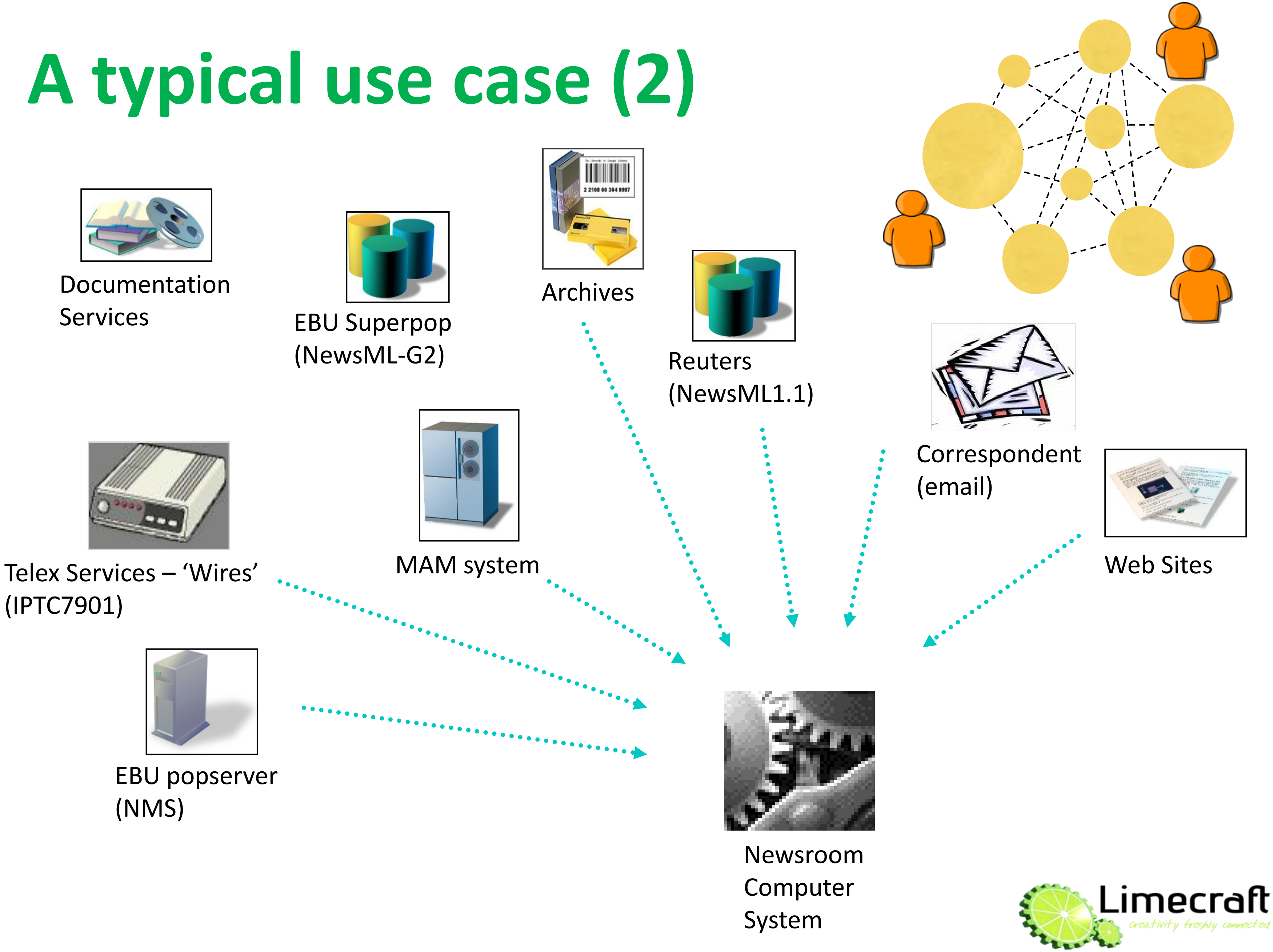
DIALOOG

van begin tot:
komen receptionist.

OPMERKINGEN VOOR MONTAGE kruizen

1: redelijk / kan beter.
② geroep buiten / redelijk voor beeld & spel
③ ok / gerinkel bel ~~[illegible]~~ niet ok / ev. bel vervangen
4: deur gaat open/klonk / getapt
⑤ ok

A typical use case (2)



Documentation Services

EBU Superpop (NewsML-G2)

Archives

Reuters (NewsML1.1)

Correspondent (email)

Telex Services – ‘Wires’ (IPTC7901)

MAM system

Web Sites

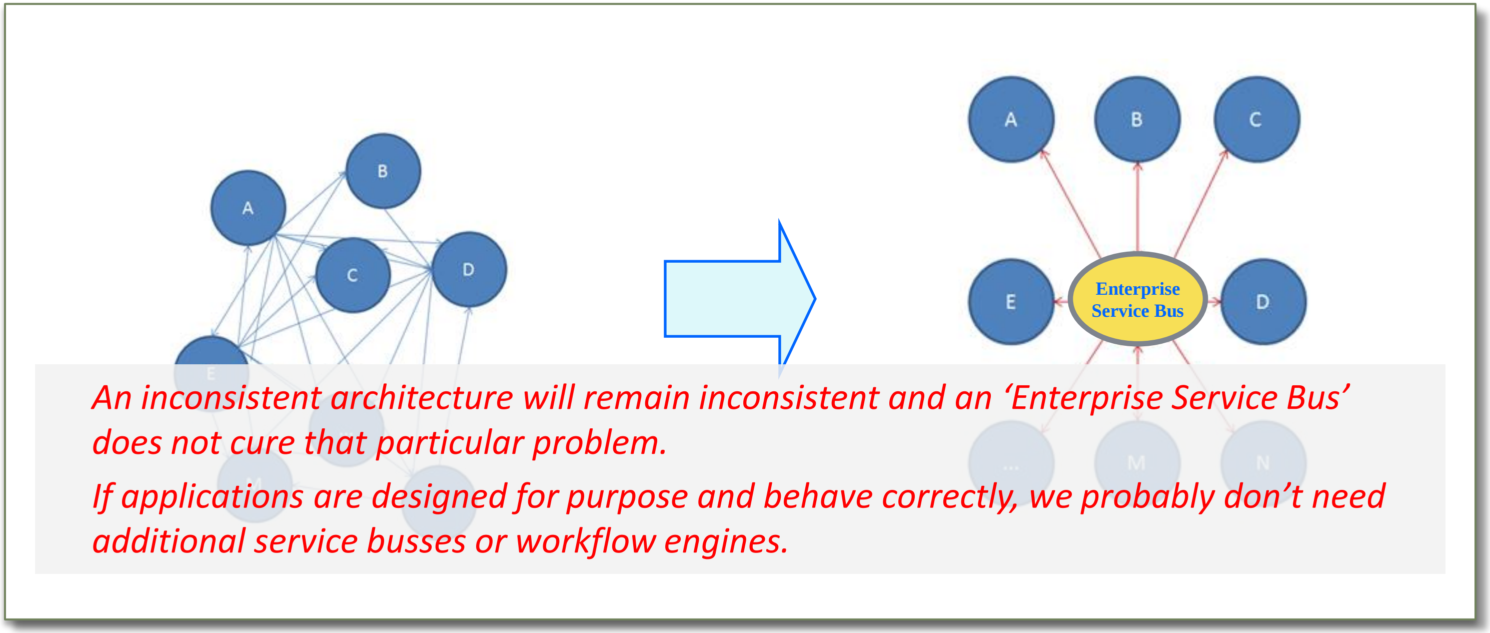
EBU popserver (NMS)

Newsroom Computer System

The Service Oriented Architecture

EBU Production Management Seminar 2009 on ***Service Oriented Architecture***

- An SOA “has the ability to manage the complexity” (CISCO)
  -> It usually increases it;
- “The ESB should replace all application specific interfaces by an general purpose abstract interface”(IBM)
  -> Applications should support proper standards (NewsML-G2, TVAnytime, Mpeg7,…);
- “The SOA and the ESB simplify your service portfolio, e.g. a single video transcoder ” (a Broadcaster).
  -> These assumptions lead to massive overconsumption of IT infrastructure;

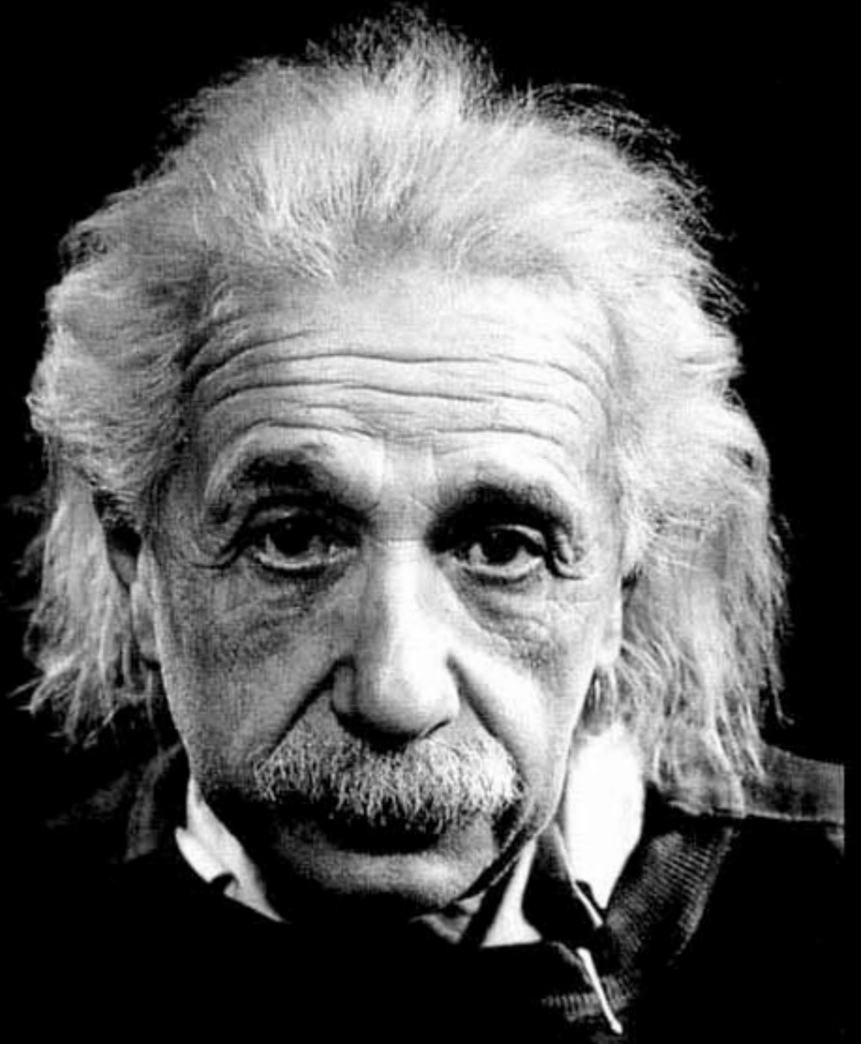


An inconsistent architecture will remain inconsistent and an ‘Enterprise Service Bus’ does not cure that particular problem.

If applications are designed for purpose and behave correctly, we probably don’t need additional service busses or workflow engines.

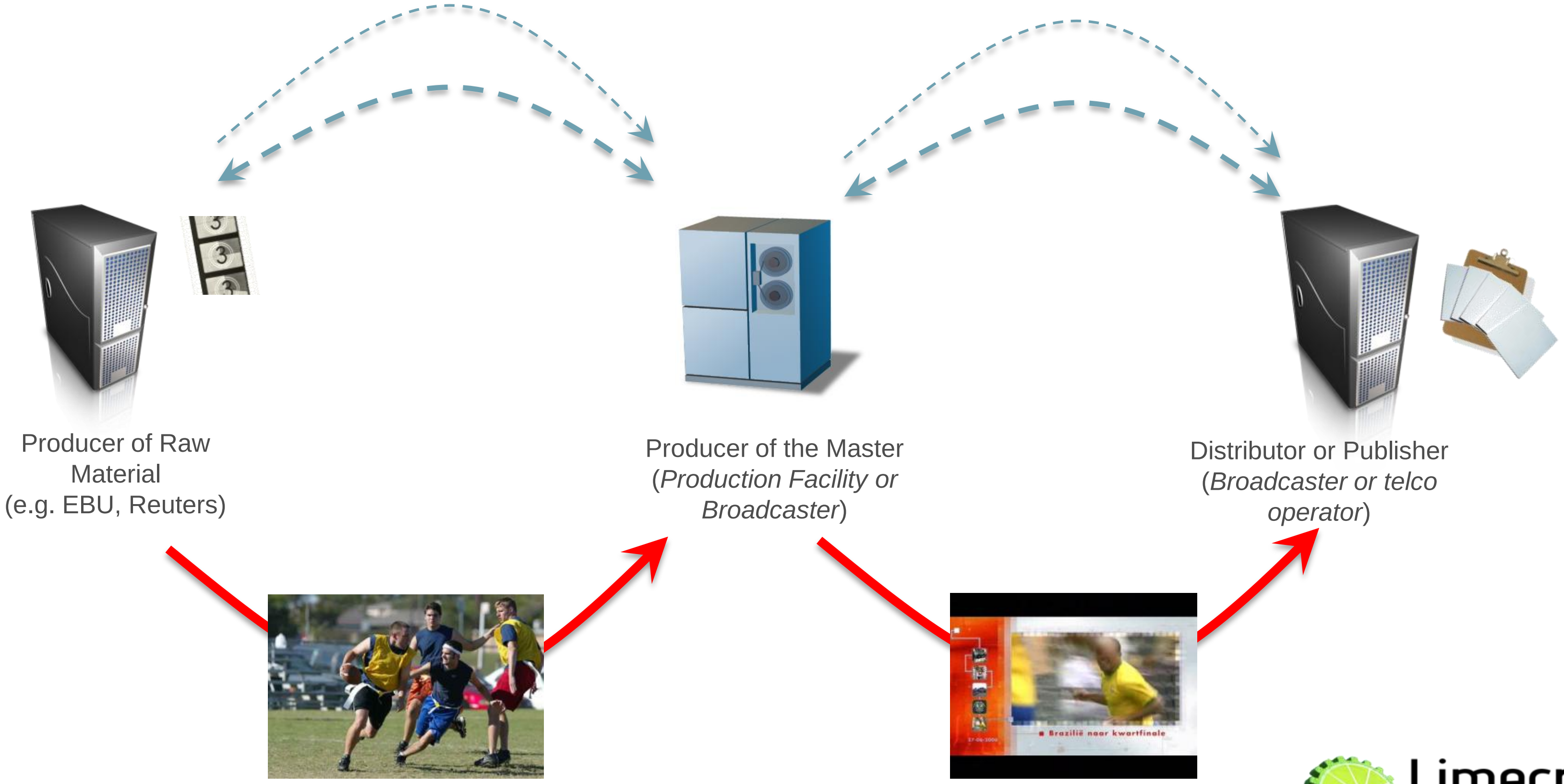
SOA – *Some Overstretched Assumptions?*

> “Everything should be made as simple as possible, but not simpler.”
>
> Albert Einstein



The Business Case

1. Overview via RSS
2. Search and selection via http (REST) – *What you select is what you get*
3. File Transfer - essence and embedded metadata



Producer of Raw Material
(e.g. EBU, Reuters)

Producer of the Master
(*Production Facility or Broadcaster*)

Distributor or Publisher
(*Broadcaster or telco operator*)

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Design requirements

	MXF SMPTE	Adobe xmp™	QuickTime
Embedded metadata!	ϒ	ϒ	ϒ
Metadata and indices should be • Time-code based, frame accurate • Multi-valued if appropriate • Nested if applicable	ϒ	ϒ	χ
A metadata schema should comply with • Programme – Item – Media Object • Thesaurus systems	ϒ	χ	χ

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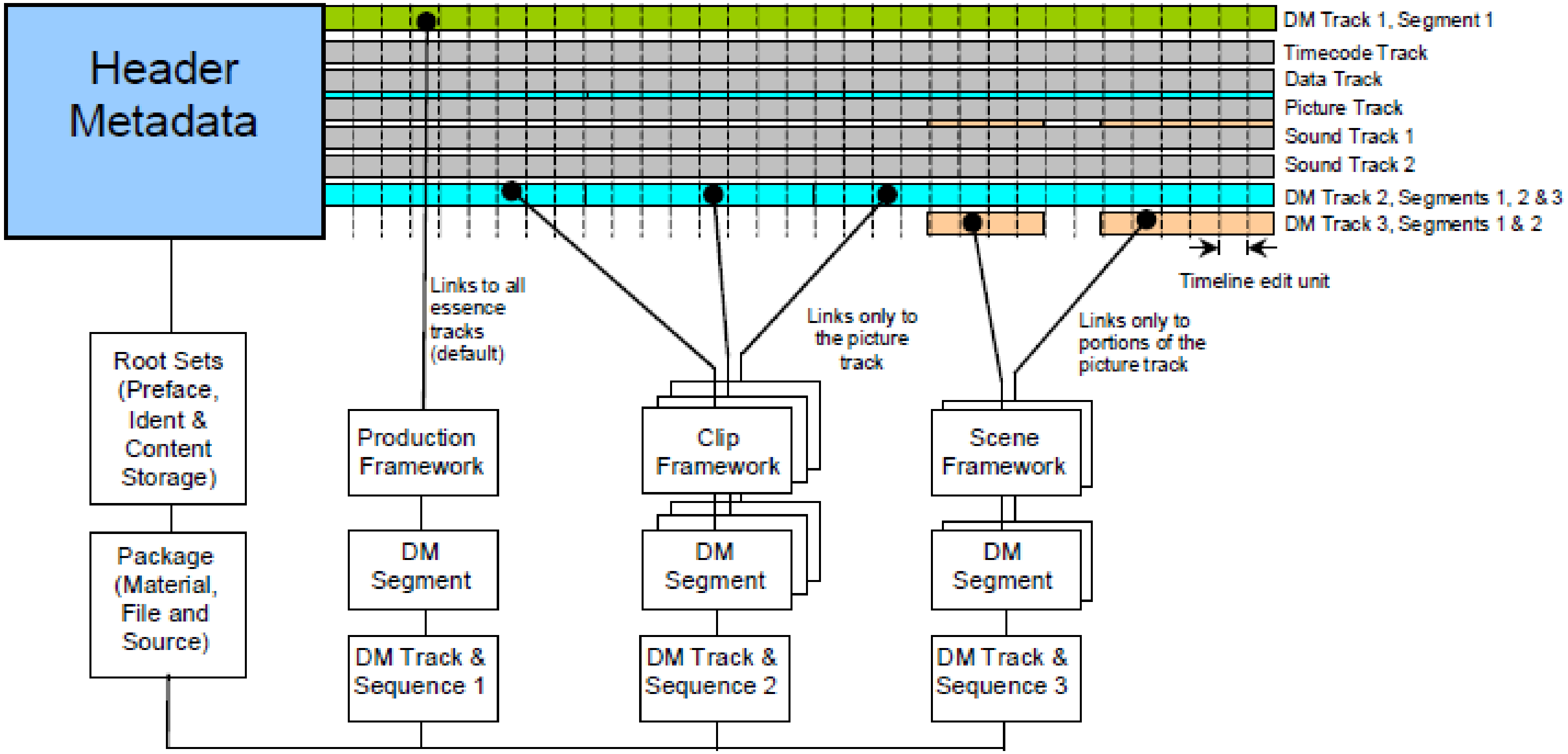
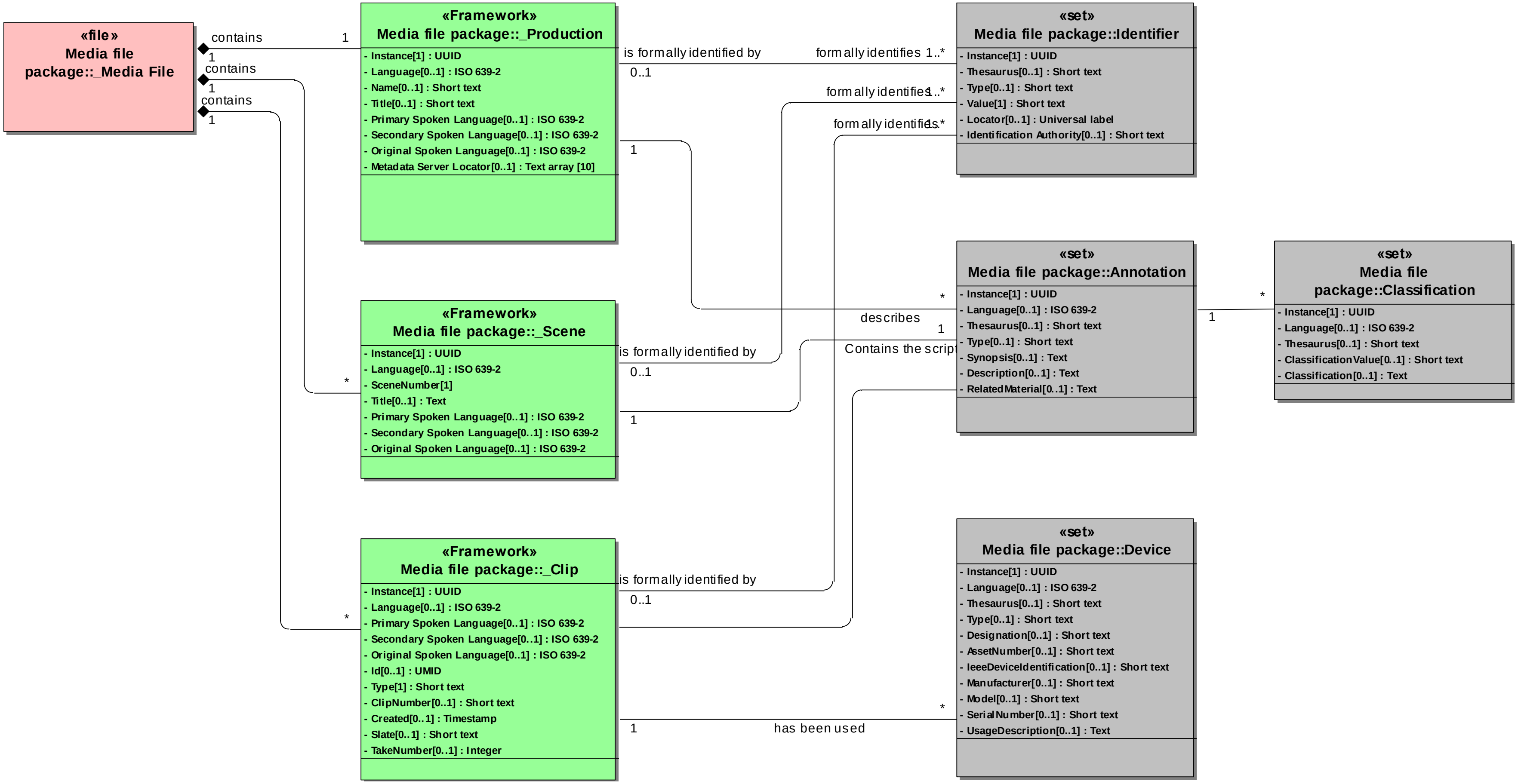
Descriptive Metadata Schema 1


Header Metadata
DM Track 1, Segment 1
Timecode Track
Data Track
Picture Track
Sound Track 1
Sound Track 2
DM Track 2, Segments 1, 2 & 3
DM Track 3, Segments 1 & 2
Timeline edit unit
Links to all essence tracks (default)
Links only to the picture track
Links only to portions of the picture track
Root Sets (Preface, Ident & Content Storage)
Package (Material, File and Source)
Production Framework
Clip Framework
Scene Framework
DM Segment
DM Segment
DM Segment
DM Track & Sequence 1
DM Track & Sequence 2
DM Track & Sequence 3

Descriptive Metadata Schema 1


contains
1
1
contains
1
1
*
contains
1
*
is formally identified by
0..1
formally identifies 1..*
formally identifies 1..*
formally identifies 1..*
1
*
describes
1
Contains the script
is formally identified by
0..1
1
1
*
is formally identified by
0..1
1
has been used
*

«file»
Media file package::_Media File

«Framework»
Media file package::_Production
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Name[0..1] : Short text
- Title[0..1] : Short text
- Primary Spoken Language[0..1] : ISO 639-2
- Secondary Spoken Language[0..1] : ISO 639-2
- Original Spoken Language[0..1] : ISO 639-2
- Metadata Server Locator[0..1] : Text array [10]

«Framework»
Media file package::_Scene
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- SceneNumber[1]
- Title[0..1] : Text
- Primary Spoken Language[0..1] : ISO 639-2
- Secondary Spoken Language[0..1] : ISO 639-2
- Original Spoken Language[0..1] : ISO 639-2

«Framework»
Media file package::_Clip
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Primary Spoken Language[0..1] : ISO 639-2
- Secondary Spoken Language[0..1] : ISO 639-2
- Original Spoken Language[0..1] : ISO 639-2
- Id[0..1] : UMID
- Type[1] : Short text
- ClipNumber[0..1] : Short text
- Created[0..1] : Timestamp
- Slate[0..1] : Short text
- TakeNumber[0..1] : Integer

«set»
Media file package::Identifier
- Instance[1] : UUID
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Value[1] : Short text
- Locator[0..1] : Universal label
- Identification Authority[0..1] : Short text

«set»
Media file package::Annotation
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Synopsis[0..1] : Text
- Description[0..1] : Text
- RelatedMaterial[0..1] : Text

«set»
Media file package::Classification
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- ClassificationValue[0..1] : Short text
- Classification[0..1] : Text

«set»
Media file package::Device
- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Designation[0..1] : Short text
- AssetNumber[0..1] : Short text
- IeeeDeviceIdentification[0..1] : Short text
- Manufacturer[0..1] : Short text
- Model[0..1] : Short text
- SerialNumber[0..1] : Short text
- UsageDescription[0..1] : Text

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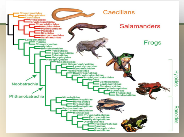
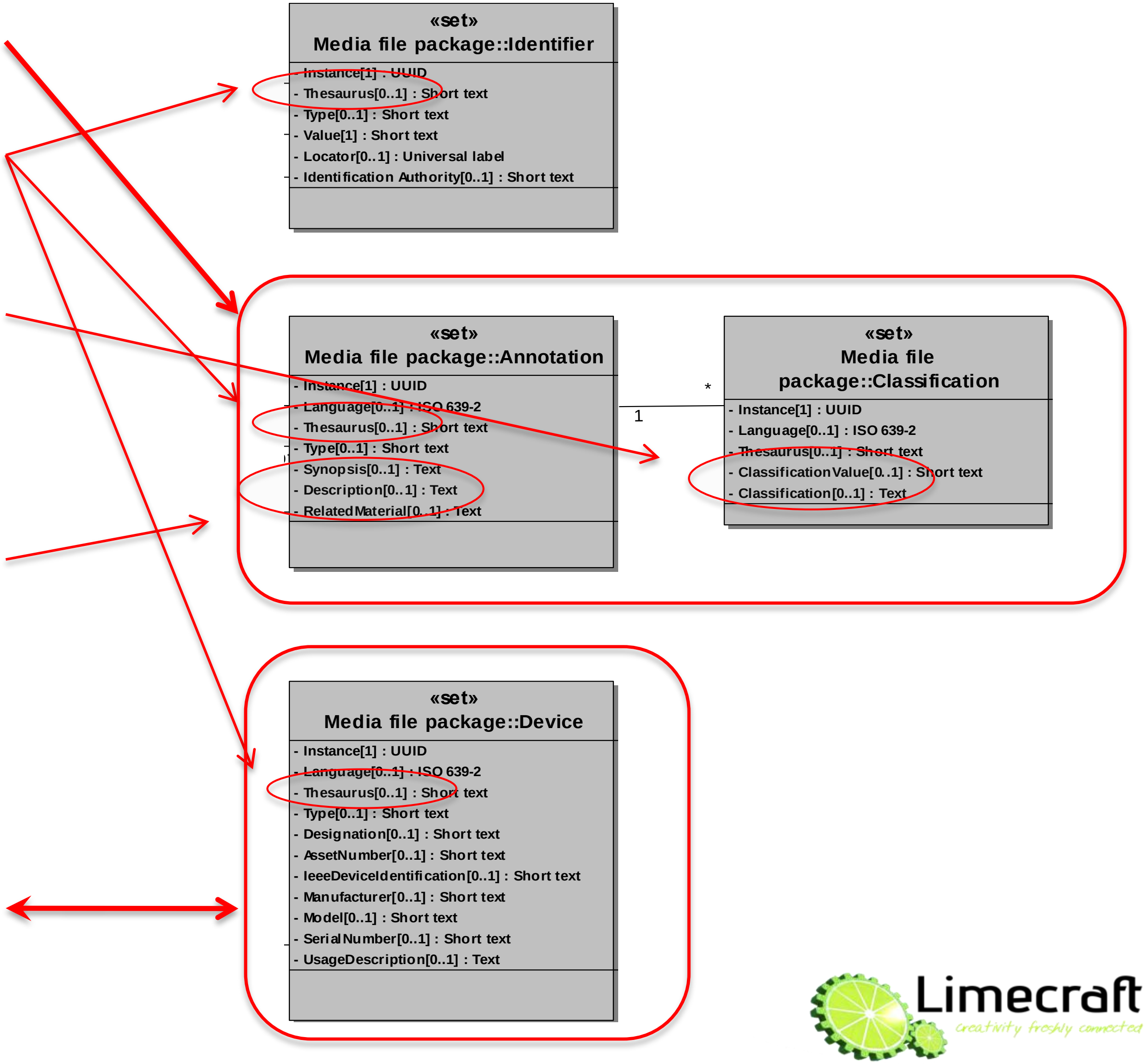
What about semantic technology and DMS-1?

W3C
Semantic Web


Caecilians
Salamanders
Frogs

Focus on Simplicity
Wikis
Joy of Use
Folksonomy
Usability
AJAX
Recommendation
Social Software
The Long Tail
Participation
Economy
Blogs
Affiliation
Web2.0
Audio
Convergence
Design
Video
Mobility
Remixability
RSS
OpenAPIs
Standardization
CSS-Design
DataDriven
Web Standards
Microformats

"Denton's Death" - by Martin Amis



«set»
Media file package::Identifier

- Instance[1] : UUID
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Value[1] : Short text
- Locator[0..1] : Universal label
- Identification Authority[0..1] : Short text

«set»
Media file package::Annotation

- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Synopsis[0..1] : Text
- Description[0..1] : Text
- RelatedMaterial[0..1] : Text

«set»
Media file package::Classification

- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- ClassificationValue[0..1] : Short text
- Classification[0..1] : Text

«set»
Media file package::Device

- Instance[1] : UUID
- Language[0..1] : ISO 639-2
- Thesaurus[0..1] : Short text
- Type[0..1] : Short text
- Designation[0..1] : Short text
- AssetNumber[0..1] : Short text
- IeeeDeviceIdentification[0..1] : Short text
- Manufacturer[0..1] : Short text
- Model[0..1] : Short text
- SerialNumber[0..1] : Short text
- UsageDescription[0..1] : Text

Limecraft
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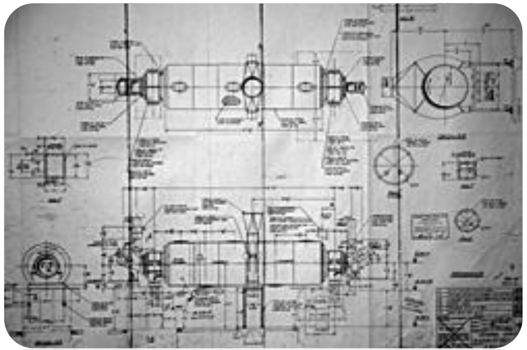
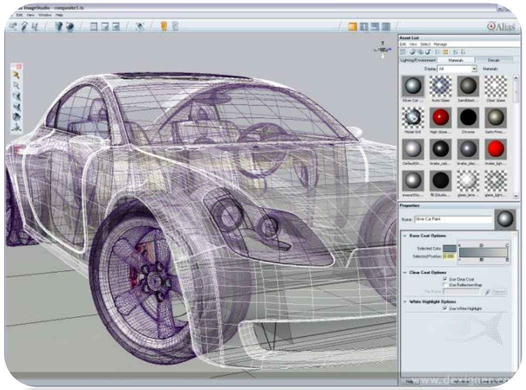
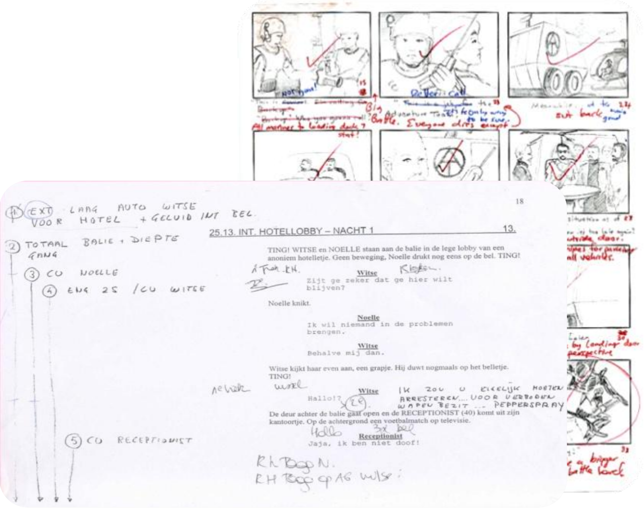






① EXT LANG AUTO WITSE VOOR HOTEL + GELUID INT BEL

18

25.13. INT. HOTELLOBBY – NACHT 1 13.

② TOTAAL BALIE + DIEPTE GANG

TING! WITSE en NOELLE staan aan de balie in de lege lobby van een anoniem hotelletje. Geen beweging. Noelle drukt nog eens op de bel. TING!

③ CU NOELLE

④ ENG 25 /CU WITSE

Witse

Zijt ge zeker dat ge hier wilt blijven?

Noelle knikt.

Noelle

Ik wil niemand in de problemen brengen.

Witse

Behalve mij dan.

Witse kijkt haar even aan, een grapje. Hij duwt nogmaals op het belletje. TING!

Witse

Hallo!?

IK ZOU U EIGELIJK MOETEN ARRESTEREN.... VOOR VERBODEN WAPEN BEZIT ... PEPPERSPRAY

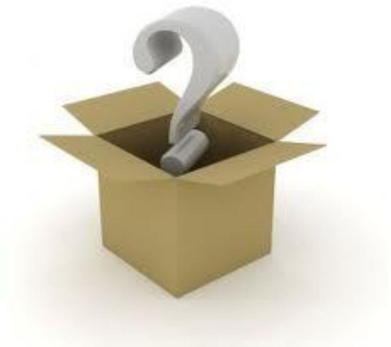
De deur achter de balie gaat open en de RECEPTIONIST (40) komt uit zijn kantoortje. Op de achtergrond een voetbalmatch op televisie.

⑤ CU RECEPTIONIST

Hallo 3x bel

Receptionist

Jaja, ik ben niet doof!



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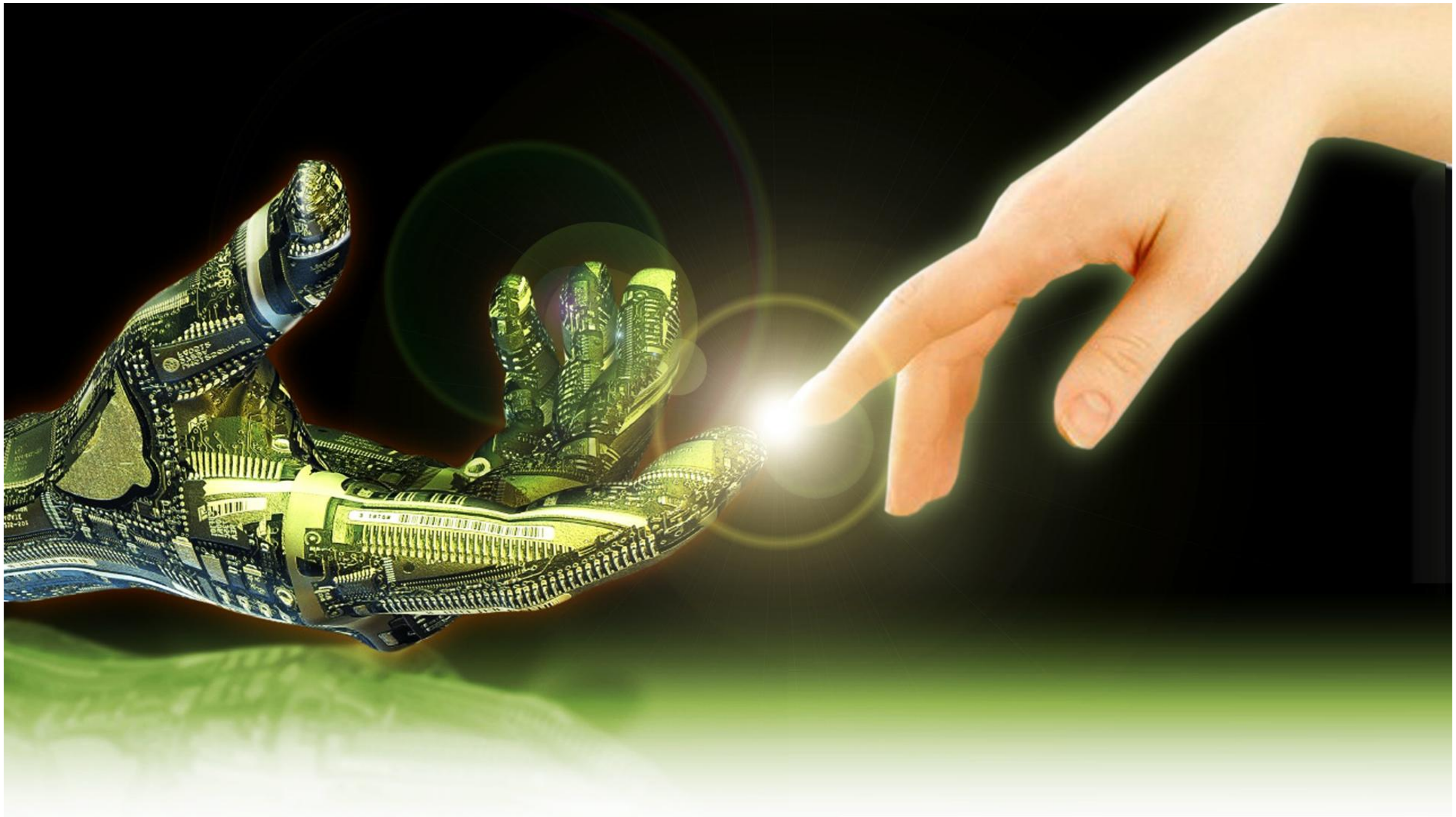
- Limecraft
  - Incorporated May 11th, 2010
  - Team van experten
  - Appelation d'Origine Controlé
  - Spin-off van VRT-medialab, Ugent en IBBT

- What do we do
  - Design and development of professional systems
  - Professional Services
  - Integrated Production System (IBC 2012)



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- http://twitter.com/limecraft
- maarten.verwaest@limecraft.com

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Eastern Egg

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