

# *Sistemi Collaborativi e di Protezione (SCP)*

**Corso di Laurea Magistrale in Ingegneria**

***Prof. Paolo Nesi***

Department of Information Engineering, DINFO

University of Florence

Via S. Marta 3, 50139, Firenze, Italy

tel: +39-055-4796523, fax: +39-055-4796363

**DISIT Lab**

<http://www.disit.dinfo.unifi.it/>

paolo.nesi@unifi.it, <http://www.disit.dinfo.unifi.it/nesi>



# Cosa vediamo Oggi

- ❏ Modello del corso
- ❏ Laboratorio DISIT
- ❏ Progetti in corso e attività correlate
- ❏ Visione generale del corso





# Argomenti del Corso: 2013-2014

- ⌚ Parte 0: descrizione del corso: obiettivi, argomenti, e benefici per gli studenti del corso
- ⌚ Parte 1: sistemi di protezione dei contenuti digitali, DRM e CAS
- ⌚ Parte 2: internet advertising, etc.
- ⌚ Parte 3: XML, RDF, Ontologies, reasoning
- ⌚ Parte 4: Mining, Crawling and Natural Language Processing
- ⌚ Parte 5: knowledge modeling and management, QA
- ⌚ Parte 6: Bigdata solutions and analytics, e.g., Smart Cyties
- ⌚ Parte 7: sistemi collaborativi, social media, social network, integrazione con reti sociali, applicazioni per social network, social network analysis
- ⌚ Parte 8: Anatomia di una Social Network: valutazione del comportamento degli utenti, collective intelligence, raccomandazioni in social media,



# Argomenti del Corso: 2014-2015

- ⌚ Parte 0: descrizione del corso: obiettivi, argomenti, e benefici per gli studenti del corso
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- ⌚ Parte 5: knowledge modeling and management, QA
- ⌚ Parte 6: Social Media technologies, anatomia di una Social Network: valutazione del comportamento degli utenti, collective intelligence, raccomandazioni in social media
- ⌚ Parte 7: open data, linked open data, bigdata solutions and analytics, e.g., Smart Cyties





# Modello del Corso

- ⌘ Tipicamente per ogni argomento sono presentati:
  - ♣ Requisiti e motivazioni dello sviluppo dell'argomento
    - ➔ Punto di vista dell'utente e del gestore
  - ♣ Stato dell'arte
    - ➔ Basi teoriche e tecnologiche
    - ➔ Eventuali standard
    - ➔ Prodotti di mercato (leader), pro e contro
  - ♣ Recenti Innovazioni e tendenze
  - ♣ Confronti fra le varie tecnologie e nuove soluzioni, pro e contro
  - ♣ Dettagli progettuali
  - ♣ Aspetti prestazionali e di scalabilità
- ⌘ Seminari di altri studenti e/o esperti, ....



# Ricevimento ed esame



## Ricevimento per la didattica frontale

-  In ufficio: Via S. Marta
-  Tutti i Venerdì dalle ore 11:00 alle 13:00

## Ricevimento per elaborati

-  *Ogni giorno, dalle 8:00 alle 20:00, inviate una email*

## Modalità per il superamento dell'esame

-  Completare un elaborato concordato
-  Argomenti: sulle tematiche del corso

## Eventuali stage e tesi



# SWCP:

# <http://www.disit.org/5494>



Distributed Systems and Internet Technologies Lab  
 Distributed Data Intelligence and Technologies Lab  
 Department of Information Engineering (DINFO)  
 University of Florence

<http://www.disit.dinfo.unifi.it>

qualsiasi tipo

HOME ABOUT RESEARCH INNOVATION CORSI E TESI COME FARE EVENTI MIO PROFILO

paolo nesi Uscire

Mostra Modifica

TESI, ELABORATI E STAGE

SISTEMI DISTRIBUITI

SISTEMI COLLABORATIVI E DI PROTEZIONE

PHD COURSES

LISTA CORSI

ACCESSO AL DISIT

PROGED

## DISIT LAB OVERVIEW

**DISIT lab and research group** is active since 1994 as one of the most active ICT labs of the University of Florence, metropolitan area. We have successfully developed a relevant number of International research, development and innovation projects. DISIT focuses on research for cloud and distributed computing.

DISIT has coordinated a number of large EC projects, playing the role of partner coordinating scientific and technical Work Packages of dissemination and assessment. DISIT has received several awards and is directly involved into top level international projects.

**DISIT research areas:** big data, semantic models and computing, knowledge mining and representation, artificial intelligence, natural language processing, distributed systems, high performance, content and data licensing and protection, ontology modelling, formal models, metrics definition and assessment, data mining and understanding, digital rights management and conditional access.

**DISIT Techniques:** data analytic, clustering, indexing and search, link discovering, regression, holistic regression, machine learning, prediction, inference, deduction, recognition, disambiguation.

**DISIT solutions for:** user behaviour analysis, recommendation, multilingual and cross media indexing, user and collective profiling, indoor/outdoor navigation, media synchronisation, matchmaking, audio transcoding, decision support, sentient and autonomous agents and tools, open data, linked open data.



fiver



[DISIT Lab overview](#)

(see more on [Publications](#) and [Current Projects](#) page, see on the left bar of this page for the Conferences in which DISIT is directly involved). [See web page of DISIT coordinator Prof. Paolo Nesi](#)

**DISIT commitment** for the next 2015 European Commission Calls and ICT proposers' day 2014 are reported below, while major information can be easily recovered by performing a query above, by searching on the web page, projects, documents, papers, deliverables and slides available and indexed on the DISIT

### CONTENUTI

- [Ultime Attività](#)
- [In primo piano](#)
- [Più visti](#)
- [Most Viewed \(last 250\)](#)
- [Ultimi caricati](#)
- [Più votati](#)
- [Mie collezioni pubblicate](#)
- [Miei contenuti](#)
- [Carica un nuovo contenuto](#)

### CLASSIFICAZIONE

Lista dei termini

- ▶ [application fields \(2404\)](#)
- ▶ [content kind \(686\)](#)
- ▶ [models and systems \(1815\)](#)
- ▶ [project kind \(425\)](#)
- ▶ [research topics \(5370\)](#)
- ▶ [standard \(134\)](#)

### E-LEARNING: CORSI

Tutti i corsi  
 Tutte le categorie di corsi  
 Tutti gli insegnanti  
 Le mie attività e-learning





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***Distributed Data Intelligence and Technologies Lab***  
***Distributed Systems and Internet Technologies Lab***

***Prof. Paolo Nesi***

***Via S. Marta, ala destra, 2' piano***

***<http://www.disit.dinfo.unifi.it>***

***<http://www.disit.dinfo.unifi.it>***





Distributed Systems and Internet Technologies Lab  
Distributed Data Intelligence and Technologies Lab  
Department of Information Engineering (DINFO)  
University of Florence

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qualsiasi tipo

[HOME](#) [ABOUT](#) [RESEARCH](#) [INNOVATION](#) [CORSI E TESI](#) [COME FARE](#) [EVENTI](#)

[Log in/Create account](#)

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DISIT lab may develop original solutions in RIA project as well as solutions grounded on available DISIT tools for specified TRL for IA, innovation action projects:



flyer



[DISIT Lab overview](#)

### CONTENUTI

- [In primo piano](#)
- [Più visti](#)
- [Most Viewed \(last 250\)](#)
- [Ultimi caricati](#)
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- [research topics \(5370\)](#)
- [standard \(134\)](#)



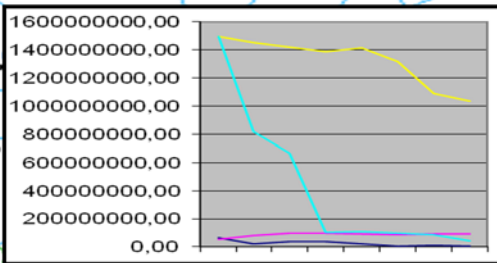
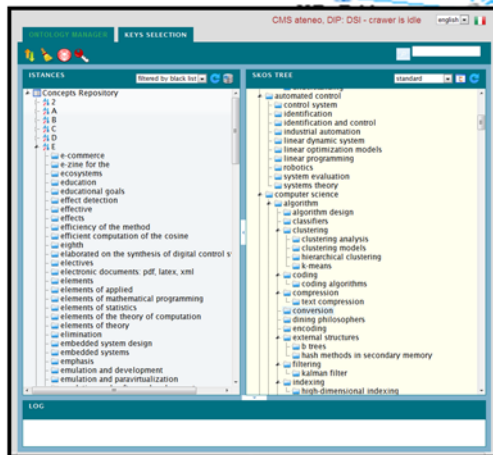
## Research areas:

- **Distributed systems: cloud, grid, semantic computing on big data**
- **Smart Cloud, smart sensor systems:**
  - automated configuration verification and management, cloud monitoring, prediction of critical condition, SLA verification and validation
- **Semantic computing:**
  - **Data and knowledge mining** (reconciling and solving inconsistencies/incompleteness on Dates/Time, person names, textual data understating, cross media heterogeneity, geographical and spatial information and knowledge), ontology construction.
  - **Linked Open Data** developing tools and access (DISIT [Open Graph on dbpedia](#) and on [Open Graph on Sii-Mobility](#) knowledge base)
  - <http://mediacrawler.disit.org/dbpedia-graph/>
  - **Natural Language Processing for competence mining and understanding, ontology production tools:** [OSIM](http://www.disit.dinfo.unifi.it/osim.html) <http://www.disit.dinfo.unifi.it/osim.html> and [SACVAR](#) project.
  - **Data Analytics for:** prediction, correlation, causality, indexing, search, etc.
- ***Applications: transportation (smart city), smart cloud, digital library and cultural heritage, SME and citizen services, knowledge mining and understanding.***

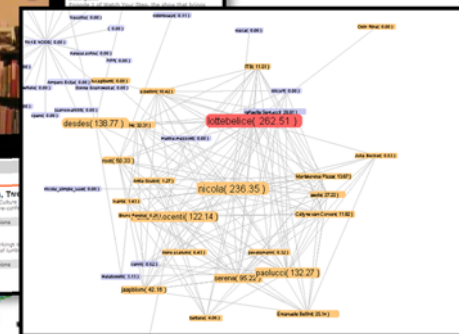


<http://www.disit.dinfo.unifi.it>

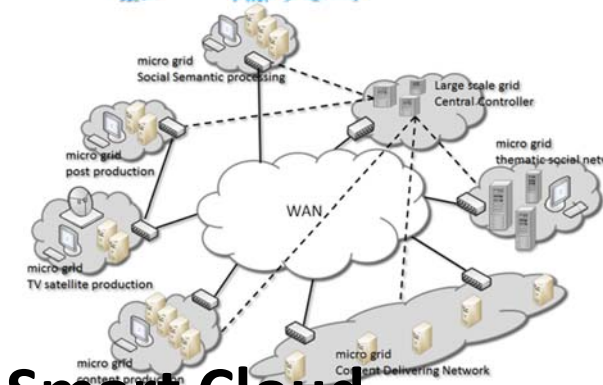
# Text and Web Mining



# Data Analytics Big data



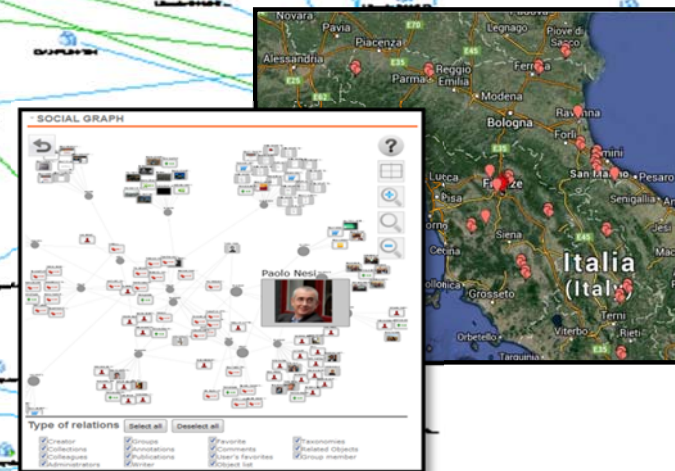
# Social Media, e-learning



# Smart Cloud Computing



# Mobile Computing



# Smart Cities

# DISIT Lab

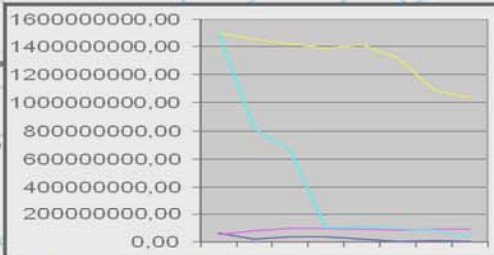
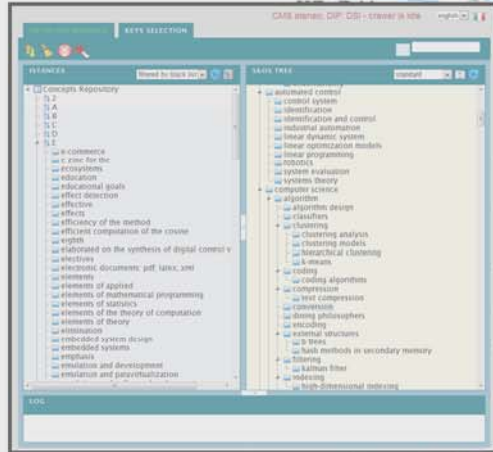
- People: 20
- Current Active Projects: 10
- Project in the last 4 years:  
17
- SpinOff: 1



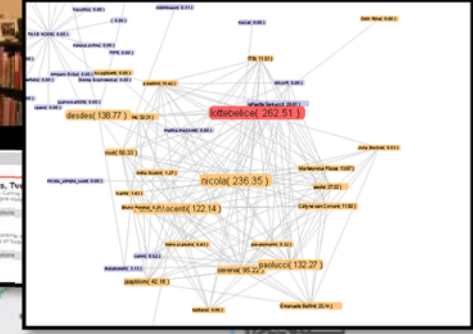


<http://www.disit.dinfo.unifi.it>

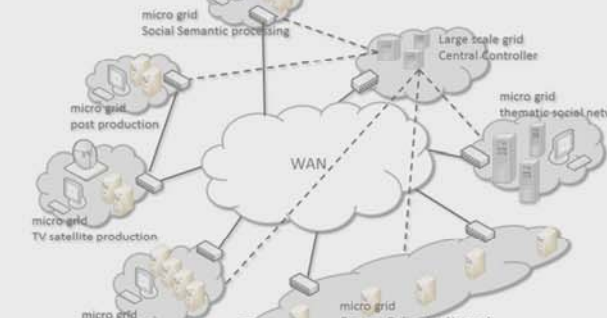
# Text and Web Mining



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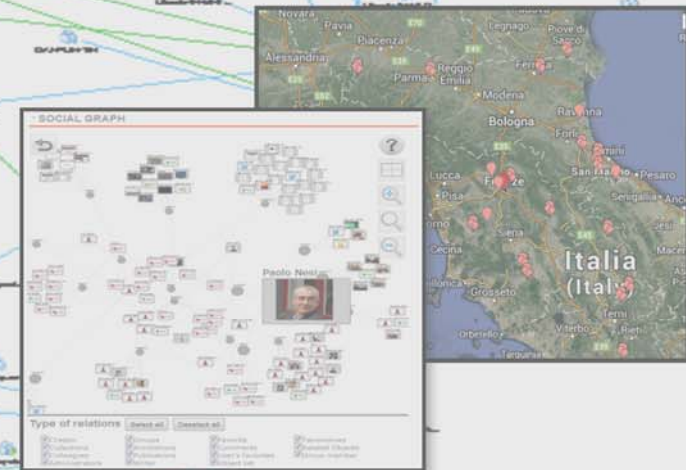
# Social Media, e-learning



# Smart Cloud Computing



# Mobile Computing



# Smart Cities



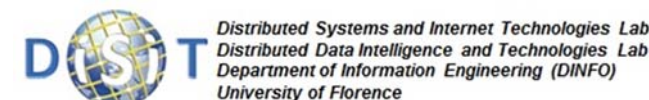
# Social Media and e-Learning

- **Projects:** <http://www.disit.org/5501>
  - ECLAP, <http://www.eclap.eu>
  - Others: ApreToscana, IUF.csavri.org, SMNET, etc..
  - Others: AXMEDIS, VARIAZIONI, etc.
- **Tools:** <http://www.disit.org/5489>
  - XLMS, Cross Media Learning System
  - IPR and content protection and distribution
  - Mobile and SmartTv Applications
  - Suggestions and recommendations
  - Matchmaking solutions
  - Media Tools for cross media content



# Social Media, e-learning

- **ECLAP**: life long learning, social learning
  - <http://www.eclap.eu>
- **FirstClass**: certified blended learning, paid courses
  - <http://fad.fclass.it>
- **IUF.Csavri**: blended learning for entrepreneurs incubation and spin-offs
  - <http://iuf.csavri.org>
- **APRETOSCANA**: formation for researchers
  - <http://www.apretoscana.org>
- **DISIT.DINFO.UNIFI.IT**: research management and dissemination
  - <http://www.disit.dinfo.unifi.it>
- **SMNET**: SentienMultimedia Network for KSI
  - <http://smnet.disit.org>



<http://www.disit.dinfo.unifi.it>



# Social Learning

The screen displays the ECLAP website interface. At the top, the ECLAP logo is visible, along with a search bar containing 'any types' and 'deep search', and a 'register' button. Below the logo, there are navigation links: HOME, ABOUT, CONTENT, COMMUNITY, SEARCH, SERVICES, EVENTS, HOWTO. A 'Log in/Create account' link is also present.

The main content area features a video player titled 'Dario Fo e Franca Rame, evento 20 ottobre 2011, live'. The video shows two people, Dario Fo and Franca Rame, sitting at a table with microphones. Below the video player are controls for 'RELOAD', 'PLAY', and 'STOP', along with social media sharing icons (Facebook, Twitter, LinkedIn, YouTube) and an 'ACTIONS' button.

To the right of the video player is a 'METADATA' section. A man in a white shirt is pointing at this section. The metadata includes:

- METADATA**
- Metadata languages: [Icons for various languages]
- Title: Dario Fo e Franca Rame, evento 20 ottobre 2011, live
- Creator: marco
- Classification: [Dropdown menu]
- IPR information: [Dropdown menu]
- Technical: [Dropdown menu]
- Location: [Dropdown menu]
- Subject: Dario Fo e Franca Rame, evento 20 ottobre 2011, live
- Description: Dario Fo e Franca Rame, evento 20 ottobre 2011, live
- Provider: DSI
- Short URL: http://www.eclap.eu/63497

Below the metadata is an 'ACTIONS' section, followed by a 'CONTENT' section with a list of items:

- Featured
- Popular
- Popular in the period
- Last Posted
- Top Rated
- Location
- Timeline

Below the content is a 'CLASSIFICATION' section, followed by a 'THEMATIC GROUPS' section with a list of items:

- ECLAP Best Practice Network
- WG: Intellectual Property and Business Models for Content
- WG: Performing Arts Education and Training tools
- WG: Digital Libraries Tools

At the bottom of the screen, there is a 'RELATED OBJECTS BY TEXT' section with several thumbnails and titles, a 'COMMENTS' section with a 'Login or Register to add comments.' prompt, and a 'SOCIAL GRAPH' section with a 'Dario Fo' profile card and a 'Serena' profile card.

The smaller screen in the foreground shows the ECLAP website interface, specifically the 'SOCIAL GRAPH' section. It displays a network diagram with nodes and connections, representing the relationships between users or entities in the ECLAP community.



### Dario Fo e Franca Rame, evento 20 ottobre 2011, live



#### METADATA

Metadata languages:

Title: Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Creator: marco

Classification:

IPR information:

Technical:

Location:

Subject: Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Description: Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Provider: DSI

Short uri: <http://www.eclap.eu/63497>

#### ACTIONS

RELOAD    ACTIONS

#### RELATED OBJECTS BY TEXT



**Best practice network for performing arts**

ECLAP MyStoryPlayer, ECLAP networking, Dario Fo e Franca Rame, ECLAP Opportunita', Una vista del portale

#### CLASSIFICATION

THE MAIN GROUPS

COMMENTS

MORE

# ECLAP Social TV on Samsung SmartTV







Annotation info

**toni servillo sincronizzazione giorno 2 parte 2**

Start and: 00:00:01 - 01:00:52

Duration: 01:00:51

***Multicamera synchronized streaming***

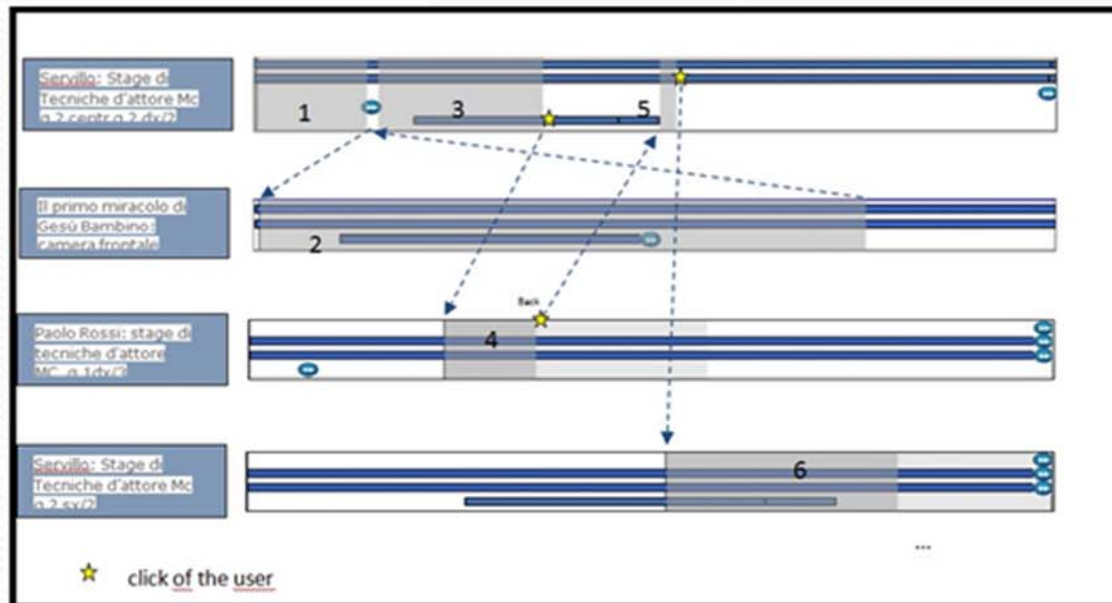
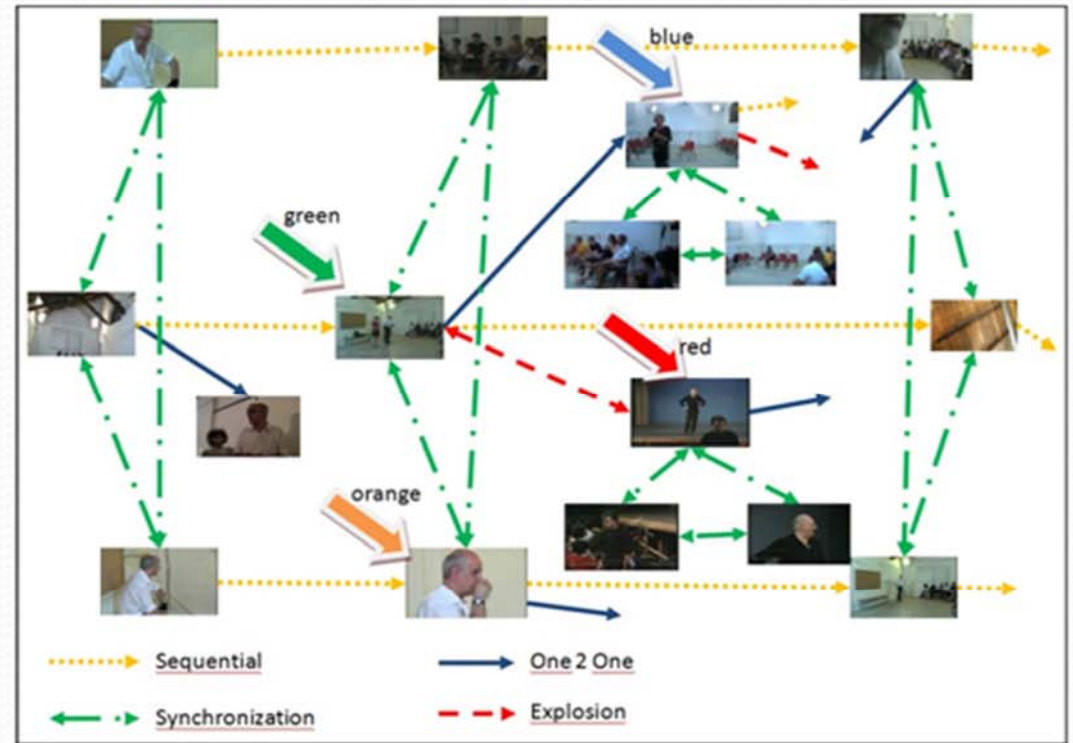
# MyStoryPlayer: personal experiences



(b)



(d)





# Matching Demand and Offer Company and Lab Profile



The graphic features three horizontal lines of varying lengths (light, medium, and dark brown) on the left, each ending in a red circle of the same color. To the right of these circles, the text 'MATCH MAKING multiplace' is displayed in a light brown, red, and dark red font respectively.

**IMPRESA E RICERCA S'INCONTRANO!**  
Pubblica/aggiorna il tuo profilo e partecipa ai prossimi match  
[apretoscana.org/matchmaking](http://apretoscana.org/matchmaking)



APRE TOSCANA  
AGENZIA PER LA PROMOZIONE  
DELLA RICERCA EUROPEA



APRE TOSCANA  
AGENZIA PER LA PROMOZIONE  
DELLA RICERCA EUROPEA



UNIONE INDUSTRIALE PRATESE  
CONFINDUSTRIA PRATO



ID INNOVATION  
DAY

**pal-1: disit lab (distributed sy...** [torna indietro](#)  
**responsabile: paolo nesi**  
**evento: matchmaking - pisa cnr,**  
**15-05-2014**

disit e' un lab. di ricerca, innovazione e trasferimento tecnologico, ad accesso aperto sulle tecnologie della semantic computing, big data, smart city, social media, nlp, data intelligence, cloud ...

seleziona/rimuovi la tua prenotazione con questo laboratorio.

● occupato ● prenotato da te ● tuoi meeting. ● libero ● no tavoli

●	<input type="checkbox"/>	9:30 - 10:00	Tav.1: viene <a href="#">Carlo</a>   <a href="#">Megatech</a>
●	<input type="checkbox"/>	10:00 - 10:30	Tav.12: viene <a href="#">Gino Rossi</a>   <a href="#">Eco bat</a>
●	<input type="checkbox"/>	10:30 - 11:00	
●	<input type="checkbox"/>	11:30 - 12:00	Tav. A1: vai da <a href="#">Ugo Red</a>   <a href="#">It9</a>
●	<input type="checkbox"/>	12:00 - 12:30	Ala est. Tav.3: viene <a href="#">ELEN</a>   <a href="#">ELEN</a>
●	<input checked="" type="checkbox"/>	12:30 - 13:00	<b>tua prenotazione</b>
●	<input type="checkbox"/>	14:00 - 14:30	
●	<input type="checkbox"/>	14:30 - 15:00	Tav.54: vai <a href="#">J.R. Baric</a>   <a href="#">Miscos</a>
●	<input type="checkbox"/>	15:00 - 15:30	
●	<input type="checkbox"/>	15:30 - 16:00	
●	<input type="checkbox"/>	16:00 - 16:30	spazio esaurito

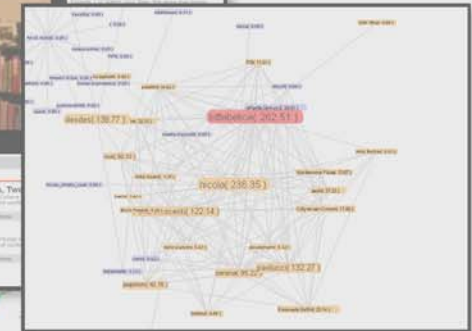
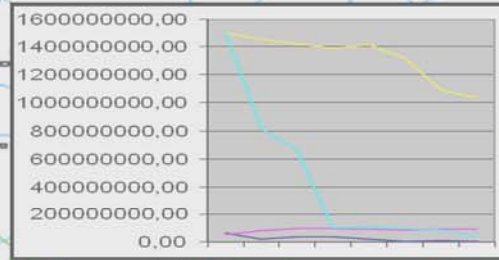
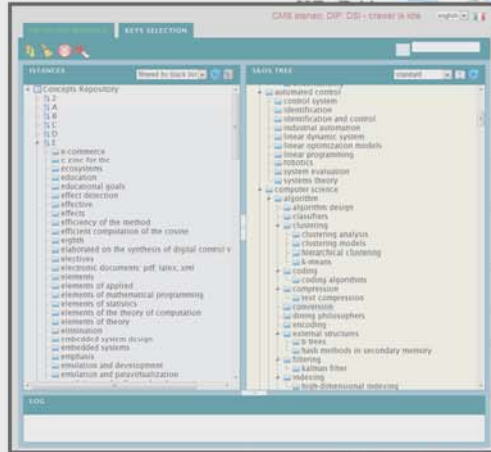
**MatchMaking: demand vs offers**





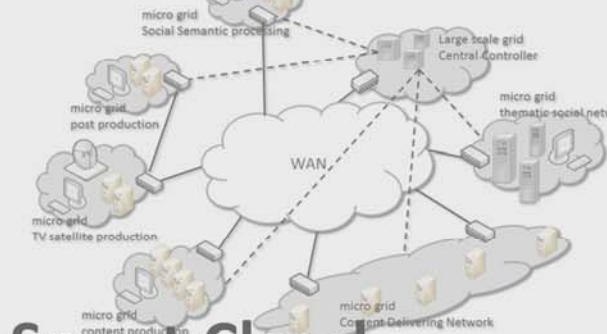
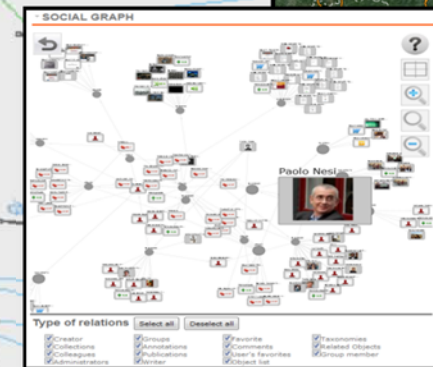
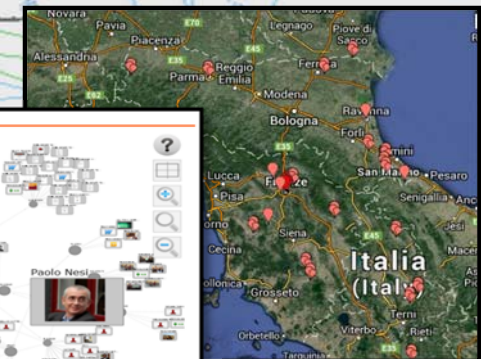
<http://www.disit.dinfo.unifi.it>

# Text and Web Mining



# Data Analytics Big data

# Social Media, e-learning



# Smart Cloud Computing

# Mobile Computing

# Smart Cities



# Smart City and Transport

- **Projects:** <http://www.disit.org/5501>
  - Sii-Mobility, <http://www.sii-mobility.org>
  - Service Map: <http://servicemap.disit.org>
  - Social Innovation: Coll@bora
  - Navigation Indoor/outdoor: Mobile Emergency
  - Transport: TRACE-IT, RAISSS, TESYSRAIL
- **Tools:** <http://www.disit.org/5489>
  - Data gathering, data mining and reconciliation
  - Data reasoning, deduction, prediction
  - Smart city ontology and reasoning tools
  - Service analysis and recommendations
  - Autonomous train operator, train signaling
  - Mobile Applications



**Enabling Smart City Solutions**



Comments from citizens, Social Media



AVM Public transport

Materials



Sensors for private transport

Parking sensors



Traffic monitoring, highways



Railways Environmental parameters



Public Services



Ordinances: events, large scale works, ...

Sensors, monitoring system



UTC

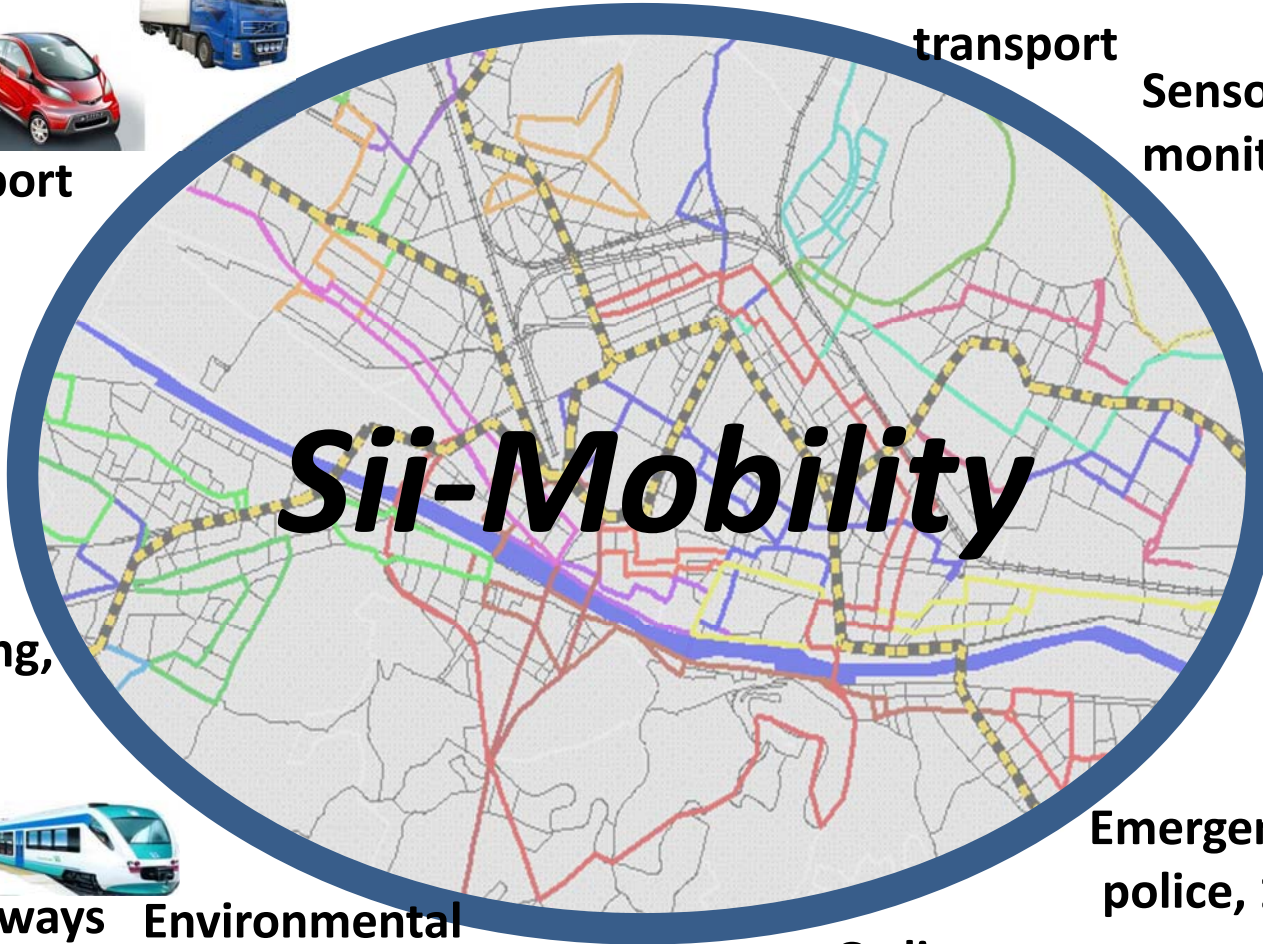


Infomobility

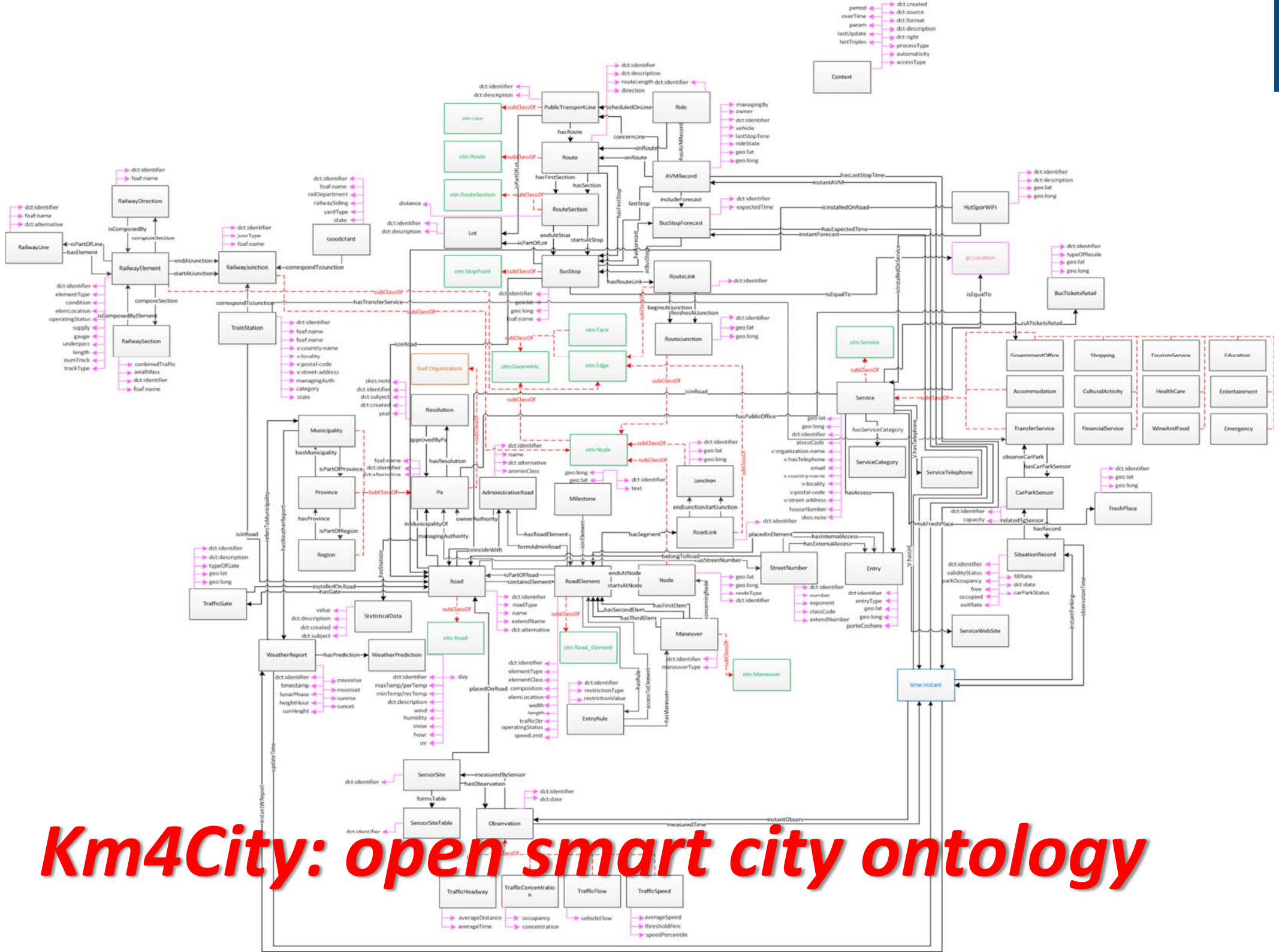


Telematic passages, ZTL

Emergency, police, 118







# Km4City: open smart city ontology

**SiiMobility (by DISIT)**

Examples:

- VIA GIACOMO MATTEOTTI
- Bagno a ripoli
- Florence

Choose a class:

Search for keyword

keyword:

PIAZZA DEI PITTI

uri: <http://www.disit.dinfo.unifi.it/SiiMobility/RT0480170/>

Request

**Your data**

sparql endpoint:

http://...

uri: http://...

Request

**Status**

Requests:

PIAZZA DEI PITTI [SiiMobility (by DISIT)]

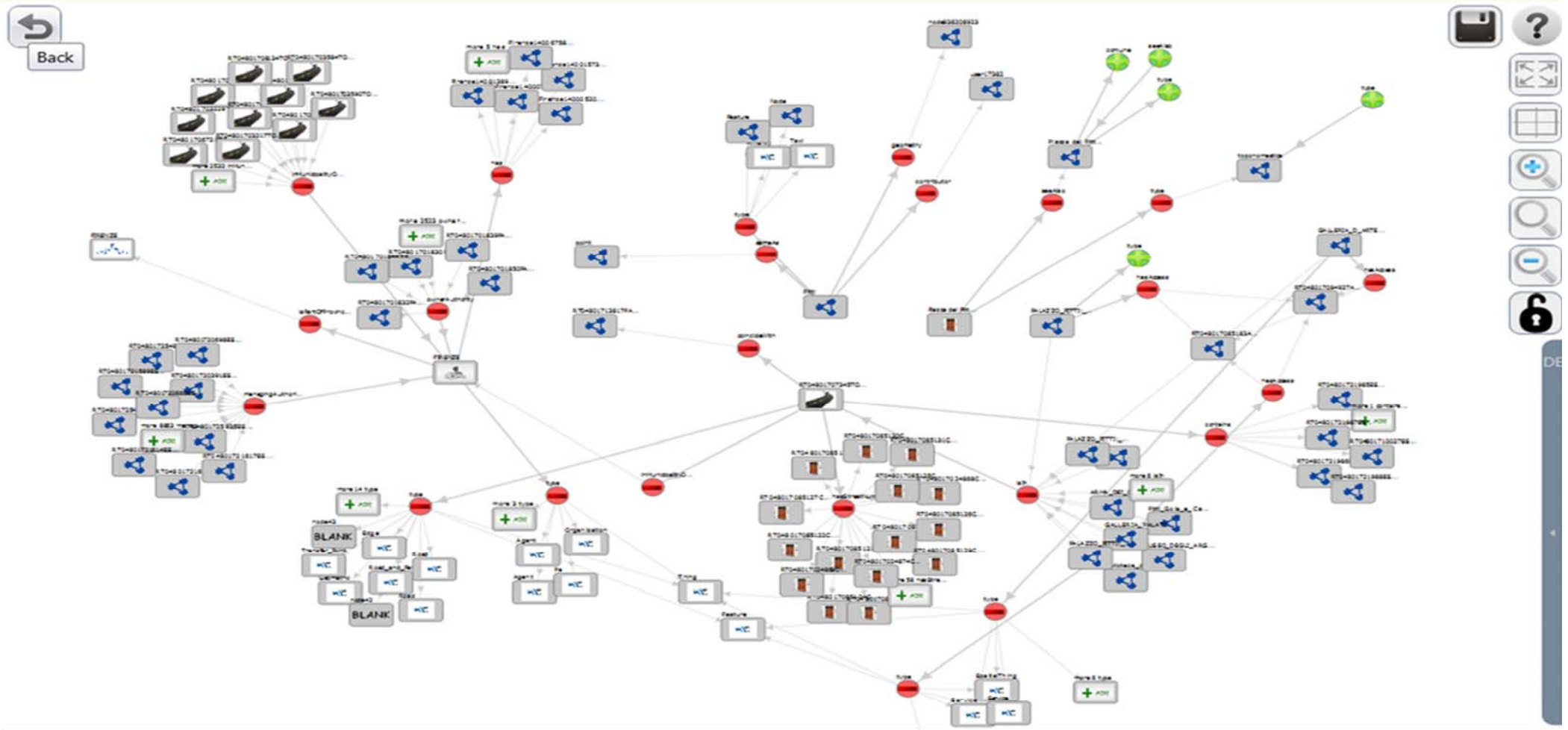
Piazza dei Pitti n.1 N [Comune Firenze]

Pitti (Florence) [LinkedGeoData]

Remove Clear

<http://log.disit.org>

**LINKED OPEN GRAPH**



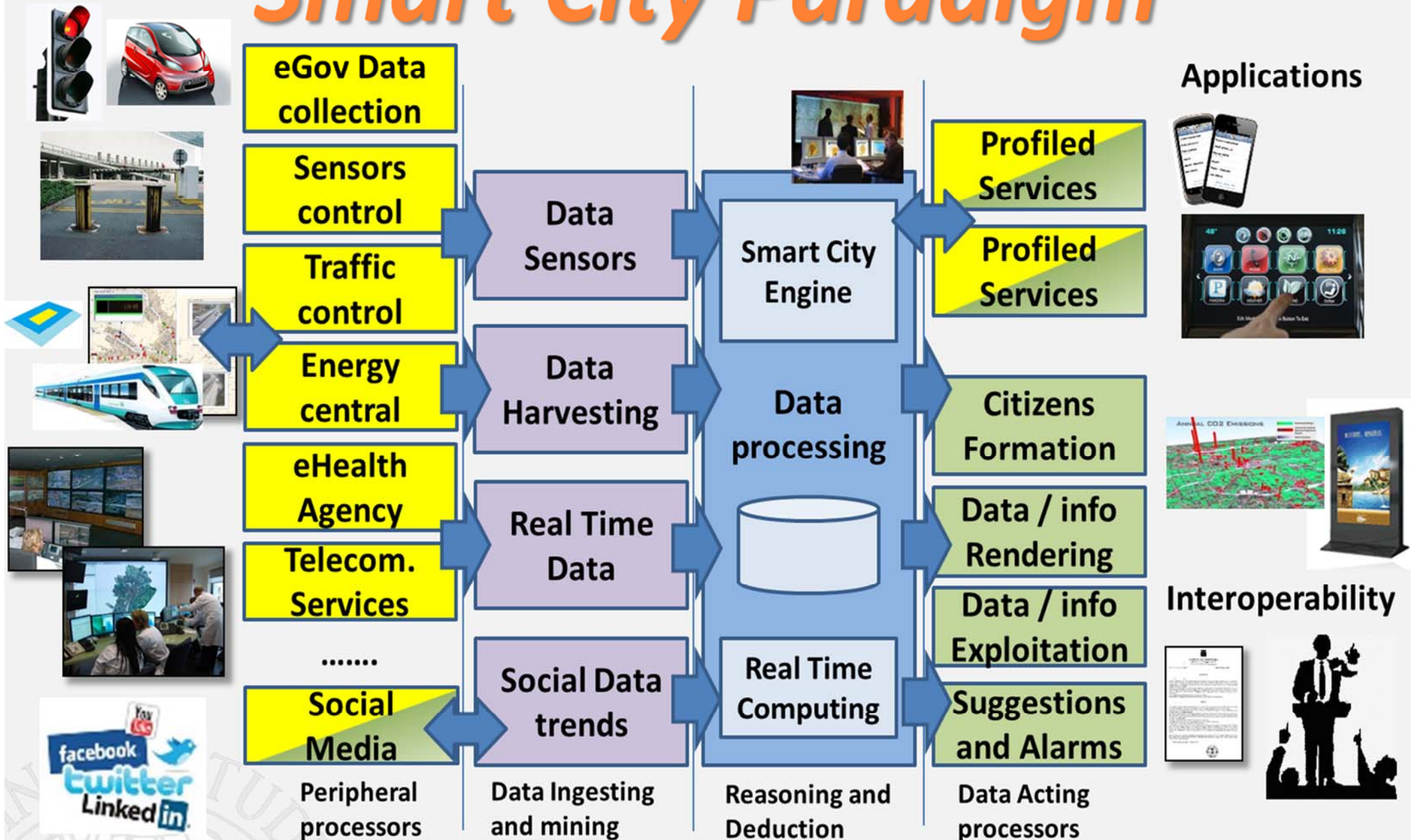
**Type of relations**

Select all Deselect all Invert Hide all inverse

<input checked="" type="checkbox"/> coincideWith	<input checked="" type="checkbox"/> comune	<input checked="" type="checkbox"/> contains	<input checked="" type="checkbox"/> contributor	<input checked="" type="checkbox"/> depiction	<input checked="" type="checkbox"/> geometry	<input checked="" type="checkbox"/> has	<input checked="" type="checkbox"/> hasAccess	<input checked="" type="checkbox"/> hasStreetNumber
<input checked="" type="checkbox"/> inMunicipalityOf	<input checked="" type="checkbox"/> isIn	<input checked="" type="checkbox"/> isPartOfProvince	<input checked="" type="checkbox"/> managingAuthority	<input checked="" type="checkbox"/> musei_nella_strada	<input checked="" type="checkbox"/> ownerAuthority	<input checked="" type="checkbox"/> sameAs	<input checked="" type="checkbox"/> seeAlso	<input checked="" type="checkbox"/> seeAlso
<input checked="" type="checkbox"/> type								



# Smart City Paradigm





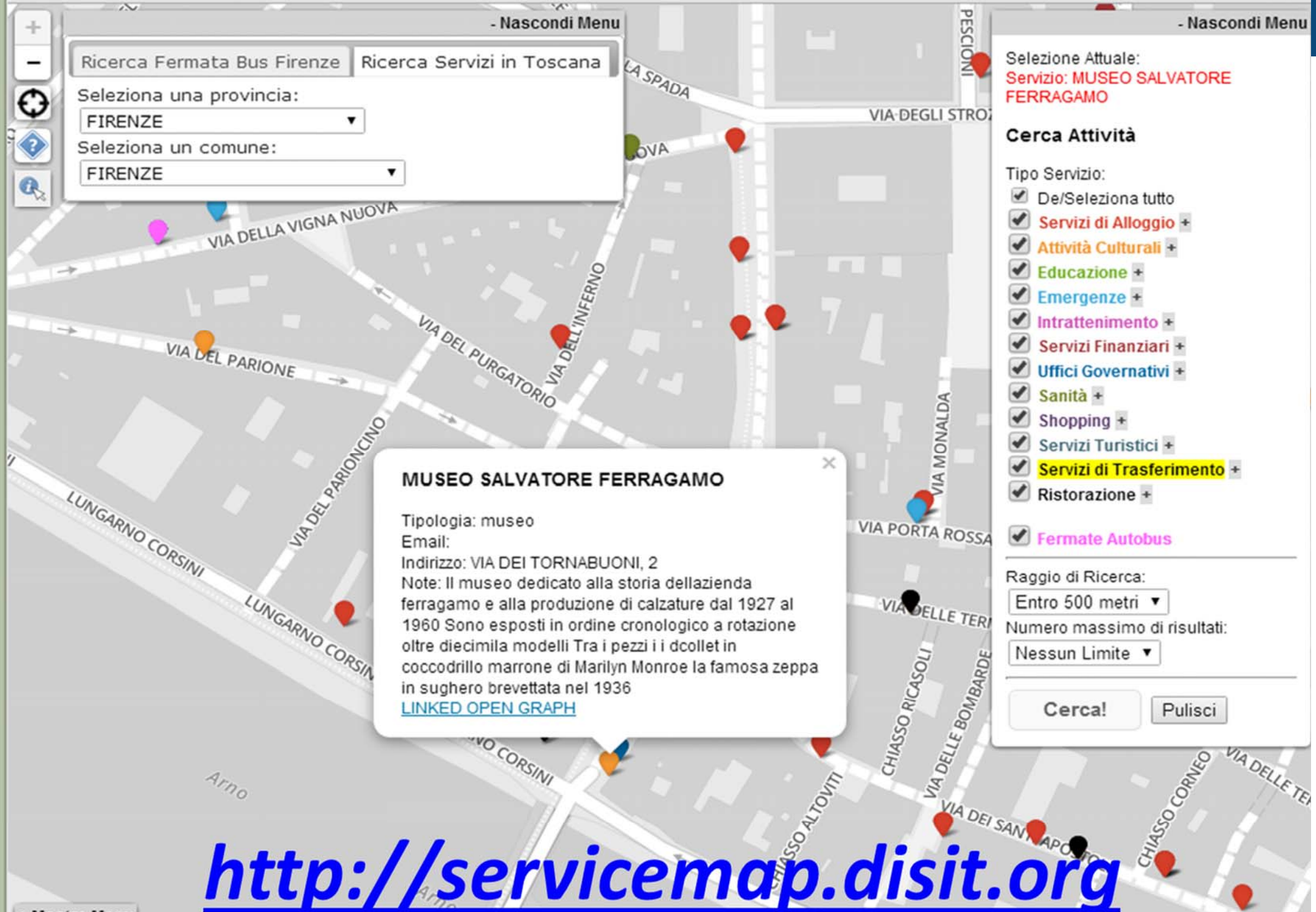


- Nascondi Menu

Ricerca Fermata Bus Firenze   Ricerca Servizi in Toscana

Seleziona una provincia:

Seleziona un comune:



**MUSEO SALVATORE FERRAGAMO**

Tipologia: museo  
 Email:  
 Indirizzo: VIA DEI TORNABUONI, 2  
 Note: Il museo dedicato alla storia dell'azienda ferragamo e alla produzione di calzature dal 1927 al 1960 Sono esposti in ordine cronologico a rotazione oltre diecimila modelli Tra i pezzi i i dcollet in coccodrillo marrone di Marilyn Monroe la famosa zeppa in sughero brevettata nel 1936  
[LINKED OPEN GRAPH](#)

- Nascondi Menu

Selezione Attuale:  
**Servizio: MUSEO SALVATORE FERRAGAMO**

**Cerca Attività**

Tipo Servizio:

- De/Seleziona tutto
- Servizi di Alloggio** +
- Attività Culturali** +
- Educazione** +
- Emergenze** +
- Intrattenimento** +
- Servizi Finanziari** +
- Uffici Governativi** +
- Sanità** +
- Shopping** +
- Servizi Turistici** +
- Servizi di Trasferimento** +
- Ristorazione** +

---

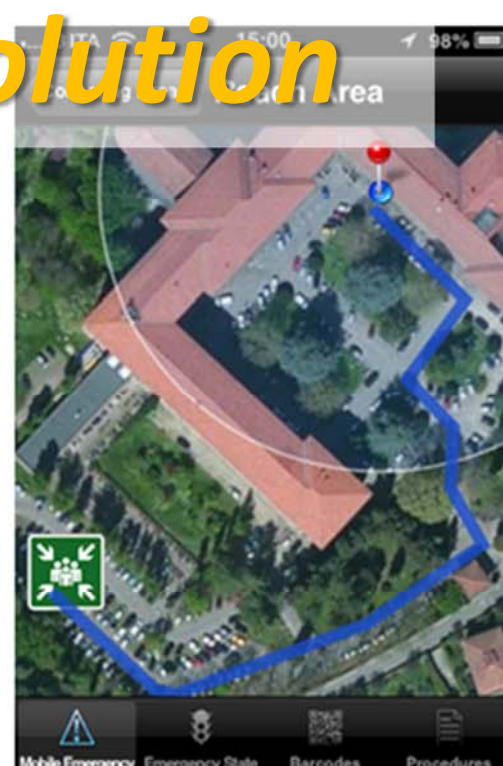
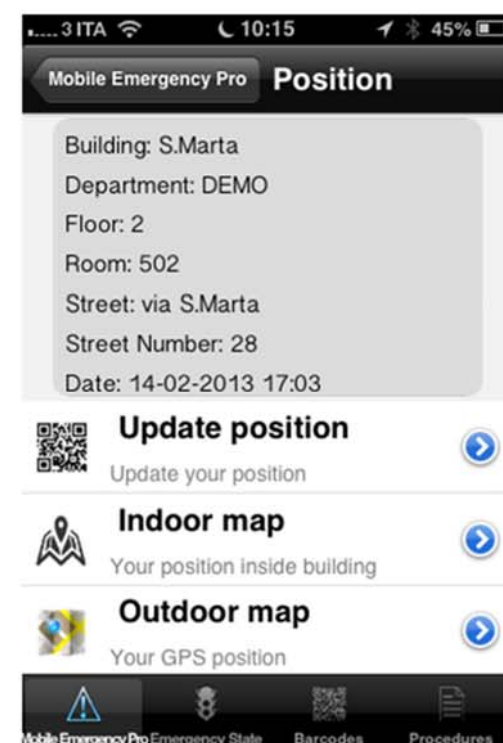
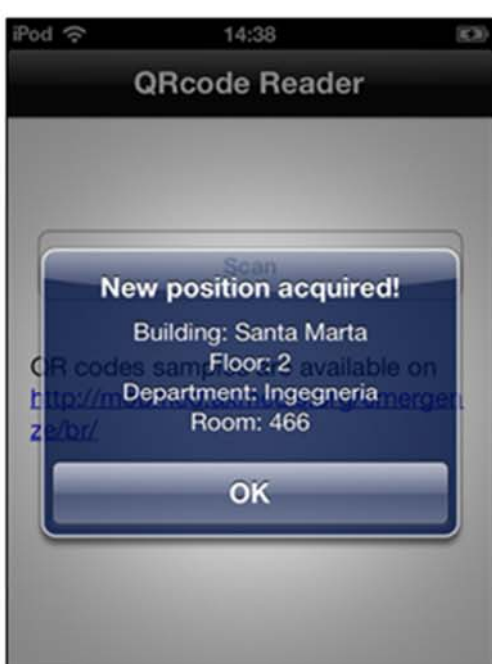
**Fermate Autobus**

Raggio di Ricerca:

Numero massimo di risultati:

<http://servicemap.disit.org>

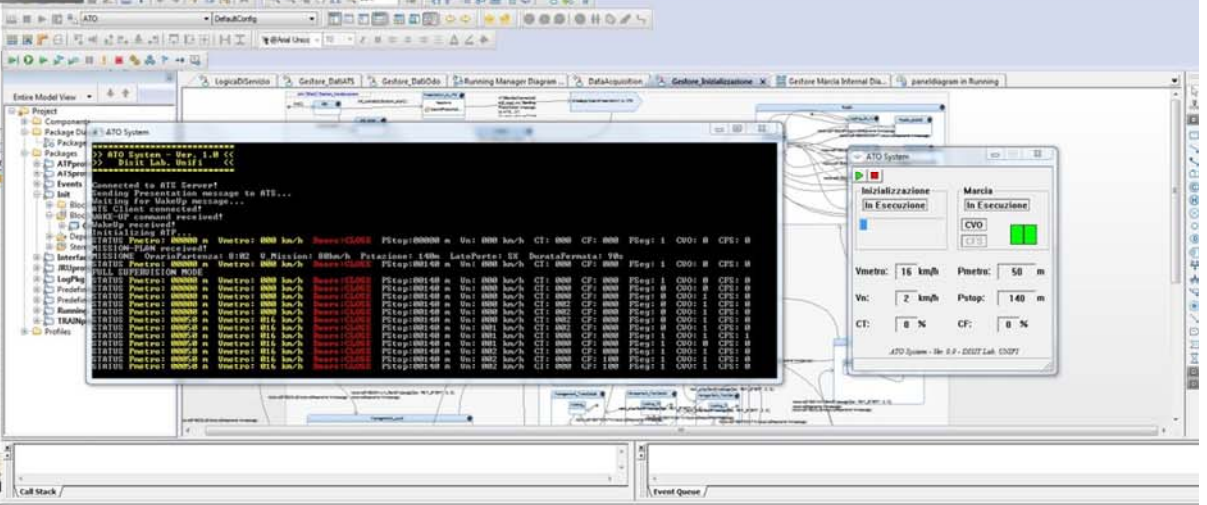
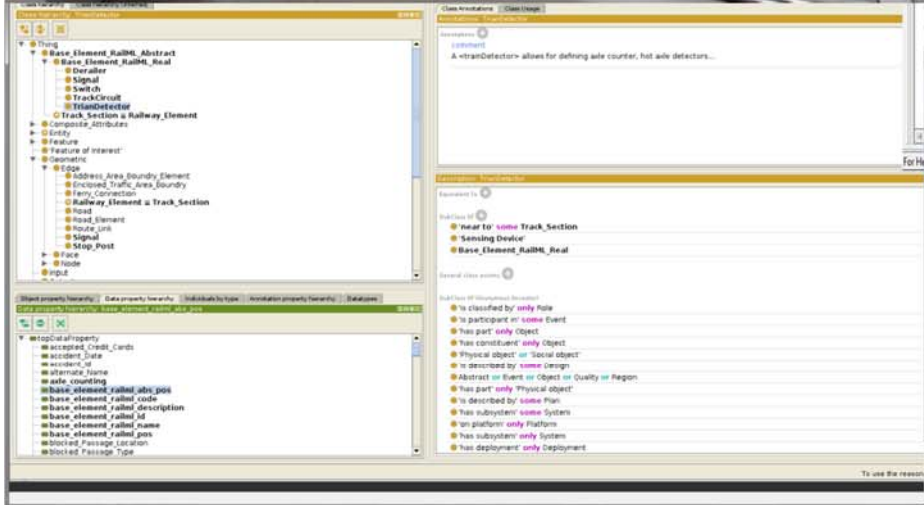
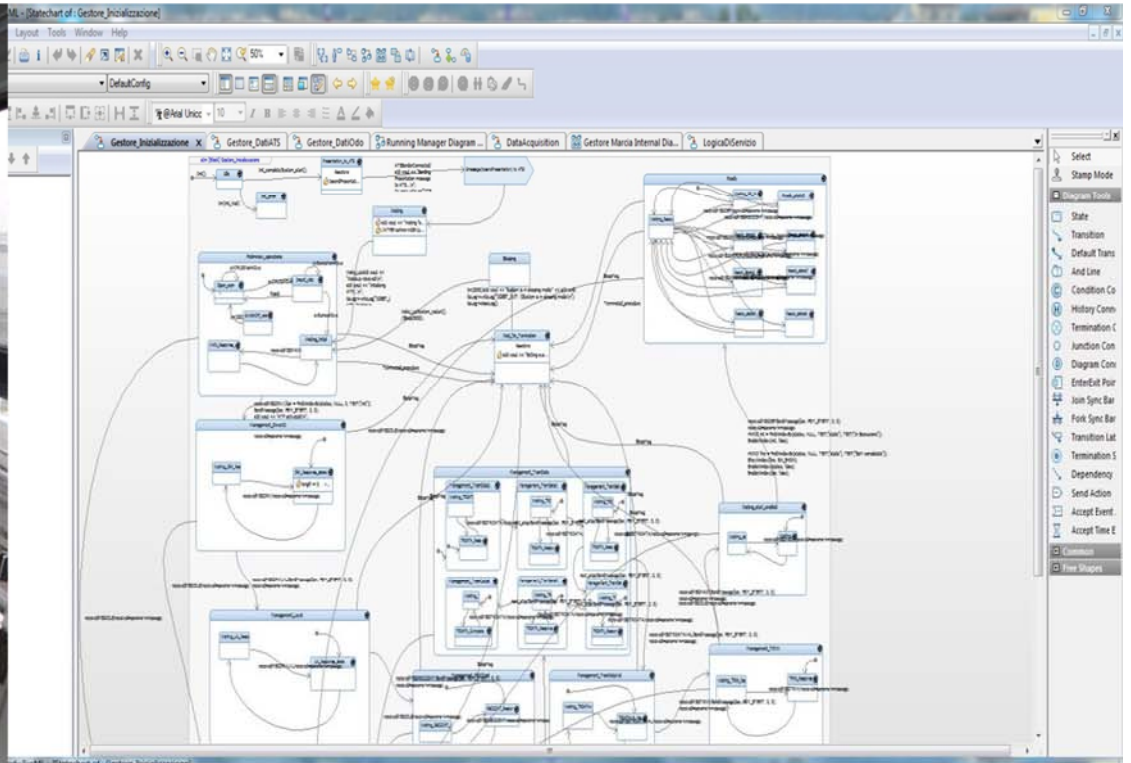




# Integrated Indoor/outdoor solution



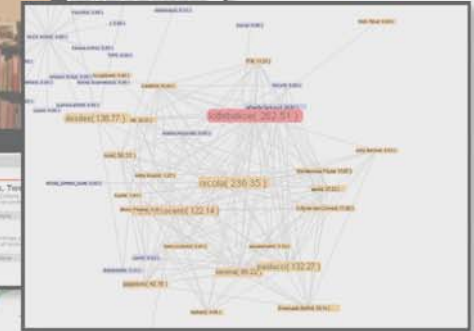
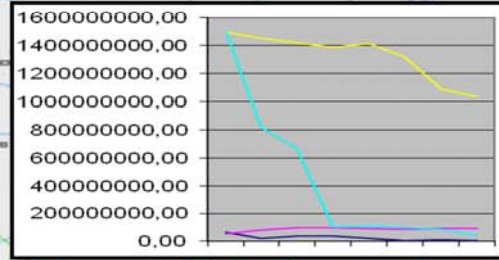
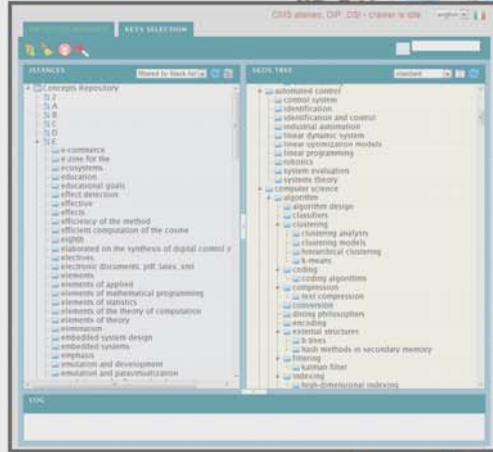
# Autonomous train operator





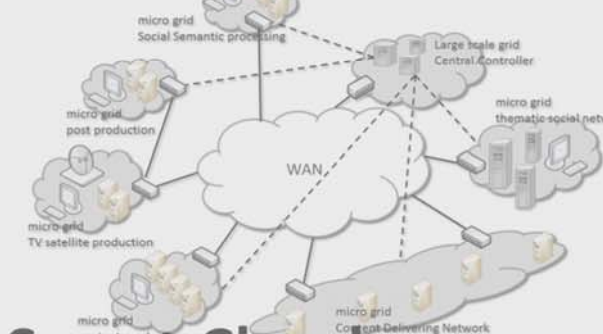
<http://www.disit.dinfo.unifi.it>

Text and Web Mining



Data Analytics  
Big data

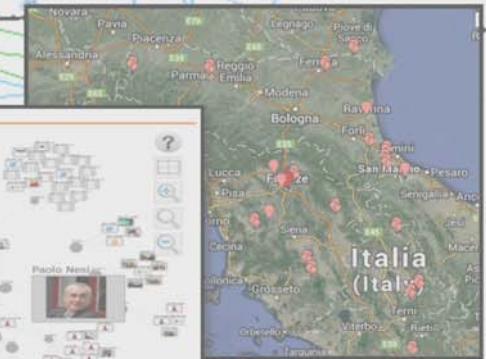
Social Media,  
e-learning



Smart Cloud  
Computing



Mobile Computing



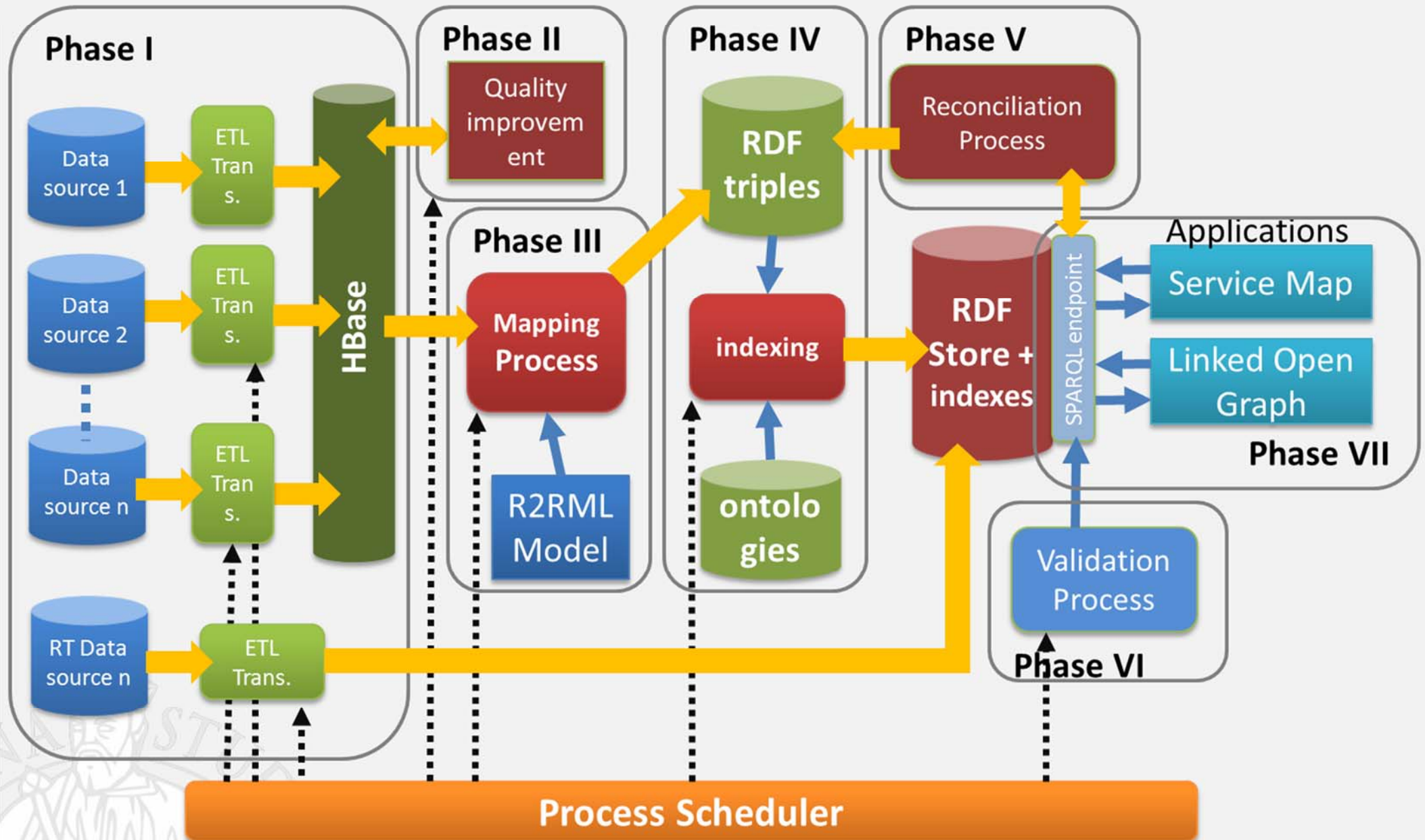
Smart Cities

# Data Analytics - Big data

- **Projects:** <http://www.disit.org/5501>
  - Linked Open Graph: <http://LOG.disit.org>
  - Sii-Mobility, <http://www.sii-mobility.org>
  - Service on a number of projects
- **Tools:** <http://www.disit.org/5489>
  - Open data and Linked Open Data
  - LOG LOD service and tools
  - Data mining and reconciliation
  - Data reasoning, deduction, prediction
  - SN Analysis and recommendations
  - User behavior monitoring and analysis



# Data Engineering Architecture

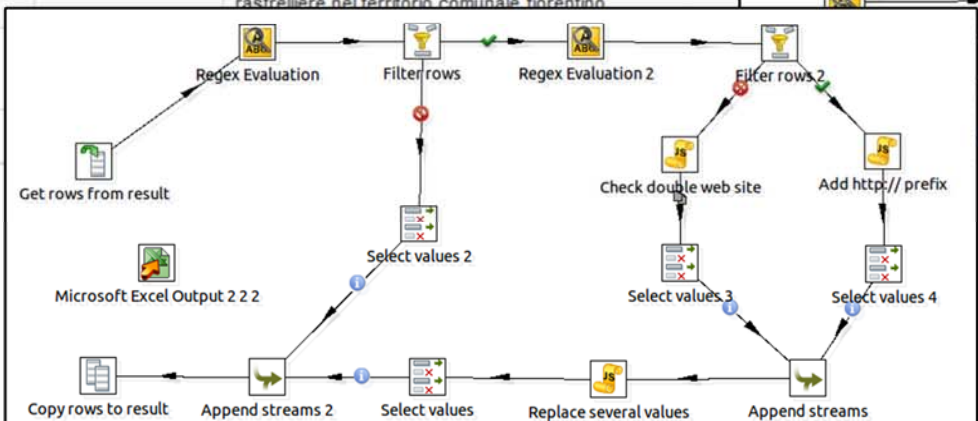
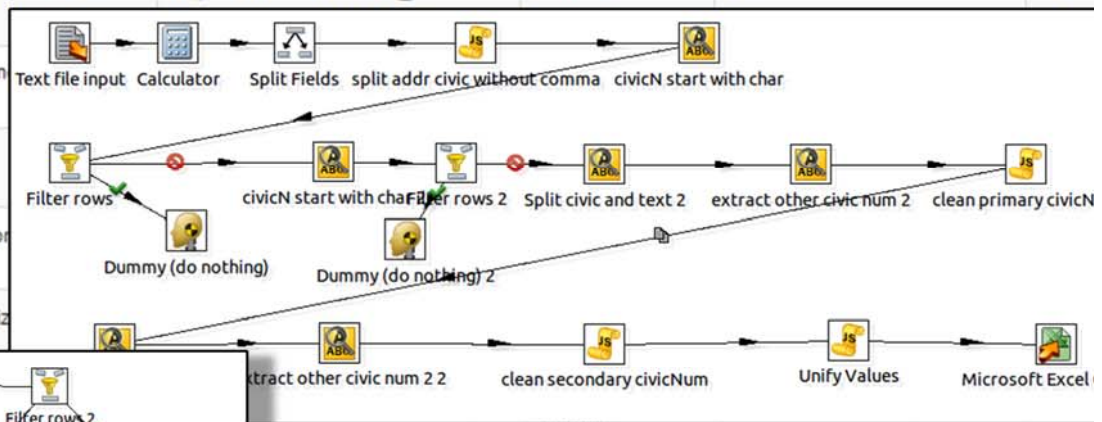
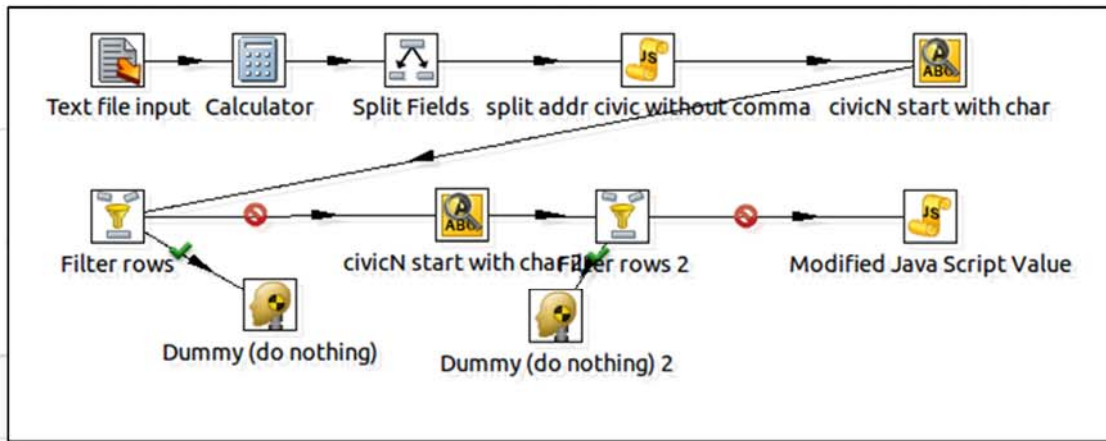


# Static data selection

Show 10 entries

Process Name	Resource					
Banche_csv	Banche					
Consolati_kmz	Consolati	comune - Elementi puntuali che individuano i consolati sul territorio comunale fiorentino	/Triples/Services/Consolati_kmz	2014-04-14 11:38:04	2014-08-15 10:07:21+02	n.a.
Emergenze_csv	Emergenze	regione - Commissariato, Carabinieri, Vigili del Fuoco, Protezione civile, polizia provinciale finanziaria	/Triples/Services/Emergenze_csv	2014-04-14 11:38:04		n.a.
Farmacie_kmz	Farmacie	Comune - Archivio puntuale delle farmacie per cui esiste un'autorizzazione rilasciata dal Comune di Firenze	/Triples/Services/Farmacie_kmz	2014-04-14 11:38:04		n.a.
Fontanelli_kmz	Fontanelli	comune - Localizzazione puntuale dei fontanelli sul territorio comunale	/Triples/Services/Fontanelli_kmz	2014-04-15		n.a.
Imprese_del_commercio_csv	Imprese di commercio	regione - Informazioni sulle imprese commerciali, dalla grande al negozio monomarca				
Infrastrutture_aeree_csv	Infrastrutture aeree	regione - Aeroporti civili, Aviosuperfici, Elisuperfici				
Ospedali_kmz	Ospedali	comune - Elementi puntuali che individuano sul territorio comunale fiorentino ospedali e case di cura				
Rastrelliere_kmz	Rastrelliere	comune - Elementi puntuali che rappresentano la geolocalizzazione delle rastrelliere nel territorio comunale fiorentino				
Servizi_vari_csv						

# Open Data reconciliation & interoperability

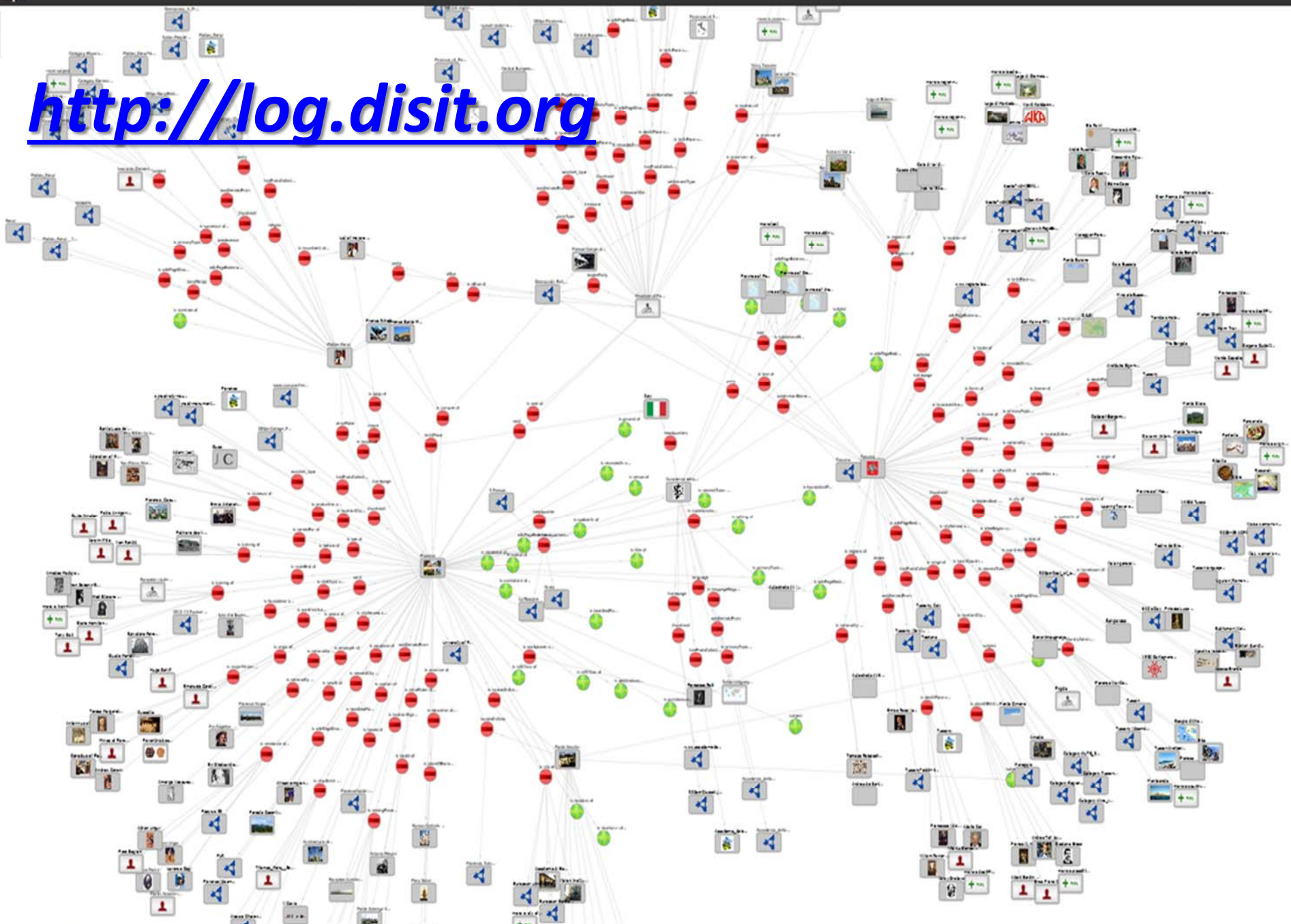


Showing 1 to 10 of 11 entries

Back Next step



<http://log.disit.org>



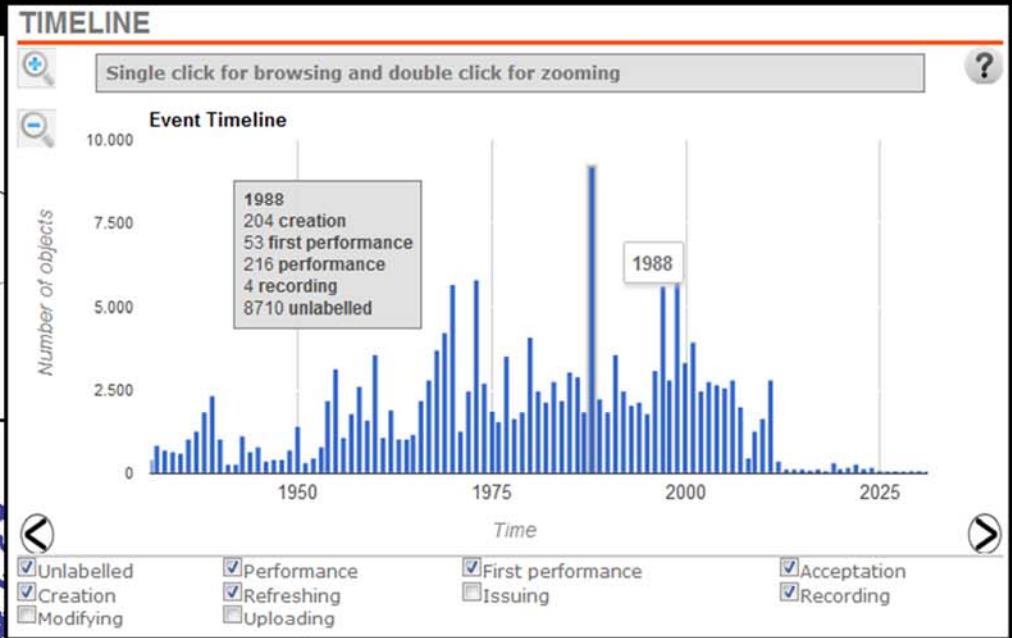
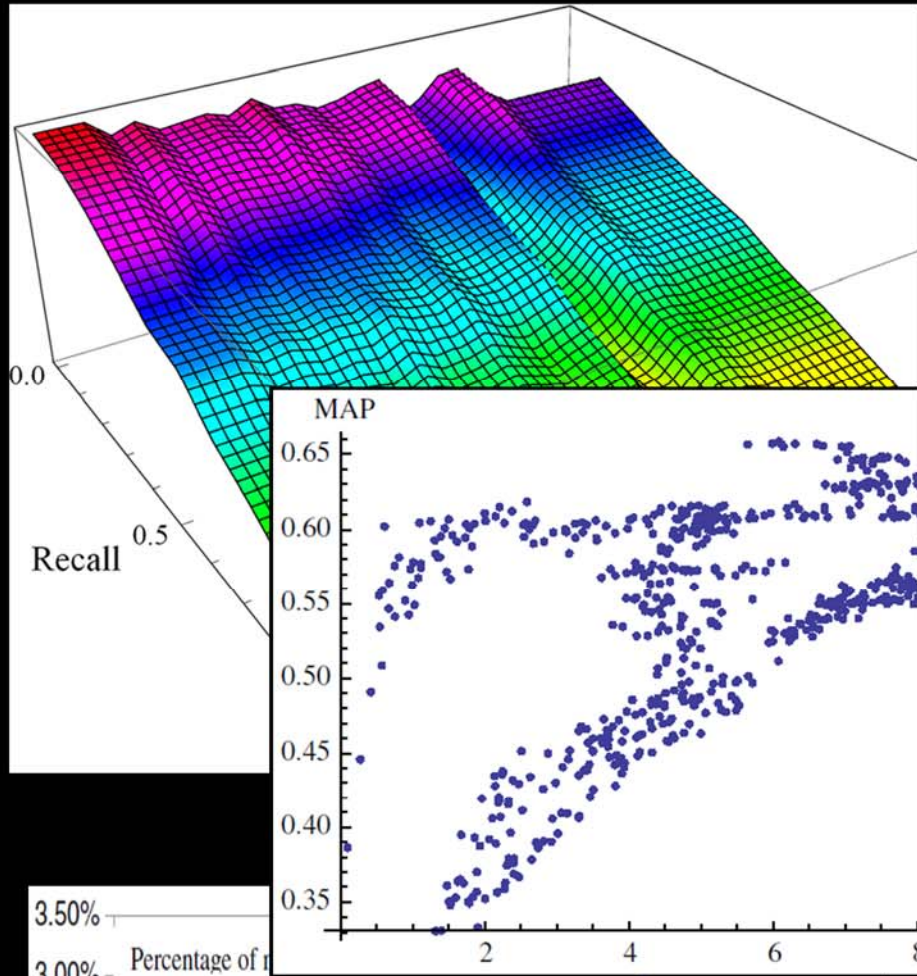
Navigation and utility icons:

- Question mark icon
- Full screen icon
- Grid icon
- Zoom in icon
- Search icon
- Zoom out icon

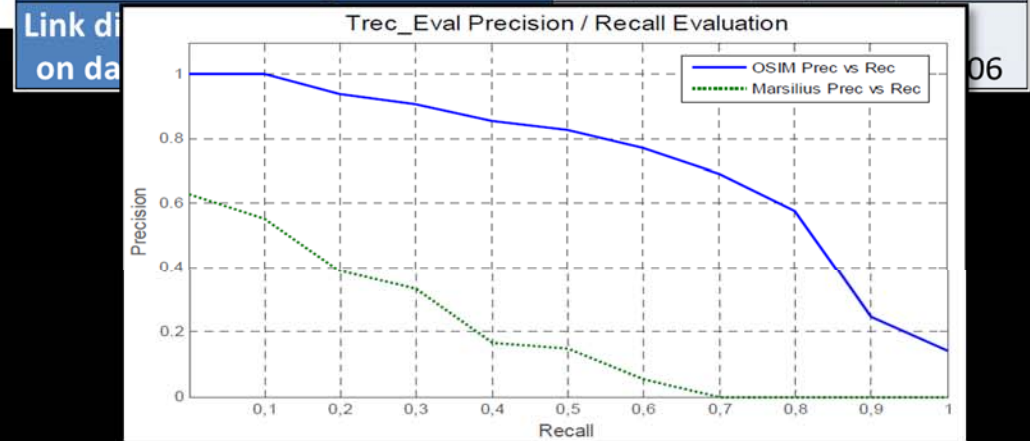
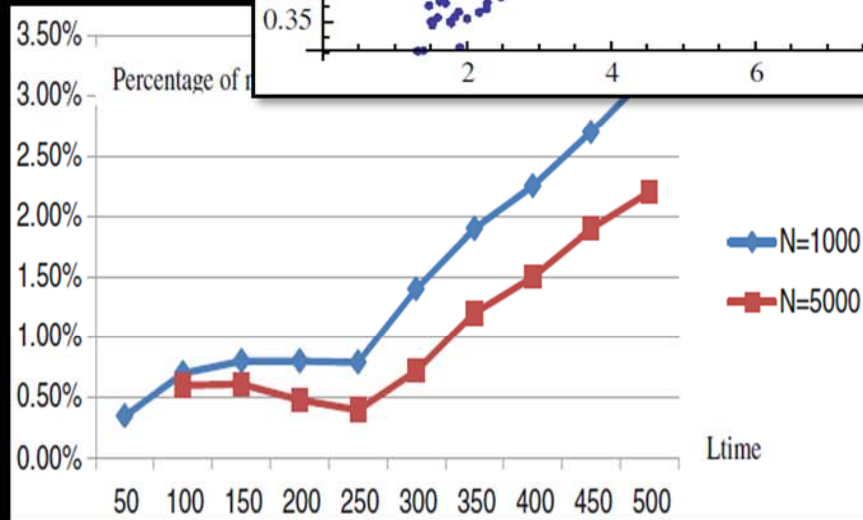
Type of relations

Select all   
  Deselect all   
  Invert

- |  |  |   |  |  |   |  |  |  |  |  |
|--|--|---|--|--|---|--|--|--|--|--|
| <input type="checkbox"/> sameAs                        | <input type="checkbox"/> depiction                 | <input checked="" type="checkbox"/> seeAlso   | <input type="checkbox"/> is province of          | <input type="checkbox"/> is region of                    | <input type="checkbox"/> country                        | <input type="checkbox"/> mayorParty                    | <input checked="" type="checkbox"/> saint          | <input checked="" type="checkbox"/> mayor          | <input type="checkbox"/> region                      | <input type="checkbox"/> type                            |
| <input checked="" type="checkbox"/> subject            | <input checked="" type="checkbox"/> homepage       | <input type="checkbox"/> wikiPageUsesTemplate | <input checked="" type="checkbox"/> thumbnail    | <input checked="" type="checkbox"/> wikiPageExternalLink | <input checked="" type="checkbox"/> wasDerivedFrom      | <input checked="" type="checkbox"/> hasPhotoCollection | <input checked="" type="checkbox"/> wordnet_type   | <input type="checkbox"/> isPrimaryTopicOf          | <input type="checkbox"/> is battles of               | <input checked="" type="checkbox"/> is training of       |
| <input checked="" type="checkbox"/> is restingPlace of | <input checked="" type="checkbox"/> is comune of   | <input type="checkbox"/> is after of          | <input checked="" type="checkbox"/> is museum of | <input checked="" type="checkbox"/> is title of          | <input type="checkbox"/> is origin of                   | <input checked="" type="checkbox"/> is headquarters of | <input checked="" type="checkbox"/> is location of | <input checked="" type="checkbox"/> is city of     | <input type="checkbox"/> is battle of                | <input checked="" type="checkbox"/> is see of            |
| <input type="checkbox"/> is restingPlace of            | <input checked="" type="checkbox"/> is province of | <input type="checkbox"/> is place of          | <input checked="" type="checkbox"/> is origin of | <input checked="" type="checkbox"/> is production of     | <input checked="" type="checkbox"/> is placeOfBurial of | <input type="checkbox"/> is place of                   | <input checked="" type="checkbox"/> is nonplace of | <input checked="" type="checkbox"/> is recorded of | <input checked="" type="checkbox"/> is mainShrine of | <input checked="" type="checkbox"/> is route function of |

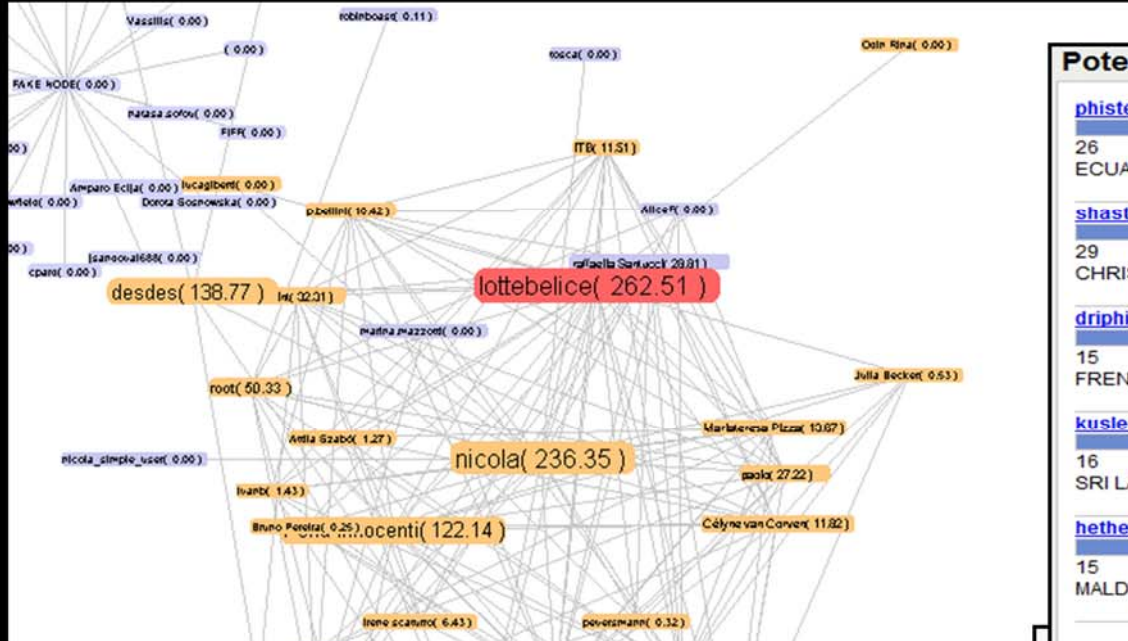


Method	Precision	Recall	F1
SPARQL –based reconciliation	1,00	0,69	0,820
SPARQL -based reconciliation + additional manual review	0,985	0,722	0,833
Link discovering - Leveisthein	0,927	0,508	0,656
Link discovering - Dice	0,968	0,674	0,794
Link discovering - Jaccard	1,000	0,472	0,642





# User behavior analysis

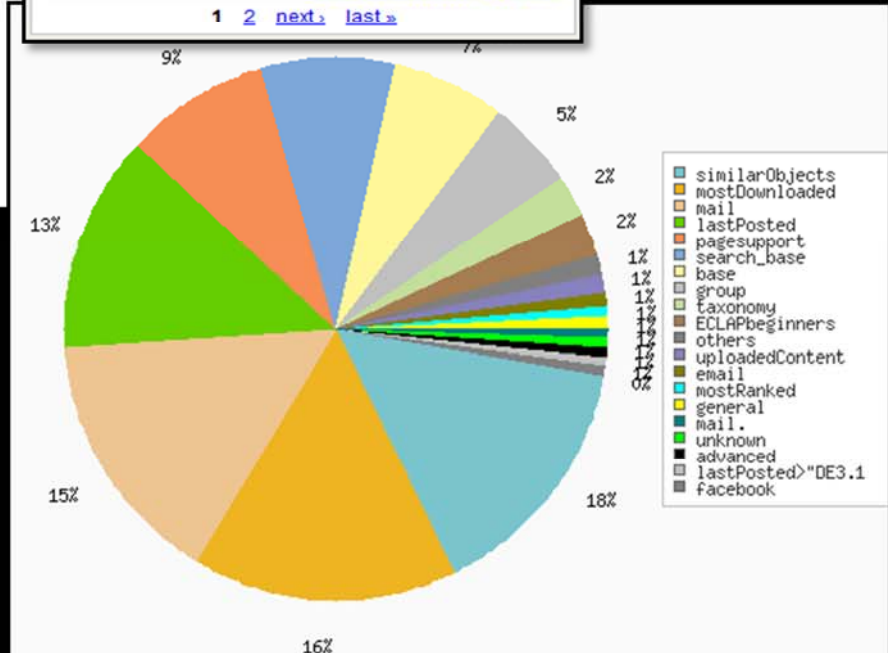
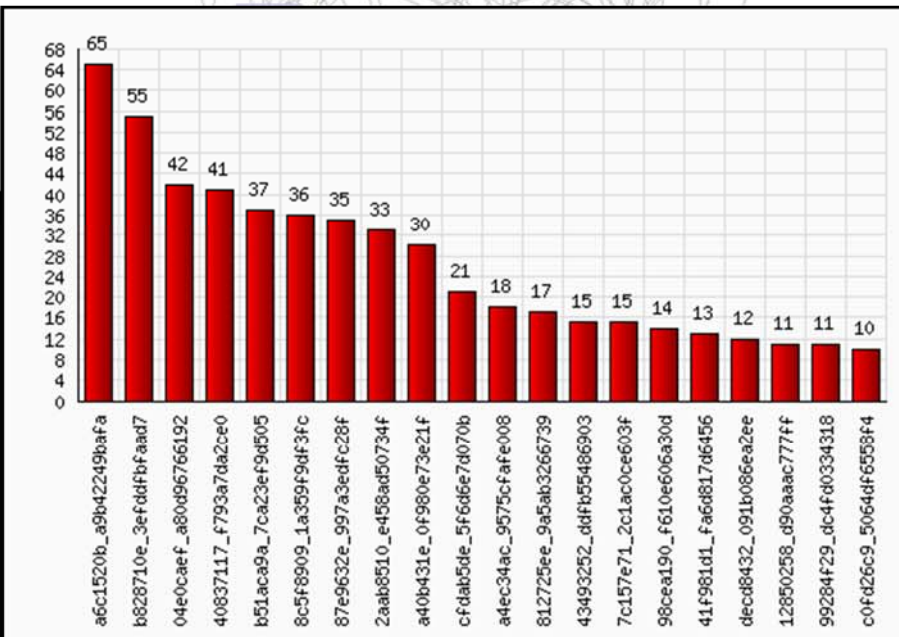
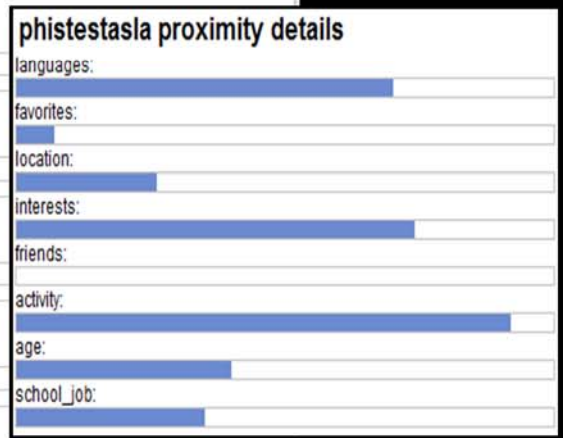


### Potential friends

- phistestasla**  
26  
ECUADOR, Orellana
- shastu**  
29  
CHRISTMAS ISLAND
- driphifras**  
15  
FRENCH POLYNESIA
- kuslechi**  
16  
SRI LANKA, Kurunegala
- hetheruno**  
15  
MALDIVES, Raa

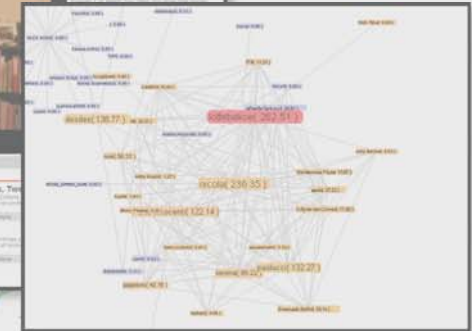
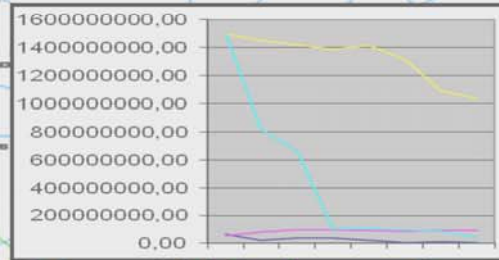
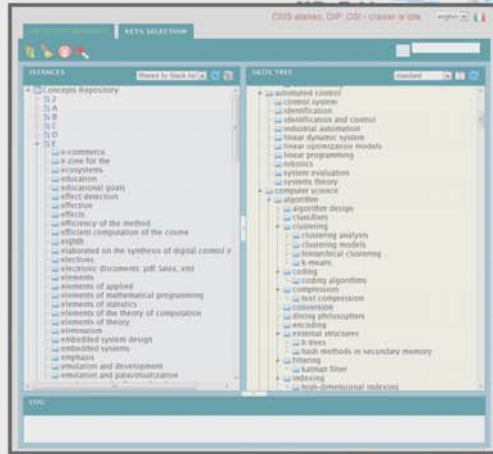
[Add to your friends](#) [Details](#)

1 2 [next](#) [last](#)



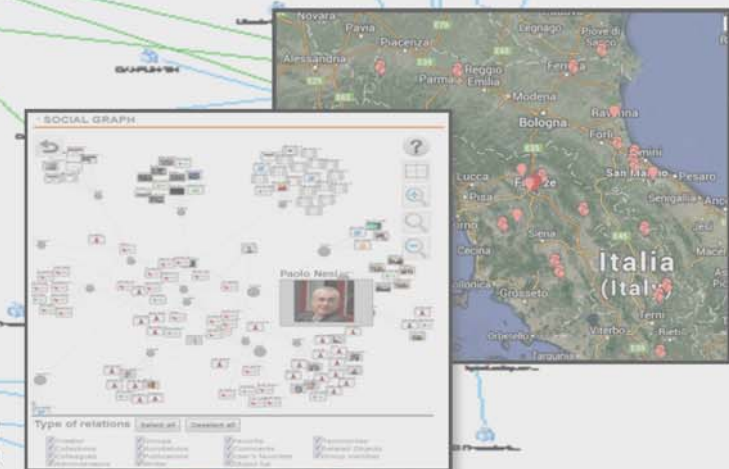
<http://www.disit.dinfo.unifi.it>

# Text and Web Mining



# Data Analytics Big data

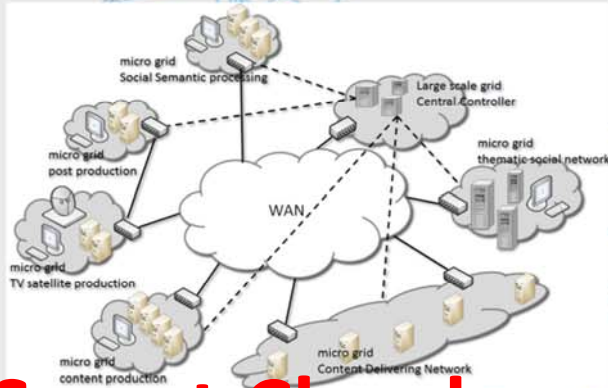
# Social Media, e-learning



# Mobile Computing

# Smart Cities

# Smart Cloud Computing





# Smart Cloud - Computing

- **Projects:** <http://www.disit.org/5501>
  - ICARO: <http://www.disit.org/5482>
  - Cloud ontology: <http://www.disit.org/5604>
- **Tools:** <http://www.disit.org/5489>
  - Cloud Monitoring
  - Smart Cloud Engine and reasoner,
  - Service Level Analyzer and control
  - Configuration analysis and checker
  - Cloud Simulation



***Smart  
Cloud  
Control***

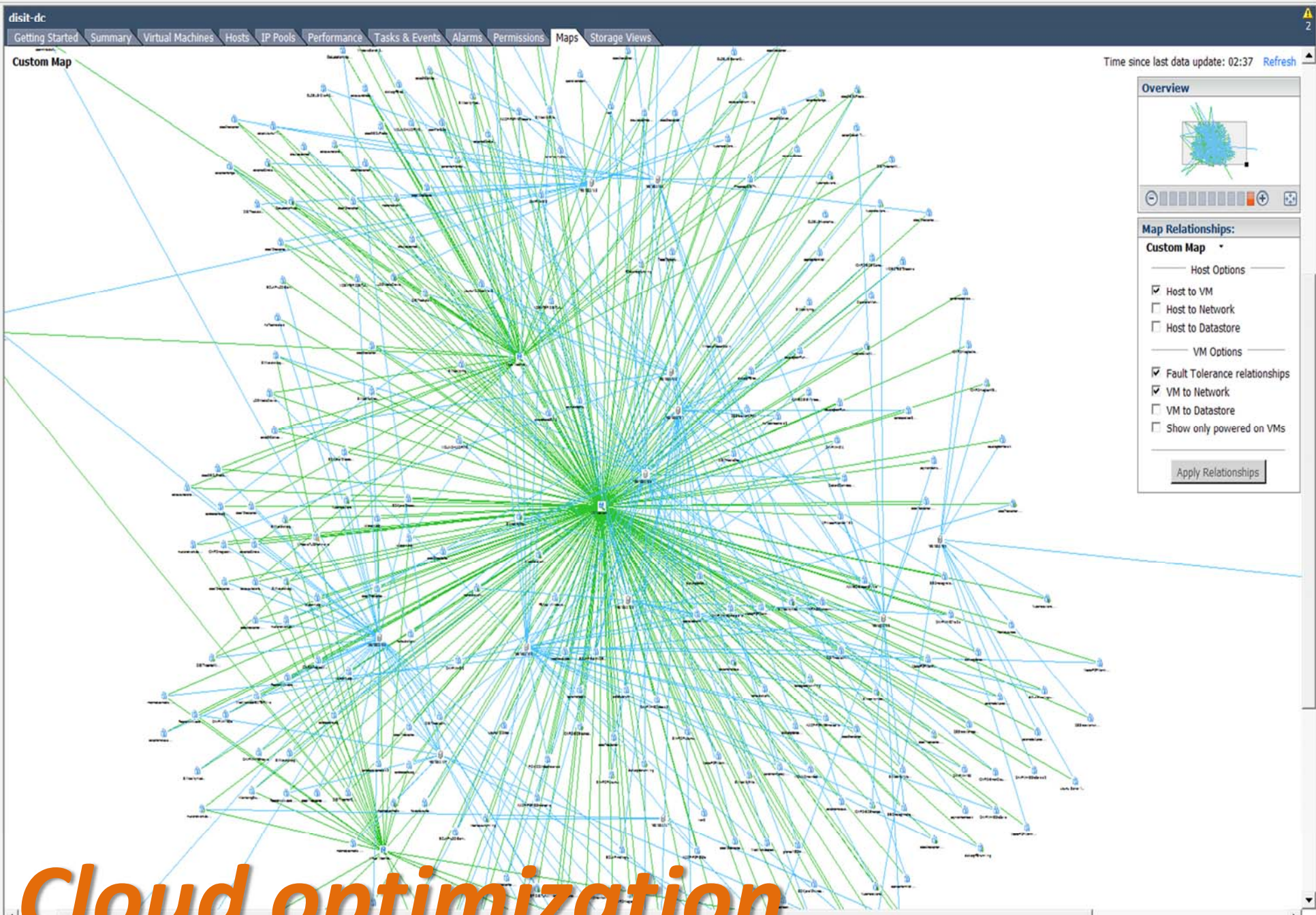








- disit-dc
  - 192.161
    - AxT
    - ftp.e
    - inea
    - mus
    - SDK
  - 192.161
    - aqu
    - Dizik
    - ECL
    - horr
    - idra
    - Mas
    - Mas
    - mas
    - OAI
    - OAI
    - OAI
    - OAI
    - OAI
    - pala
    - payr
    - VCE
    - VIO
    - VIO
    - Win
  - 192.161
    - BLO
    - disit
    - disit
    - disit
    - DIS
    - ebox
    - ecla
    - ecla
    - ecla
    - Geo
    - inea
    - mus
    - SiiM
    - SiiM
    - Silk
  - 192.161
    - ecla
    - apre
    - disit
    - ebox
    - ecla
    - ecla
    - iuf.c
    - Nutr
    - oper
    - oper
    - SiiM
  - 192.161
    - apre
    - apre
    - Feaj
    - Feaj
    - Co



**Cloud optimization**



# Cloud Simulation

Icaro - Supervisor & Monitor

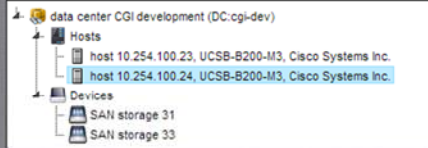
nagios Alerts

General Info

Monitor

Notifications

## Structure (data center CGI development)



## Description Data

Contract

Id

DC.cgi-dev

Name

data center CGI development

Description

urn:dcloud:icaro:DataCenter.cgi.dev

Contacts

Type

System

## Monitor Data

Monitor Id

SM:00000.53abf68458fa3.DC.cgi-dev

Description

urn:dcloud:icaro:DataCenter.cgi.dev

Status

Monitoring

Tool

NagiosConfigurator

## Host - host 10.254.100.24, UCSB-B200-M3, Cisco Systems Inc.

Info Controls Meters Graphs

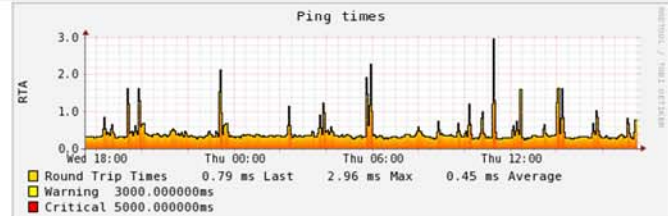
### Graphs (10.254.100.24)

Time: 02/07/14 17:30:23 - 03/07/14 17:30:23

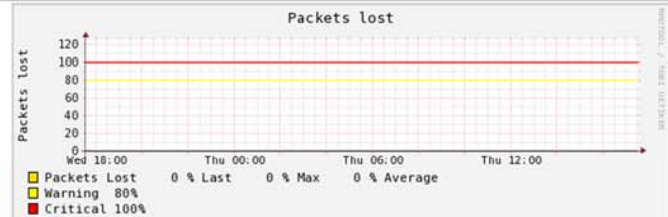
VMWARE Host Net Traffic Out: net send



Host Data: Round Trip Times



Host Data: Packets Lost



### Date Selection

Choose time interval

From

gg/mm/aaaa

To

gg/mm/aaaa

Send

### Graphs Menu

Host Data

VMs Status

Swap Memory Used

Host Storage Used

Physical Memory Used

mem usage

Real Memory Used

Net Traffic Out

Net Traffic In

Net Traffic

Memory Overhead

Memory Overall

IO Write

IO Read

CPU MHz

CPU AVG

# Smart Cloud Monitoring

- System Info
- Monitor Tools
- Settings
- Journal
- Users
- Configurations
- General Info
- Monitor
- Notifications

Dashboard Monitor Pause Monitor Delete

### Structure (SharePointFarm)

- SharePointFarm (SharePointFarm)
  - Applications
    - SharePoint
      - Hosts
        - SPFARM\_DC01
        - SPFARM\_SOL01
        - SPFARM\_OWA01
        - SPFARM\_APP01
        - SPFARM\_WFE01
        - SPFARM\_WFE02
        - haproxy
        - HLM-SharePointFarm

### Description Data

**Contract**

farm

**ID**

SharePointFarm

**Name**

SharePointFarm

**Descriptions**

urn:cloudicaro:BusinessConfiguration.cgi:SharePointFarm

**Contacts**

pierfrancesco.bellini@unifi.it

**Type**

Business

### Monitor Data

**Monitor ID**

SM:00000:53ac00e0f38a9:SharePointFarm

**Description**

urn:cloudicaro:BusinessConfiguration.cgi:SharePointFarm

**Status**

Monitoring

### Dashboard

Summary Hosts SLA

#### SPFARM\_DC01 (10.254.101.150)

Name	Usage	Value	State	Last Check
CPU AVG	<div style="width: 2%;"></div>	2%	OK	12/09/14 15:27:35
Physical Memory Used	<div style="width: 48%;"></div>	48%	OK	12/09/14 15:32:05
Disk Usage	<div style="width: 40%;"></div>	40%	OK	12/09/14 15:32:07
C:\Label: Serial Number 7ae785c7 Used				

#### SPFARM\_SQL01 (10.254.101.151)

Name	Usage	Value	State	Last Check
CPU AVG	<div style="width: 1%;"></div>	1%	OK	12/09/14 15:25:07
Physical Memory Used	<div style="width: 42%;"></div>	42%	OK	12/09/14 15:26:05
Disk Usage	<div style="width: 50%;"></div>	50%	OK	12/09/14 15:27:36
C:\Label: Serial Number 7ae785c7 Used				

#### Host Data: Round Trip Times

Host Trip Times: 0.04 ms Last 22.00 ms Req: 0.00 ms Average

#### Host Data: Packets Lost

Packets Lost: 0.0 Last 0.0 Req: 0.0 Average

#### Host Data: Round Trip Times

Host Trip Times: 2.20 ms Last 23.40 ms Req: 1.24 ms Average

#### Host Data: Packets Lost

Packets Lost: 0.0 Last 0.0 Req: 0.0 Average

#### SPFARM\_OWA01 (10.254.101.155)

Name	Usage	Value	State	Last Check
CPU AVG	<div style="width: 1%;"></div>	1%	OK	12/09/14 15:31:15
Physical Memory Used	<div style="width: 60%;"></div>	60%	OK	12/09/14 15:30:04
Disk Usage	<div style="width: 44%;"></div>	44%	OK	12/09/14 15:30:52
C:\Label: Serial Number 7ae785c7 Used				

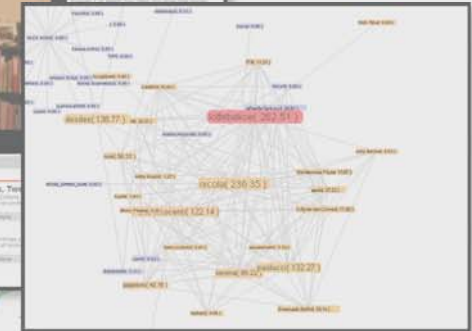
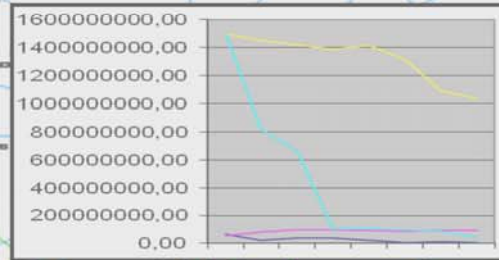
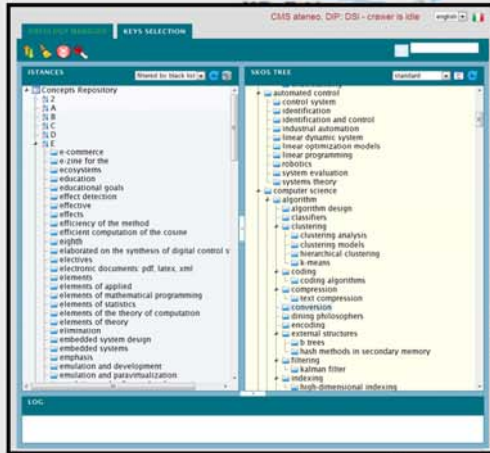
#### SPFARM\_APP01 (10.254.101.152)

Name	Usage	Value	State	Last Check
CPU AVG	<div style="width: 2%;"></div>	2%	OK	12/09/14 15:30:05
Physical Memory Used	<div style="width: 37%;"></div>	37%	OK	12/09/14 15:27:51
Disk Usage	<div style="width: 73%;"></div>	73%	OK	12/09/14 15:30:50
C:\Label: Serial Number 7ae785c7 Used				



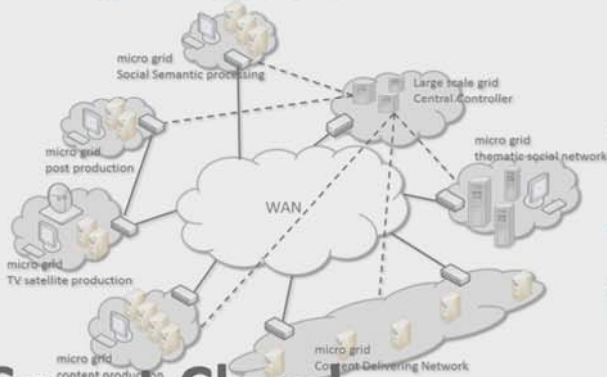
<http://www.disit.dinfo.unifi.it>

# Text and Web Mining



## Data Analytics Big data

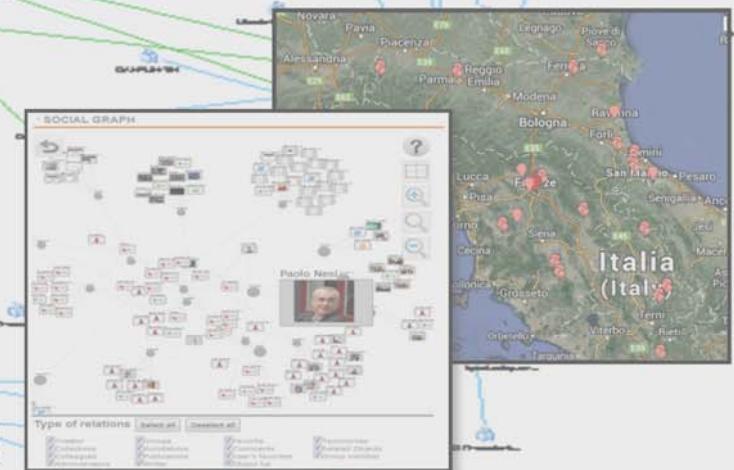
## Social Media, e-learning



## Smart Cloud Computing



## Mobile Computing



## Smart Cities

# Text and Web Mining

- **Projects:** <http://www.disit.org/5501>
  - OSIM: <http://www.disit.org/5482>
  - SACVAR: <http://www.disit.org/5604>
- **Tools:** <http://www.disit.org/5489>
  - Text and web mining, Natural Language Processing
  - Service localization
  - Competence analysis
  - Blog Vigilance, sentiment analysis



ONTOLOGY MANAGER

KEYS SELECTION

RELATIONS MANAGER

ISTANCES

hide black list 0

- Concepts Repository
  - A
    - about cooperative firms (6)
      - Look-up
      - add to black list
      - restore from black list
    - adjusting (2)
    - accounts (17)
    - acquisitions (2)
    - active (163)
    - active participation (1)
    - active tourism (1)
    - activities during the course (1)
    - activities/committees (1)
    - activity (521)
    - addition (1)
    - additional (5)
    - additional detailed information on child care and
    - adjustmant (1)
    - adjustment (17)
    - adjustment and development (1)
    - adjustment at the household (1)
    - adjustment conducive (2)
    - adjustment in the service (1)
    - adjustment policies (1)
    - adjustment policies and approaches (1)

SKOS TREE

SKOS ALT standard

- Concept Schema
  - Agents Theory
    - Individual agent
      - Competences and capabilities
    - Economic Theory
      - Organized entities
        - Entrepreneurship
        - Financial aspects
        - competition
  - analysis of systems
    - New node
    - economic thought
  - macroeconomics
    - macroeconomic
      - macroeconomics and growth theory
      - macroeconomics and mathematical
      - macroeconomics in developing countries

LOG

- [INFO]: COURSES LOOKUP FOR about cooperative firms (6)
- Related Subjects:
  - [http://www.unifi.it/index.php?module=ofform&mode=1&cmd=3&AA=2011&fa\\_pds=GEN&afd=293258](http://www.unifi.it/index.php?module=ofform&mode=1&cmd=3&AA=2011&fa_pds=GEN&afd=293258)
  - [http://www.unifi.it/index.php?module=ofform&mode=1&cmd=3&AA=2012&fa\\_pds=GEN&afd=340919](http://www.unifi.it/index.php?module=ofform&mode=1&cmd=3&AA=2012&fa_pds=GEN&afd=340919)
- [INFO]: PEOPLE LOOKUP FOR about cooperative firms (6)
- Related Persons:
  - Pier Angelo Mori (6)

# Blog Vigilance

CRAWLER PARSER

REGOLE DI PARSING

Author tag	Author class	Author ID
span	xsaid	
Date tag	Date class	Date ID
span	date	
Text tag	Text class	Text ID
blockquote	postcontent restore	
Title tag	Title class	Title ID
h1	pagetitle	

SUGGERIMENTO

Pagina:

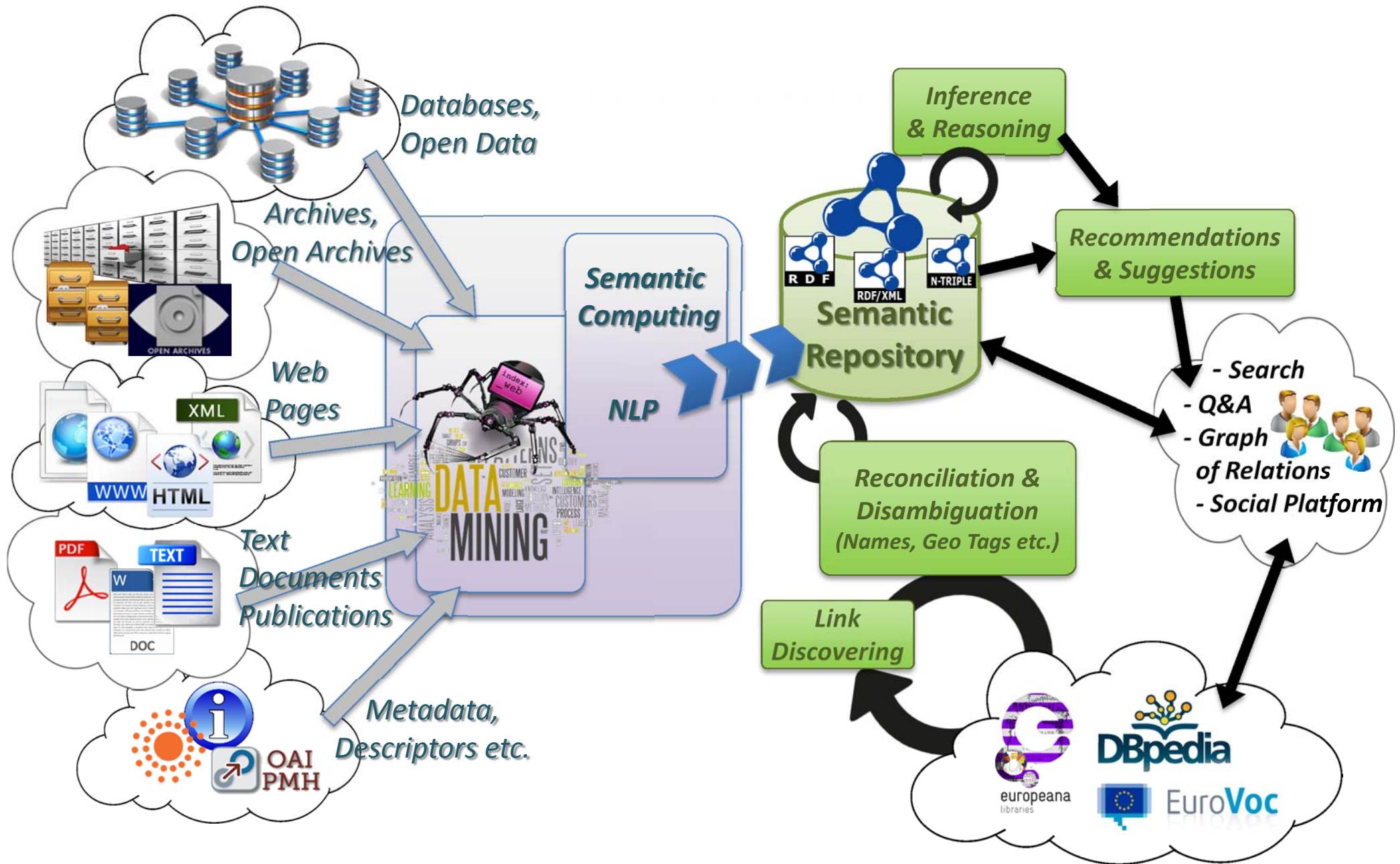
Taglio:

#	Tag	Class
1	html	noclass
1	base	noclass
1	meta	noclass
1	title	noclass
1	body	noclass
1	div	noclass
1	div	noclass
1	div	noclass
1	a	logo-image
1	div	noclass
1	div	navbar
1	ul	breadcrumb
1	ol	noclass

```
<?xml version="1.0" encoding="UTF-1252"?>
<html>
<head />
<!--[if IE] /base><![endif]-->
<!-- Metro mobile Theme from PixelGoose.com v.1.0.2 -->
<div data-role="page" data-theme="d" id="page-home">
  <div id="header">
    <div id="header-left">
```

# Sentiment and affective analysis

# Knowledge Work-flow: from Sources to Final Users





<http://OpenMind.disit.org>

Back

NESI PAOLO urn:u-gov:unifi:AC\_AB0:8cf8e70205520a44e90211a34e6b7a9e

Registrato CINECA

[More Info \(on: Managing Person Knowledge\)](#)

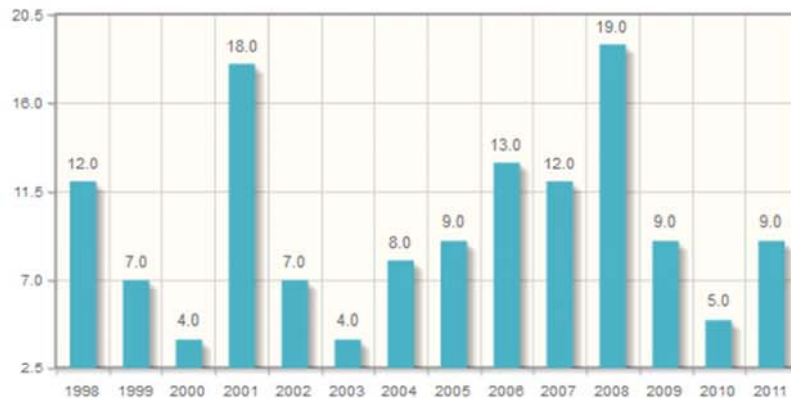
Author subject:

[INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE SC. E TEC. PER UNA SOCIETÀ DELL'INFORMAZIONE E DEL](#)

Tipo di pubblicazioni dell'autore:

- [1a - Articolo su rivista](#) (44)
- [1a - Articolo su rivista ISI](#) (1)
- [2a - Art/Cap/Saggio libro scient/tech](#) (11)
- [3f - Libro scientifico/tecnico](#) (7)
- [4a - Articolo in atti di congresso](#) (94)
- [5o - Rapporti di ricerca pubblicati](#) (1)
- [7a - Curatela](#) (8)
- [7d - Curatela di libro scientifico/tecnico](#) (1)

Totale pubblicazioni: 167



Anno:

[1998](#) (12) [1999](#) (7) [2000](#) (4) [2001](#) (18) [2002](#) (7) [2003](#) (4) [2004](#) (8) [2005](#) (9) [2006](#) (13) [2007](#) (12) [2008](#) (19) [2009](#) (9) [2011](#) (9)

[Elenco di tutte le pubblicazioni](#) (167)

Autori che hanno lavorato con questo persona

- [ARGENTI FABRIZIO](#) (Registrato CINECA)
- [BALDASSARRE ANTONIO](#) (Registrato CINECA)
- [BELLINI PIERFRANCESCO](#) (Registrato CINECA)
- [BRUNO IVAN](#) (Registrato CINECA)

- [Visualizza le pubblicazioni in comune](#) (2)
- [Visualizza le pubblicazioni in comune](#) (1)
- [Visualizza le pubblicazioni in comune](#) (41)
- [Visualizza le pubblicazioni in comune](#) (22)

### Linked Open Graph

Select a SPARQL endpoint:  
**OSIM (by DISIT)**

Examples:  
• [Paolo Nesi](#)  
• [Dip. Ingegneria dell'Informazione](#)

Choose a class:  
Search for keyword

keyword:

uri:

Request

**Your data**

sparql endpoint: (optional)

uri:

Request

**Status**

Request:

urn:u-gov:unifi:AC\_AB0:8cf8e70205520a44e90211a34e6b7a9e

Remove Clear

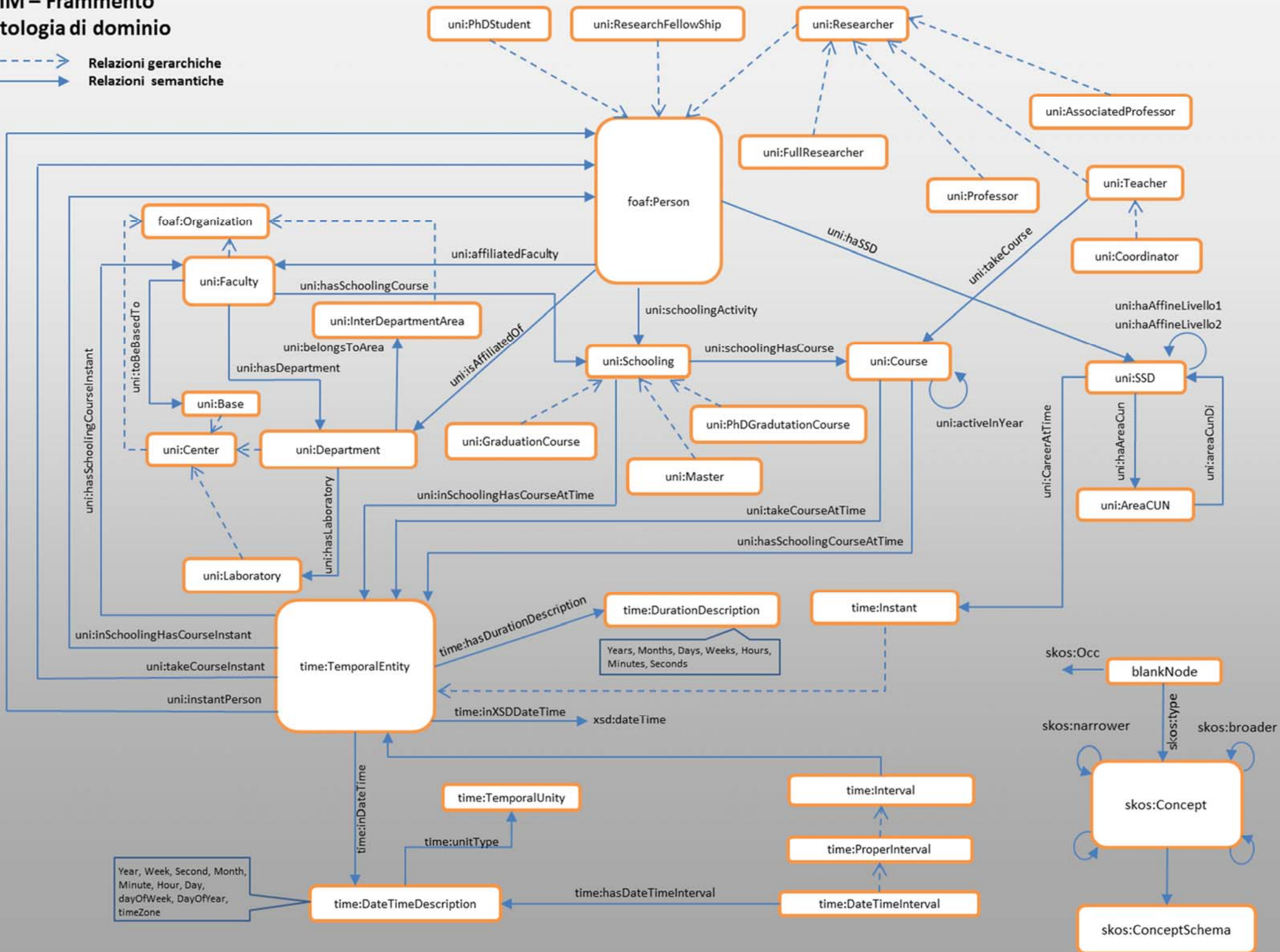
**Linked Open Graph**

Shown: 61  
Entities: 33  
Relations: 28

**Knowledge analysis**

# OSIM – Frammento Ontologia di dominio

- - - - - ➔ Relazioni gerarchiche  
- - - - - ➔ Relazioni semantiche





## Linked Open Graph

Select a SPARQL endpoint:  
**OSIM (by DISIT)**

Examples:

- Paolo Nesi
- Dip. Ingegneria dell'Informazione

Choose a class:  
Search for keyword

keyword:

uri: urn:u-gov:unifi.AC\_AB0:8cf8e70205520a44e90211a:  
Request

**Your data**

sparql endpoint: (optional)  
http://...

uri: http://...  
Request

**Status**

Requests:

urn:u-gov:unifi:AC\_AB0:8cf8e70205520a44e90211a34

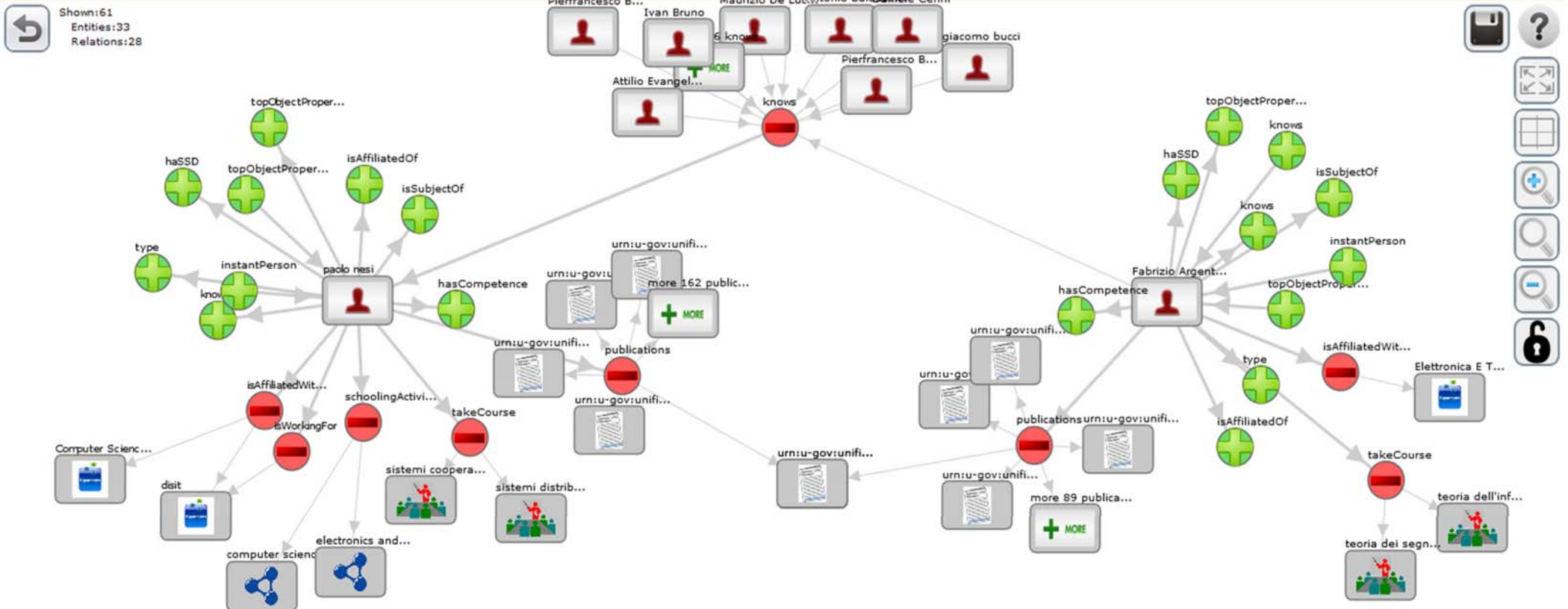
Remove Clear

**Type of relations**

Select all Deselect all Invert Hide all inverse

<input type="checkbox"/> depiction	<input checked="" type="checkbox"/> haSSD
<input checked="" type="checkbox"/> hasCompetence	<input checked="" type="checkbox"/> instantPerson
<input checked="" type="checkbox"/> isAffiliatedOf	<input checked="" type="checkbox"/> isAffiliatedWith
<input checked="" type="checkbox"/> isSubjectOf	<input checked="" type="checkbox"/> isWorkingFor
<input checked="" type="checkbox"/> knows	<input checked="" type="checkbox"/> publications
<input type="checkbox"/> sameAs	<input checked="" type="checkbox"/> schoolingActivity
<input checked="" type="checkbox"/> seeAlso	<input checked="" type="checkbox"/> takeCourse
<input checked="" type="checkbox"/> topObjectProperty	<input checked="" type="checkbox"/> type


## Linked Open Graph



# Infrastructure and support for

- **Research group with more than 20 years of activities**
- **Cloud and data center** with several servers and more than 400Tbyte storage in raid 50.
  - Managing several infrastructure: ECLAP, ApreToscana, IUF, SMNET, etc.
- **IOT center:** reference center for Fluctus, UDOO, e Intel Galileo
- **Open Data and Linked Open Data center**
  - **Integration of more than 400 different Open Data** sets coming from Tuscany area (geographical information, ambient and weather, transportation and mobility, public administration and services, statistics, point of interest, sensors, events, time lines, etc.) see [Sii-Mobility project](http://www.disit.dinfo.unifi.it/siimobility.html) <http://www.disit.dinfo.unifi.it/siimobility.html>
  - **LOD** for Performing Arts in connection to Europeana on [ECLAP project and service](http://www.eclap.eu/103998), <http://www.eclap.eu/103998> see ECLAP [social graph](http://LOG.disit.org), <http://LOG.disit.org>
- **Technology Transfer** to SMEs via [APREToscana](http://www.apretoscana.org/) <http://www.apretoscana.org/> and [CSAVRI](#) center for TT and incubator.
- Management of Call for proposals in EC projects
- Project Management, Dissemination Management, Exploitation Plan





**DIST** Distributed Systems and Internet Technologies Lab  
Distributed Data Intelligence and Technologies Lab  
Department of Information Engineering (DINFO)  
University of Florence

<http://www.disit.dinfo.unifi.it>

  
qualsiasi tipo  deep search

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- CORSI E TESI ▾
- COME FARE ▾
- EVENTI ▾
- MIO PROFILO ▾

paolo nesi Uscire 

Mostra Modifica

## ELABORATI, STAGE E TESI AL DISIT, 2014-2015

L'obiettivo di questa pagina è fornire le informazioni di base che possono essere utili ai candidati in fase di scelta dello Stage e/o Tesi per la Laurea in Ingegneria (area dell'informazione: Informatica, Elettronica e Telecomunicazioni) oppure di Informatica di Scienze, triennale e/o Specialistica/Magistrale in modo che, stimolati da questi argomenti, possano sentirsi maggiormente motivati ed interessati ad un eventuale colloquio per discutere del/della loro Stage/Tesi presso il [Laboratorio DISIT](#). Si veda la pagina relativa ai [progetti DISIT](#), oppure presso il [INEA LAB, "Laboratorio per l'Ingegneria Elettroacustica"](#).  
Le Tesi/Stage fanno riferimento sia al vecchio che al nuovo ordinamento, e nel caso del nuovo ordinamento, sia alla Laurea triennale sia Magistrale/Specialistica; per Ingegneri Informatici, Telecomunicazionisti ed Elettronici, e anche per Laureandi in Informatica. Inoltre vi sono anche svariate tesi di dottorato.

**Ogni tesista viene seguito in tutte le fasi da uno o piu' esperti/ricercatori della materia e dispone delle risorse del laboratorio DISIT e del data center DISIT.**

Si informa inoltre del **Bando Aperto per Borse di Dottorato**: Sono disponibili borse di dottorato triennali in vari ambiti, e di borse di Dottorato in Apprendistato con importanti aziende del settore ICT. Se interessati contattate il [Prof. Paolo Nesi](#).

## 2014-2015: ARGOMENTI DI TESI/ELABORATI PER INFORMATICA, ELETTRONICA E TELECOMUNICAZIONI, VECCHIO E NUOVO ORDINAMENTO, TRIENNALE E/O MAGISTRALE/SPECIALISTICA:

- bigdata analysis, data mining, massive crawling, noSQL db, massive e parallel processing
- smart city, gestione delle mobilita', motori di smart intelligence per la mobilia' ed i servizi al cittadino
- sistemi di progettazione e programmazione data knowledge per Open Data e/o Linked Open Data
- blog analisi, analisi e comprensione di eventi ed opinioni su social media
- Tracciamento di percorsi ferroviari e bus su mappe, open
- e-learning: i MOOC e integrazione con modelli tradizionali
- tecnologia indossabile a supporto di esperienze collettive
- modelli collaborativi fra team medici e famigli per il supporto alla famiglia
- modelli cooperativi per l'educazione in classe e a distanza
- generazione di applicazioni mobili
- sistemi di navigazione integrati inerziali indoor/outdoor per sistemi mobili
- problematiche di protezione e data intelligence

### CONTENUTI

- [Ultime Attività](#)
- [In primo piano](#)
- [Più visti](#)
- [Most Viewed \(last 250\)](#)
- [Ultimi caricati](#)
- [Più votati](#)
- [Mie collezioni pubblicate](#)
- [Miei contenuti](#)
- [Carica un nuovo contenuto](#)

### CLASSIFICAZIONE

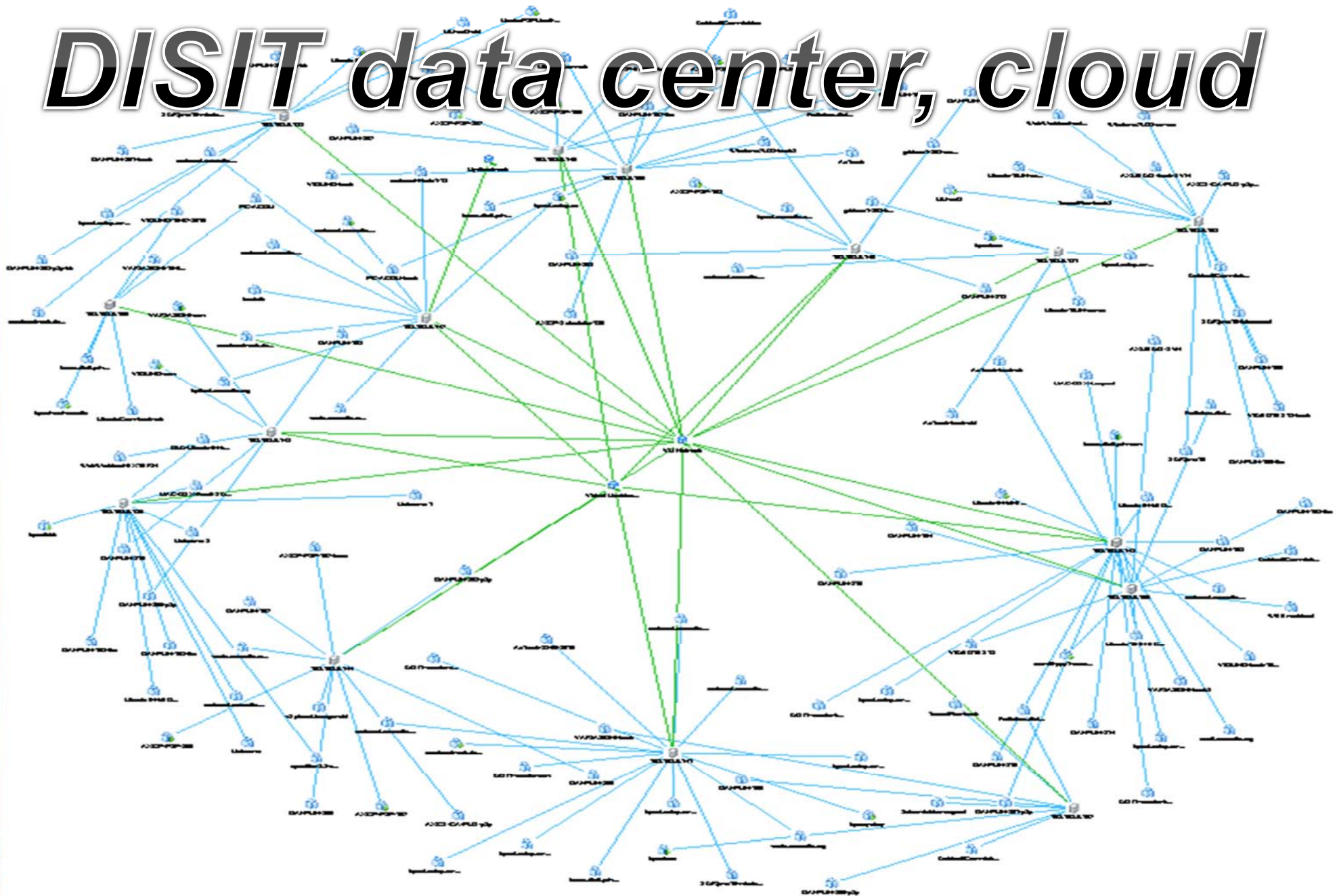
Lista dei termini

- ▶ [application fields \(2404\)](#)
- ▶ [content kind \(686\)](#)
- ▶ [models and systems \(1815\)](#)
- ▶ [project kind \(425\)](#)
- ▶ [research topics \(5370\)](#)
- ▶ [standard \(134\)](#)

### E-LEARNING: CORSI

Tutti i corsi  
Tutte le categorie di corsi  
Tutti gli insegnanti  
Le mie attività e-learning

## *DISIT data center, cloud*





# Supporto alla didattica

## Corsi e Laboratorio di ricerca:

- ✦ **Sistemi Distribuiti**, Laurea triennale in Ingegneria Informatica o Telecomunicazioni:
  - ➔ sistemi distribuiti, mobili, grid, p2p, e-commerce, middleware, cloud computing, crawling, ...
- ✦ **Sistemi Collaborativi e di Protezione**, Laurea Magistrale in Informatica o Telecomunicazioni:
  - ➔ sistemi collaborativi, social networking, modelli e soluzioni per la protezione dei contenuti multimedia, advertising, gestione diritti, semantic computing, ..
- ✦ Scuola della Regione
- ✦ .... altri Corsi Universitari correlati a DISIT

## Stage e Tesi di Laurea al DISIT:

- ✦ Laurea Triennale e/o Magistrale in Ingegneria

## Assegni di Ricerca su progetti

## Dottorato di ricerca al DISIT:

- ✦ Su progetti, in apprendistato, industriale, etc..



# Cosa vediamo Oggi

- Modello del corso
- Laboratorio DISIT
- Progetti in corso e attività correlate
- **Visione generale del corso** ←





# Argomenti del Corso: 2014-2015

- ⌚ Parte 0: descrizione del corso: obiettivi, argomenti, e benefici per gli studenti del corso
- ⌚ Parte 1: sistemi di protezione dei contenuti digitali, DRM e CAS
- ⌚ Parte 2: internet advertising, etc.
- ⌚ Parte 3: XML, RDF, Ontologies, reasoning
- ⌚ Parte 4: Mining, Crawling and Natural Language Processing
- ⌚ Parte 5: knowledge modeling and management, QA
- ⌚ Parte 6: Social Media technologies, anatomia di una Social Network: valutazione del comportamento degli utenti, collective intelligence, raccomandazioni in social media
- ⌚ Parte 7: Smart City: open data, linked open data, bigdata solutions and analytics

# *Sistemi Collaborativi e di Protezione (SCP)*

**Corso di Laurea Magistrale in Ingegneria**

***Prof. Paolo Nesi***

Department of Systems and Informatics

University of Florence

Via S. Marta 3, 50139, Firenze, Italy

tel: +39-055-4796523, fax: +39-055-4796363

**DISIT Lab**

<http://www.disit.dinfo.unifi.it/>

[paolo.nesi@unifi.it](mailto:paolo.nesi@unifi.it) <http://www.disit.dinfo.unifi.it/nesi>





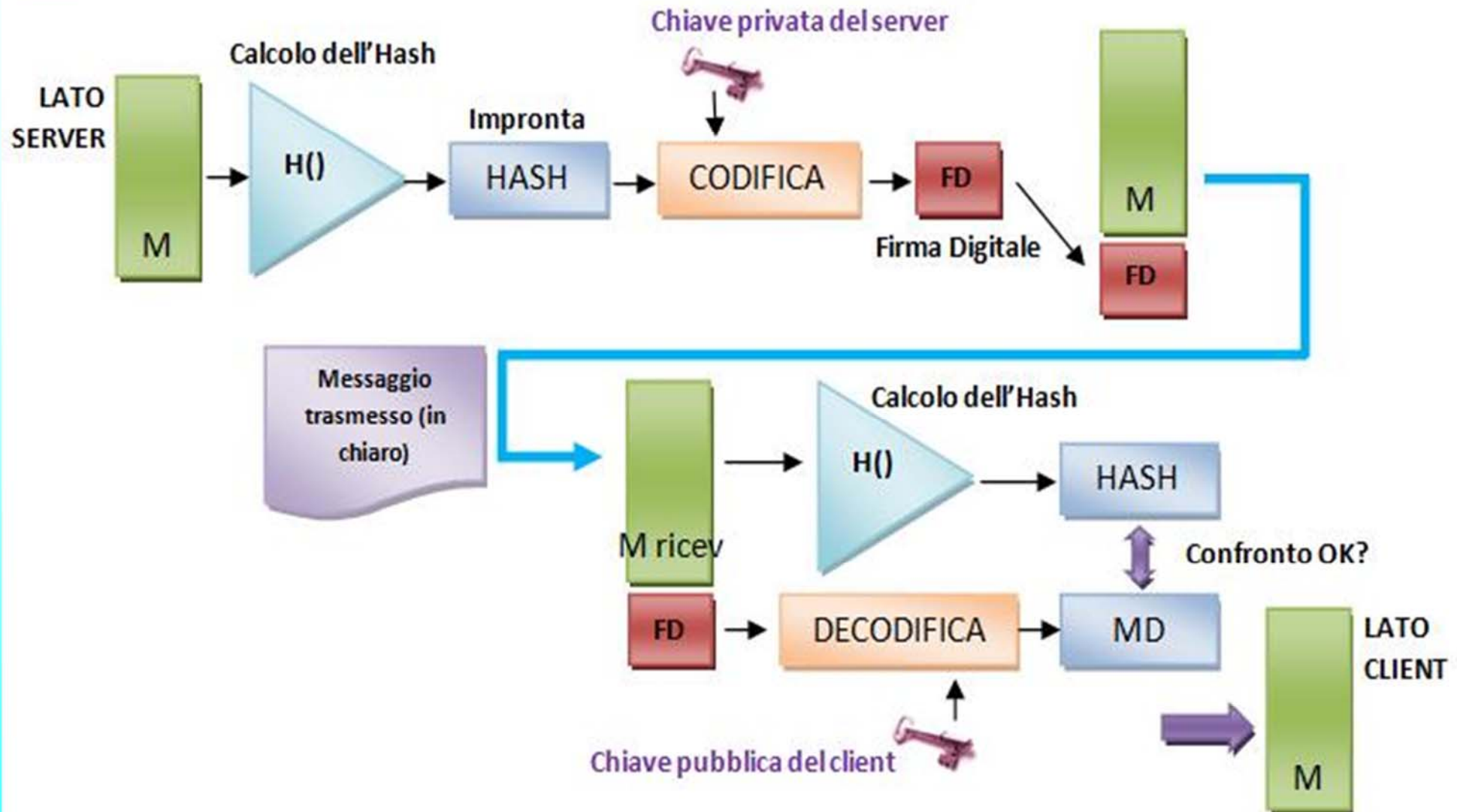
- ❏ sistemi di protezione dei contenuti digitali e multimediali
  - ♣ Formalizzazione di Licenze, gestione dei diritti
  - ♣ DRM e CAS (esempi del digitale terrestre, Windows DRM, iTunes, OMA, etc.),
  - ♣ protezione su sistemi mobili.
  - ♣ Standard per la protezione

## Attività in DISIT come progetti:

- ♣ AXMEDIS....SIAE, AFI, SDAE, etc. <http://www.axmedis.org>
- ♣ MPEG-21...
- ♣ ECLAP IPR Model: <http://www.eclap.eu>



# Digital Signature



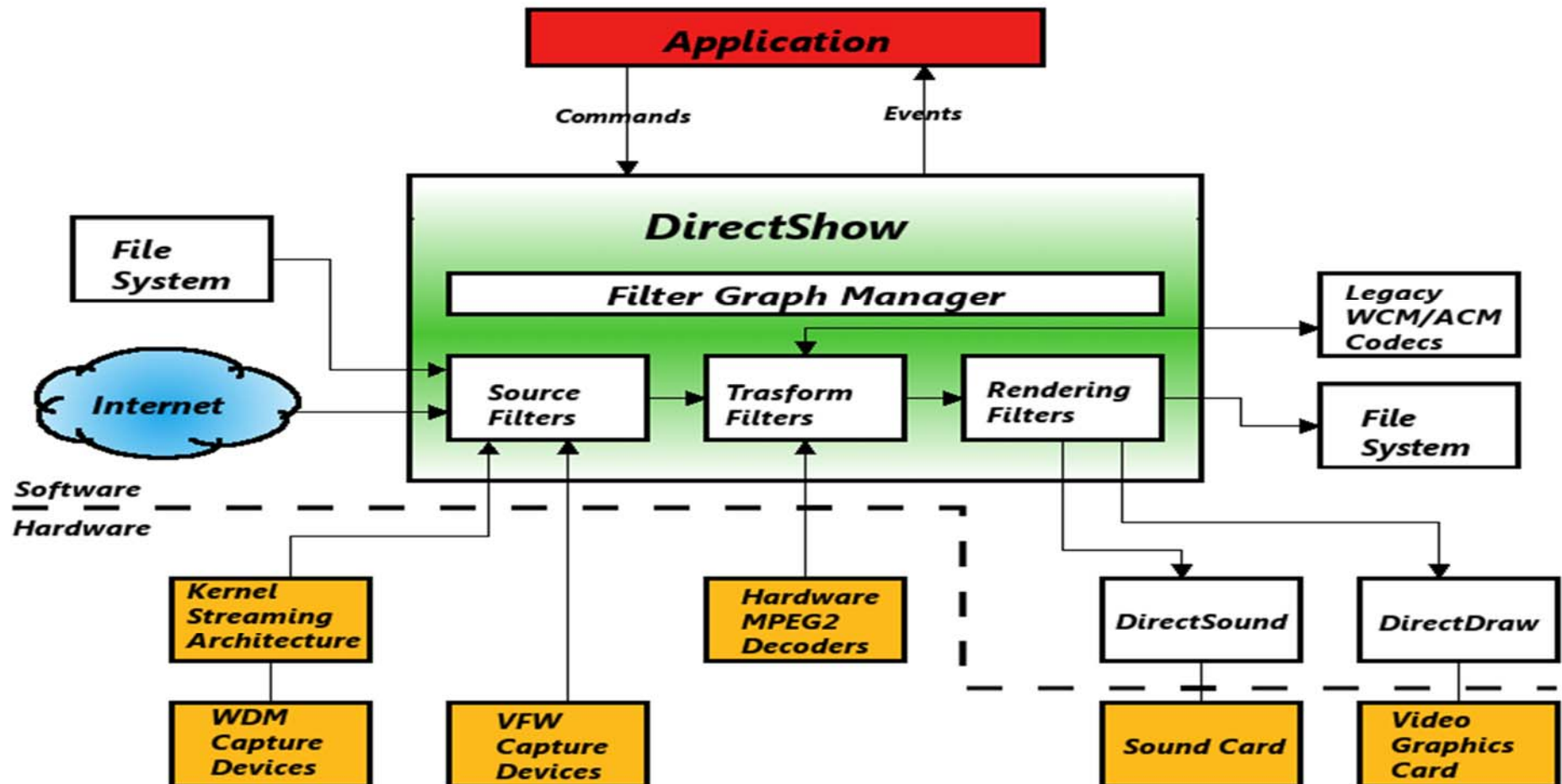




# Esempi di Licenze: creator to distrib

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<!-- License model for giving right adapt to the distributor -->
<r:license xmlns:dsig="http://www.w3.org/2000/09/xmldsig#" xmlns:mx="urn:mpeg:mpeg21:2003:01-REL-
MX-NS" xmlns:r="urn:mpeg:mpeg21:2003:01-REL-R-NS" xmlns:sx="urn:mpeg:mpeg21:2003:01-REL-
SX-NS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-REL-R-NS ../schemas/rel-r.xsd
urn:mpeg:mpeg21:2003:01-REL-SX-NS ../schemas/rel-sx.xsd urn:mpeg:mpeg21:2003:01-REL-MX-NS
../schemas/rel-mx.xsd">
<r:grantGroup>
<r:grant> <r:keyHolder> <r:info><dsig:KeyName>AXDID:Distributor</dsig:KeyName> </r:info>
</r:keyHolder>
<mx:adapt/>
<mx:diReference><mx:identifier>AXOID:Identifier</mx:identifier> </mx:diReference>
</r:grant>
</r:grantGroup>
<!--The license is issued by the creator.-->
<r:issuer> <r:keyHolder> <r:info> <dsig:KeyName>AXCID:Creator</dsig:KeyName></r:info>
</r:keyHolder>
</r:issuer>
</r:license>
```

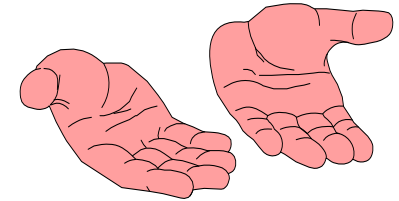
- **Basato sul concetto di Filtro.**
- **Isolamento dell'applicazione dall'Hardware a disposizione.**
- **Supporto ad un gran numero di formati e possibilità di estensione.**





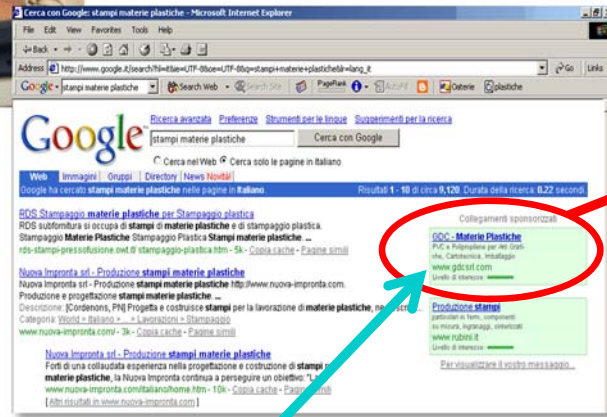
# Parte 2: Advertising

- Main concepts of Internet Advertising
  - ♣ Why Advertising
- Business models and Advertising
- Internet Advertising Measures
- Advertising Services: Google ADWords
  - ♣ Lessons Learned
- Google AdSense
- Semantic processing and Issues of Advertising
  - ♣ Recommendation and Advertising





# Pay per click, mediated via advertisers



Visit



click

Advertising Management & Semantic Computing



**WEB portal capable to:**  
*present products*  
*monitor user actions, IPs, etc.*  
*ask for registration*  
*collect contact*  
*provide more and more.....*





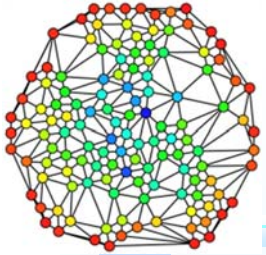
# Parte 3: XML, RDF, Ontologies, reasoning

## XML: *Extensible Markup Language*

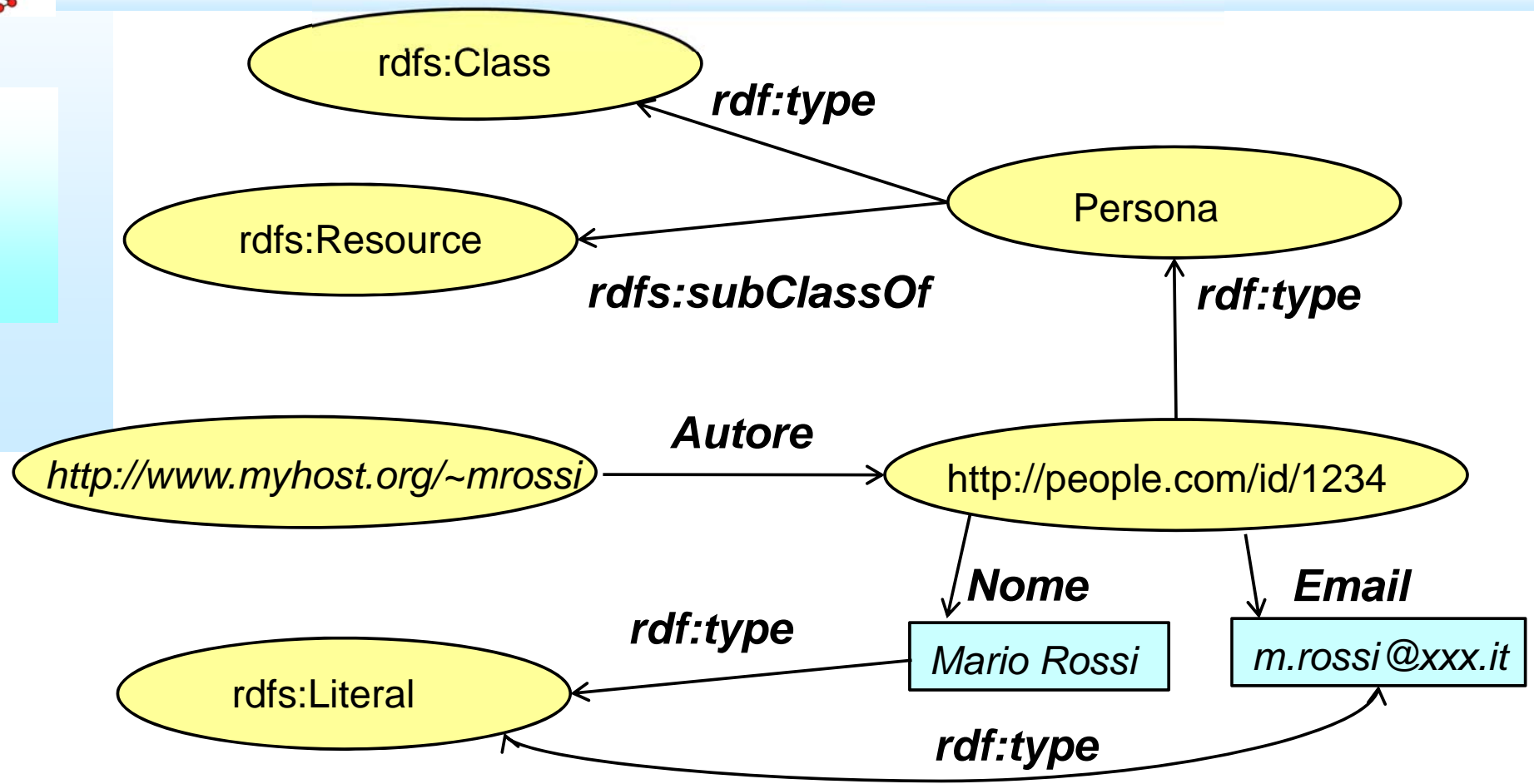
- ♣ Introduzione
- ♣ Classi e Istanze
- ♣ Proprietà
- ♣ Applicazioni XML

## RDF: *Resource Description Language*

- ♣ Introduzione
- ♣ Classi e Istanze
- ♣ Proprietà

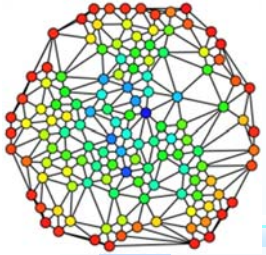


# Classi e Proprietà (2)

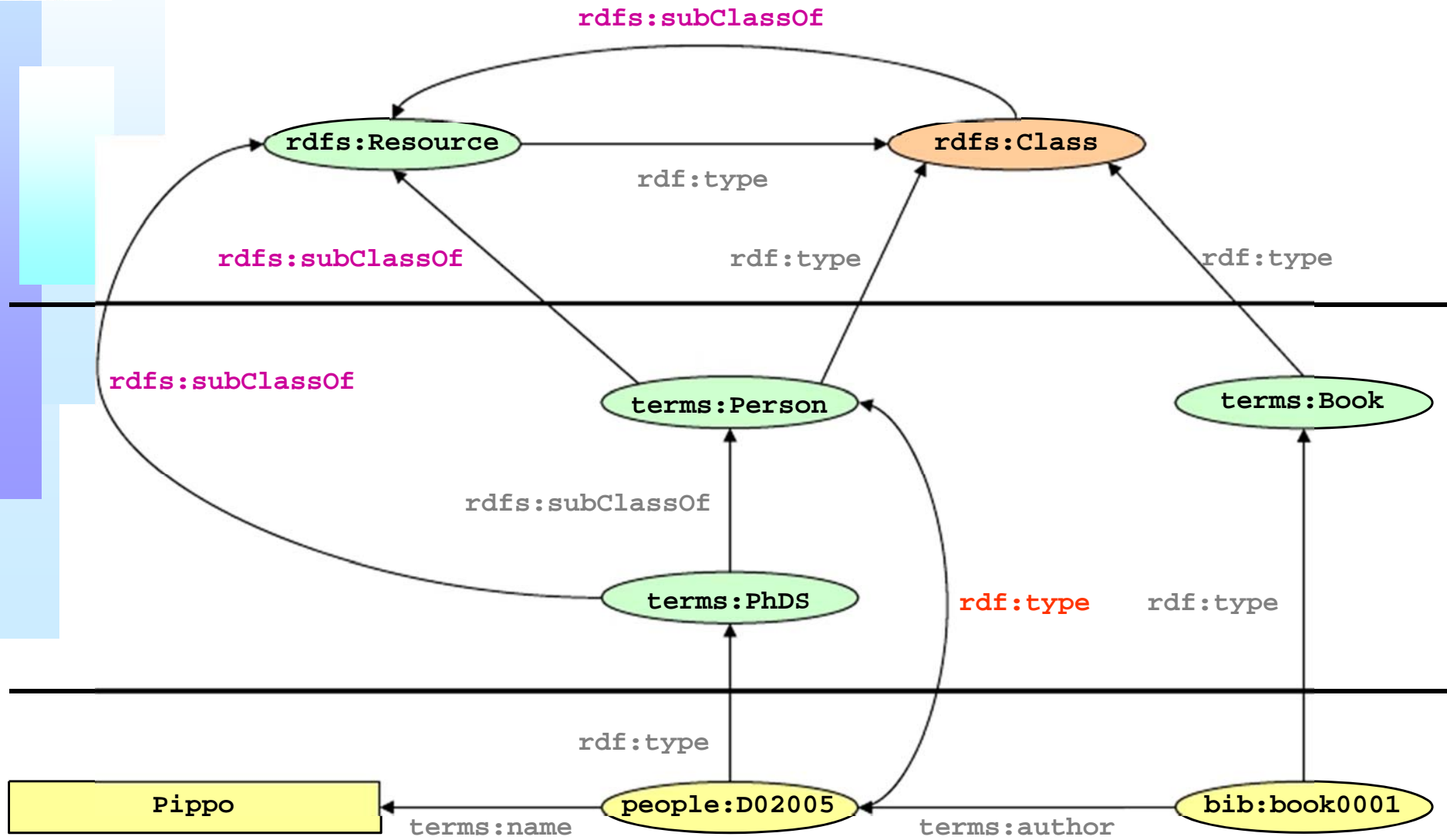


```
<rdf:Description rdf:ID="Personna">  
  <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/>  
  <rdfs:subClassOf rdf:resource="http://www.w3.org/2000/01/rdfschema#Resource"/>  
</rdf:Description>
```





# Esempio di reasoning





# Parte 4: Mining & Crawling

## ⌘ Rappresentazione della Conoscenza e Ontologie

- ♣ La conoscenza
- ♣ Linguaggi di Rappresentazione
- ♣ Ragionamento Automatico
- ♣ Sistemi di rappresentazione della conoscenza

## ⌘ OWL: *Ontology Web Language*

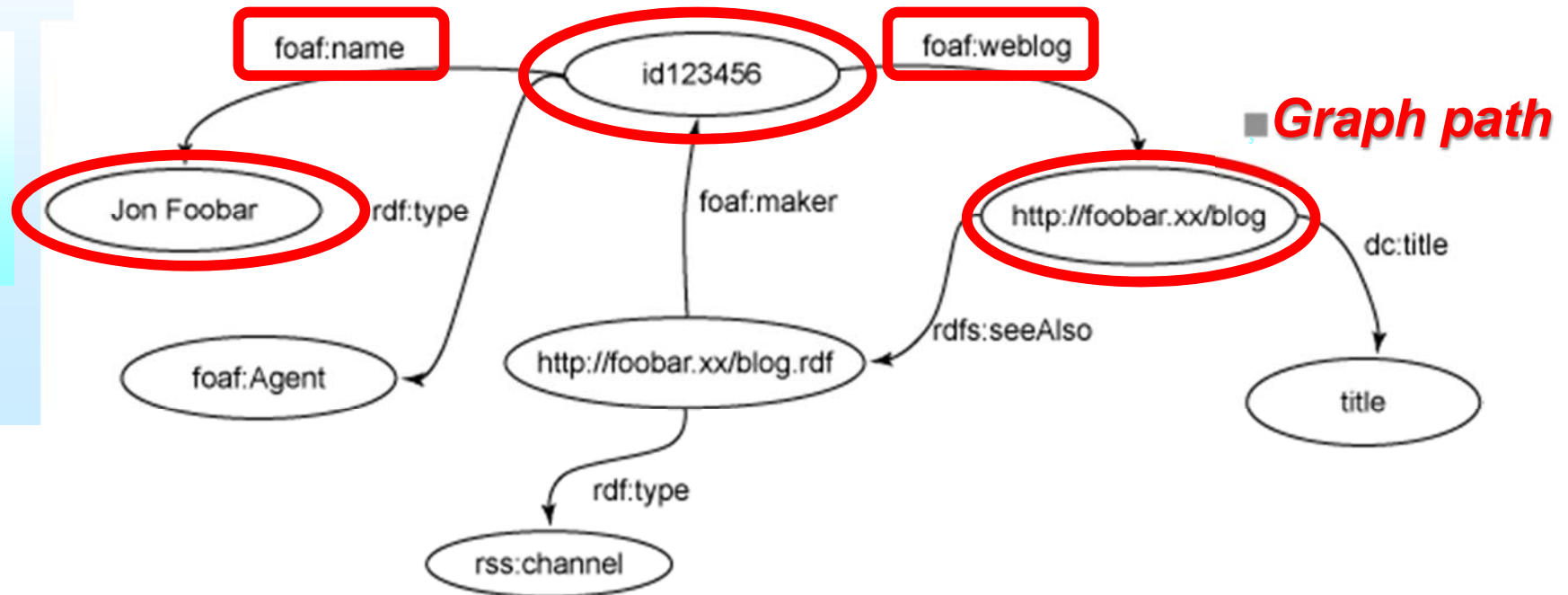
- ♣ Introduzione
- ♣ Descrizione di Classi e Assiomi
- ♣ Proprietà
- ♣ Individui e Fatti
- ♣ Servizi di Ragionamento
- ♣ Interrogare la Conoscenza: SPARQL

## ⌘ Sistemi di Web Crawling

- ♣ Strategie di Crawling
- ♣ Robot Exclusion Protocol
- ♣ Concorrenza



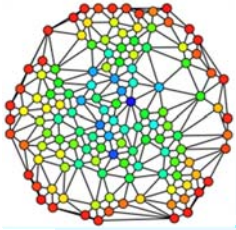
# Interrogare la conoscenza (2)



- *Trova l'url del blog creato dalla persona "Jon Foobar"*

- **PREFIX** foaf: <http://xmlns.com/foaf/0.1/>
- **SELECT** ?url
- **FROM** <bloggers.rdf>
- **WHERE** { ?contributor foaf:name "Jon Foobar" . ?contributor foaf:weblog ?url . }

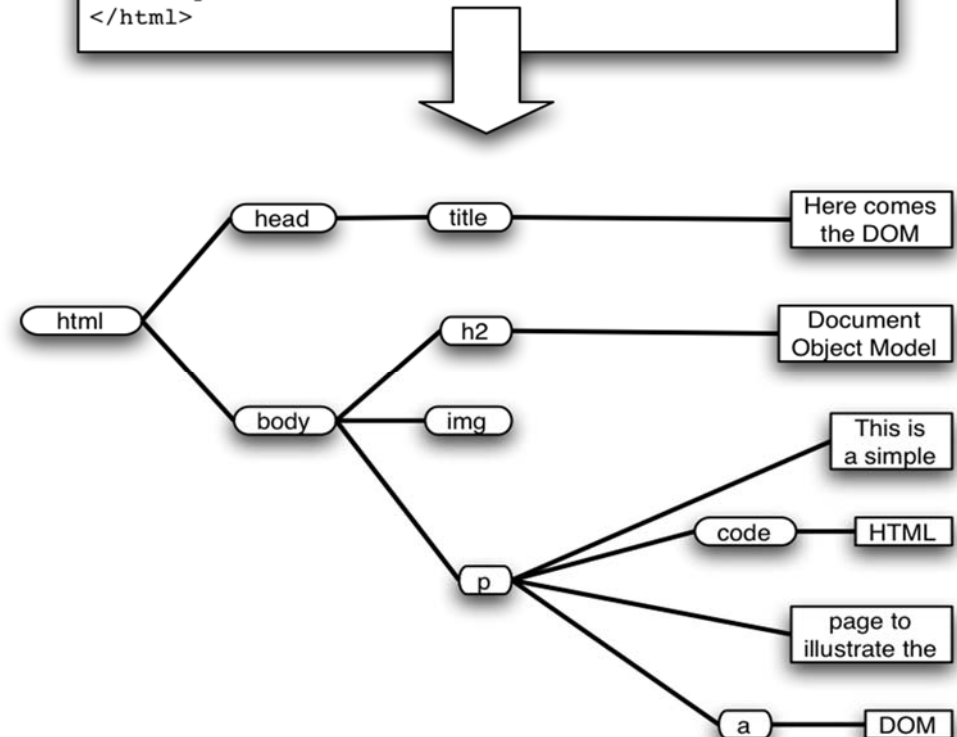




# Considerazioni implementative: Parsing

- ⌘ I documenti HTML hanno una struttura ad albero - DOM (Document Object Model)
- ⌘ Spesso i documenti HTML non rispettano gli standard di sintassi
- ⌘ Occorre trattare le entità HTML e gli unicode nei testi
- ⌘ Vi sono molti formati diversi di files:
  - ♣ Flash, SVG, RSS, AJAX...

```
<html>
  <head>
    <title>Here comes the DOM</title>
  </head>
  <body>
    <h2>Document Object Model</h2>
    
    <p>
      This is a simple
      <code>HTML</code>
      page to illustrate the
      <a href="http://www.w3.org/DOM/">DOM</a>
    </p>
  </body>
</html>
```





# Parte 5: Natural Language Processing

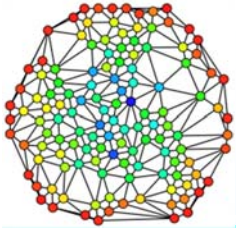
## ⌘ NLP: Natural Language Processing

- ♣ Stato dell'Arte
- ♣ Fasi dell'Elaborazione in Linguaggio Naturale
- ♣ NLP Tools: GATE

## ⌘ Progetto OSIM

- ♣ Architettura e Funzionalità del Sistema
- ♣ Modello Ontologico
- ♣ Interrogare la Conoscenza – Query Wizard

## ⌘ Sistemi di Question-Answering in NLP: Aqualog

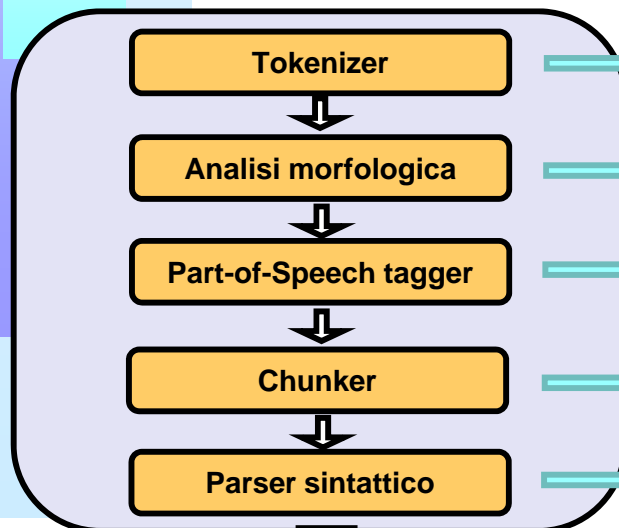


# Fasi dell'elaborazione in Linguaggio Naturale (2)

Testo in linguaggio naturale



Analisi sintattica



Segmenta il testo in parole e altre sequenze significative di caratteri (token) ed assegna una categoria grammaticale ad ogni token



Riconosce suffissi, prefissi e composti lessicali



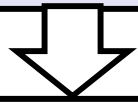
Annota ogni parola di una frase con la sua natura grammaticale all'interno del periodo (predicato, complemento oggetto, soggetto, altri complementi ecc....)



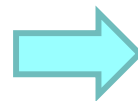
Usa le annotazioni precedenti per raggruppare le frasi nominali e verbali di ogni sentenza



Produce l'albero sintattico di ogni frase (syntactic parse tree)



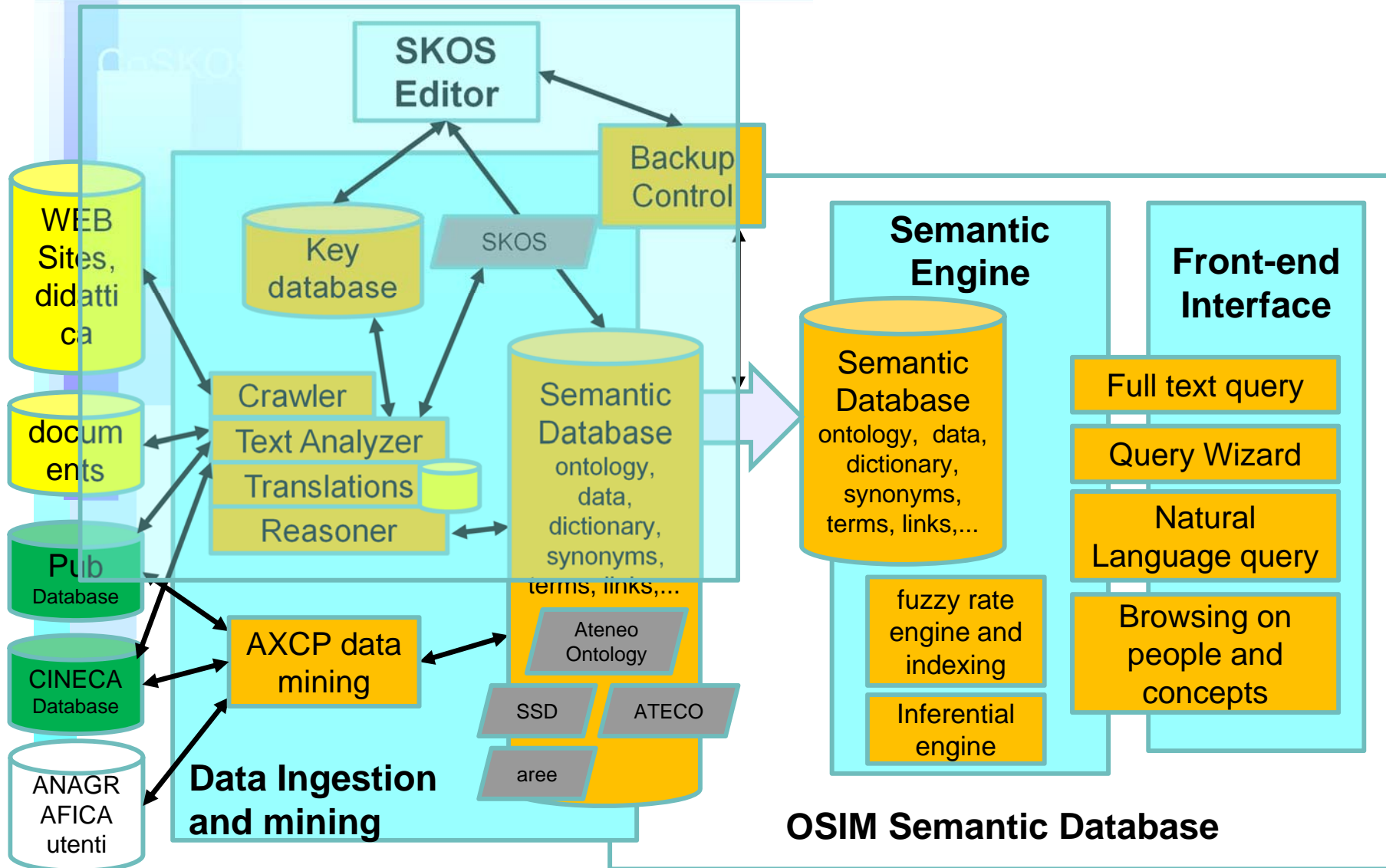
Analisi semantica



Le frasi in linguaggio naturale vengono codificate in una rappresentazione semantica (formalismi logici, reti semantiche, ontologie)



# OSIM Architettura





# CoSKOSAM

## INSTANZE

filtra per lista nel

## ALBERTO KOS

con traduzione



## Concepts Repository

- A
- B
- C
- D
- E
- F
  - famiglia (12)
  - finito (13)
  - fisica (12)
  - flusso massimo (17)
  - fondamenti (35)
  - fondamenti di programmazione (11)
  - fondazioni (35)
  - forma (33)
  - forme (22)
  - fornire (58)
  - fornire strumenti (11)
  - frequenza obbligatoria (150)
  - funzionamento (14)
  - funzioni (55)
- G

## Concept Schema

- L'architettura multi-tier (EN: multi-tier architecture)
- algoritmi di ricerca (EN: search algorithms)
- architeturali (EN: architectural)
- area dell'ingegneria del software (EN: area of software)
- condizione (EN: condition)
- controllo automatizzato (EN: automated control)
- e-commerce (EN: e-commerce)
- e-learning (EN: e-learning)
- evento (EN: event)
- evento (EN: time concept)
- gestione (EN: management)
- grafico (EN: graphic)
- informatica (EN: computer science)
- intelligenza artificiale (EN: artificial intelligence)
- interazione (EN: interaction)
- matematica (EN: math)
- media (EN: media)
- metriche (EN: metrics)
- middleware (EN: middleware)
- modello (EN: model)

## LOG

3. [INFO]: LOOKUP FOR fornire strumenti (11)
4. Related Subject:
5. [http://www.unifi.it/off\\_form/insegnamenticc.php?cmd=2&cds=B086&cur=B38&esa=B001635-  
&fac=200049<s=PSICOLOGIA&AA=2009&codice=4563&bol=&coqnome=&nome=&f=s](http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B086&cur=B38&esa=B001635-<br/>&fac=200049<s=PSICOLOGIA&AA=2009&codice=4563&bol=&coqnome=&nome=&f=s)
6. [http://www.unifi.it/off\\_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-  
&fac=200006<s=INGEGNERIA&AA=2009&codice=138&bol=&coqnome=&nome=&f=s](http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-<br/>&fac=200006<s=INGEGNERIA&AA=2009&codice=138&bol=&coqnome=&nome=&f=s)
7. [http://www.unifi.it/off\\_form/insegnamenticc.php?cmd=2&cds=B086&cur=C39&esa=B001635-  
&fac=200049<s=PSICOLOGIA&AA=2009&codice=139&bol=&coqnome=&nome=&f=s](http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B086&cur=C39&esa=B001635-<br/>&fac=200049<s=PSICOLOGIA&AA=2009&codice=139&bol=&coqnome=&nome=&f=s)
8. [http://www.unifi.it/off\\_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-  
&fac=200006<s=INGEGNERIA&AA=2009&codice=3460&bol=&coqnome=&nome=&f=s](http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-<br/>&fac=200006<s=INGEGNERIA&AA=2009&codice=3460&bol=&coqnome=&nome=&f=s)
9. [http://www.unifi.it/off\\_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-  
&fac=200006<s=INGEGNERIA&AA=2009&codice=3460&bol=&coqnome=&nome=&f=s](http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B064&cur=D02&esa=B010314-<br/>&fac=200006<s=INGEGNERIA&AA=2009&codice=3460&bol=&coqnome=&nome=&f=s)



# Parte 6: Social Media technologies



## Collaborative systems

- Definition and Terminology

## Social Network

- Forrester Trend for Social Networking
- Motivations for Social Networking
- Application, classification of Social Networking
- Examples of Social Networks
- factors of Social Networks

## User/Content Social Network

- User Generated Content, UGC
- Content descriptors
- User and group descriptors

## Measures of Social Networks

- User profile problems
- Measures of Social Networks
- Metrics and examples: Centrality, Clustering, ....
- Direct measures of user actions

## Business of Social Networks

- Penetration of social networks
- Numbers of Social Networks

## interoperability and standards

- Social icons
- Embedding
- Authentication

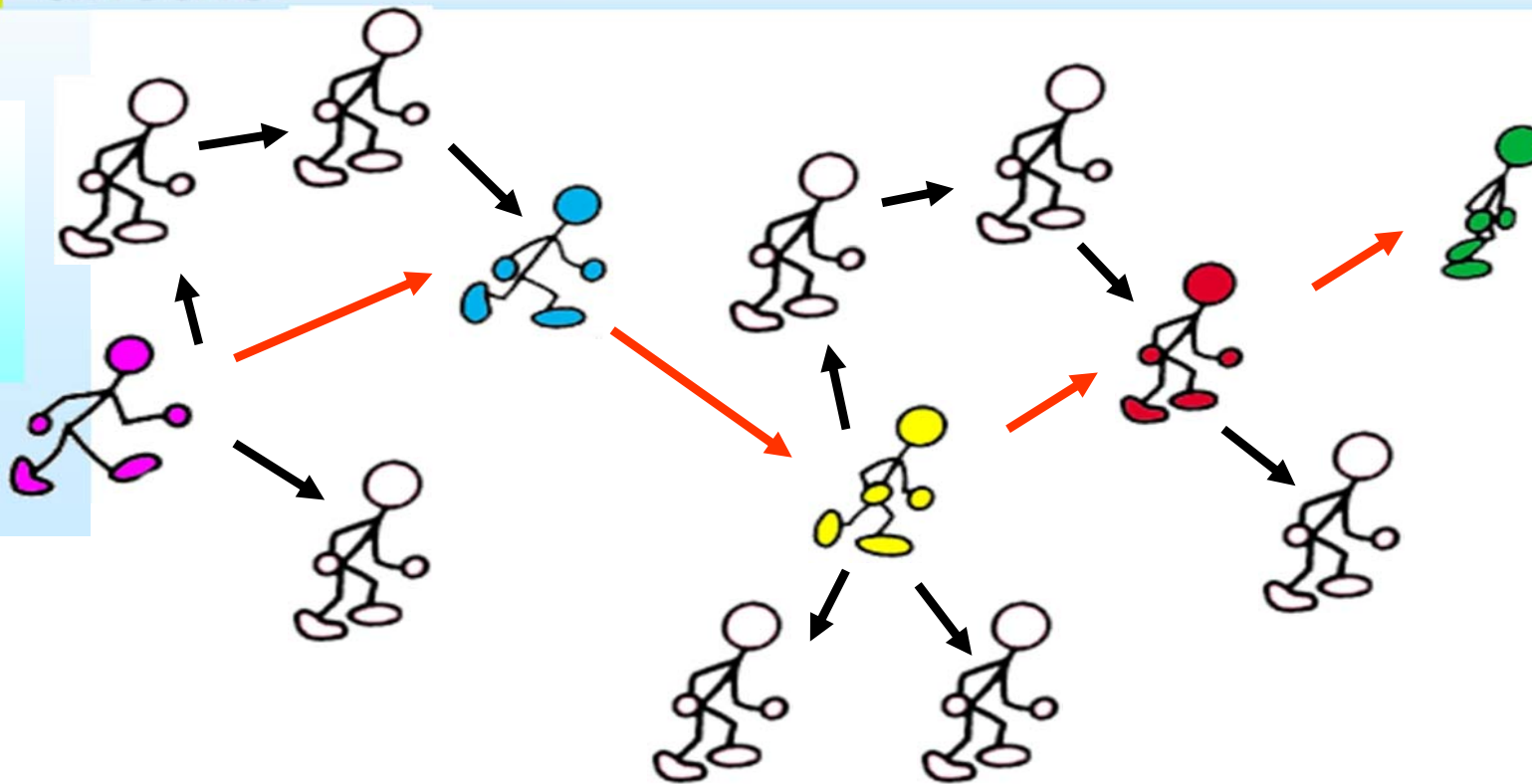
## Suggestion and Clustering

- Raccomandazioni / suggerimenti
- Metrics Similarity Distances
- Clustering algorithms comparison
- Performances, Incremental Clustering
- Suggerimenti  $U \rightarrow U$  an improvement
- Validazione del modello di suggerimento





# Averaged shortest path from one person to another



■ MIT: 6.4 hops

■ Stanford: 9.2 hops

■ Our example: 1.97 hops

■ Sum of shortest paths: 89

■ 10 Nodes

■ 45 possible connections



# Interoperability among Social Networks

❏ **SN may be interoperable** with other portals and SN

❏ **Allowing:**

- ♣ **posting** comments and contributions via the so called ***Social Icon*** interface
- ♣ **importing** user registration/profile and info or directly with some SSO
- ♣ **exporting** SN content in other portals, for example via some API.
- ♣ **hosting** SN players into other WEB portal pages, via some HTML segment to be copied
- ♣ **hosting** widgets/applications into the WEB pages of the Social Network, via some programming model



# Visualizzazione di Suggerimenti e dist

### Potential friends

[phistestasla](#)  
26  
ECUADOR, Orellana  
[Add to your friends](#) [Details](#)

[shastu](#)  
29  
CHRISTMAS ISLAND  
[Add to your friends](#) [Details](#)

[driphifras](#)  
15  
FRENCH POLYNESIA  
[Add to your friends](#) [Details](#)

[kuslechi](#)  
16  
SRI LANKA, Kurunegala  
[Add to your friends](#) [Details](#)

[hetheruno](#)  
15  
MALDIVES, Raa  
[Add to your friends](#) [Details](#)

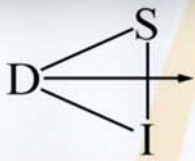
1 [2](#) [next >](#) [last >>](#)

### phistestasla proximity details

languages:  
favorites:  
location:  
interests:  
friends:  
activity:  
age:  
school\_job:



- Objective and overview
- Networking & Tools
- Content & Tools
- ECLAP Architecture
- Comparison with other Social Networks



CENTRO TEATRO ATENEO  
CENTRO DI RICERCA SULLO SPETTACOLO



SAPIENZA  
UNIVERSITÀ DI ROMA

museum

ESMAE | POLITÉCNICO DO PORTO



UNIVERSITY OF AMSTERDAM



INSTITUTE OF POLISH CULTURE  
University of Warsaw  
Faculty of Polish Studies



museum of  
archaeology &  
anthropology



University of Glasgow | Department of  
History of Art



Fondazione RINASCIMENTO  
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culturali

FILMS DE  
FEMMES



Diputació  
Barcelona

Institut del Teatre

mae

Centre de Documentació  
i Museu de les Arts Escèniques



DARIO FO E FRANCA RAME

artea



országos  
színháztörténeti  
múzeum  
és intézet



Associazione Culturale Onlus  
ICT Ad Duae Lauros

www.duaslauros.it - duaslauros@gmail.com

Teatro  
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GROTOWSKIEGO



UNIVERSITY  
of DERBY



NATIONAL  
AUDIOVISUAL  
INSTITUTE

digiLab

medioteca delle scienze umanistiche

UNISA | university  
of south africa





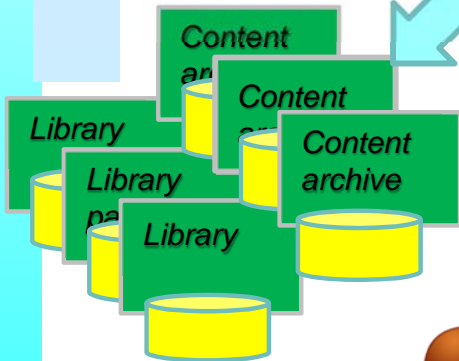
# Social Networking

**Automated  
Back office,  
AXCP**

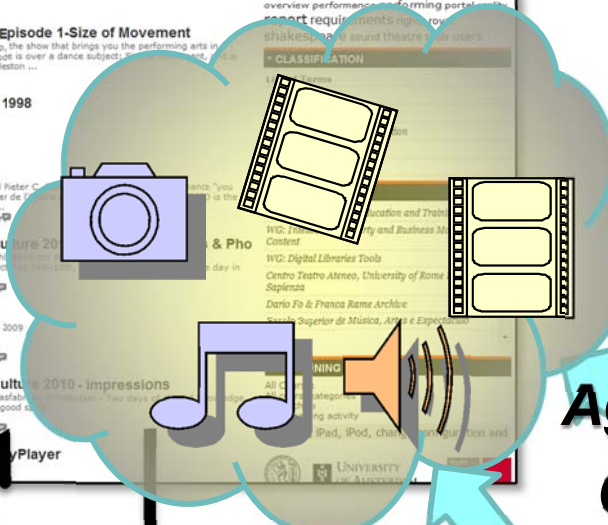
**ANY content**



**ANY content**



**UGC, web page,  
comments**



**Metadata**



**-PC, MACos, linux,  
...**

**-iPhone, iPod,  
Windows Mobile,  
.....**

**Search/Query**

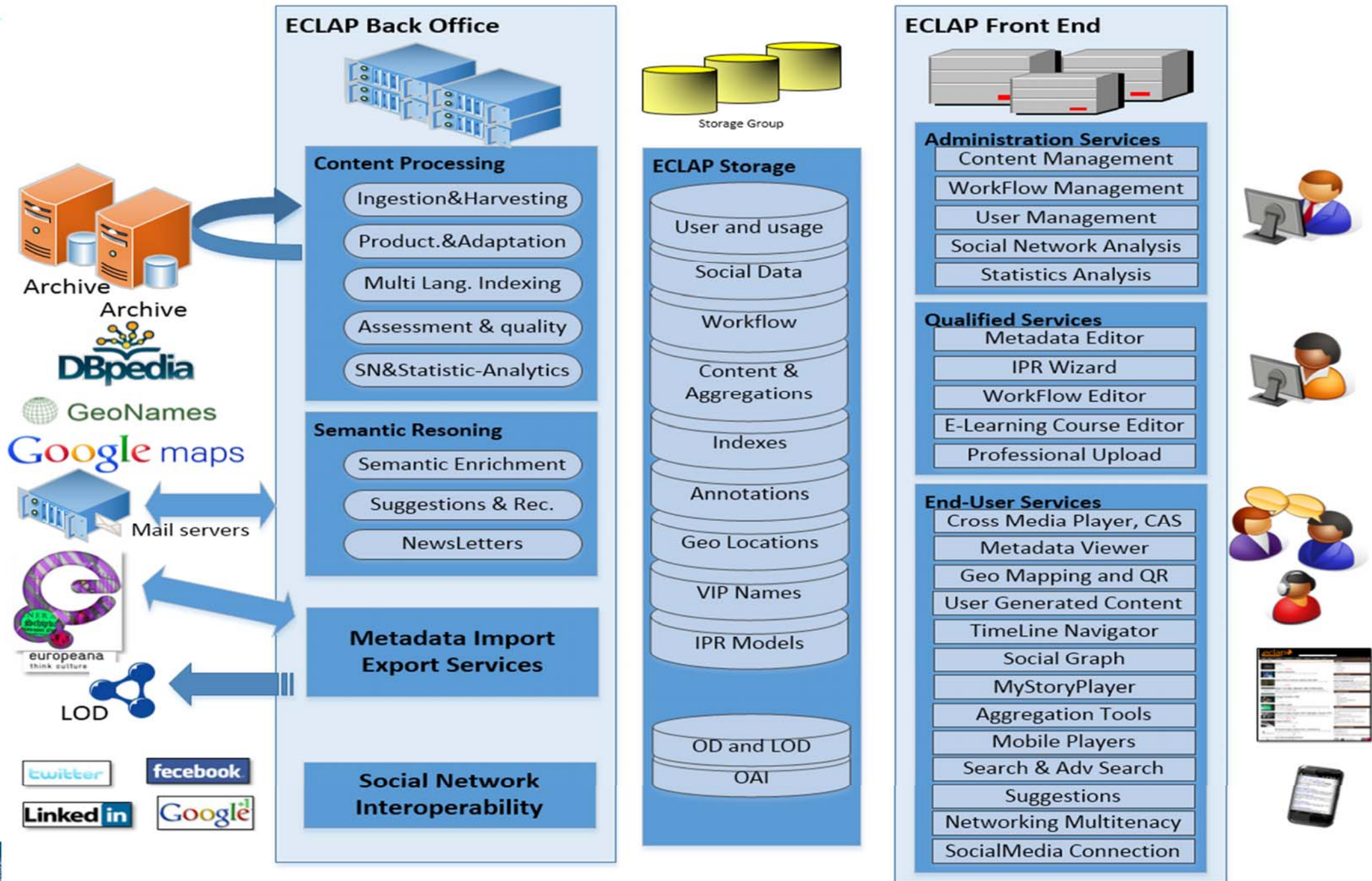


**Agg. Content  
Content  
Services**





# @Cloud Scalable Social Networking





# Parte 7: Smart City

- Open Data
- Linked Data, Linked Open Data
- Linked Open Graph
- Big Data, Hadoop
- Smart City overview
- Data interoperability
- Reasoning and firing
- Data analytic

# Big data

## 1. The Big Data Problem

- 4V's of Big Data
- Big Data Problem
- CAP Principle
- Big Data Analysis Pipeline

## 2. Big Data Application Fields

## 3. Overview of Big Data Solutions

## 4. Data Management Aspects

- NoSQL Databases
- CouchBase

## 5. Architectural aspects

- eXist

## 6. Access/Data Rendering aspects

## 7. Data Analysis and Mining/Ingestion Aspects

## 8. Comparison and Analysis of Architectural Features

- Data Management
- Data Access and Visual Rendering
- Mining/Ingestion
- Data Analysis
- Architecture







**Enabling Smart City Solutions**





Comments from citizens, Social Media



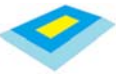
AVM Public transport

Materials



Sensors for private transport

Parking sensors



Traffic monitoring, highways



Railways Environmental parameters



Public Services



Ordinances: events, large scale works, ...



Sensors, monitoring system

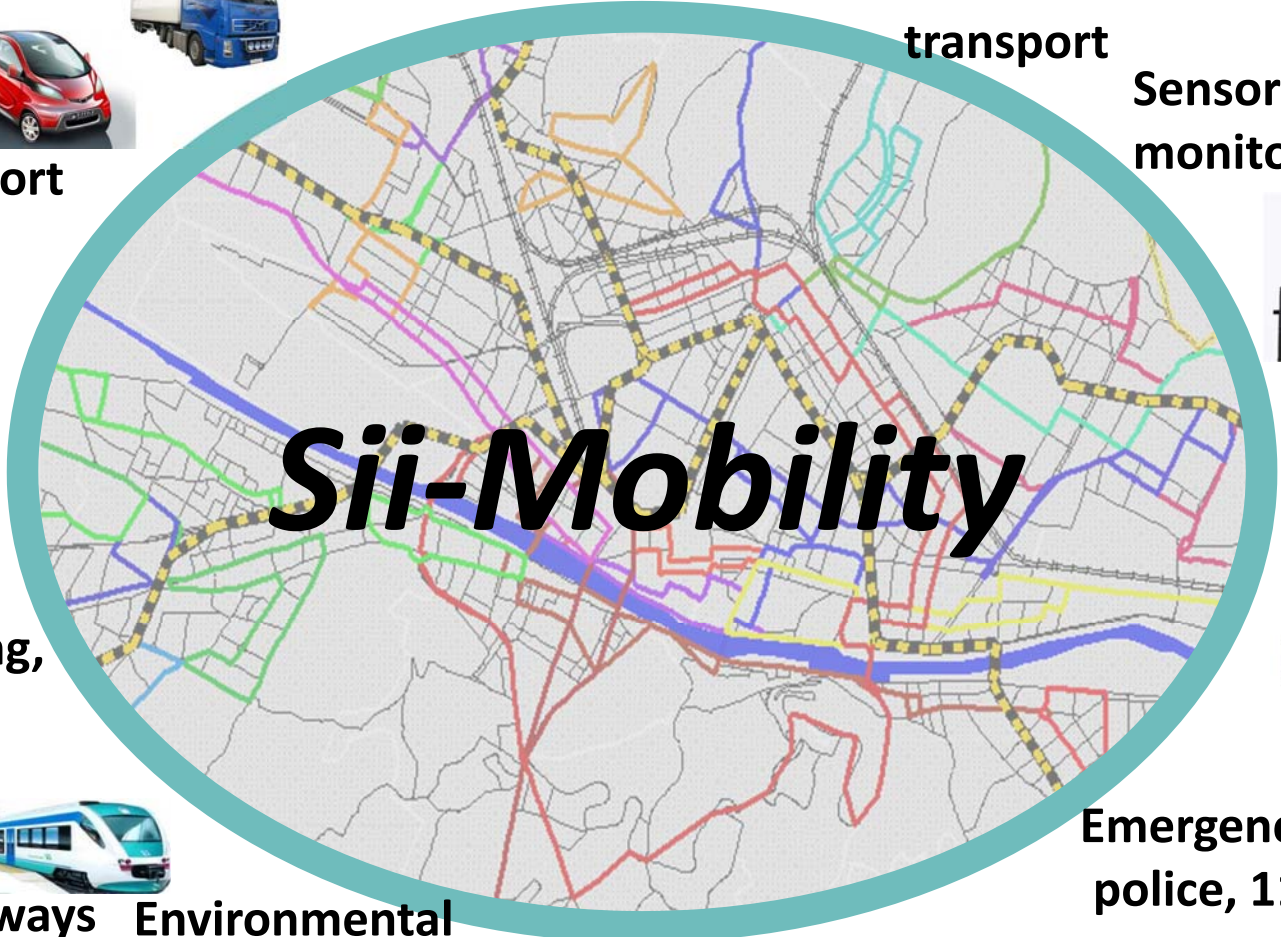


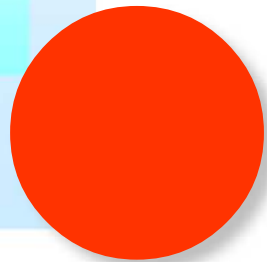
Infomobility



Telematic passages, ZTL

Emergency, police, 118





**FINE**