

# *DISIT Lab, competence and project idea on knowledge modeling, OD/LD and reasoning*



Paolo Nesi

Dipartimento di Ingegneria dell'Informazione, DINFO

Università degli Studi di Firenze

Via S. Marta 3, 50139, Firenze, Italy

Tel: +39-055-4796567, fax: +39-055-4796363

**DISIT Lab**

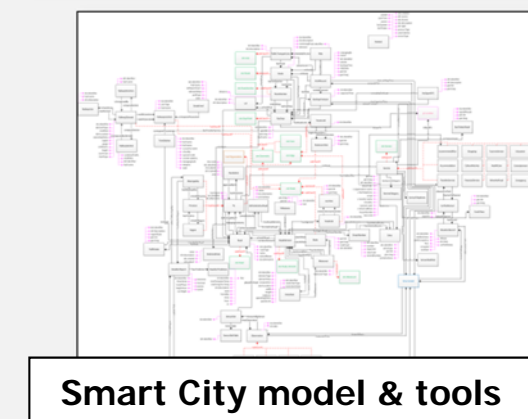
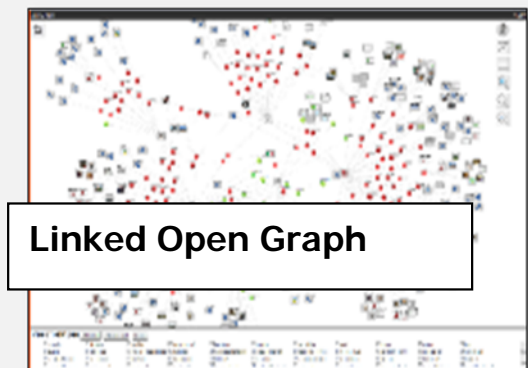
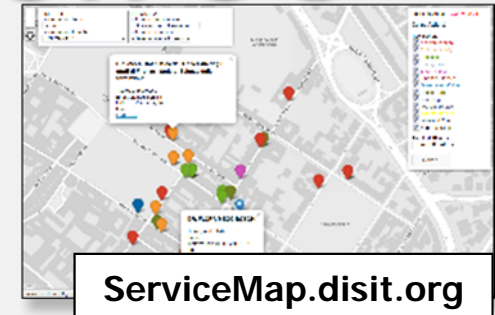
<http://www.disit.dinfo.unifi.it> *alias* <http://www.disit.org> , [paolo.nesi@unifi.it](mailto:paolo.nesi@unifi.it)

# DISIT Lab Competences

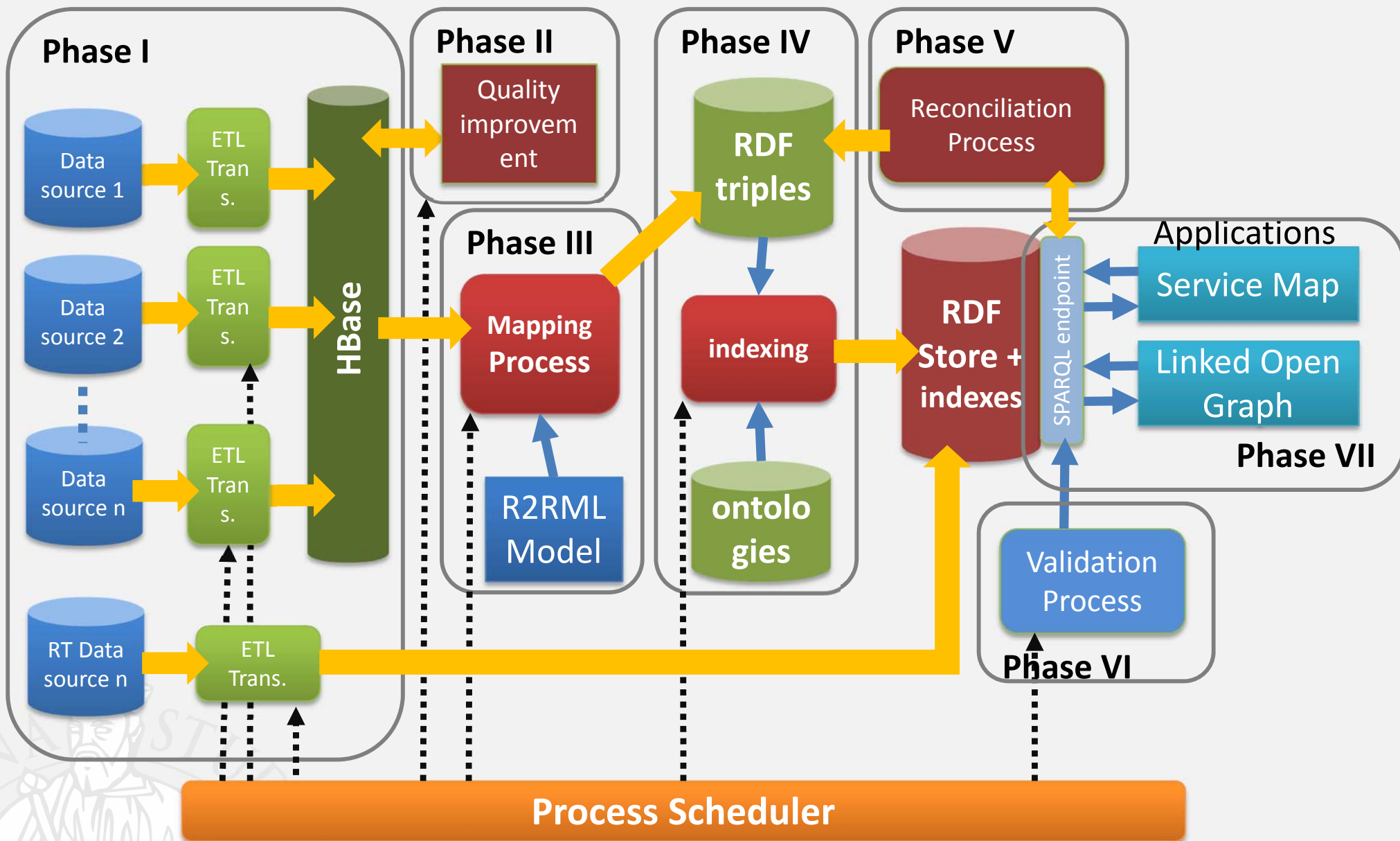
- **DISIT Lab**
  - one of the most active ICT labs of the University of Florence
  - successfully developed a number of International RnD/RIA/IA projects as well as solutions grounded on available DISIT tools for specified TRL
  - Publications: <http://www.disit.org/5487> Tools: <http://www.disit.org/5489>
- **Research areas:**
  - big data, high performance distributed systems, data mining and understanding
  - semantic models and computing, knowledge mining and representation, ontology modelling,
  - artificial intelligence, natural language processing,
- **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.

# Recent Track Record on SC

- **Sii-Mobility**, largest Italian smart city project on the integration of mobility and smart city services (14 Meuro):  
<http://www.sii-mobility.org>
  - <http://servicemap.disit.org>
  - Open Data ingestor, aggregation, reasoner,..
- **Linked Open Graph** service: LD/LOD open service and reasoner engine
  - <http://LOG.disit.org>
- **Modeling knowledge and reasoners for:**
  - Smart City: <http://www.disit.org/5606>
  - Smart Cloud: <http://www.disit.org/5604>
  - Cultural heritage: <http://www.disit.org/6038>



# Data Engineering Architecture





# SC Project Idea

- Big data Knowledge modeling and indexing for fast conceptual reasoning in space, time,...
  - Technologies
    - noSQL Semantic data base and indexing
    - Modeling of Reasoning algorithms and tools
    - Semantic Reasoning Languages
    - Distributed computing solutions
    - Rendering and visualization tool on semantic database
    - Performance evaluation and assessment metrics
  - Application areas:
    - Smart city, cloud, cultural heritage, content protection

# Recent publications

- P. Nesi, G. Pantaleo, M. Tenti, "**Ge(o)Lo(cator): Geographic Information Extraction from Unstructured Text Data and Web Documents**", SMAP 2014, 9th International Workshop on Semantic and Social Media Adaptation and Personalization, November 6-7, 2014, Corfu/Kerkyra, Greece. technically co-sponsored by the IEEE Computational Intelligence Society and technically supported by the IEEE Semantic Web Task Force. [www.smap2014.org](http://www.smap2014.org)
- P. Bellini, P. Nesi, A. venturi, "**Linked Open Graph: browsing multiple SPARQL entry points to build your own LOD views**", Journal on Visual Language and computing, 2014.
- P. Bellini, P. Nesi, M. Simoncini, A. Tibo, "**Maintenance and Emergency Management with an Integrated indoor/outdoor Navigation Support**", Journal on Visual Language and computing, 2014. Best Paper Award.
- P. Bellini, M. Benigni, R. Billero, P. Nesi, N. Rauch, "**Ontology Bulding vs Data Harvesting and Cleaning for Smart-city Services**", 20th International Conference on Distributed Multimedia Systems, [DMS2014](#), Pittsburgh University Center, Pittsburgh, USA, 27-29 Aug. 2014.
- P. Bellini, P. Nesi, N. Rauch, "**Knowledge Base Contruccion Process for Smart-city Services**", IEEE 19th International Conference on Engineering of Complex Computer Systems ([ICECCS 2014](#)). 2014
- P. Bellini, P. Nesi, N. Rauch, "**Smart City data via LOD/LOG Service**, [LOD2014](#), Workshop Linked Open Data: where are we?, organized by W3C and CNR, Rome, 2014
- P. Bellini, D. Cenni, P. Nesi, "**Optimization of Information Retrieval for Cross Media contents in a Best Practice Network**", International Journal Multimedia Information Retrieval. Springer, 2014
- P. Bellini, P. Nesi, "**Modeling Performing Arts Metadata and Relationships in Content Service for Institutions**", International Multimedia Systems Journal, Springer 2014.
- P. Bellini, P. Nesi, F. Pazzaglia, "**Exploiting P2P Scalability for Grant Authorization in Digital Rights Management Solutions**", International Journal Multimedia Tools and Applications, Springer press, 2013.

**Paolo Nesi** [paolo.nesi@unifi.it](mailto:paolo.nesi@unifi.it)

DISIT Lab: <http://www.disit.org>

Tel: +39-335-5668674

Dipartimento di Ingegneria dell'Informazione,  
DINFO

Università degli Studi di Firenze

Via S. Marta 3, 50139, Firenze, Italy

Tel: +39-055-4796567, fax: +39-055-4796363

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

