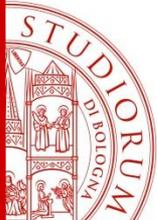


# ASFE and PROSO

## Modeling Entities through Events

*Lyons, March 2014*

*Jacopo Zingoni*



# Contents

---

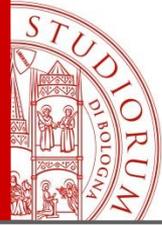
- Contents of this presentation
  - Concepts of ASFЕ and of PROSO
  - People in PROSO (*Person* & *PersonGroup* Entities)
  - PROSO Factoids: general concepts.
  - Factoids: common, for *Person* & *PersonGroup*
  - Concrete examples of Event Driven Approach
  - *Interactive SPARQL endpoint demo available*



# Concepts of ASFE: People

---

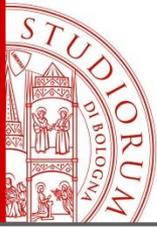
- **People** (Students and graduates)
  - Name variants
  - Birth / Death, noble titles
  - Location and nation of Provenance
  - *Curriculum studiorum*
  - Academic affiliations and accomplishments
  - *Liber amicorum*



# Main Concepts of PROSO

---

- Entities (*Person*, *Place*, *Studium...*)
  - Are the concepts handled by the data supplier
- Factoids (*Name*, *Affiliation*, *Kinship...*)
  - Are sourced assertions about 1 or more entities
- Relationship to RDF Triples (S-P-O):
  - Entities are akin to subject & object resources
  - Factoids are akin to the predicates
  - Both are parts of an extensible class hierarchy



# Person as (Conceptual) Entity

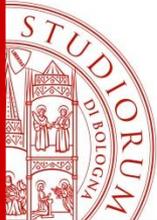
---

- Entities in PROSO are the elements modeling the main concepts handled by the projects.
  - Are the subject of Factoids, can be the objects as well
- Entities are organized in a Class Hierarchy
  - All default entities are subtypes of Entity
  - All have in common some possible attributes (predicates in RDF, attributes in XML serialization)
  - All must have an unique identifier (URI)
- **Person** is one of PROSO's default Entities
- Groups of individuals are the *PersonGroup* entity



# Person in PROSO

- The most important concept in PROSO
- Represents a single human being
- **Many solutions exist for representing people**
  - Most of the popular ones focus on contemporary individuals considered from a not historical point of view in their representation.
- We propose a different approach in modeling:
  - Based on Factoids: **Event-Driven Sourced** assertions, not absolute facts (more on them later).
  - Content model tolerates both **structured** and unstructured data (but encourages the first)



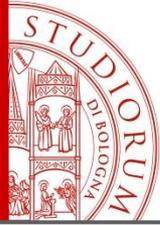
# *PersonGroup* in PROSO

- Represents an association of multiple *Person*
- *PersonGroup* does not simply represent a set of people with a common distinctive trait
- **Rather the concept that such a set might exist in time and have its own significance.**
- It can take many forms, either as a group of people sharing a specific Affiliation, or geographical provenance, and so on
- Same conceptual approach as *Person*
  - Many type of factoids in common, too.



# Factoids

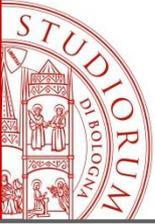
- They are the means used to assert that:
  - **the source S believes that the fact F can be stated about subject entity E.**
  - This can be coupled with a set of time information T
  - Or express a relationship between subject entity E and other object entities O1, O2, etc.
- **They are always backed by 1+ sources**
- **A factoid is not an absolute assertion:**
  - A source claims that fact F involves this entity
  - Factoids can be contradictory with each other!
  - A degree of reliability can be associated to factoids



# Default Common Factoids

---

- **name**
  - Naming of an entity. Has optional subtypes:
    - firstName, surname, patronymic, formalName, lineage
- **changeOfStatus**
  - Generic factoid intentionally unspecific
- **changeOfLocation**
  - Movement of an entity. Has optional subtypes:
    - departedFrom, traveledTo, stayedIn, movedTo, exiledTo
- **originates**
- **part/hasPart** relationships (like in OWL)
- notes (for freeform textual annotations)



# Default Social Factoids

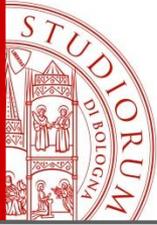
- **changeOfSocialRelation**

- Used to represent changes in the social standing of a *Person* or to model general societal relationships between entities, either individual or groups
- Has optional subfactoids
  - **affiliation**: *Membership in a PersonGroup, Religion ...*
  - **occupation**: *A daily job of some kind.*
  - **officeCommission**: *A specific office in a public, political or academic organization, or a noble title.*
  - **commendation**: *An award, a degree or a public recognition.*



# Other Factoids

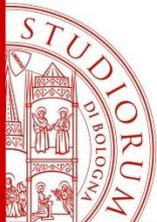
- **changeOfHealth** (only for *Person*)
  - Asserts changes on the health of a *Person*, including birth and death. Has optional subtypes:
    - **birth, death, illness**
- **changeOfPersonalRelation**
  - Assert changes in the personal relationship of an entity (vs. the social ones). Has optional subtypes:
    - **kinshipRelation** (which has subtypes of its own):
      - **sibling, parentOf, offspringOf, kinsfolk, guardianOf**
    - **friendship, rivalry, liaison, marriage**
- **size** (not for *Person*)
  - Models a sizeable amount (e.g: the # of affiliates).



# Extensibility, flexibility, labels

---

- Extensibility – subtypes definition
  - With “type” attribute in XML format
  - Extending the class hierarchy in RDF
- Labels for specific needs
  - With “rel” attribute in XML format
    - Allows further characterize the meaning of a Factoid or the role of an Entity object
  - With *rdfs* or *skos* labels in RDF (multilingual!)
- Flexibility:
  - Supports structured and unstructured data



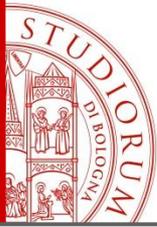
# Event driven approach

---

- Prosopographical and biographical info modeled as events “changing” the subject

*For instance, let's suppose we want to state the following:*

*This individual has held a title of “DomHerr” (Canon) from 1545-01-19 in Augusburg, and was born someday between the 20 and the 30 of January 1521.  
(fictional facts)*



# Example (XML)

```
<person xml:id="EXAMPLE.001">
```

```
[...]
```

```
<!-- Being promoted to office is a change of Social Relation -->
```

```
<changeOfSocialRelation type="officeCommission">
```

```
  <office><value>Domherr</value></office>
```

```
  <moment>1545-01-19</moment>
```

```
  <place href="Augusburg"></place>
```

```
  <source "...fiction..."/>
```

```
</officeCommission>
```

```
<!-- Let's show some Bio Data: birth is a Change of Health -->
```

```
<changeOfHealth>
```

```
  <birth>
```

```
    <interval>
```

```
      <begins><moment>1521-01-20</moment></begins>
```

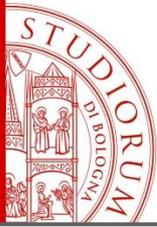
```
      <ends><moment>1521-01-30</moment></ends>
```

```
    </interval>
```

```
  </birth>
```

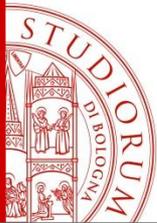
```
  <source "...fiction..."/>
```

```
</changeOfHealth>
```



# Same Example (RDF: Turtle)

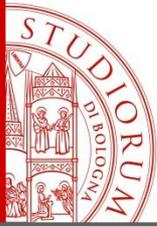
```
ex:00001          a                proso:Person ;
                  proso:changeOfSocialRelation    _:bn-title .
# Factoids are rendered with the anonymous nodes like _:bn-title
# The details of the changeOfSocialRelation factoid
_:bn-title        rdfs:label          "Domherr"@de , "Canon"@en ;
                  proso:moment        "1541-12-07"^^xsd:date ;
                  proso:takesPlaceIn   rag:places_Augsburg ;
                  proso:office         "Domherr Mag. Art." ;
                  proso:source         "FICTION" .
# Some information about his birth (subclass of Change of Health)
ex:00001          proso:birth         _:bn-health .
_:bn-health       rdfs:label          "birth"@en ;
                  proso:interval      _:bn-interval .
                  proso:source        "FICTION" .
__bn-interval    proso:beginsMoment   "1521-01-20"^^xsd:date ;
                  proso:endsMoment    "1521-01-31"^^xsd:date .
```



# Example 2 – Names (XML)

```
<person xml:id="atelier.eu.examples.asfe.jsepulveda">
  <infoCollection xml:id="collections.asfe.jsepulveda"
    src="http://asfe.unibo.it/it/persona/LL1012">
[...]
```

```
  <name normalized="true">
    <firstName>Juan</firstName>
    <surname>Sepúlveda, de</surname>
    <source href="atelier.eu/sources/asfe"/>
  </name>
  <name>
    <firstName>Iohannes</firstName>
    <source href="atelier.eu/sources/asfe/guerrini#1003"/>
  </name>
  <name>
    <surname>Sepulveda</surname>
    <source href="atelier.eu/sources/asfe/guerrini#1003"/>
  </name>
[...]
```



# Same Example (RDF: Turtle)

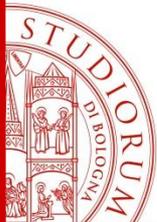
**# Declaring a subject of type Person, and listing a couple of names**

```
asfe:LL1012      a          proso:Person ;
                  proso:name  _:bn-name31 , _:bn-name32 .
```

**# Factoids are rendered with the anonymous nodes like `_:bn-name`**

```
_:bn-name31      proso:normalized  "true"^^xsd:boolean ;
                  proso:firstName  "Juan" ;
                  proso:surname    "Sepúlveda, de" ;
                  proso:source      src:Peréz_Martin ;
                  proso:sourceInnerRef "670" .

_:bn-name32      proso:firstName  "Iohannes" ;
                  proso:surname    "Sepulveda " , "Sepulveda, de" ;
                  proso:source      src:Guerrini ;
                  proso:sourceInnerRef "1003" .
```



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

Jacopo Zingoni

Area Sistemi Dipartimentali e Documentali – ASDD:  
**CRR-MM: Centro di Risorse per la Ricerca Multimediale**

mail: [asdd.crrmm@unibo.it](mailto:asdd.crrmm@unibo.it)

mail: [zingoni@cs.unibo.it](mailto:zingoni@cs.unibo.it)

*<http://www.unibo.it/it/ricerca/progetti-e-iniziative/centro-di-risorse-per-la-ricerca-multimediale-crr-mm>*