

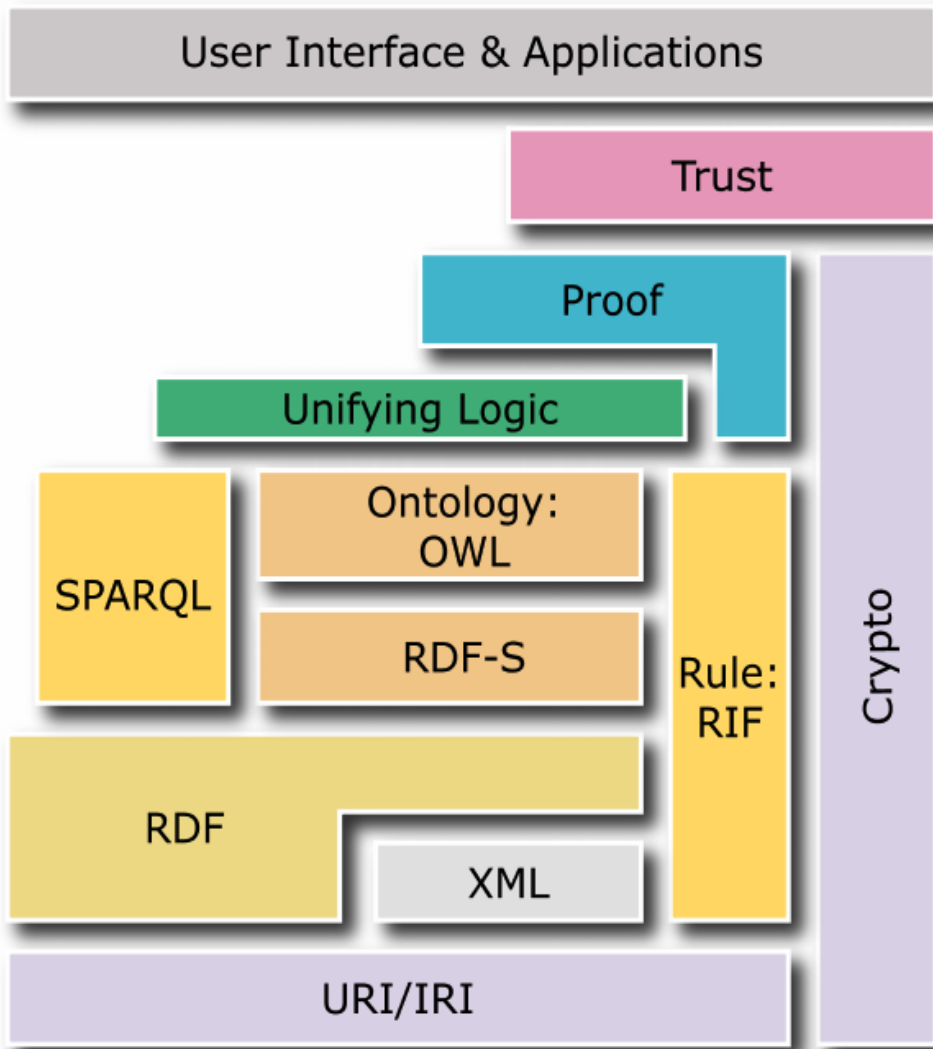


<Towards Interoperable Provenance Publication on the Linked Data Web>

prov:wasAttributedTo

<Jun Zhao>

<Olaf Hartig>



```
<semantic web layered cake 2007>
  prov:wasAttributedTo <steve bratt> ;
  prov:wasDerivedFrom
    <semantic web layered cake 2000> .
```

```
<>
  rdf:type   prov:Activity ;
  prov:used  <semantic web layered cake 2007>;
  prov:startedAtTime "2007-01-30T00:00:00"
    ^^xsd:dateTime .
```

```
<semantic web layered cake 2000>
  prov:wasAttributedTo <Berners-Lee> ;
  prov:wasGeneratedBy [
    rdf:type   prov:Activity ;
    prov:startedAtTime
      "2000-12-06T00:00:00"^^xsd:dateTime;
    prov:location <washington d.c> ;
  ] .
```

```
[ ] prov:wasGeneratedBy [  
    prov:wasAssociatedWith <http://www.wordle.net/> ;  
    prov:endedAtTime "2012-04-12"^^xsd:dateTime ;  
];  
prov:wasAttributedTo <jun zhao> .
```

Context Named Graphs Annotations Trust
Metadata Data Quality
Social Network Provenance
Semantic Web

Main Page

Provenance Working Group

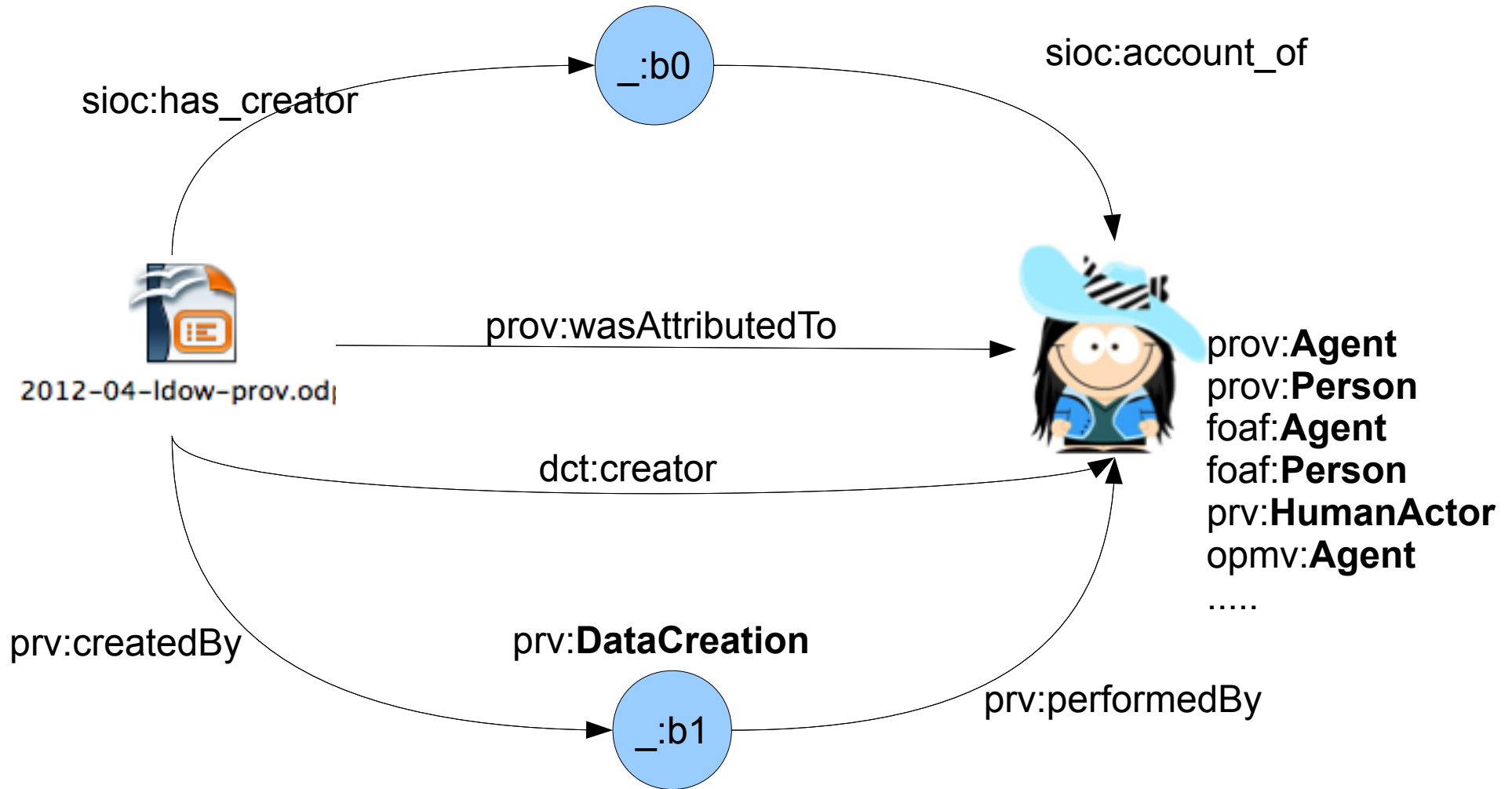


Mission: to support the widespread publication and use of provenance information of Web documents, data, and resources. The Working Group will publish W3C Recommendations that define a language for exchanging provenance information among applications. (See [Charter](#))

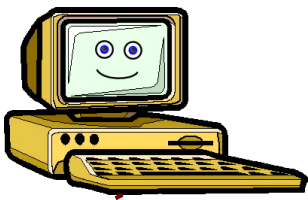
The Working Group is based on an extensive review and roadmap developed by a prior [incubator group](#).

Exchange provenance information among applications

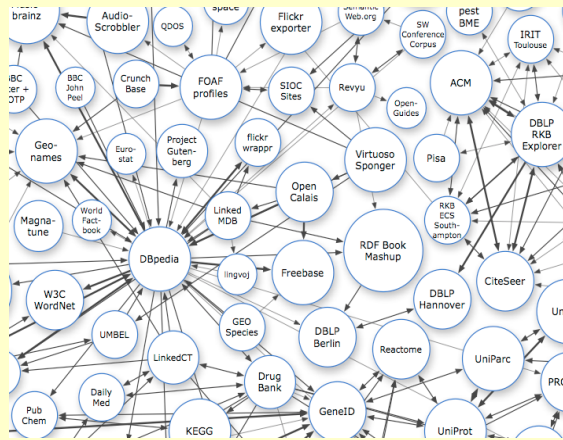
sioc:UserAccount



prefix prv: <http://purl.org/net/provenance/ns#>
prefix prov: <http://www.w3.org/ns/prov/>
prefix sioc: <http://rdfs.org/sioc/ns#>
prefix opmv: <http://pur.org/net/opmv/ns#>
prefix dct: <http://purl.org/dc/terms/>
prefix foaf: <http://xmlns.com/foaf/0.1/>

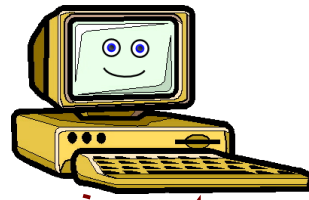


<http://ns.slideshare.net/junzhao/slide-ldow-2012>



WHERE
to find
PROVENANCE?

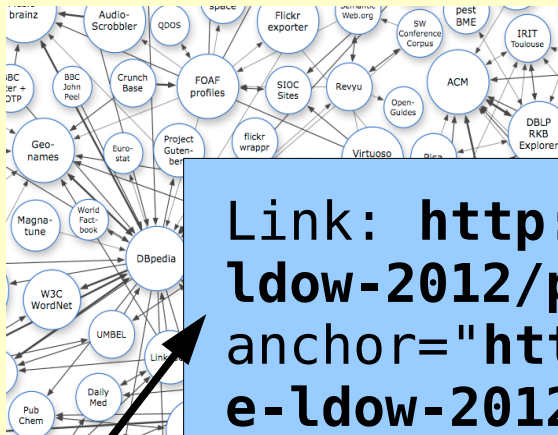
Entity URI



<http://ns.slideshare.net/junzhao/slide-ldow-2012>

```
GET //ns.slideshare.net/junzhao/
    slide-ldow-2012 HTTP/1.1
Host: ns.slideshare.net
Accept: text/turtle
```

```
HTTP/1.1 200 OK
Content-Type: text/turtle
Date: Wed, 10 April 2012 10:58:02 GMT
Link: http://ns.slideshare.net/junzhao/slide-
    ldow-2012/provnc/; rel="provenance";
    anchor="http://ns.slideshare.net/junzhao/slid
    e-ldow-2012"
Content-Length: 18556
```



`rdfs:label "presentation for ldow 2012";`

Link: <http://ns.slideshare.net/junzhao/slide-ldow-2012/provnc/>; rel="provenance"; anchor="http://ns.slideshare.net/junzhao/slide-ldow-2012"

Provenance URI

Entity URI
(optional)

What is described?

Météo à Lyon



10 °C | °F

Ciel nuageux

Vent : S à 6 km/h

Humidité : 66%

Météo à Lyon



10 °C | °F

Faible pluie

Vent : S à 6 km/h

Humidité : 71%

Who generated
the forecast
of Lyon?

Unchanged properties

- Forecast of Lyon
- Creator of the forecast data

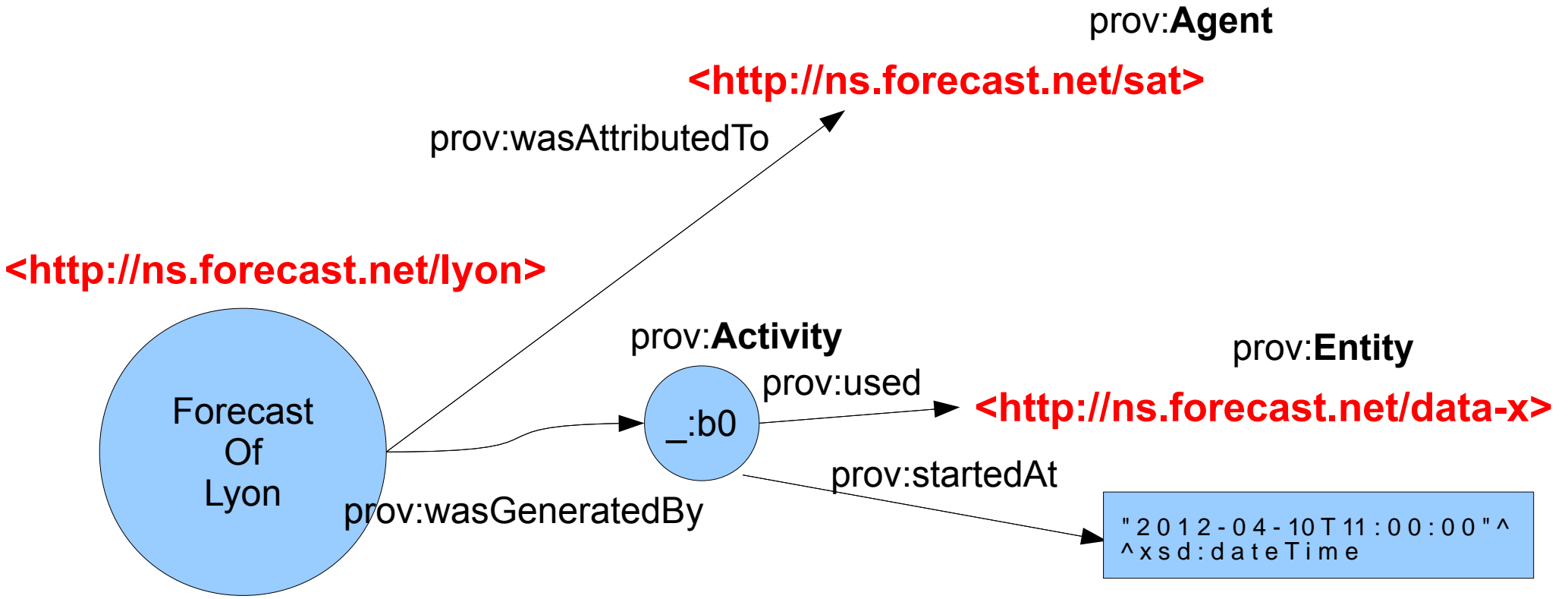
Changed properties

- Creation time of the forecast
- Raw data used to generate the forecast

Who generated
the forecast
of Lyon on
April 16, 2012?

Provenance Entities

- *A flexible* notion from Provenance WG
 - With a lifetime and some attributes that do not vary
 - Subject to provenance providers / application needs
- Firmer notion
 - Something of an immutable piece of state
 - The Provenance Vocabulary
 - <http://purl.org/net/provenance/ns-20120314>
 - OPMV
 - <http://purl.org/net/opmv/ns-20101006>



prov:Agent

<http://ns.forecast.net/sat>

prov:wasAttributedTo

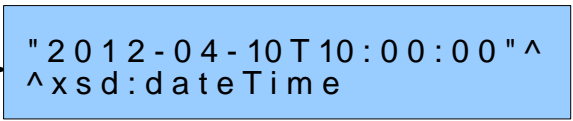
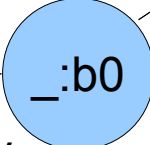
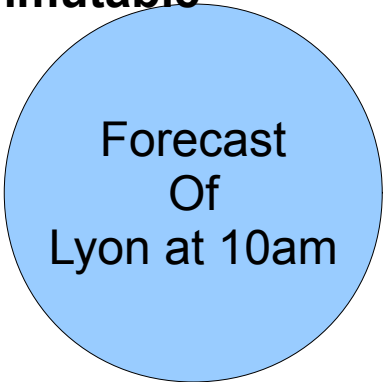
<http://ns.forecast.net/lyon-10am>

prov:Immutable

prov:DataCreation

<http://ns.forecast.net/data-x>

prov:Entity



prov:createdBy

prov:usedData

prov:completedAt

<http://ns.forecast.net/sat> prov:Agent

prov:wasAttributedTo

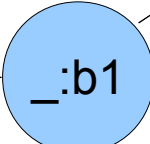
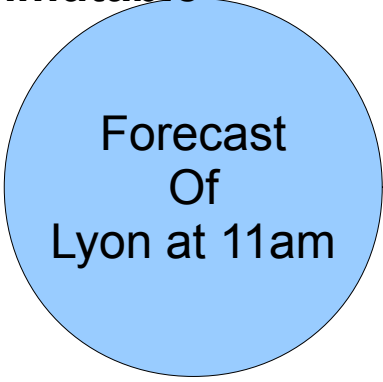
<http://ns.forecast.net/lyon-11am>

prov:Immutable

prov:DataCreation

<http://ns.forecast.net/data-y>

prov:Entity



prov:createdBy

prov:usedData

prov:completedAt

Trust

Provenance
Vocabulary

Provenance
Access

Provenance
Representation

Provenance
Semantics



Take-home Messages

- Provenance publisher:
 - Think again about what is described in your provenance
 - Make sure “sufficient” historical records can be accessed
 - Make sure your provenance is made accessible
- Provenance consumer:
 - Think again what you are accessing
 - Does it talk about the same thing you think it does?
 - Will it stay there forever if you don't cache it locally?

WG release expected April 19

Look out to:

<http://www.w3.org/2011/prov/>

Provenance Tutorial
International Provenance and Annotation
Workshop (IPAW 2012)
Santa Barbara, California
June 19, 2012
<http://ipaw2012.bren.ucsb.edu/>

WG Updates
SWPM Workshop at ESWC2012
Heraklion, Greece
May 27, 2012
<http://sites.google.com/site/swpm2012/>

These slides have been created by
Jun Zhao and Olaf Hartig

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