Datex II Roadworks Ontology

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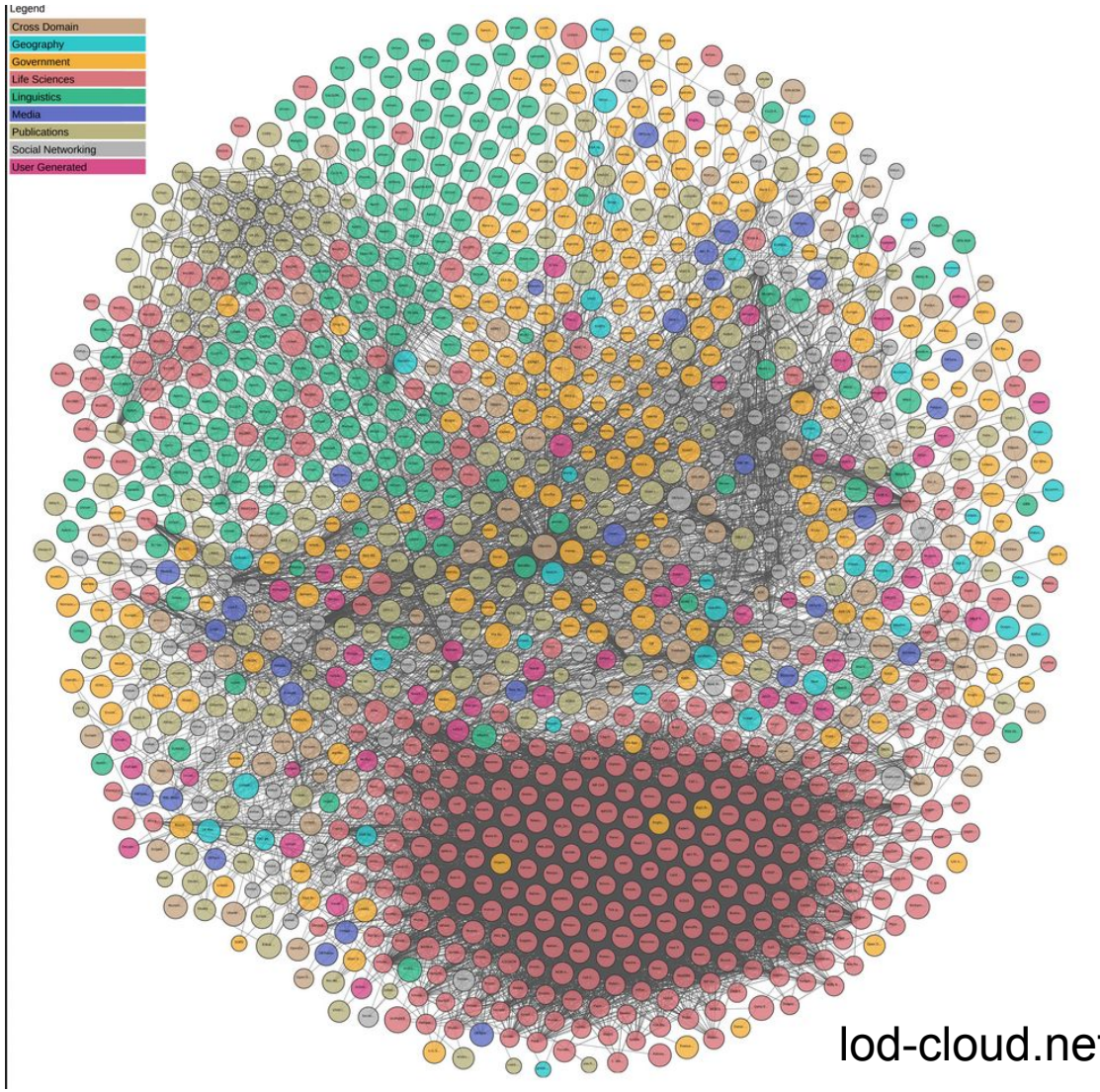
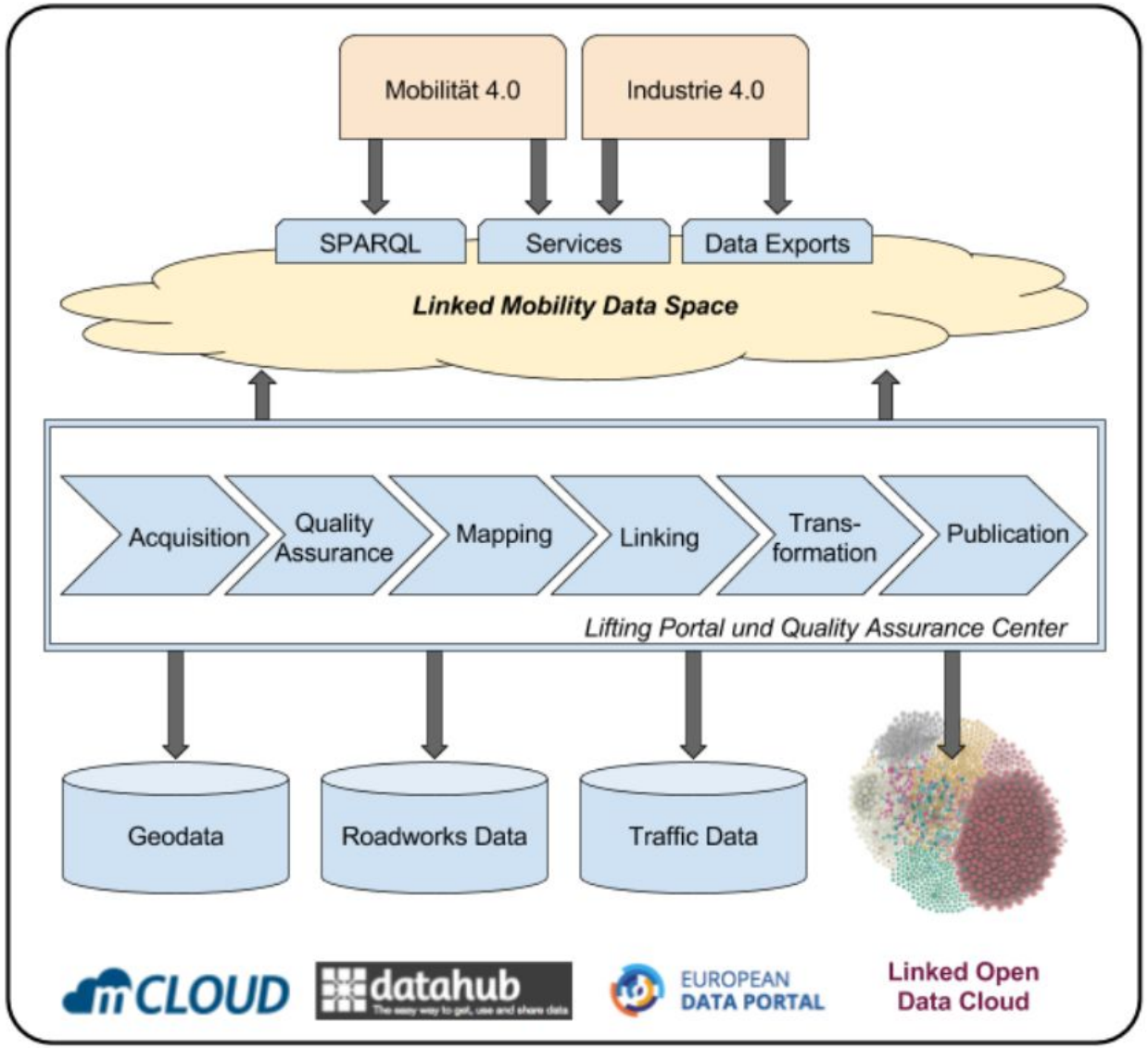
Motivation: Linking Data



lod-cloud.net



limbo-project.org

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Mobility Data Marketplace - German Governmental Data Portal

- Every German state (16x) published Roadworks data
- nearly all publish **AlertC** Locations

LCL List necessary for consumption

```
<alertCLinear xsi:type="AlertCMethod2Linear">
    <alertCLocationCountryCode>de</alertCLocationCountryCode>
    <alertCLocationTableNumber>15</alertCLocationTableNumber>
    <alertCLocationTableVersion>15.1.D-160122</
    alertCLocationTableVersion>
    <alertCDirection>
        <alertCDirectionCoded>positive</alertCDirectionCoded>
    </alertCDirection>
    <alertCMethod2PrimaryPointLocation>
        <alertCLocation>
            <alertCLocationName>
                <values>
                    <value lang="de">Parsdorf</value>
                </values>
            </alertCLocationName>
            <specificLocation>12904</specificLocation>
        </alertCLocation>
    </alertCMethod2PrimaryPointLocation>
    <alertCMethod2SecondaryPointLocation>
        <alertCLocation>
            <alertCLocationName>
                <values>
                    <value lang="de">Feldkirchen-Ost</value>
                </values>
            </alertCLocationName>
            <specificLocation>12902</specificLocation>
        </alertCLocation>
    </alertCMethod2SecondaryPointLocation>
</alertCLinear>
```

LCL16.0.D.xlsx - LibreOffice Calc

O8981

	K	L	M	N	O	P	Q	R
8933		02581	07229	12902	12904	12903,12983	48,1427	11,7578
8934		02581	07229	12903	13450		48,149	11,7868
8935		03360	07229	12904	12905	13450,13825	###	###
8936		03360	07229	13450	12906	12905,27526	48,1616	11,8553
8937		01249	07229	12905	08051	12906,27520	48,1698	11,8908
8938		01249	07229	12906	07617	8051,8057	###	###
8939		03636	07229	08051	07618		48,1949	11,92475
8940		03636	07229	07617	07619		48,1975	11,92615
8941		03636	07229	07618		7619,7776	48,215	11,9495
8942		08103	07229		08105	20680,8104,27537	48,2475	12,3619
8943		00781	07229	08104	08106		48,2489	12,40265
8944		00781	07229	08105	42378	8106,31976	48,246462874057	###
8945		01947	07229	08106	42377	61294,42378	###	12,437768076485
8946		01947	07229	42378	42376	42379,15573,42377	###	###
8947		31740	07229	42377	31806		48,2658	12,6066

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DATEX II - Roadworks Ontology

Validity
- status (xsd:string)
- startTimeOverall (xsd:dateTime)
- endTimeOverall (xsd:dateTime)
- period Period (xsd:dateTime)

SituationRecord
- creationTime (xsd:dateTime)
- versionTime (xsd:dateTime)
- hasURL (url)
- probabilityOfOccurence (xsd:string)
- generalPublicComment (xsd:string)
- speedLimit (xsd:integer)
- subject (xsd:string)
- internalRoadworkIdentifier (xsd:integer)
- constructionType (xsd:string)
- impactedRoad (xsd:string)
- validity VALIDTIY
- location LOCATION

Period
- startOfPeriod (xsd:dateTime)
- endOfPeriod (xsd:dateTime)
- recurringWeekday <list> WeekDay

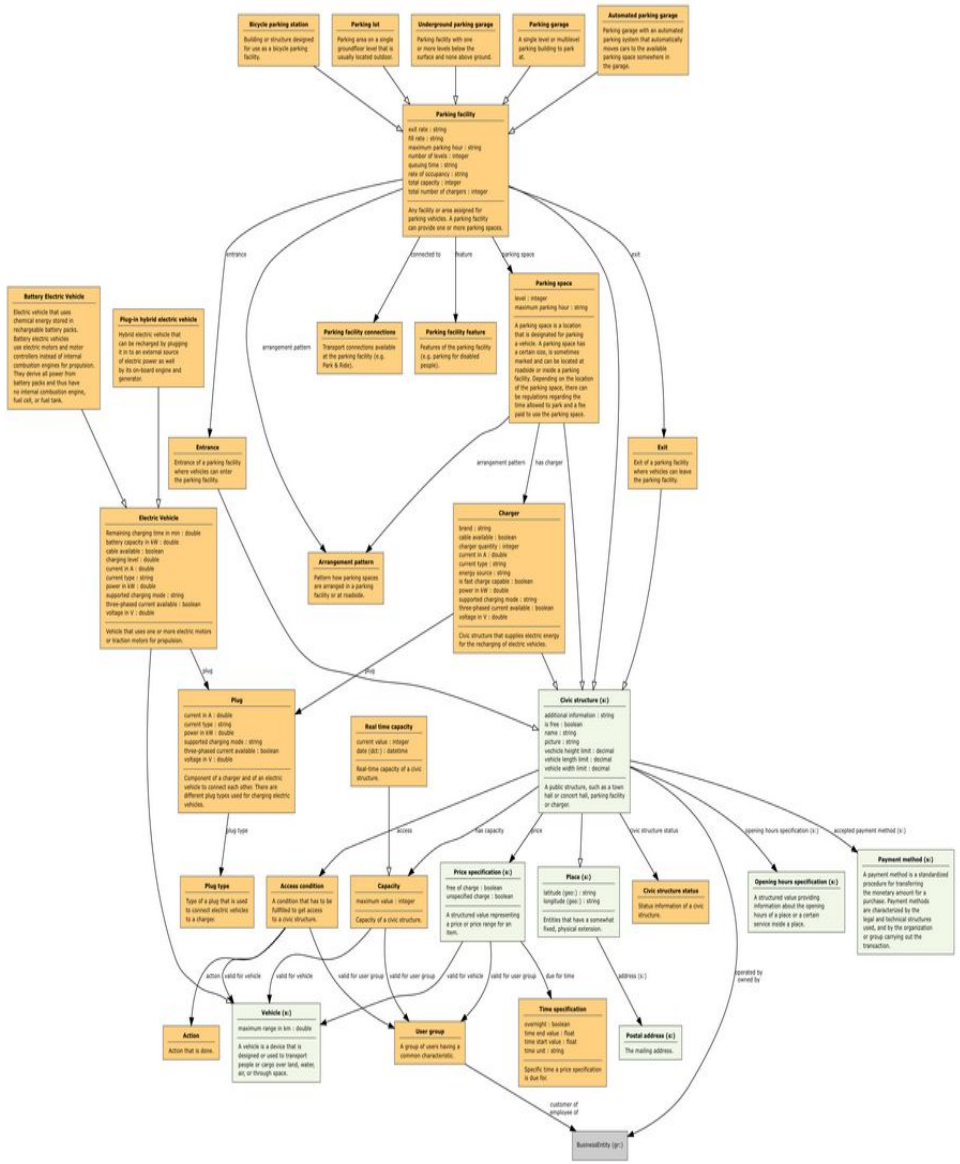
LinearExtension
- roadName (xsd:string)
- roadNumber (xsd:string)
- startLatitude (wgs:lat)
- startLongitude (wgs:long)
- endLatitude (wgs:lat)
- endLongitude (wgs:long)
- list <intermediatePoints>

Location
- linearExtension LINEAREXTENSION
- alertCLocation ALERTCLOCATIOON

PrimaryLocation
- locationName (xsd:string)
- specificLocation (xsd:integer)

AlertCLocation
- cc (xsd:string)
- tableNumber (xsd:integer)
- tableVersion (xsd:string)
- direction (xsd:string)
- PrimaryLocation PRIMARYLOCATION
- secondaryLocation SECONDARYLOCATION

SecondaryLocation
- locationName (xsd:string)
- specificLocation (xsd:integer)



https://github.com/vocol/**mobivoc**/

DATEX II - Roadworks Ontology https://github.com/vocol/**mobivoc**/

```
mv:SituationRecord
    a owl:Class ;
    owl:equivalentClass datex:SituationRecord;
    rdfs:comment "An identifiable instance of a single record/element within a situation."@en  ;
    rdfs:label "SituationRecord"@en  ;
    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    vs:term_status "testing" ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
.


mv:recordCreationTime
    a owl:DatatypeProperty ;
    rdfs:domain mv:SituationRecord ;
    rdfs:range xsd:dateTime ;
    rdfs:comment "The creation time of a Situation Record." ;
    rdfs:label "recordCreationTime"@en ;
    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
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    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
.
```

```
mv:direction
        a owl:DatatypeProperty ;
    rdfs:domain mv:AlertCLocation ;
    rdfs:range xsd:string;
    rdfs:comment "The direction of an AlertCLocation description." ;
        rdfs:label "tableVersion"@en ;
    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
.


mv:primaryLocation
        a owl:ObjectProperty ;
    rdfs:domain mv:AlertCLocation ;
    rdfs:range mv:PrimaryLocation ;
    rdfs:comment "The primary location of an AlertCLocation description." ;
        rdfs:label "primaryLocation"@en ;
    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
.


mv:secondaryLocation
        a owl:ObjectProperty ;
    rdfs:domain mv:AlertCLocation ;
    rdfs:range mv:SecondaryLocation ;
    rdfs:comment "The secondary location of an AlertCLocation description." ;
        rdfs:label "secondaryLocation"@en ;
    rdfs:isDefinedBy <http://schema.mobivoc.org/> ;
    dct:creator <http://np00.github.io/#i> ;
    dct:created "2018-01-30"^^xsd:date ;
    dct:modified "2018-01-30"^^xsd:date ;
.
```

DATEX II - Roadworks Data

https://github.com/vocol/**mobivoc**/

```
mv:1293_1_153474 a mv:RoadWorks ;
        mv:recordCreationTime "2014-06-16T04:16:00.395+02:00"^^xsd:dateTime ;
        mv:recordVersionTime "2016-12-01T08:19:43.698+01:00"^^xsd:dateTime ;
        mv:generalPublicComment "Baustelleneinrichtung"@de ;
        mv:generalPublicComment "Der Standstreifen wird als Verzögerungs- bzw. Beschleunigungsstreifen für die BS-AS-Nabern genutzt
        mv:probabilityOfOccurence "certain" ;
        mv:internalRoadworkIdentifier "OK4" ;
        mv:temporarySpeedLimit "80.0" ;
        mv:validity mv:validity3 ;
        mv:impact mv:impact3 ;
        mv:location mv:location3 ;
.

mv:validity3 a mv:Validity ;
                        mv:validityStatus "definedByValidityTimeSpec" ;
                        mv:startTimeOverall "2016-12-13T00:00:00.000+01:00"^^xsd:dateTime ;
                        mv:endTimeOverall "2020-05-01T00:00:00.000+02:00"^^xsd:dateTime ;
                .

mv:impact3 a mv:Impact ;
                    mv:trackCrossSection "suu2oos" ;
.

mv:location3 a mv:Location ;
                         mv:affectedCarriagewayAndLanes "mainCarriageWay" ;
                         mv:affectedRoadLength "1100.0" ;
                         mv:linearExtension mv:linearExtension3 ;
                         mv:alertCLocation mv:alertCLocation3 ;
.

mv:linearExtension3 a mv:LinearExtension ;
                                      mv:roadNumber "A8" ;
.

mv:alertCLocation3 a mv:AlertCLocation ;
                                  mv:countryCode "de" ;
                                  mv:tableNumber "15" ;
                                  mv:tableVersion "15.1.D-160122" ;
                                  mv:directionCode "positive" ;
                                  mv:primaryLocation mv:primaryLocation3 ;
                                  mv:secondaryLocation mv:seccondaryLocation3 ;
.

mv:primaryLocation3 a mv:PrimaryLocation ;
                                      mv:locationName "Aichelberg"@de ;
                                      mv:specificLocation 12534 ;
```

```
mv:vis-vmz-hb-509 a mv:RoadWorks ;
        mv:recordCreationTime "2015-01-15T06:44:56+01:00"^^xsd:dateTime ;
        mv:recordVersionTime "2017-09-01T14:00:06+02:00"^^xsd:dateTime ;
        mv:generalPublicComment "Brückensanierung"@de ;
        mv:generalPublicComment "Brückenneubau"@de ;
        mv:generalPublicComment """zeitweise Sperrung von Fahrstreifen in beiden Richtunge
Fahrempfehlung: B75 in Höhe der Ausfahrt Huchting FR stadtauswärts: Nutzen Sie für die Zuf
nächste Vollsperrung B75: vorauss. 29.09.2017, 20:00 Uhr bis 02.10.2017, 4:00 Uhr (Aushäng
Umleitungen: aus Richtung Bremen: über B75 Abfahrt Huchtinger Kreisel, Huchtinger Heerstra
        mv:constructionType "constructionWork" ;
        mv:recordUrl <http://vmz.bremen.de/baustellen/aktuell/?feature=vis-vmz-hb-509> ;
        mv:temporarySpeedLimit "60" ;
        mv:probabilityOfOccurence "certain" ;
        mv:validity mv:validity2 ;
        mv:impact mv:impact2 ;
        mv:location mv:location2 ;
.

mv:validity2 a mv:Validity ;
                        mv:validityStatus "definedByValidityTimeSpec" ;
                        mv:startTimeOverall "2016-01-18T07:00:00+01:00"^^xsd:dateTime ;
                        mv:endTimeOverall "2017-12-31T17:00:00+01:00"^^xsd:dateTime ;
                        mv:period mv:period2 ;
                .

mv:period2 a mv:Period ;
                    mv:startOfPeriod "2016-01-18T07:00:00+01:00"^^xsd:dateTime ;
                    mv:endOfPeriod "2017-12-31T17:00:00+01:00"^^xsd:dateTime ;
                    mv:recurringWeekday "monday" ,
                                                    "tuesday" ,
                                                    "wednesday" ,
                                                    "thursday" ,
                                                    "friday" ,
                                                    "saturday" ,
                                                    "sunday" ;
```

DATEX II - Online Demo https://rawgit.com/np00/np00.github.io/master/datex.html#d4e1117

Datex II Ontology: Roadworks

IRI:
http://schema.mobivoc.org/
Current version:
SNAPSHOT
Contributors:
http://np00.github.io/#i
http://purl.org/net/clange
http://sebastian.tramp.name
Other visualisation:
Ontology source

Abstract

DATEX II is a multi-part Standard, maintained by CEN Technical Committee 278, CEN/TC278, (Road Transport and Traffic Telematics), see www.itsstandards.eu. The first three Parts of the CEN DATEX II series (CEN 16157) have already been approved as Technical Specifications. These three Parts deal with the most mature and widely used parts of DATEX II: the modelling methodology (called Context and framework) as Part 1, Location referencing as Part 2 and the most widely used DATEX publication for traffic information messages (called Situation publication) as Part 3.

Table of Content

1. Classes
2. Object Properties
3. Data Properties
4. Annotation Properties
5. Namespace Declarations

Classes

AlertCLocation AlertCLocation Impact LinearExtension Location Period PrimaryLocation RoadWorks SituationRecord Validity

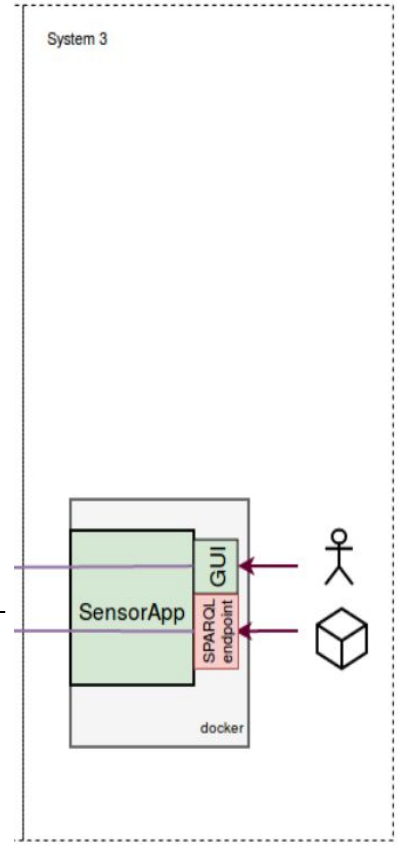
AlertCLocation[c]

back to ToC or Class ToC

IRI: http://schema.mobivoc.org/AlertCLocation
is defined by
http://schema.mobivoc.org/

An AlertCLocation description of a situation record.

is equivalent to
alert c location[c]
is in domain of
countryCode[dp], primaryLocation[op], secondaryLocation[op], tableNumber[dp], tableVersion[dp], tableVersion[dp]
is in range of

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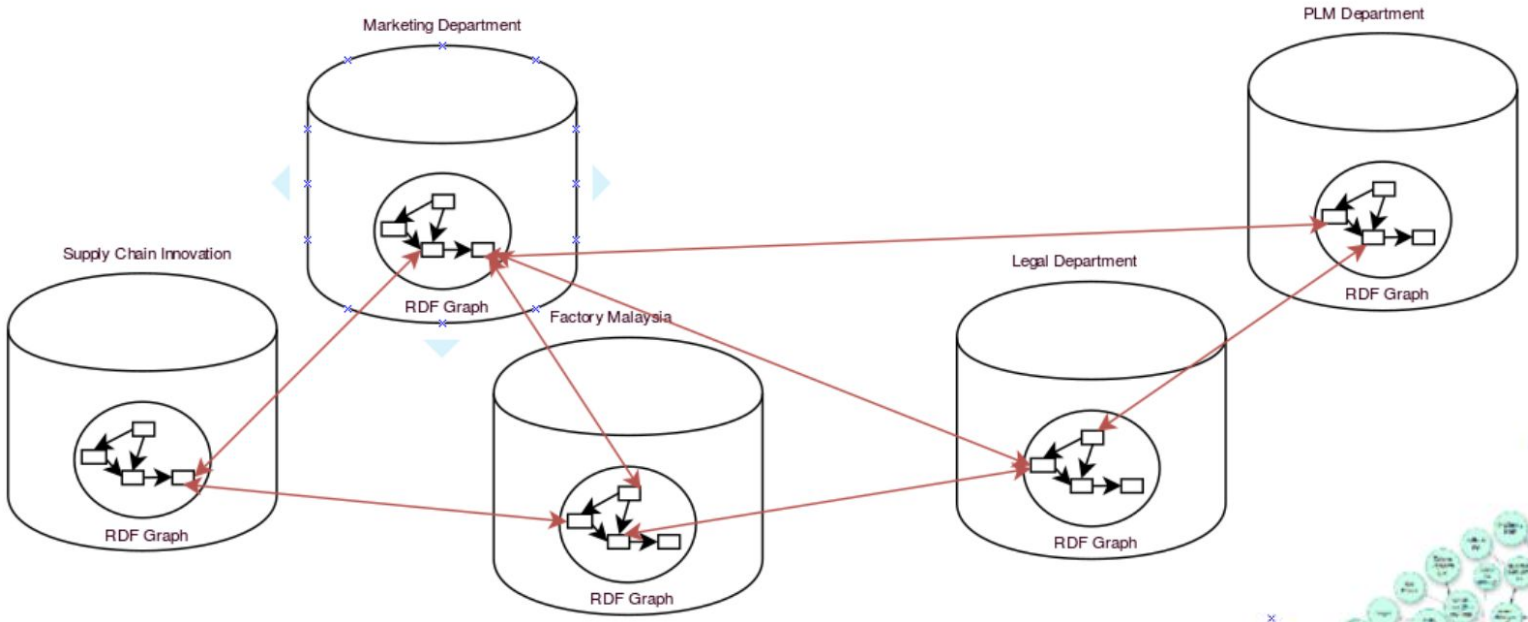

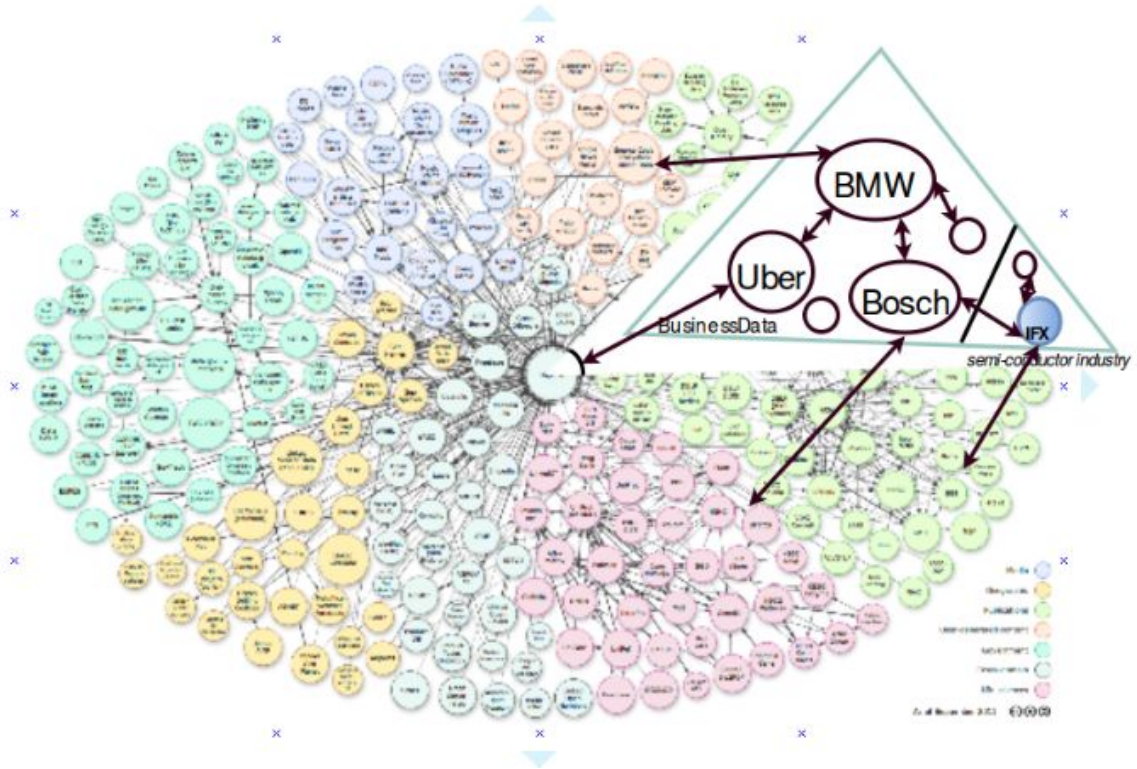

Lesson Learned

- **Datex II is hard**
- **LinearExtension > AlertCLoacation**
  - lack of latitude/longitude information makes it harder for web developer to make use of the data
- **LCL** list is currently (in Germany) only via form accessible -> **open-source EU LCL list**?

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