

kadaster

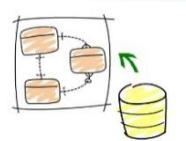


extending the data model INSPIRE Utility Networks

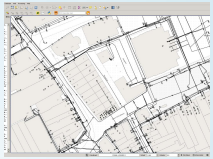
from a business point of view

Ing. A.L.M. (Ad) van Houtum MSc
EUROGI 2017 - Paris

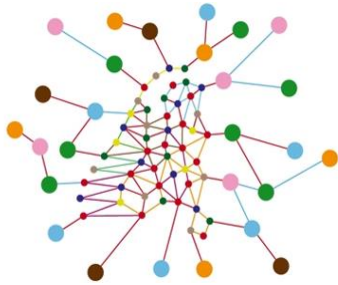
Topics



To **EXTEND** or
not to **EXTEND**



Utility networks in the Netherlands



Statistics 2016

- ~1.7 million km for water, gas, electricity, telecom, sewerage, fossil fuels and chemicals
- mostly underground
- ~1.100 network administrators
- ~15.000 excavators: building, agricultural and UN
- 32.858 excavation damages on UN
- Average costs €796 per damage

Preventing excavating damage



KLIC

- Information Centre for Cables and Pipelines
- Started in 1968, nation wide since 1986
- Reports of excavations are transferred to network administrators
- Since 2008
 - A legal obligation (WION-act) for network administrators and excavators
 - A service of Kadaster
- Since 2010:
 - Webservice
 - Fully automated transfer to network administrators
 - Fully automated delivery of combined maps (PNG) to the excavator
 - Rate based (2017: €19 per request)

Future business requirements (< 2020)

Good results, but the industry demands:



1. A further decline of damages due to excavations
2. Improvement on efficiency
3. Use of network information in other domains, e.g.
 - Planning and zoning
 - Public order and security

KLIC vs INSPIRE



	KLIC	INSPIRE
Legislation	NL-WION	2007/2/EC
Strict roadmap	+/-	√
High quality demands (availability, usability etc.)	√	+/-
All networks enclosed	√	X
Realtime delivery	X	√
Webservices WMS, WFS	√	√
Authentication, Authorization, Accounting	√	+/-
Recent data	√	--
Unlimited requested area	X	√

Consequences



1. INSPIRE UN must be a part of KLIC

- Many similarities
- Less costs for the utility administrators
- Prevent cannibalization on KLIC

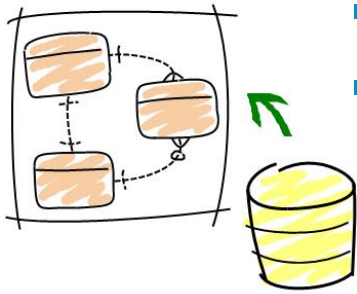
→ INSPIRE UN shall be an additional product of KLIC

2. Common information model for multiple applications

- Many similarities
- Less costs in building the information system
- INSPIRE is leading

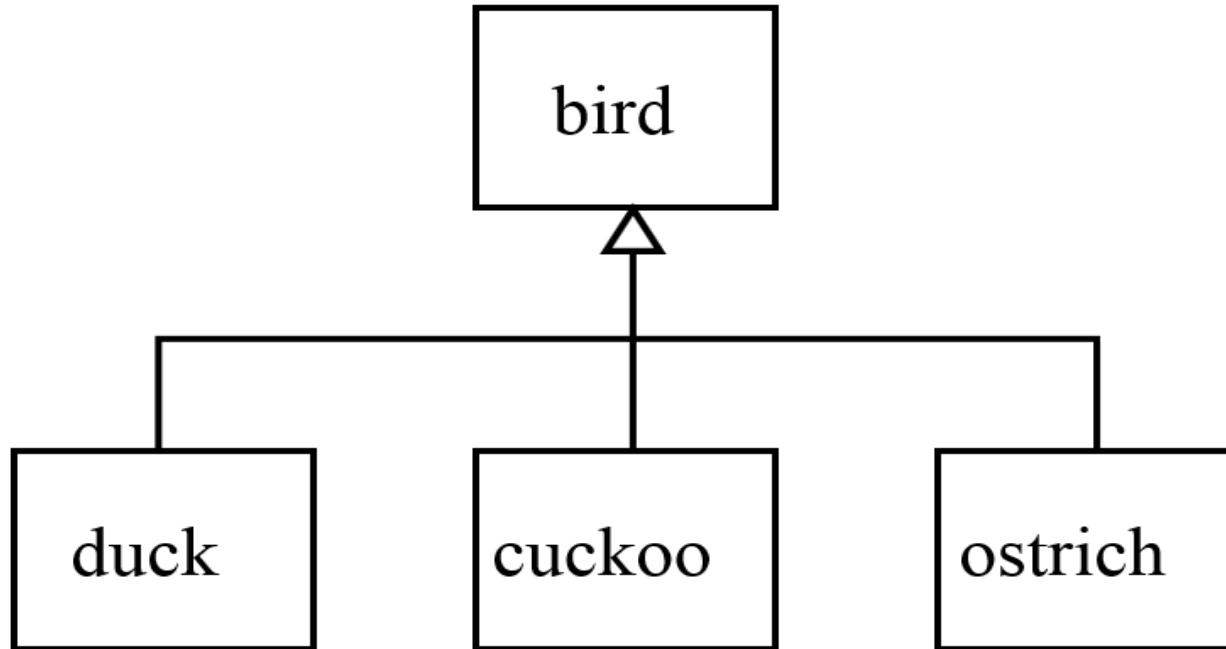
→ information model KLIC shall be an extend on INSPIRE UN

Designing the model



- Designed by Geonovum (with help from the industry and AGIV)
- 4 basic methods:
 - Subtyping
 - By association
 - Application domain extension
 - Mixin multiple inheritance
- Most suitable is the Mixin-method
 - The only method to combine 2 models
 - The Dutch model is still recognizable
 - We are not forced into the INSPIRE-model
 - We maintain flexibility

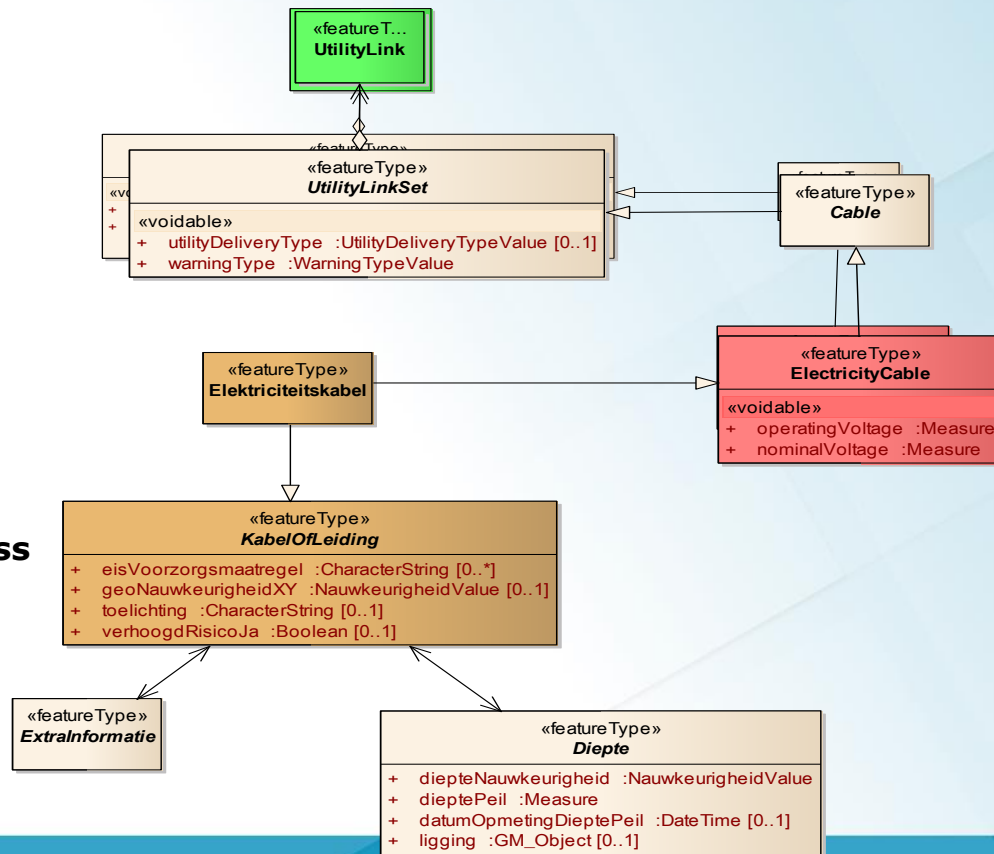
Inheritance

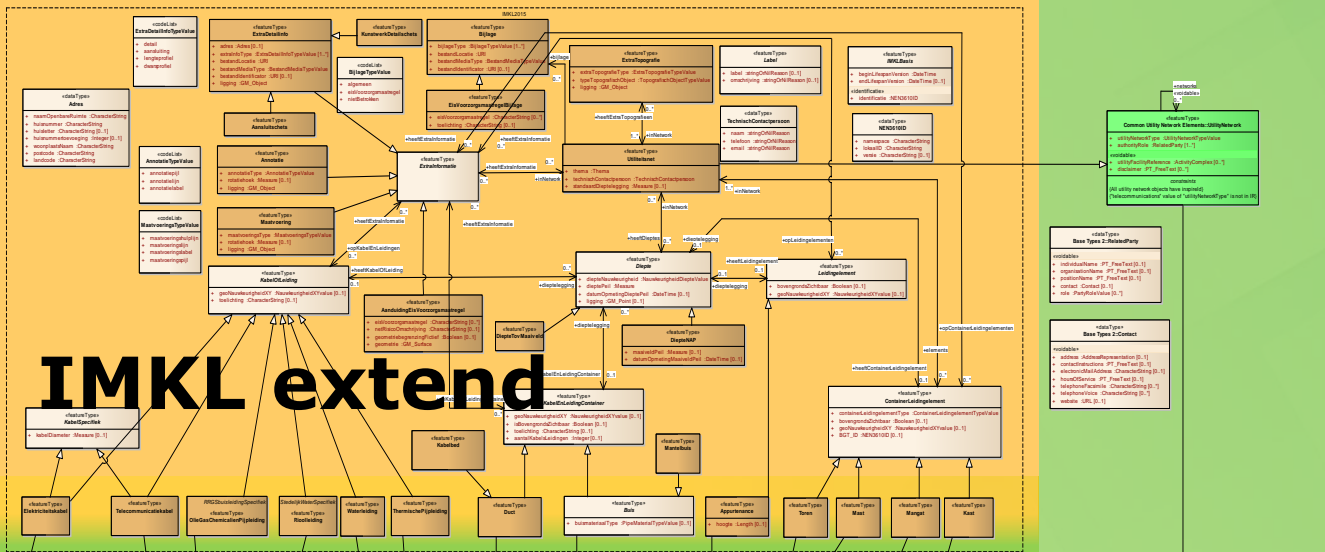


Mixin Multiple Inheritance

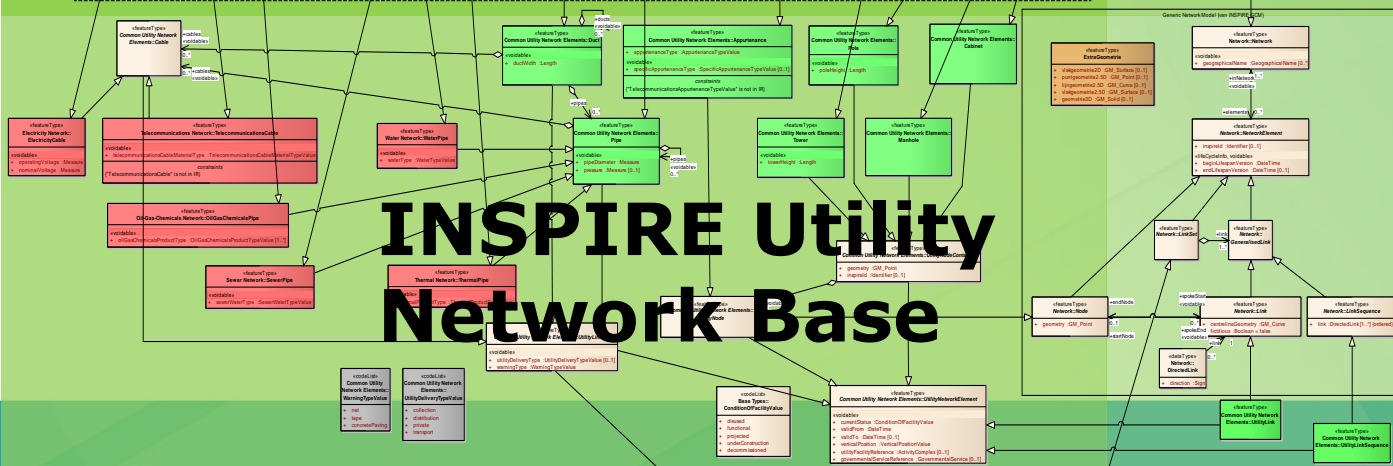


Mixin class





IMKL extend



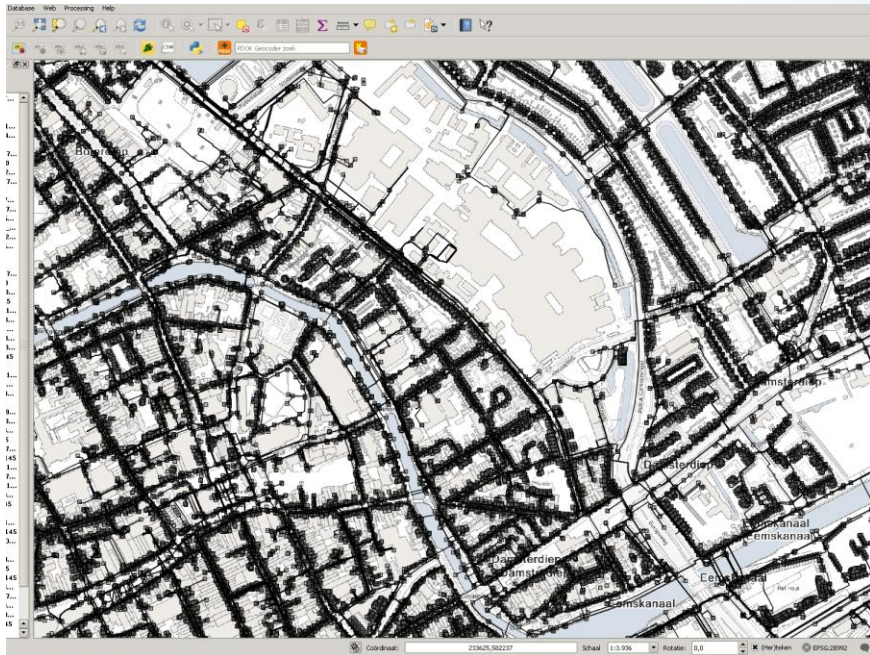
INSPIRE Utility Network Base

KLIC-INSPIRE: application



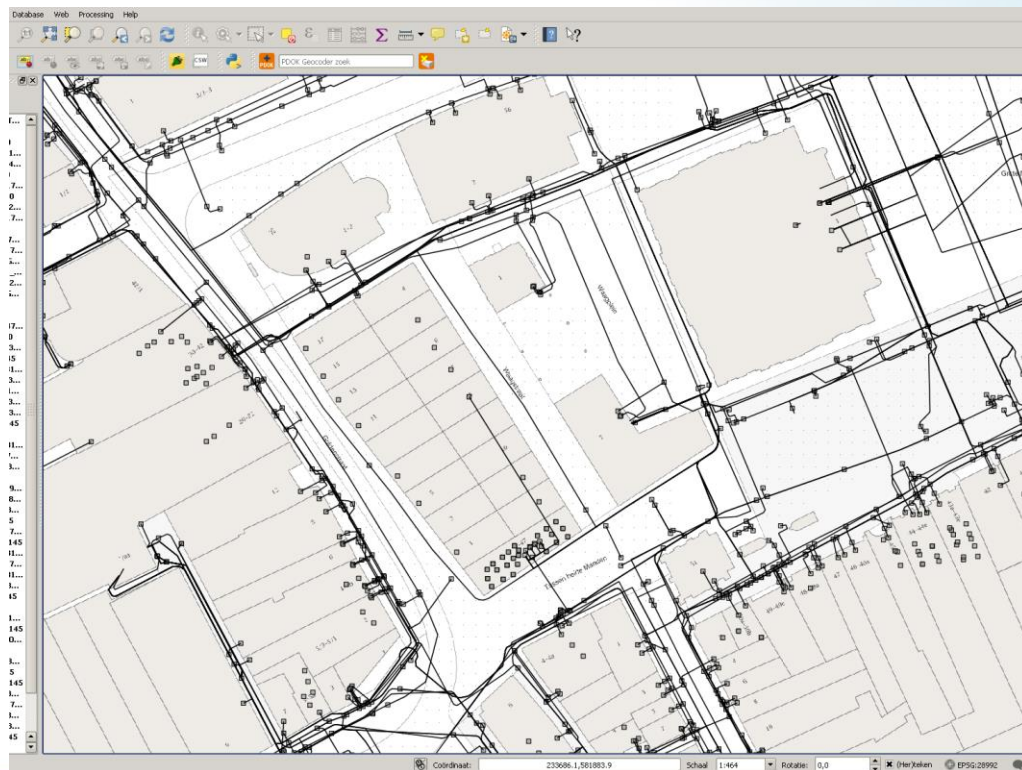
- ✓ Obtain credentials (ID + PW)
- ✓ Logon to 'Mijn Kadaster' > INSPIRE
- ✓ Complete user characteristics, e.g. user project number
- ✓ Search the area (2.5 x 2.5 km) at adres or geographically
- ✓ Check the application
- ✓ Accept the supply conditions

KLIC-INSPIRE: delivery

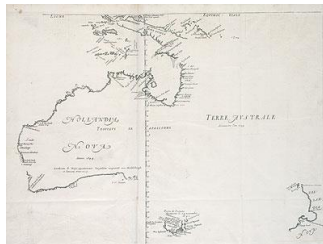


- ✓ Confirmation of order by email
- ✓ Delivery message by email
- ✓ Link to WMS of WFS
- ✓ Visualize in (own) GIS-viewer

KLIC-INSPIRE: delivery (2)



Final remarks



To **EXTEND** or
not to **EXTEND**



Thanks for your attention



@ ad.vanhoutum@kadaster.nl



+31 6 51 26 73 15