athumi
Vlaams Datanutsbedrijf

IMKL Update 3.0
Workshop 5 – Sewer theme

25/06/2024

Practical arrangements

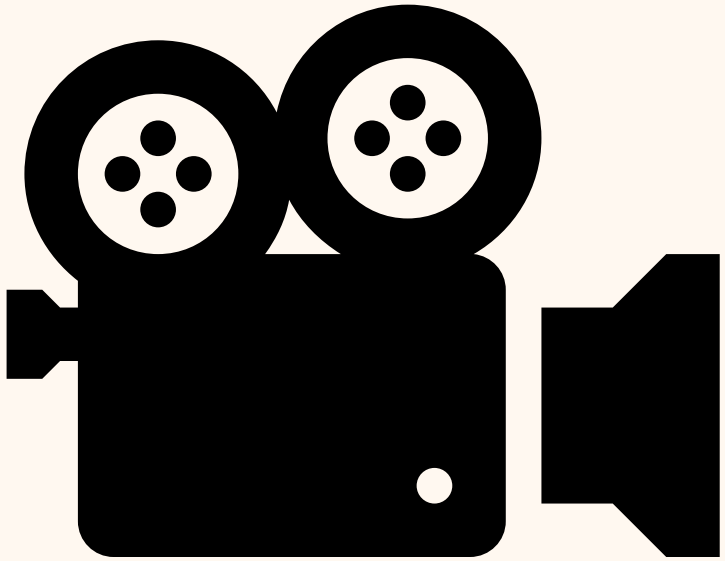
Sound of audience is **muted** by default

Use the **hand** icon if you want to say something. Collaboration is greatly appreciated!

Questions, comments and suggestions can be shared via the chat function. Interaction is encouraged!

Leading language will be **English,** questions can be asked in mother tongue (NL/FR)

Recording?



Agenda

- SewerWaterType
- Subtheme
- AppurtenanceType
- Current status
- Survey accuracy & method
- WarningType
- DeliveryType
- Material
- VerticalPosition
- Depth
- Protected Area

IMKL 3 – Sewer Theme

IMKL & AWIS

IMKL:

- **I**nformatie**M**odel **K**abels en **L**eidingen
- Developed by Athumi in the context of KLIP
- The goal is to prevent excavation damage

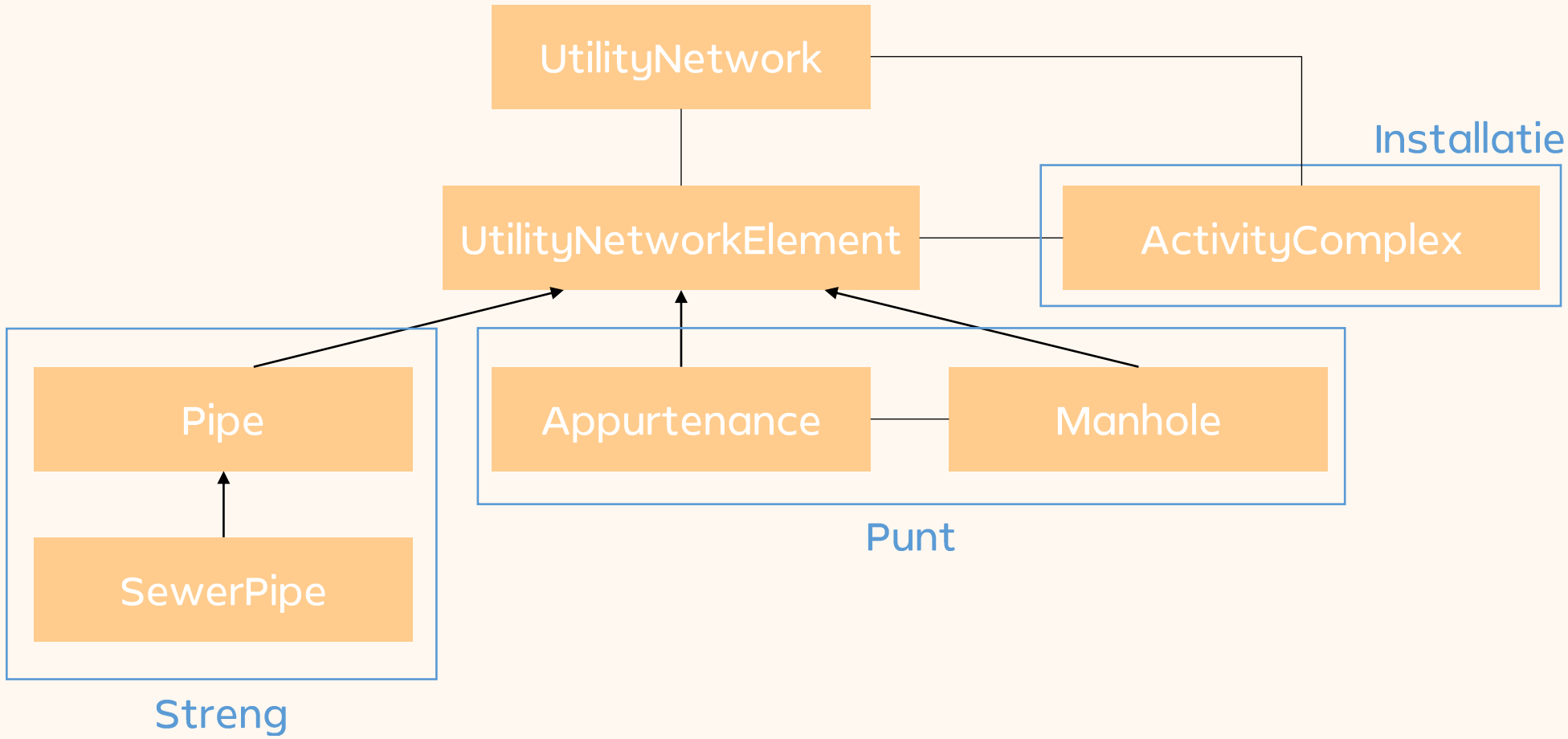
AWIS:

- **A**fval**W**ater**I**nformatie**S**ysteem
- Developed by the VMM
- Aimed at planning, construction, maintenance, financing of the sewage systems and water purification

Sewer Network

IMKL

AWIS



SewerWaterType

- *sewerWaterType* is a **mandatory** property of SewerPipe in IMKL 2.3 and IMKL 3.
- The sewerWaterType can have the following values:
    - combined
    - reclaimed
    - sanitary
    - storm
- In AWIS there are only 2 water types:
    - vuil: sanitary + combined
    - n_vuil: storm + reclaimed

- *Afgeleid watertype* will be added in AWIS soon? This property is more in line with the *sewerWaterType* of IMKL/INSPIRE.

- What is the reason for the simplified water types in AWIS?

Subtheme

- *subtheme* is a **mandatory** property of Cable, Pipe and Appurtenance in IMKL 2.3 and IMKL 3.
- It is used to classify elements according to the thematic domain (e.g. sewer) to which they belong.
- The sewer subtheme can have the following values:
  - rioleringAfvalwaterPersleiding - *sewageWasteWaterPressurePipe*
  - rioleringAfvalwaterGravitaireLeiding - *sewageWasteWaterGravitationalPipe*
  - waterafvoerOppervlaktewaterPersleiding – *waterDrainageSurfaceWaterPressurePipe*
  - waterafvoerOppervlaktewaterGravitaireLeiding – *waterDrainageSurfaceWaterGravitationalPipe*
  - waterafvoerIngebuisdeGracht - *waterDrainagePipedCanal*
  - waterafvoerOverwelfdeWaterlopen - *waterDrainageArchedWaterways*

- Is this classification correct and complete?
  e.g. is the distinction between *afvalwater* and *oppervlaktewater* needed when there is also a sewerWaterType property?
- Are the translations correct?

Waarde	**rioleringAfvalwaterPersleiding**
Omschrijving	Persleidingen van afvalwater (DWA) en gemengd water
Waarde	**rioleringAfvalwaterGravitaireLeiding**
Omschrijving	Gravitaire leiding van afvalwater (DWA) en gemengd water
Waarde	**waterafvoerOppervlaktewaterPersleiding**
Omschrijving	Persleiding regenwater (RWA) (aangelegd volgens code)
Waarde	**waterafvoerOppervlaktewaterGravitaireLeiding**
Omschrijving	Gravitaire leiding regenwater (RWA) (aangelegd volgens code)
Waarde	**waterafvoerIngebuisdeGracht**
Omschrijving	Ingebuisde grachten welke niet aangelegd zijn volgens code, vaak lokale overwelvingen, hierop kan ook vervuiling zijn aangesloten
Waarde	**waterafvoerOverwelfdeWaterlopen**
Omschrijving	Ingebuisde delen van gecatalogeerde waterlopen

Subtheme

The classification of SewerPipes (Streng) in AWIS is done based on *strengType* and *afvoerType*.

Code	Label/Korte omschrijving
r_streng	Riool streng
gracht	Gracht
drempel	Drempelstreng
pomp	Pompstreng
bekken	Bekkenstreng
wervel	Wervelstreng
knijp_o	Knijpopening
rwzi_dwa	RWZI-DWA streng
terugslg	Terugslagklep-streng
schuif	Schuif-streng
connect	Andere streng
rwzi_rwa	RWZI-RWA streng
virtueel	Virtuele streng

Code	Label/Korte omschrijving
grav	Gravitaire leiding
pers	Persleiding
druk	Drukleiding
knijp	Knijpleiding
sifon	Sifon
infiltr	Infiltratieleiding
nvt	Niet van toepassing

AppurtenanceType

- *appurtenanceType* is a **mandatory** property of Appurtenance in IMKL 2.3 and IMKL 3.
- The *appurtenanceType* can have the following values in IMKL 2.3:
    - zuiveringsinstallatie – treatmentSystem
    - overstort – overflow
    - kbMeetpunt – cathodicProtectionMeasurementPoint
    - kbInstallatie – cathodicProtectionInstallation
    - aansluiting – connection
    - catchBasin (bekken)
    - dischargeStructure (uitlaat)
    - other (andere)
    - pump (pomp)
    - tideGate (terugslagklep)
    - node (knooppunt)
- Request to add the following types in IMKL 3:
    - infiltratieput – infiltrationStructure
    - effluent van zuiveringsinstallatie – effluent
    - inspectieput – manhole => Manhole is already a type of UtilityNodeContainer
    - inlaat – inlet

AppurtenanceType

- Is this classification of appurtenances correct and complete?
- Are the translations correct?
- Appurtenance types in AWIS:

Code	Label/Korte omschrijving	IMKL
conPunt	Connectiepunt	sewerNode
uitlaat	Uitlaat	dischargeStructure
infiltr	Infiltratieput	specificStructure
infWZI	Influent van zuiveringsinstallatie	zuiveringsinstallatie
effWZI	Effluent van zuiveringsinstallatie	specificStructure
overst	Overstortkamer	overstort
gemaal	Opvoergemaal	pump
inspPut	Inspectieput	barrel
bekken	Bekken	catchBasin
inlaat	Inlaat	specificStructure
andere	Andere	specificStructure

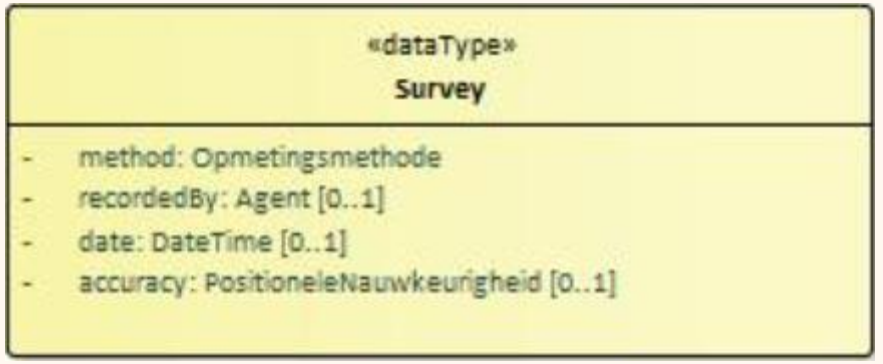
Current Status

- *currentStatus* is a property of (Sewer)Pipe, Appurtenance, Manhole, … in IMKL
- *status* is a property of Streng and Punt in AWIS
- IMKL and AWIS use the same codelist (from INSPIRE)

IMKL	AWIS	Comments
projected	gepland	
underConstruction	aanbouw	Will be added in IML3
functional	funct	
disused	buitgebr	
~~decommissioned~~	afgebr	Not included in IMKL 2.3 and IMKL 3.

Survey - Accuracy

In IMKL 3 a *survey* will be added for most geometries (all except for annotations).
A survey has properties *method* and *accuracy*.



Accuracy:

The codelist of IMKL 2.3 will be replaced with a *measureType* in IMKL 3.

IMKL 2.3:

```
<imkl:liggingNauwkeurigheid xlink:href="http://mir.agiv.be/cl/IMKL/v2/NauwkeurigheidValue/tot30cm" />
```

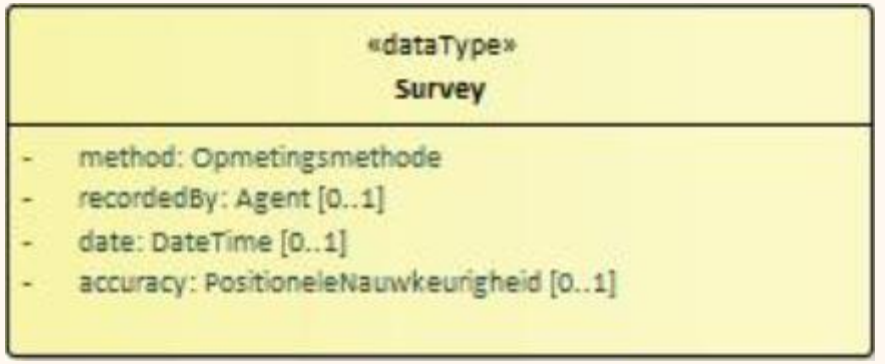
IMKL 3:

```
<imkl:accuracy uom="urn:ogc:def:uom:OGC::cm">100</imkl:accuracy>
```

In AWIS *Streng* and *Punt* have a property *liggingNauwkeurigheid*.
This property uses the same codelist that was used in IMKL 2.3: *tot30cm, tot50cm, tot100cm, onbekend*

Survey - Method

In IMKL 3 a *survey* will be added for most geometries (all except for annotations).
A survey has properties *method* and *accuracy*.



Method:

The *method* property is a new property in IMKL 3.
Proposed values for method:

- Digitized plan
- Total station
- GNSS
- Terrestrial
- Triangulation
- Photogrammetry
- LiDAR
- Measuring tape

In AWIS *Streng*, *Punt* and *Installatie* have a property *Opmetingsproces*.
This property uses a different codelist: *opgem, asbuilt, grb, achtergr, schema*

WarningType

All UtilityLinkSets (Pipe, SewerPipe, …) have a *warningType* property in IMKL 2.3 and IMKL 3.

This property can have the following values:

- net (INSPIRE)
- tape (INSPIRE)
- concretePaving (INSPIRE)
- beschermplaten (IMKL specific)

Streng has a similar property In AWIS. That property can have the same values, except for *beschermplaten*.

- Is *beschermplaten* not relevant for sewer pipes?
- Are there other relevant warning types?

DeliveryType

All UtilityLinkSets (Pipe, SewerPipe, …) have a *utilityDeliveryType* property in IMKL 2.3 and IMKL 3.

This property can have the following values:

- collection
- distribution
- private
- transport

Streng has a similar property In AWIS. That property can have the same values, except for *private* and *distribution*.

- Are *private* and *distribution* not relevant for sewer pipes?
- Are there other relevant delivery types?

Material

All UtilityLinkSets (Pipe, SewerPipe, …) have a *materialType* property in IMKL 2.3 and IMKL 3.

The same material types are used in AWIS (except for jute and crossLinkPolyethyleen).

- Is this correct?
- Are there other relevant material types?

duktielGietijzer	ductileCastIron
duktielGietijzerBlutop	ductileCastIronBlutop
glasvezelVersterktePolyester	glassFiberReinforcedPolyester
grijsGietijzer	grayCastIron
lood	lead
polyethyleen	polyethylene
polyethyleenSafetyLine	polyethyleneSafetyLine
polyethyleenHogeDensiteit	polyethyleneHighDensity
polypropyleen	polypropylene
polypropyleenSLA	polypropyleneSLA
pvc	PVC
roestvrijStaal	stainlessSteel
sideroCement	sideroCement
staal	steel
vezelCement	fiberCement
voorgespannenBeton	prestressedConcrete
andere	other
onbekend	unknown
gegalvaniseerdStaal	galvanisedSteel
beton	concrete
gres	stoneware
jute	jute
crossLinkPolyethyleen	crossLinkPolyethylene
metselwerk	brickwork

verticalPosition

All UtilityNetworkElements (Pipe, Appurtenance, Manhole, …) have a *verticalPosition* property in IMKL 2.3 and IMKL 3.

This property can have the following values:

- onGroundSurface
- suspendedOrElevated
- underground

A similar property, using the same codelist, is foreseen in AWIS, but that property is ignored in the AWIS context.

Depth

IMKL (KLIP) and AWIS have different use cases. Hence, they also have different requirements regarding *depth/coverage* information.

IMKL:

- coverage: The top part of the Pipe
- pipeDiameter: The outer diameter of the Pipe

AWIS:

- BOK-peil begin, BOK-peil einde
- pipeDiameter (as in IMKL) + height/width begin and end

Protected Area

A *Protected Area* (Beschermd Gebied in IMKL 2.3) is an area within which certain regulations apply when carrying out works.

In IMKL a *Protected Area* has a **mandatory** *type* property with the following possible values:

- ondergrondseGasopslag (undergroundGasStorage)
- drinkwaterwingebied (drinkingWaterExtractionArea)
- geothermischeInstallatie (geothermalInstallation)
- anderBeschermdGebied (otherProtectedArea)

Feedback VMM: *Protected Areas* are represented as *installations* in AWIS.

Aren't installations more like *Activity Complexes*?

Activity Complex:
Technical and economic unit managed by the same operator where certain activities regarding production and services take place.

Are there protected area types needed specifically for sewer networks?

Next steps

Next steps

- **June/July:** Implementation of XSD. A draft version of the XSD and documentation will be provided as soon as possible.

- **Workshop 6 (12/09/2024):** Presentation of XSD, migration from IMKL 2.3 to IMKL 3 and start of review

- **Workshop 7 (26/09/2024):** Evaluation of updated XSD

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