athumi
Vlaams Datanutsbedrijf

IMKL Update 3.0 Workshop 6

12/09/2024

Practical arrangements

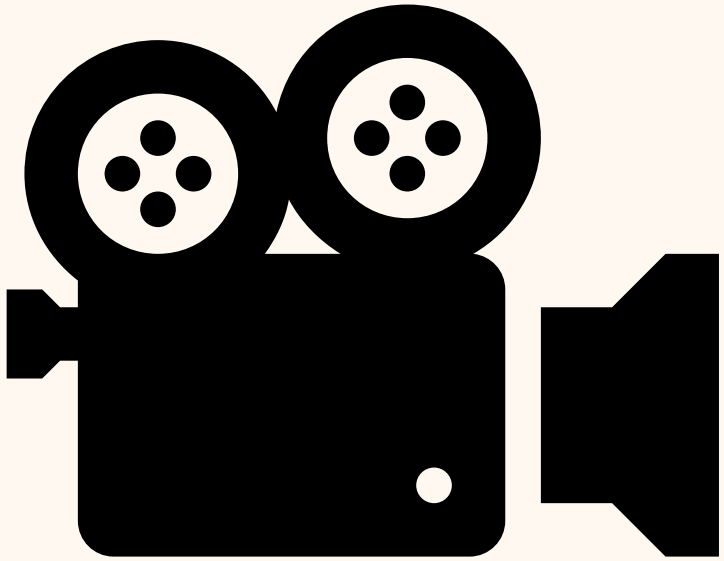
Sound of audience is **muted** by default

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

- Current state of affairs
- IMKL 3 namespace
- Topics to discuss:
  - Risk
  - Accuracy of diameter or width
  - Standard coverage per subtheme
  - Connection lines
  - Directional drillings / construction technique
- Next steps

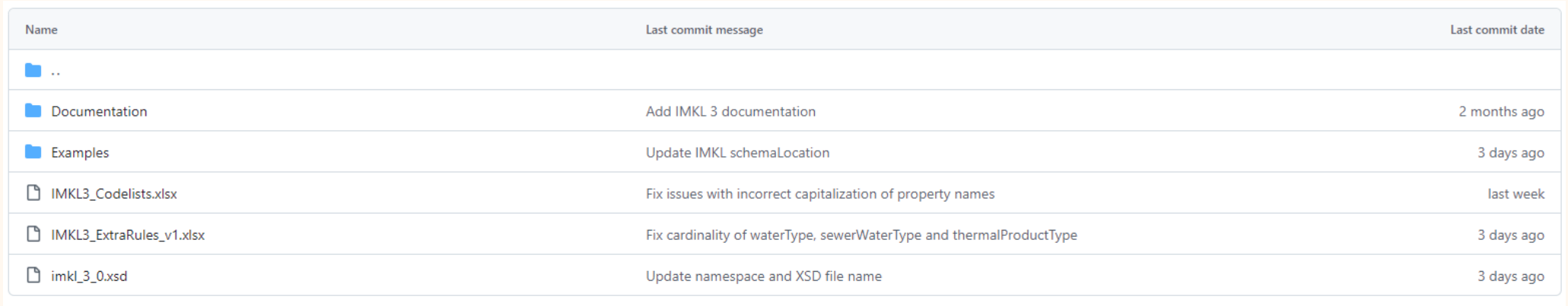
State of affairs

State of affairs

End of July: Proposal of implementation and accompanying documentation was shared:

- IMKL 3 XSD
- Examples of valid IMKL 3 files
- Overview of codelists (Excel)
- Overview of data model and validation rules (Excel)
- Migration Guide (PDF)

All files are available on GitHub: https://github.com/belgif/ICEGthema-imkl/tree/implementation/implementation



Name	Last commit message	Last commit date
..		
Documentation	Add IMKL 3 documentation	2 months ago
Examples	Update IMKL schemaLocation	3 days ago
IMKL3_Codelists.xlsx	Fix issues with incorrect capitalization of property names	last week
IMKL3_ExtraRules_v1.xlsx	Fix cardinality of waterType, sewerWaterType and thermalProductType	3 days ago
imkl_3_0.xsd	Update namespace and XSD file name	3 days ago

State of affairs

Based on the feedback:

- A few typos have been fixed and some missing information was added to the documentation (risk was missing for some objects)
- 2 extra values have been added to the ThermalAppurtenanceTypeIMKLValue codelist
- **The implementation (XSD) itself did not require any changes**

Check the commit log for detailed information:

https://github.com/belgif/ICEGthema-imkl/compare/main...implementation

State of affairs

Still to do:

- Complete documentation for newcomers (i.e. not in comparison with IMKL 2.3)
- Updates regarding the IMKL 3 namespace (next slides)
- Updates needed regarding the topics of today's workshop?
- Step by step migration guide – the quick and easy way => if needed

Feedback on the current implementation and documentation that was distributed?

Namespaces

IMKL 3 Namespace

IMKL 2.3 namespace:

`xmlns:imkl="http://mir.agiv.be/cl/AGIV/v1/xmlns/IMKL2.3"`

IMKL 3 namespace:

`xmlns:imkl="https://vocab.belgif.be/ns/imkl/3.0"`

This will replace the placeholder in

the current version of the examples:

`xmlns:imkl=http://TODO/imkl3`

The XSD is available online:

https://vocab.belgif.be/ns?lang=en

```
<gml:FeatureCollection
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xlink="http://www.w3.org/1999/xlink"
    xmlns:act-core="http://inspire.ec.europa.eu/schemas/act-core/4.0"
    xmlns:us-net-common="http://inspire.ec.europa.eu/schemas/us-net-common/4.0"
    xmlns:us-net-el="http://inspire.ec.europa.eu/schemas/us-net-el/4.0"
    xmlns:us-net-tc="http://inspire.ec.europa.eu/schemas/us-net-tc/4.0"
    xmlns:us-net-ogc="http://inspire.ec.europa.eu/schemas/us-net-ogc/4.0"
    xmlns:us-net-sw="http://inspire.ec.europa.eu/schemas/us-net-sw/4.0"
    xmlns:us-net-wa="http://inspire.ec.europa.eu/schemas/us-net-wa/4.0"
    xmlns:us-net-th="http://inspire.ec.europa.eu/schemas/us-net-th/4.0"
    xmlns:net="http://inspire.ec.europa.eu/schemas/net/4.0"
    xmlns:base="http://inspire.ec.europa.eu/schemas/base/3.3"
    xmlns:base2="http://inspire.ec.europa.eu/schemas/base2/2.0"
    xmlns:imkl="https://vocab.belgif.be/ns/imkl/3.0"
    xsi:schemaLocation="https://vocab.belgif.be/ns/imkl/3.0
      https://vocab.belgif.be/ns/imkl/3.0/imkl_3_0.xsd"
    xmlns:gml="http://www.opengis.net/gml/3.2"
    xmlns:gmd="http://www.isotc211.org/2005/gmd">
```

IMKL 3 Codelists

IMKL 2.3:

```
<imkl:materiaalType xlink:href="http://mir.agiv.be/cl/IMKL/v2/MaterialTypeValue/pvc" />
```

IMKL 3:

```
<imkl:materialType xlink:href="https://vocab.belgif.be/auth/IMKL-MaterialTypeValue/pvc" />
```

This will replace the placeholder in the current version of the examples:

```
<imkl:materialType xlink:href="http://TODO/MaterialTypeValue/pvc" />
```

Risk

Risk

In the semantic datamodel a property called **risk** is foreseen.

Challenge: How do we define risk? An unclear definition can lead to more dangerous situations…

Let's take a step back…

What do we want to achieve?

As a utility network operator, you want to:

- Be notified when exactly construction work will take place
- Ensure the required safety measures are taken into account on site

Risk

Because of the difficulty to clearly define *risk*, we propose to replace the *risk* property with a new property: *elevated risk*.

This property can be used to signify that the risk associated with a particular network element is **higher than the standard risk level for the corresponding utility network**. For example because:

- The depth deviates from the standard depth
- The pressure is higher compared to the standard pressure
- Inspection recently made clear that maintenance is needed
- …

=> It is up to the utility network operator to determine if there is an elevated risk.

It does not comment on the absolute risk level, but instead provides **a relative comparison** to other elements within the same utility network. Hence, elements with **an elevated risk should be the exception** rather than the rule.

The purpose of the elevated risk is to alert people working on-site that **extra safety precautions might be necessary** beyond the usual safety measures for typical utility network elements managed by a particular network operator. These extra precautions can be documented in a linked document or extra plan.

Risk

Example:

```
<imkl:SewerPipe>
    <net:inspireId>
        <base:Identifier>
            <base:localId>SP_001</base:localId>
            <base:namespace>Demo</base:namespace>
        </base:Identifier>
    </net:inspireId>
    ...
    <imkl:elevatedRisk>true</imkl:elevatedRisk>
   ...
    <imkl:documentation xlink:href="..." />
</imkl:SewerPipe>
```

The elevatedRisk property is optional. The absence of the property implies no elevated risk.

Accuracy of diameter or width

Accuracy of diameter or width

Cables, Pipes and Ducts have a **diameter or width property** (cableDiameter, pipeDiameter and ductWidth).

For the use case of IMKL the diameter or width should correspond to **the outer dimensions**.

Because the exact outer dimensions are not always known (often only the inner dimensions are known), an extra property is added to cables, pipes and ducts:

- Cable: cableDiameterAccuracy
- Pipe: pipeDiameterAccuracy
- Duct: ductWidthAccuracy

This **optional** property can be used to provide information on the accuracy of the diameter or width (in mm, cm or m).

```
<imkl:SewerPipe>
    ...
    <us-net-common:pipeDiameter uom="urn:ogc:def:uom:OGC::cm">70</us-net-common:pipeDiameter>
    ...
    <imkl:pipeDiameterAccuracy uom="urn:ogc:def:uom:cm">10</imkl:pipeDiameterAccuracy>
</imkl:SewerPipe>
```

Standard coverage per subtheme

Standard coverage per subtheme

A Utility Network can have a standard coverage. If a network element does not include specific coverage information, the standard coverage of the network is applicable.

In IMKL 2.3, a Utility Network could have only 1 standard coverage (standaard dekking).

In IMKL 3, a Utility Network can have **multiple standard coverages**:

- At most 1 standard coverage **without subtheme**
- 1 standard coverage **per subtheme** (overruling the standard coverage without subtheme for all corresponding network elements)

Standard coverage per subtheme

```
<imkl:UtilityNetwork>
    <imkl:standardCoverageDetail
        xlink:href="http://TODO/StandardCoverageDetail/sewercom-be:DD001" />
    <imkl:standardCoverageDetail
        xlink:href="http://TODO/StandardCoverageDetail/sewercom-be:DD002" />
    <imkl:standardCoverageDetail
        xlink:href="http://TODO/StandardCoverageDetail/sewercom-be:DD003" />
</imkl:UtilityNetwork>
```

```
<imkl:StandardCoverageDetail>
    <imkl:imklId>
        <base:Identifier>
            <base:localId>DD001</base:localId>
            <base:namespace>sewercom-be</base:namespace>
        </base:Identifier>
    </imkl:imklId>
    <imkl:depth uom="urn:ogc:def:uom:OGC::cm">100</imkl:depth>
    <!-- No subtheme -->
    <imkl:inNetwork
        xlink:href="http://TODO/UtilityNetwork/sewercom-be:001" />
</imkl:StandardCoverageDetail>

<imkl:StandardCoverageDetail>
    <imkl:imklId>
        <base:Identifier>
            <base:localId>DD002</base:localId>
            <base:namespace>sewercom-be</base:namespace>
        </base:Identifier>
    </imkl:imklId>
    <imkl:depth uom="urn:ogc:def:uom:OGC::cm">200</imkl:depth>
    <imkl:subtheme xlink:href="http://TODO/SewerSubthemeValue/sewageWasteWaterPressurePipe" />
    <imkl:inNetwork
        xlink:href="http://TODO/UtilityNetwork/sewercom-be:001" />
</imkl:StandardCoverageDetail>

<imkl:StandardCoverageDetail>
    <imkl:imklId>
        <base:Identifier>
            <base:localId>DD003</base:localId>
            <base:namespace>sewercom-be</base:namespace>
        </base:Identifier>
    </imkl:imklId>
    <imkl:depth uom="urn:ogc:def:uom:OGC::cm">250</imkl:depth>
    <imkl:subtheme xlink:href="http://TODO/SewerSubthemeValue/sewageWasteWaterGravitationalPipe" />
    <imkl:inNetwork
        xlink:href="http://TODO/UtilityNetwork/sewercom-be:001" />
</imkl:StandardCoverageDetail>
```

Connection lines

Connection line

Problem:

How should **connection lines from/to the end customer** on his or her private property be represented?

While these connections are not managed or owned by the network operator, it is still useful to include them for clarity. Since they differ from the network operator's distribution network, it is important to distinguish them clearly.

Proposal:

Use the existing **utilityDeliveryType** property (available on cables, pipes and ducts) with a new value: **connection**.

Current utilityDeliveryType options include: collection, distribution, private and transport.

Advantages:

- No need to introduce a new property
- The new value allows for easy filtering of these connections, enabling users to hide or show them in the viewer.

Note: An alternative considered was adding a new value for subtheme. Using the subtheme for this purpose would result in the loss of the information that is otherwise available within the subtheme (e.g. low/high voltage)

Directional drillings

Construction technique

In IMKL 2.3 information about *gestuurde boringen* (directional drillings) can be provided by adding an **ExtraPlan** with type **gestuurdeBoring** to a cable, pipe or duct.

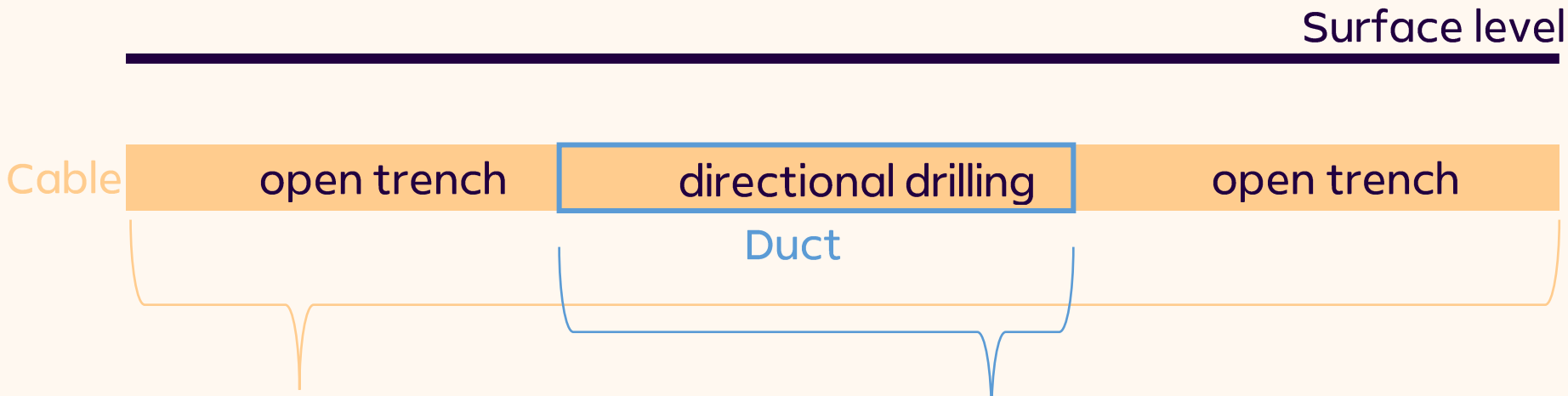
This approach has some **disadvantages**:

- The ExtraPlan is linked to the entire UtilityLinkSet even if only a section of the total length is a *gestuurde boring*
- It is not possible to clearly indicate gestuurde boringen on the map
- It is limited to directional drilling as construction type. No other types are foreseen

Proposal for IMKL 3:

- An extra property **constructionTechnique** is added to UtilityLinkSet (Cables, Pipes and Ducts).
- This property can be used to indicate the technique used.
- constructionTechnique will be **optional** (with nillReason), but it is recommended to include (especially for directional drillings).
- Options are: openTrench, directionalDrilling, culvert, other

Directional Drillings




```
<imkl:TelecommunicationsCable>
    <net:inspireId>
        <base:Identifier>
            <base:localId>001</base:localId>
            <base:namespace>telecom-be</base:namespace>
        </base:Identifier>
    </net:inspireId>
    <net:link xlink:href="http://TODO/UtilityLink/electricitycom-be:002" />
    <imkl:constructionTechnique xlink:href="http://TODO/ConstructionTechniqueValue/openTrench" />
</imkl:TelecommunicationsCable>
```

```
<imkl:Duct>
    <net:inspireId>
        <base:Identifier>
            <base:localId>D001</base:localId>
            <base:namespace>electricitycom-be</base:namespace>
        </base:Identifier>
    </net:inspireId>
    <net:link xlink:href="http://TODO/UtilityLink/electricitycom-be:004" />
    <us-net-common:cables xlink:href="http://TODO/ElectricityCable/electricitycom-be:001" />
    <imkl:constructionTechnique
        xlink:href="http://TODO/ConstructionTechniqueValue/directionalDrilling" />
</imkl:Duct>
```

Next steps

Next steps

- **Now until 12/10/2024:**
  - **Athumi:** Finalisation of implementation model and documentation
  - **All stakeholders:** Review of implementation model and documentation
    => please provide feedback via email. Do not wait for the next workshop.

- **Workshop 7 (26/09/2024):** To be decided

- **Workshop 8 (15/10/2024):** Validation of the IMKL 3 implementation model

Proposed planning release IMKL 3.0

KLIP
KLIM
Brussels Capital Region
Walloon Region

Analysis and developments for release IMKL 3.0 datamodel

Analysis and developments towards transitioning to vectorized exchange

Transition period for users

Transition period for users

April '28: decretal obligation

2024 2025 2026 2027 2028

Beginning Q3: IMKL 3.0 datamodel available

Cooperation agreement signed

Ordinances for obligation vectorial exchange in Brussels and Wallonia signed

Aug '25:
KLIM-CICC & KLIP platforms ready IMKL 3.0

IMKL 3.0 mandatory for users

IMKL 3.0 mandatory for users

- Network administrators must have data available in Lambert 2008 by the time the statutory obligation applies
- Transition period for national stakeholders

Contact info

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