# OSLO Air & Water - Business Workshop

**Date**: 17/12/2020

**Location**: Online - Microsoft Teams Meeting

# Attendees

* Informatie Vlaanderen
  + Annelies De Craene
  + Ziggy Van Lishout
  + Dwight Van Lancker
  + Michiel De Keyzer
  + Dries Catteceur
* Departement Omgeving
  + Geert Van Haute
  + Marleen Van Damme
* Vlaamse Milieumaatschappij
  + Frank Lavens
  + Geert Devriese
  + Jurgen Meirlaen
  + Katleen Miserez
* Vlaams Instituut voor de Zee
  + Laurian Van Maldeghem
  + Elien Dewitte
* Heidelberg
  + Benjamin Gaertner
* Imec vzw
  + Philippe Michiels
  + Harm Delva
* Citizens
  + Geert Thijs
* Digipolis
  + Gert Van de Wouwer
  + Ghijs Pelckmans
* West-Vlaamse intercommunales
  + Brecht Zwaenepoel
* BDO Belgium
  + Eric Duchesne
* FLUVES
  + Stijn Van Hoey
* Sirus NV
  + Gert De Tant
* Altis Swiss
  + Olivier Bernard
* FIWARE
  + Fernando López
* Smart Cities Lab
  + Olaf-Gerd Gemein
* Kiel University
  + Jesper Zedlitz

# Agenda of the working group

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| **Part 1** | Welcome and introduction of the project |
| **Part 2** | Open Standards for Linked Organisations (OSLO) |
| **Part 3** | Inspiration (existing standards and use cases) |
| **Part 4** | Brainstorm exercises |
| **Part 5** | Next steps |

## Part 1: Welcome and introduction of the project

During this part of the workshop, each participant introduced themselves. An introduction was given on the scope and context of the project, related to the project environment (OASC, ODALA, OSLO).

## Part 2: Open Standards for Linked Organisations (OSLO)

This part elaborated on the OSLO context, and more specifically on the process and method. In addition, an overview of the timeline of the project was given.

## Part 3: Inspiration (existing standards and use cases)

During this part some relevant existing standards and use cases were presented by attendees.

The examples included:

* SSN/SOSA Ontology
  + SSN: Semantic Sensor Network
  + SOSA: Sensor, Observation, Sample, and Actuator
* SAREF (Smart Applications REFerence)
* FIWARE
* OPEN DEI

In addition, some use cases were presented, which were given as input by some of the attendees. The use cases aimed at stimulating the thinking process for the brainstorm exercise.

## Part 4: Brainstorm exercises

During an online brainstorming session the participants were given time to think individually about 3 central questions, related to Air and Water:

* *What is the scope of the use case?*
* *What do you want to measure in the use case?*
* *What data do you need prior and post the use case?*

The output of the exercise can be seen in the picture. A more detailed summary of the findings is given below.

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## **Water**

* ***What is the scope of the use case?***
  + Flood prediction and prevention
  + Scientific research and modelling
  + Real-time status information on water quality of water bodies
  + Who is affecting the water quality and quantity
  + Sensor data quality verification
  + ...
* ***What do you want to measure in the use case?***
  + Many different indicators were given e.g. dissolved oxygen, temperature, turbidity, pH, ammonia, ...
  + Other examples of measurements include:
    - Sewer overflow activity and direct impact on water quality of the receiving water body
    - Water level and flow rate
    - Bacterias and/or virus concentration in water
    - Ownership of water resources (legal perspective)
    - Provenance of pollution
    - ...
* ***What data do you need prior and post the use case?***
  + In general we can already define some categories within the answers.
    - Sensor related data
      * Sensor health (connection, battery state e.g.)
      * Maintenance details of the sensors
      * Information on the sensor setup within the water
      * Sensor accuracy
      * Sensor calibration parameters
      * ...
    - Metadata on measurements
      * Quality of the information
      * Time of measurement
      * Temporal validation of measurement
      * …
    - Other examples include:
      * Sewer and river network topology
      * A reference to characterise the water quality regarding the context/usage
      * ...

## **Air**

* ***What is the scope of the use case?***
  + Build sensor grids to be able to measure Air Quality on household level.
  + Making citizens aware of Air Quality
  + Support intelligent traffic management with Air Quality Data.
  + Determine the provenance of the pollution
  + Air Quality forecasting
  + Impact of pollution prevention policy
  + …
* ***What do you want to measure in the use case?***
  + Many specific chemical notations of measurements were given e.g.
    - O3, NOx, SO3, NO, NO2, NH3, CO, H2S, …
  + Other examples of measurements include:
    - Temperature, pressure, humidity, …
    - Unique ID’s on each emission point
* ***What data do you need prior and post the use case?***
  + Sensor related data
    - Maintenance details of the sensors
    - Device information
    - ...
  + Metadata on measurements
    - Meta information on the sensors and measurements
    - Time of the measurement
    - Temporal validation of measurement
    - Quality of the information
    - ...
  + Other examples include
    - Data about emission points of all substances
    - Pollution origins estimation
    - ...

## Part 5: Next steps

To close the workshop, an overview was given of the next steps in the coming months:

* Process the input from the brainstorm exercise
* Circulate the main findings of this workshop
* Further research and prepare the first thematic workshop
* Capture further input through GitHub
  + <https://github.com/Informatievlaanderen/OSLOthema-airAndWater>
  + The participants are asked to share their GitHub username in order to receive an invite to collaborate