DELIVERABLE

D6.4 Final Report

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0.2	14/09/2020	Freya Acar Joran Van Daele	Ghent	Table of content
0.3	30/09/2020	Freya Acar Joran Van Daele	Ghent	Outline part 3 of the deliverable
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0.5	15/10/2020	Stanislav Stangl Vaclav Kucera Tomas Rehak	SITMP	Pilsen chapter Annex
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1.0	31/10/2020	Fryea Acar Joran Van Daele	Ghent	Final version

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Executive Summary

This deliverable, the final deliverable of work package 6, is the final pilot activities report. In this deliverable we want to illustrate the course that every pilot has completed and recreate each pilot's PoliVisu story. We do this by first constructing a timeline with the highlights from the project. In a second part we compare the achievements to the goals that were originally set in D6.1 through scenarios, regarding action points, target groups to be reached, objectives to be achieved and the foreseen impact. Finally we illustrate the lasting impact of the PoliVisu project on the pilots for future endeavours concerning (big) data use for policy making.

The timelines allow us to situate the progress of the PoliVisu pilots in time and space. The start and end of every iteration is indicated, together with important local events, such as elections or the start of COVID-19 and its lockdown measurements.

In section 3 we briefly describe the scenarios that were originally described in D6.1, at the beginning of the project. In this deliverable, each pilot wrote down what action points, target groups, objectives and foreseen impact they wished to achieve during the PoliVisu project. We investigate in which way goals were achieved, and which scenarios could be completed and which could not. If this was the case, we explain why and what took its place. In general, we see that most scenarios have been completed. The creation of these scenarios made it easier for the pilots to fulfil action points, reach target groups (such as policy makers and citizens), obtain objectives and evaluate whether the foreseen impact was reached or not. In a way, deliverable 6.1 provided a useful roadmap for the pilots and offered very useful guidance at various times in the project.

In general we can conclude that the impact of the PoliVisu project was larger than foreseen. The pilots managed to gain a lot of data maturity, not only for the actors that lead the pilots, but also for the policy makers and other actors within the network (which is mapped in deliverable 3.9, the policy network canvas). The actors are better aware of their specific roles in data supported policy making, and this is the main cause of an increase in data maturity of the organisation. Collaborations between data scientists and policy makers became stronger. Experience in communication through visualisations was gained and all of this knowledge has been spread within the expanding knowledge networks of the pilots.

This implies that in the future data supported policy making, with the support of visualisations, will become more straightforward. Furthermore, collaboration becomes more straightforward since the relationships between policy makers and data scientists have been strengthened in all the different pilots. Additionally and prosperously, not solely the pilots profit, the expertise gained is advantageous to the wider knowledge network within and around the different pilot cities and/or regions.

1. Introduction

Over the past three years, the different PoliVisu pilots (Ghent, Pilsen, Issy-Les-Moulineaux and Flanders) were involved in a various amount of activities, meetings, co-creation sessions, discussions, brainstorms and so on. Although they may have different specifics and targeted audiences, the overall goal of all these activities was the same. Improving the use of different (big) data sources for policy making.

Before the start of the project, different 'intake' meetings were held with all the PoliVisu Pilots to question their current challenges and paint a picture of the current 'data landscape' within these pilots. During these meetings, the first provisional policy questions were constructed and it became clear on what the pilots would mainly focus on.

With the overall main goals (being students' whereabouts in Ghent, mobility tools in Pilsen and traffic predictions in Issy-Les-Moulineaux) known for each pilot, it was then essential to capture these policy and data questions in their entirety. Thus, the first deliverable, 6.1: pilot scenarios and deployment, was created.

In this deliverable, we defined our goal as follows:

> *The goal of this document is to gather **necessary information about the proposed pilot case**s to provide **insights into the local situation** and the **societal and political goals**, as a preliminary and necessary step for scenario construction.*

This resulted in several **well-defined data management scenarios for each pilot**. Within these scenarios, different action points, objectives, desired outcomes, affected actors, processes and tools were defined. This way, each pilot had a useful guide to plan his activities to reach these desired outcomes, goals and objectives, which were evaluated and discussed more in detail in work package 7.

It goes without saying that it was anything but obvious to realize the predetermined data management scenarios in reality. Both internal factors (local elections, shift of personnel, shift in focus, ...) and external factors (decisions by supralocal authorities, the outbreak of COVID-19, ...) had a major impact on how the pilots conducted and planned their activities.

In this deliverable, the last deliverable of work package 6, we want to outline the course that every pilot has completed; and create a sort of re-sketch of each **pilot's PoliVisu story**.

We start with the construction of a **visual timeline for each pilot**. On this timeline, the different PoliVisu timings (start/end date, the timing of the four pilot iterations), activities and other impactful events are mapped. As a source for this timeline we use the pilot update slides that were made during the general assembly in Issy-Les-Moulineaux (January 2020) and the different evaluation documents in work package 7 (D7.2, D7.3, D7.5, D7.7). A detailed overview of these activities is added in the annex.

We then analyse **to what extent each pilot was able to implement his desired data management scenarios from deliverable 6.1**. More specific, we will resume and discuss the following sections from D6.1:

- **Action points**: which action points have been implemented? Which not and why not?
- **Objectives:** did the pilot achieve its planned objectives?
- **Desired outcomes:** is the effective outcome of the activities matching with the desired outcome?
- **Target groups:** has the pilot been able to reach his designated target group?

After this comparative analysis we conclude this deliverable with **a series of conclusions,** in which we analyse **what comes next** (after the PoliVisu project) for the different pilots and give an overall conclusion.

2. Timeline of the pilot's activities

Before we start discussing and evaluating the pilot scenarios from deliverable 6.1; it is necessary to get a visual overview of the different activities that took place in these pilots. Not only the activities performed are important in this overview. The external factors (unexpected or otherwise) also had a major influence on the course of the various pilots. Local elections created sometimes a shift of interest; a new mobility plan highlighted new problems and the outbreak of COVID-19 made the pilots redefine their planned activities.

As a source for this timeline, the pilots were tasked to list all their **conducted activities** during the general assembly in January 2020. This was not a new task for the pilots, as for work package 7 they had already summarized and evaluated their activities per pilot cycle (*the activities of the pilots were divided into 4 cycles: the closed, lab, open and impact iteration*). In addition to listing all activities, the pilots were also asked to sum up all the different external **key moments** that had an impact on the pilot, which was used as a source for mapping the external factors on the timelines.

The different tables of all the pilots' activities can be found in annex at the end of this deliverable (see 6.1, 6.2, 6.3 and 6.4).

In the timeline, the **activities conducted by the pilot themselves** are indicated by a **blue** date indication**.** **External and impactful events** are indicated by a **red** date indication. **Key timings in the PoliVisu project** can be recognized by the **green** date indication.

In the last four timelines it can be noted that these are shorter than the timelines of the three first pilots. This is because **the pilots from Flanders and Mechelen started at a later stage in the PoliVisu project**, which had the advantage that the experiences of the three 'original' pilots could be included with these pilots. It can also be noticed that these pilots follow the planned iteration pattern less than the first three pilots, something that can again be attributed to the more dynamic character of these pilots.

2.1. Ghent

NOVEMBER 2017
Start of thePoliVisu project.

NOVEMBER 2017
Start data quality assessment on existing housing datasets.

MAY 1 2018
Start closed iteration.

JUNE - JULY - AUGUST 2018
Brainstorms and working groups data quality analysis.

SEPTEMBER 2018
Focus-group & presentation of data quality analyse to housing department and other colleagues.

Brainstorms with project consortium on alternative datasources.

SEPTEMBER 30 2018
End closed iteration.

OCTOBER 14 2018
Local elections in Ghent; Start of discussion between parties to form new local government.

NOVEMBER 2018
Finishing up data quality analysis exercise and planning next steps.

FEBRUARY 1 2019
Start lab iteration.

FEBRUARY 2019
Focus-group with Proximus, economic, tourism and festivity department.

MARCH 2019
Brainstorm and whiteboard session with Proximus: redefining the problem and creation of student pattern for data analysis.

MAY 2019
Stakeholder meetings with housing department; updating on progress with Proximus data.

JUNE 2019

First results and visualisations with Proximus data and first stakeholder meetings to present this visualisations and data

Start quality analysis on social media data (twitter and facebook).

JULI - AUGUST 2019

Further analysis on the Proximus data; Formulating issues with data and formulating request for new iteration of data.

JULY 31 2019

End lab iteration.

SEPTEMBER 2019

Meetings with Proximus: preparing for second data-iteration round. Feedback on the delivered data from Proximus.

VIP project: collection and datacleaning of administrative datasources with focus on abondend houses and second residences.

OCTOBER 1 2019

Start open iteration.

OCTOBER 2019

GA meeting in Ghent: presentation of the project, the visualisations and the progress of the project for policy makers in Ghent.

DECEMBER 2019

Presentation of the potentials of telecommunication (big) data for the city civil servants and presentation of the PoliVisu project.

PowerBI presentation of VIP project: data of abondend houses and second residences.

JANUARY 2020

Meetings with Proximus for second data iteration.

FEBRUARY 2020

Delivery of new datasets from Proximus + presentations. Start analysing data from Proximus.

MARCH 17 2020

Start COVID-19 lockdown in Belgium - all public & open activities are cancelled.

MARCH 30 2020

End open iteration.

APRIL 2020

Start roadmap for structural approach for datamanagement concerning building information: input and experience from the PoliVisu project.

MAY 2020

Delivery of new datasets from Proximus + presentations. Start analysing data from Proximus.

JUNE 1 2020

Start impact iteration.

JUNE - JULY 2020

Delivery of new datasets from Proximus and presentation from Proximus data scientists. Start analysing data from Proximus.

Start awareness project in city management on proper data management and datagovernance

AUGUST 2020

Inspiration day on housing policy in the city of Ghent.

SEPTEMBER - OCTOBER 2020

Making visualisations based on the latest data from Proximus. Start working on the Proximus Story for the Ghent website.

OCTOBER 30 2020

End impact iteration.
End PoliVisu Project.

2.2. Issy-les-Moulineaux

NOVEMBER 2017
Start of thePoliVisu project.

NOVEMBER 2017
Benchmark of available data and potential stakeholders.

JANUARY 4 2018
start of Grand Paris Express project.

MAY 1 2018
Start closed iteration.

MAY 2018
Composition of focus groups (Data, urbanism and communication).

JUNE 2018
First data analysis about the roadworks.

JUNE - SEPTEMBER 2018
First series of workshops.

30 SEPTEMBER 2018
End closed iteration.

OCTOBER 2018
Achievement of the first dataset about traffic (Be-Mobile dataset).

JANUARY - JUNE 2019
New cycle of workshops with the 3 focus groups.

FEBRUARY 1 2019
Start lab iteration.

FEBRUARY 2019
First meetings with My Anatol.

FEBRUARY -MARCH 2019
Analysis on data of a local sensor.

MARCH - MAY - JUNE 2019
Analysis on Uber mouvements data.

Data challenge with students (ISEP).

JUNE 17 2019
Pilot on social media tools (truly media) in occasion of a local concert.

JULY 2019
End of collection of recommendations for traffic dashboard.

JULY 31 2019
End lab iteration.

SEPTEMBER 2019 - JANUARY 2020
Construction of traffic dashboard.

My Anatol pilot set up.

OCTOBER 1 2019
Start open iteration.

JANUARY 2020
meeting with Issy-les-Moulineaux policy makers with presentations of tools.

JANUARY - MARCH 2020
Pilot of My Anatol with street marketing campaign

MARCH 17 2020
Start COVID-19 lockdown in France - all public & open activities are cancelled.

MARCH 30 2020
End open iteration.

APRIL - MAY 2020
Analysis of traffic data during lockdown.

JUNE 1 2020
Start impact iteration.

JUNE - JULY 2020
Construction of new dashboard with traffic and bike use.

SEPTEMBER 2020
Launch of dashboard with My Anatol.

OCTOBER 30 2020
End impact iteration.
End PoliVisu Project.

2.3. Pilsen

NOVEMBER 2017
Start of thePoliVisu project.

MAY 1 2018
Start closed iteration.

MAY 2018
Functional analysis of application for defined pilot scenarios.

JUNE - JULY 2018
Workshops about data from traffic detectors (how to use the API, availability in Opendata portal, maintenance of detectors on traffic dashboard).

Testing of the police data heatmap protoype.

SEPTEMBER 2018
Improving the traffic model with requested changes and enhancements.

30 SEPTEMBER 2018
End closed iteration.

OCTOBER 6 2018
Local election in Pilsen. Start discussion between parties to form a new local government. A new deputy for transport and a new independent position of deputy for Smart City was created.

JANUARY 2019
User testing and online survey to provide feedback on usability, UX, practical use on the traffic intensity map.

FEBRUARY 1 2019
Start lab iteration.

FEBRUARY 2019
Workshop for evaluating traffic intensity map testing and user feedback.

MARCH 13 2019
The Sustainable Urban Mobility Plan (SUMP). Approval update version 2018 from version 2016.

APRIL 2019
Co-creation group for converting SUPERDIO XLS list of closures to webapp. Presenting PoliVisu tools that may help.

Presentation of Polivisu project and the role of Pilsen as a pilot city to the Pilen policy makers. Introducing developed tools and their possible use.

APRIL 5 2019
New program statement of coalition for the management of the city of Pilsen. Special attention to parking, traffic and smart city priorities.

MAY 2019
Discussion about policy making process and presentation of PoliVisu project to the policy makers during the general assembly meeting in Pilsen.

JULY 31 2019
End lab iteration.

SEPTEMBER - OCTOBER 2019
Testing and presenting of traffic map in Pilsen (WebGLayer); online surveys and further investigations in police dataset deployment.

OCTOBER 1 2019
Start open iteration.

OCTOBER - DECEMBER 2019
Workshops on traffic safety map (WebGLayer): using traffic offences and traffic accident data.

NOVEMBER 2019 - FEBRUARY 2020
Testing simulations and interface for entering roadworks in the traffic modeller, deployment of hourly/daily veriations and launch of simplified version for the public.

Further testing of traffic behavior, presentation of first results.

MARCH 12 2020
Start COVID-19 nation emergency state in Czechia.

MARCH 30 2020
End open iteration.

MARCH - MAY 2020
Analyzing impact of coronavirus on traffic. Creating COVID-19 map in Czechia.

APRIL 28 2020
New Map Portal of city of Pilsen. Redesign of the city's map portal website. This website includes articles about the PoliVisu project.

Furthermore there are map applications available for public This (Traffic Modeler and WebGLayer platforms) The Pilsen Traffic map is also released for public.

JUNE 1 2020

Start impact iteration.

JUNE 2020

Meetings with Police and other road security stakeholders for Pilsen Safe Roads Map.

SEPTEMBER 2020

Demonstration of real-life case studies of the cities of Pilsen, Františkovy Lázně (CZ) and Mechelen.

SEPTEMBER - OCTOBER 2020

Released Pilsen Safe Roads Map for internal use.

OCTOBER 6 2020

Regional election in Pilsen region. Important for urban policy.

OCTOBER 30 2020

End impact iteration.
End PoliVisu Project.

2.5. Flanders - Accident map

NOVEMBER 2017

Start of thePoliVisu project.

2018 - 2019

Getting the data, interpreting and formatting the data, adding the data to the WebGLayer tool - for version 1.

Dedicated progress meetings with Flemish government organizations and Federal Police.

OCTOBER 1 2019

Start open iteration.

NOVEMBER 2019

Awareness raising about the map to the VIAS network

DECEMBER 2019

Feedback on the functionalities of the accident map. Discussing use cases.

JANUARY - MARCH 2020

Awareness raising about the map to the VSV network.

MARCH 2020

Presentation at the Flemish Traffic Safety congress.

Accident data improvement session Federal Police/Flemish government for accident map

MARCH 30 2020

End open iteration.

APRIL 2020

Different meetings with Flemish house for traffic safety related to accident map.

JUNE 1 2020

Start impact iteration.

JUNE 2020

Meeting Federal Police related to accident map

OCTOBER 2020

Final demo and alignment with house for traffic safety related to accident map.

OCTOBER 30 2020

End impact iteration.
End PoliVisu Project.

2.6. Mechelen - Schoolstreets

NOVEMBER 2017
Start of thePoliVisu project.

FEBRUARY 1 2019
Start lab iteration.

MARCH 2019
First brainstorm session with Mechelen and the PoliVisu project. First requirements regarding monitoring traffic based on ANPR, but was not feasible, nor possible due to legal boundaries.

Focus on the schoolstreet project (new in the coalition agreement and could be performed with citizen science data).

JULY 31 2019
End lab iteration.

SEPTEMBER 2019
Brainstorm about schoolstraat concept and the role of PoliVisu.

OCTOBER 1 2019
Start open iteration.

NOVEMBER 2019
First mocks, KPI's for schoolstraten dashboard.

JANUARY 2020
Interactive workshop in the school with the city of Mechelen to inform and roll-out the Telraam devices.

FEBRUARY - MAY 2020
Series of demo sessions and discussions about the features and functionalities.

MARCH 30 2020
End open iteration.

JUNE 1 2020
Start impact iteration.

SEPTEMBER 2020
Meeting 'paraat voor de schoolstraat', discussing cooperation and actions towards the Flemish department of education.

OCTOBER 2020
Explaining the project and asking for support as a traffic safety and educational initiative - Formal note to the Secretary-general of the department of education.

OCTOBER 30 2020
End impact iteration.
End PoliVisu Project.

2.7. Mechelen - Traffic model

NOVEMBER 2017

Start of thePoliVisu project.

JULY 2019

Technical brainstorm about possibilities and feasibility of integrating traffic model of Mechelen with management of road works and public domain.

SEPTEMBER 2019

Creation of development plan.

OCTOBER - NOVEMBER 2019

Development of a two-way API and development of a prototype user interface.

JANUARY 2020

Evaluation workshop with the city of Mechelen to discuss the results of this project.

OCTOBER 30 2020

End impact iteration.
End PoliVisu Project.

2.8. Police Zone Voorkempen

NOVEMBER 2017

Start of thePoliVisu project.

OCTOBER 1 2019

Start open iteration.

DECEMBER 2019

First internal brainstorm with Macq, ISP and Flanders to creata a first definition of the project and to create a mock-up definition.

JANUARY 2020

Meeting with the DPO of the police and the head of the police zone Voorkempen to define the scope, the needed data and the privacy arrangements (for which, later in January, an agreement was made formally).

Agreement to start the cooperation.

First sets of mock-ups and graphs were created based on the first batch of processed ANPR data.

FEBRUARY 2020

Presentation of the ANPR analysis results to the police zone and the 4 mayors in the police zone Voorkempen.

MARCH 30 2020

End open iteration.

JUNE 1 2020

Start impact iteration.

SEPTEMBER 2020

Workshop on average speed control zones. Discussing mock-ups and functionalities

Demo of the first dashboard version and further discussing the functionalities.

OCTOBER 30 2020

End impact iteration.
End PoliVisu Project.

3. Original pilot scenarios

At the beginning of the PoliVisu project the societal and political goals of all the different pilots have been written down in D6.1. In this deliverable we want to look critically at these original scenarios. We will first describe in short the goal of the pilot, following with a summary of the originally defined scenarios. For the scenarios that have been completed we repeat the action points, target groups, objectives and foreseen impact that was stated in D6.1, and illustrate how the goals were achieved and what happened along the way. This allows us to observe the long term gain of the PoliVisu project.

3.1. Ghent

The general goal of the Ghent pilot is to get a holistic view of its "users", in order to deliver adequate services and civil infrastructure in the city. These users do not only include inhabitants. Ghent is a student city, and every year more than 70.000 students are registered for higher education (university or college). Of these 70.000 students, it is estimated that between 30.000 and 40.000 reside in Ghent during the week when classes take place. This large increase of city users during a certain time of the year has an impact on city services and infrastructure, such as housing, economy and mobility.

The Ghent pilot defined 3 scenarios to explore the impact of residential students (i.e. students that reside in Ghent when classes take place) on city services and infrastructures. **The first scenario** has the goal to map student housing. There is no register of where all the residential students live. When students move into family homes this might have an impact on housing prices, making it more difficult for families to buy a house in the city. By mapping where the students reside, the city of Ghent gets a better image of the housing needs of students and can provide more adequate housing.

The second scenario aims to map student mobility patterns. When the city wants to invest in new mobility infrastructure for their inhabitants and 'users', it is difficult for the civil servants/policy makers to make decisions that benefit all the city users, due to the fact that there isn't much known about the mobility patterns of the different city users. This is especially true for the mobility behaviour of the students. How do they move through the city? Do they use their bike or do they use public transport? How do the students from outside Ghent enter the city? Do they cause congestion in the city at certain times (which is maybe linked to the lesson schedules which don't take the mobility of the students into account)? With an estimation of 75.000 students in Ghent, their impact on the mobility in Ghent cannot be underestimated.

The third scenario aims to link economic city distribution to student mobility and housing. The goal is to explore how students impact economic activities (shops, events, restaurants, …) and the distribution of services and goods, and subsequently how this influences mobility.

Soon it became clear that the first scenario was a bigger challenge than first expected. We will go more into detail on why in the next section, but it was clear that the lack of data would drive the Ghent pilot to explore a wide variety of possible data providers. A lot was learned from this approach, about data providers, collaboration with external data providers, types of data that can be used, and the role of data in the policy making process (see D3.8 and D3.9). However, since the second and third scenario relied on the first scenario to be completed, these scenarios could not be fully explored.

3.1.1. Data Management Scenario A: Mapping of the student housing

Action points

Four action points have been defined. These were to combine existing datasets, explore the use of telecommunication data for living/housing behaviour, explore the link between energy usage and residencies, and explore voluntary registration by residential students.

The first action point was to combine existing datasets. The datasets that already existed within the city's administration are the student inscription list provided by some (but not all) institutions for higher education, the registrations of inspections on living quality and fire safety of (student) houses, a terrain survey on student housing in the city centre and the building- and address registry (that indicates whether an official address is registered for a certain building). We started this action point by exploring the aforementioned datasets and assessing their quality. During the quality assessment phase it became clear that the datasets were incomplete and sometimes outdated. We concluded that structural improvement of data management for these administrative data sources was necessary and opportunities of alternative data sources needed to be explored to get a better view on student residencies.

The second and third action point referred to exploring new data sources. After exploring multiple alternative sources such as social media data, WIFI sniffing data and telecommunication data, it was proposed to further explore the potential use of telecommunication data. Conversations about a possible collaboration with Proximus1, a telecom provider in Belgium, were set up and an iterative process was set up. Proximus and the city of Ghent together defined expected behavioural patterns of residential students. Using these patterns an algorithm was able to identify a residential student profile in the telecom data and deliver aggregated data with the number of residential students present in a certain area for any point in time during the period of data collection. The first period of data collection comprised weekdays with classes, weekend days and holidays, allowing the city to get a view on the impact and distribution of the presence of residential students in the city. The data analysis results are not sensitive to privacy issues since individual students or residencies cannot be identified. The geographic precision however is limited and extrapolation to absolute numbers of users requires calibration through combination with other data. The telecom data can provide insights in trends and distribution of users on a meso level. To adequately support the policy making process on a micro level, more precise data is required.

The third action point might provide a solution for this. The goal of the third action point was to explore the link between energy usage and residencies. Residencies that have a higher energy usage during the weekdays when classes take place, but not during weekend days and holidays might be a student residence. Conversations were set up with the energy provider of the city of Ghent. Unfortunately the company is not yet able to monitor energy usage for most residencies in the city. Therefore this option was not further elaborated.

The last action point was to explore voluntary registration by residential students. The most complete and reliable data concerning residential students is obtained by asking the students themselves. The institutions for higher education were contacted with this question. Through conversation with the student themselves it became clear that most students are reluctant to have the address of their temporary residence in an official register because of possible legal and financial consequences this might have. There is no legal framework set up in Belgium for student residencies. Students that no longer have their official address with their parents no longer receive supporting funds from the government. Furthermore, some students live in residencies with unofficial contracts and fear these contracts might be discovered. They rent these residencies because they cost less, even though they don't always attain the quality and safety standards.

[1] https://www.proximus.be/en/id_cl_analytics/companies-and-public-sector/it-services/iot/proximus-analytics.html

Target groups

Four target groups were identified. The first one is inhabitants of Ghent, who are affected in both an indirect and direct manner. It is hypothesized that the presence of residential students puts pressure on the housing market as students occupy family homes. Furthermore the presence of students in residential areas can have a direct social impact and impact on liveability of the area.

The second target group that was identified are civil servants from the thematic departments working on this problem, namely the housing department and the department for education.

They have a close link with the third target group, policy makers, i.e. political actors, that are concerned with housing and education. At regular points in time a conversation was set up with the relevant civil servants and policy makers, informing them on the status of the process and identifying the specific policy and data questions they have. The specific role of the Ghent pilot was to translate the policy question from the civil servants and the policy makers to a data analysis question towards Proximus, and subsequently the data answer to a policy answer in return.

The last identified target group were the institutions for higher education. On several occasions there were discussions and conversations with the institutions for higher education about the data they can provide, the hindrances they foresee and what they wish to gain from the collaboration.

Objectives

Several objectives were identified. The first goal was to use big data analytics and visualisations in order to determine the whereabouts of students or to make the right policy decisions. This was done through the telecommunication data that was obtained through Proximus. In figure 1 we see how student activity during the night on weekdays is localized mainly in the centre of the city. Two cells, around the Overpoort more specifically, a neighbourhood that has many student bars, have the highest number of residential students. Through this visualization we see that for the majority of the city the impact of the presence of residential students is small, but for the city centre, and some specific neighbourhoods, the impact is large.

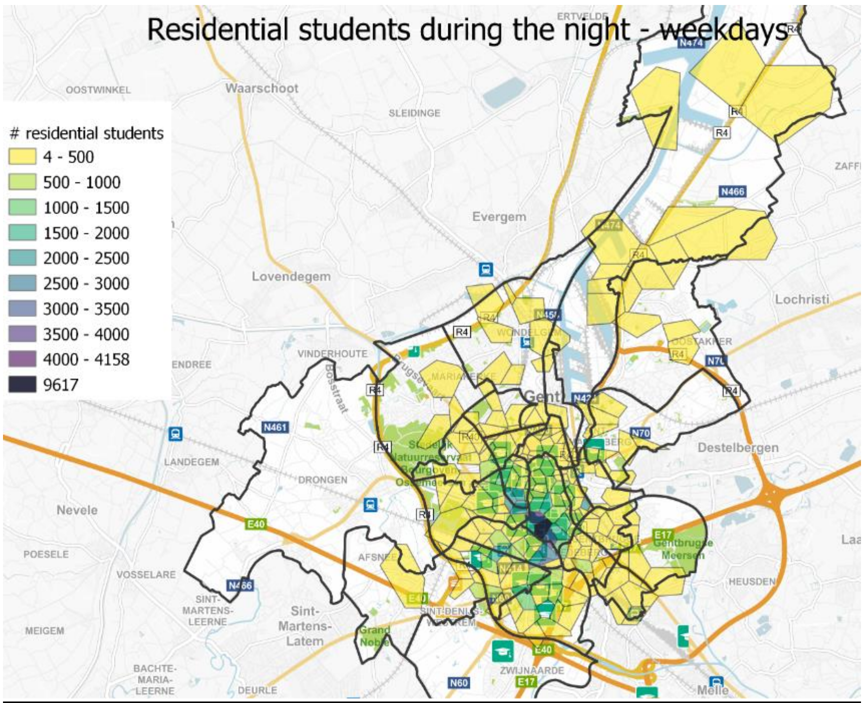


Figure 1: Student activity during the night on weekdays in Ghent

The second goal was to improve decision making concerning real estate and urban planning. From the visualizations of Proximus we can conclude that the biggest need for student housing is located in the city centre, around the neighbourhood of the Overpoort. This can be taken into account when more student residencies are being constructed. However, it is clear that more research is needed into this type of data before the city can really base decisions on it.

The third goal was to stimulate policy co-creation between students and the civil servants in the city concerning real estate and urban planning. Conversations between student organizations, institutions for higher education and civil servants are facilitated by the "student's civil servant", a member of the local administration that is tasked with matters from institutions for higher education.

Finally, the fourth goal was the most ideal outcome, namely a map or/and list of student residencies that is yearly updated and that can be used to execute the two remaining scenarios. However, as is previously explained, obtaining addresses and precise data of student residencies requires structural investments in administrative data and student registrations is still not possible and therefore this map is not yet available. Conversations are being held, both within the city's administration and on federal level, with the goal to stimulate or oblige the registration of student's addresses. Having an official register will increase safety and allow policy makers to make more informed policy decisions. Nevertheless, a legal framework is necessary to make this possible.

Impact

The biggest foreseen impact of an official register with student's addresses is available, is that it would allow the city's administration and the educational institutions to provide better services for students. This includes decisions concerning the real estate market, mobility and urban planning. Institutions for higher education might be able to use this data to provide better students services. Even though a detailed register is not available, the Proximus data provides some insight into where students are during the day, the evening, and at night. This gives an idea about where their residencies are located, where they spend their days and evenings, and which routes are most likely to be taken. It becomes visible on which part of the city the biggest impact can be expected. While some hypotheses already existed, it is very valuable to see them confirmed through data.

A possible negative impact that was foreseen are privacy and data security issues. When data is collected about students, such as residential addresses, this data should be stored securely. There is no privacy issue with the Proximus data, since the individuals are grouped per cell, and if there are less than 30 individuals in a cell, the number of individuals is changed to 0. All individuals have been pseudonymized. However, if an official register with student's residential addresses were to be constructed, it is clear that it should be treated the same way as, for example, the official population register.

For this official register with student's residential addresses to be constructed, consent of the students for their addresses to be registered is required. Currently the city of Ghent is investigating the incentives (e.g. no possibility for punitive consequences such as loss of government support) that are necessary for students to voluntarily provide the city with their residential address. Part of this investigation is who is the data subject. Is it the students themselves, or the owner of the student residence (i.e. the "kotbaas" in Dutch).

The PoliVisu Ghent Pilot has helped raise awareness of management and policy makers on the data challenges the city administration faces. In 2020 a large scale program on data- and information management has started in the city administration, aiming to develop data management structures and capabilities and increase the data maturity of the organisation. Information on buildings and (student) housing is likely to become one of the main priorities.

In conclusion, the city of Ghent could explore many different data sources and discover their specific advantages and disadvantages. The results of the collaboration with an external (big) data provider, Proximus, are the food for conversations between civil servants, policy makers and institutions for higher education.

3.2. Pilsen

The general common goal of the Pilsen scenarios was to improve the traffic situation in the city. Pilsen does not have an ideal socio-economic (the majority of the population lives in the north, while industry and large companies are concentrated in the southern part), as well as geographically (four rivers, a few bridges, missing complete bypass) characteristics. And because Pilsen is a transit city, traffic complications are emerging. It can be assumed that without the right transport decision, the traffic situation may worsen in the future.

Therefore, four scenarios were defined in Pilsen. Based on them, tools and outputs were created, which should then be implemented in the decision-making processes of the city and thus increase the quality of decisions and measures taken. They may partially overlap, but the common goal is maintained.

The basic scenario **A: Efficient traffic planning and prediction** within which the primary data collections (data from detectors, traffic model) and tools (visualizations, modelling tools) were prepared. The quality of these initial steps was crucial for the next scenarios, where the outputs from scenario A essentially go beyond. The primary use of this scenario is in the planning of traffic measures for SUMP and the modelling or verification of their impacts.

The following scenario is **B: Current city traffic**, which uses the environment developed for the first scenario. It is intended for public access and displays the current state of traffic based on online data from the detectors and specified traffic restrictions. In addition to monitoring the state of traffic itself, it is also extended by historical data and, together with the possibility of a time shift to the future, offers users the possibility of comparing states.

The actual entry and authorization of traffic restrictions is the domain of the scenario **C: Predicting roadworks for better coordination**. The goal here was to set up processes for gathering information on planned road works and closures. The subsequent use of modelling capabilities is intended to help authorize and improve the coordination of these activities in order to reduce their impact on the public.

The last, but also important scenario **D: Big data analysis and outputs**, which was originally understood as covering the previous three in terms of presentation of outputs, partial results and source data to the public. Over time, it included experimentations with various technologies and other continuously acquired data sources, which, however, still relate to transport and its safety.

During the project, we managed to fulfil the prescribed sequence of work together with the technical partners, and all scenarios were gradually fulfilled. Of course, steps have emerged, which can move forward more efficiently or with better results in the future. As a part of further development, the city of Pilsen will strive for this by participating in follow-up projects (DUET, TRAFFO). In addition to experience with processing big data sets and with the principles of traffic modelling, we learned the usefulness of political support in all phases of the project.

3.2.1. Data Management Scenario A: Efficient traffic planning and prediction

Action points

The basic precondition for success was gaining access to big data from traffic detectors. With political support, a workflow was created to load this data from the traffic dashboard into the GIS database. This allowed us to analyse this data for the first time and prepare conversions to hourly aggregations. The creation of traffic profiles then completed the necessary steps for the creation of a new traffic model. Within the project, the model has been improved several times, but its behaviour and calibration is still based only on the measured traffic intensity. The involvement of other parameters (ANPR, occupancy, throughput of crossroads, change on traffic generators, etc.) is planned as part of the involvement in follow-up DUET and TRAFFO projects.

The first version of the application, the Traffic Modeler tool, could then be created above the traffic model, which had simulation techniques that could already be used for the first demonstration outputs. Their presentation then increased awareness of our activities in the city environment. Verification of the model results against real states was postponed to a later stage, when scenario B was implemented.

The use of the Traffic Modeler itself is the subject of forthcoming negotiations. Especially thanks to the fact that the application was continuously developed and improved throughout the project and the final version is only available now.

Target groups

From the originally identified target groups, traffic specialists and, in the form of presentations, political management were involved in the implementation of the scenario. Traffic specialists were invited to the workshops and participated in designing the necessary functionalities. They gave feedback on the changes made in tools. Subsequently, a public version was presented. When this tool is deployed in the final version, other potential users beyond the originally intended will be contacted (e.g. urban planning department, regional authority, utility network administrators).

Objectives

It can be said that the basic goals in this scenario have been achieved. We have a functional application that can model traffic. It is possible to simulate the future state of traffic intensities and verify the impacts of already implemented measures. We see its deployment especially when working with planned long-term SUMP measures. As part of the development, we still expect the implementation of a function that will enable the drawing of planned roads beyond the existing traffic model. The challenge for the future is to ensure the development and updating of the traffic model itself.


Plán udržitelné mobility Plzně
Karta opatření

Mott MacDonald

41 | Rekonstrukce Lobezské ulice

Balíček opatření
7 – Rekonstrukce ulic

Nositel opatření
Odbor investic

Nositel opatření za město
Odbor investic

Kapitálové výdaje celkem
85 mil. Kč

Kapitálové výdaje města
85 mil. Kč

Předpoklad dotace
0 mil. Kč

Popis opatření
Celková oprava uličního prostoru, zachování stávajícího počtu jízdních pruhů (1+1) i tvaru křižovatek. Vytvoření souběžného jednosměrného pruhu se šikmými i podélnými parkovacími stáními. Rekonstrukce trakčního napájení.

Řešený problém
- špatný technický stav komunikace
- nedostatek parkovacích stání
- živelné parkování i na nezpevněných plochách
- řešení výškových úrovní komunikace a chodníků
- obnova sítí technické infrastruktury

Přínos pro uživatele / obyvatele
- odstranění nevyhovujícího technického stavu komunikace
- navýšení kapacity dopravy v klidu
- zlepšení veřejného prostoru

Figure 2: Example of measure from the SUMP documentation - No. 41 Reconstruction of Lobezská Street

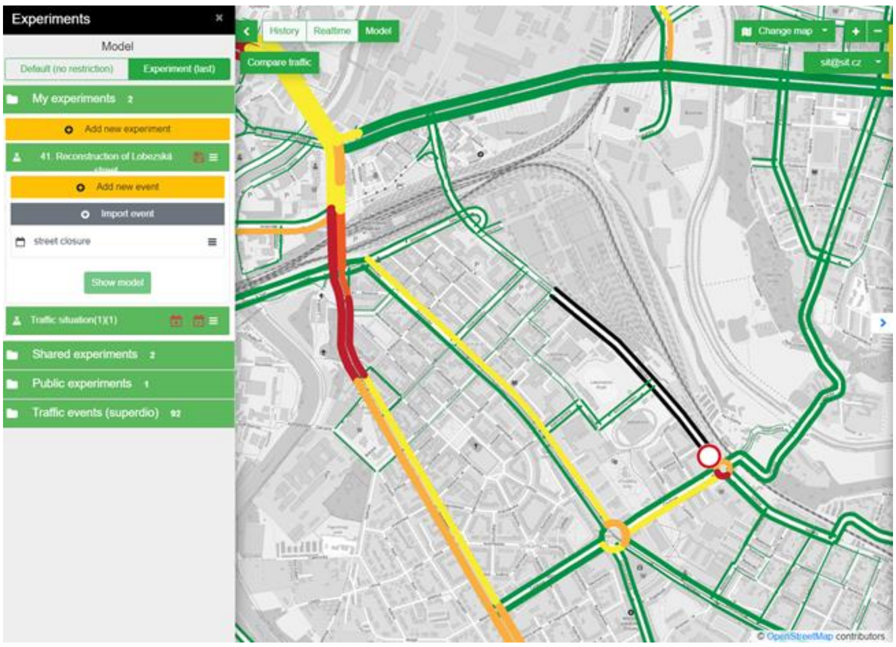


Figure 3: Traffic model with measures from the SUMP - No. 41 Reconstruction of Lobezská Street

Impact

For now, it is ahead of the time to talk about the proven impacts of this scenario on all target groups, as we are currently in the process of negotiating the integration of TraMod into decision-making processes. This will be followed by information and presentation activities.

Nevertheless, it is possible to write that this solution aroused the interest of potential users already in the development phase. For traffic specialists, the test preparation of variant solutions and impact of some traffic measures (e.g. repair of a tram depot), can be called a specific partial success. From a technical point of view, we are largely where we planned to be at the beginning of the project.

The so-called SUPERDIO (traffic-engineering measures) module was implemented and the processes of its fulfilment are set (overlap to scenario C). Current and historical data (overlap to scenario B) are displayed. The necessary visualizations and modelling tools for traffic specialists, crisis management, traffic/infrastructure companies and also for the public are available.

Developed tools are already used and their outputs should be taken into account when planning or verifying SUMP measures. Traffic specialists can use the new traffic model and study the distribution of traffic intensity during the day.

At the same time, the requirements for future development are also defined (involvement of ANPR cameras, cooperation with the planned metropolitan dispatching centre, further improvement of the traffic model, …).

3.2.2. Data Management Scenario B: Current city traffic

Action points

Scenario B builds on the results of the previous scenario. The created traffic profiles and hourly aggregations of data from the traffic detectors were first used to display the traffic situation in the past. During the third and fourth iterations, the Traffic Modeller application created the possibility for the public to display current data from the traffic detectors. The current values from the traffic detector are recalculated in relation to the displayed values of the traffic intensity in the past and the values modelled (i.e. the number of vehicles on the traffic profile per hour).

After testing this new functionality, the display of the current state of traffic was presented to TraMod users and the public. The visualization of the current state of traffic is limited only to roads equipped with the traffic detectors, which in the case of Pilsen are mainly important intersections and urban roads (see Fig 4). This seems to be very limiting both in examining the current traffic situation and in evaluating the impact of traffic restrictions.

The further development of this scenario will therefore mainly depend on the availability of additional data from the new traffic detectors and possible ANPR cameras or data from mobile operators.

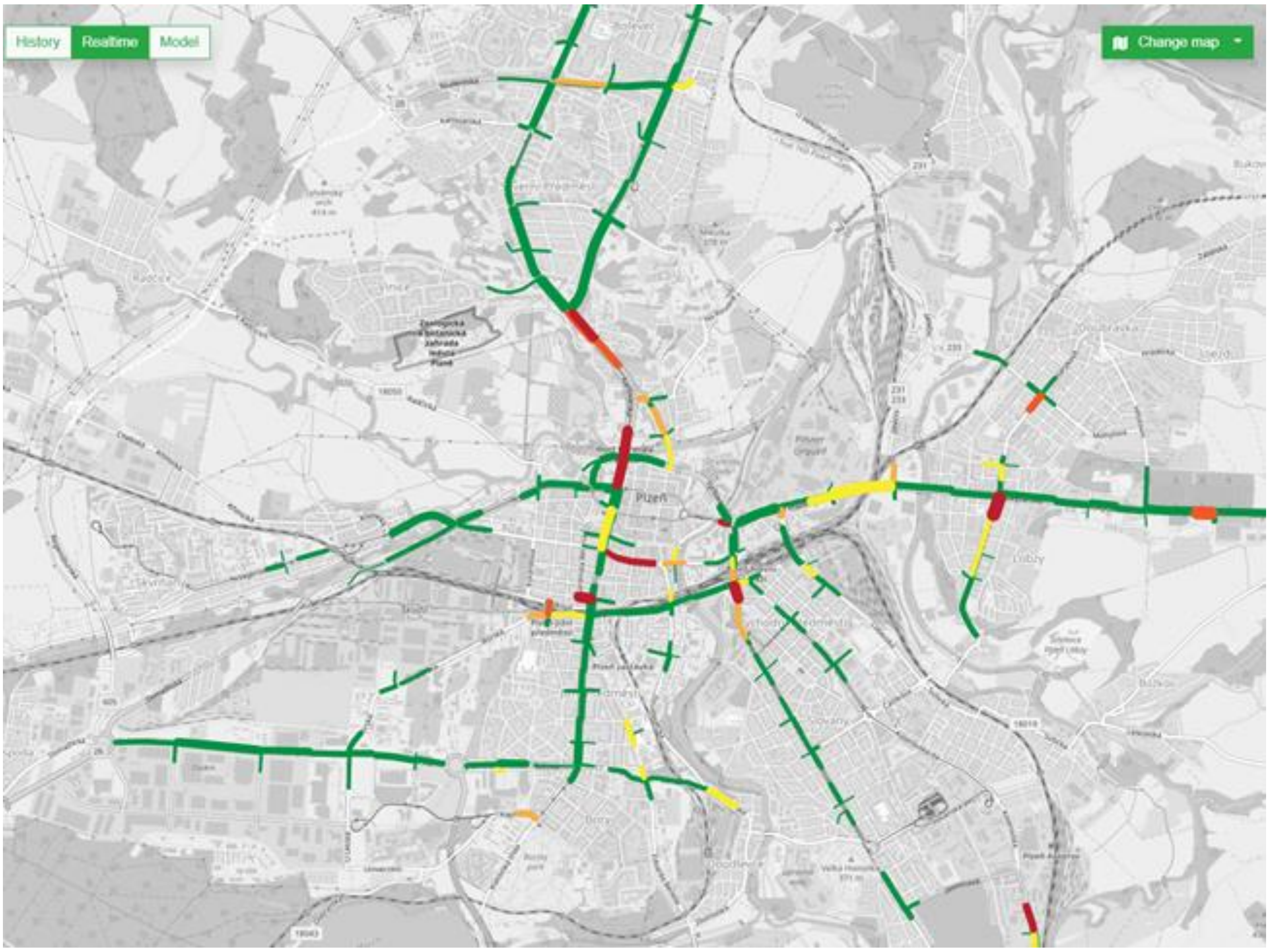


Figure 4: Demonstration of city coverage by the traffic detectors (profile sections)

Target groups

This scenario was presented to traffic specialists as part of the presentation of news in TraMod. The display of the current state of traffic can be used in crisis scenarios of the city, in crisis management (Emergency services), or in the evaluation of current traffic restrictions by traffic specialists. Transport companies can use the application to monitor traffic. For this purpose, the application is also suitable for the general public, which was presented in the form of an article on a map portal and two interviews in the Czech TV (main public broadcasting channel).

Objectives

It can be also said about this scenario that the set goals have been achieved. At the end of the project, an application with the required functionality is available to display traffic intensity in real time in places with traffic detectors. It has not yet been able to incorporate other online data (e.g. data about car accidents from JSDI - The Integrated Traffic Information System for the Czech Republic - ITIS).

This scenario can also be further developed after the end of the project. For example, it would be appropriate to evaluate which roads would be suitable for new detectors so that the online visualization of traffic intensity in Pilsen is more complex. Application itself can be improved to display additional traffic information from available online sources, and TraMod can offer traffic intensity data to other applications in further development (e.g. WMS - Web Map Service format).

Impact

The results of work on this scenario are related to the results of work on scenarios A and C, which are also covered by the comprehensive Traffic Modeller tool. After the creation and debugging of the final application comes the follow-up task - the extension and use of this application.

Simple and clear data visualization is a prerequisite for the use of the application by the general public and transport companies. The traffic flow is simply marked in colour and numbered with degrees of fluency 1 to 5. In one application, in addition to the online state of traffic, there is also a prediction for the future based on the simulations in the traffic model, and the actual state of traffic in the past based on measured and saved data by detectors.

Visualization of the current state of traffic is also important for traffic monitoring during the introduction of new planned or acute traffic restrictions (engineering network failures, accidents). In the case of planned restrictions, traffic decision makers may evaluate the suitability of these measures immediately at the beginning of the validity of the restriction. Crisis management will use scenario B to assess the state of traffic and for planning in crisis situations.

3.2.3. Data Management Scenario C: Predicting roadworks for better coordination

Action points

Within this scenario, a shift was to be achieved from the OTN2 (Open Transport Net) application created in the previous project to a full-fledged application that will be usable in the city environment for the management of traffic restrictions.

The basic step was therefore the analysis of road works and closures records management in the city. Initially, this information was recorded inconsistently in the XLS list and updated quarterly to semi-annually as the relevant SUPERDIO commission met. This was followed by a move to a regularly updated web app, but still without a graphical component allowing map display and impact modelling. The final step was to create a SUPERDIO module implemented in the Traffic Modeler tool. This achieved the required functionality, where it is possible to simulate the impacts of individual road works, assess them simultaneously and adjust their deadlines or durations. By the visualization in the public part of the Traffic Modeler, the approved closures are accessible to the public together with its other tools (current/historical/expected state of traffic). At the same time, the process of continuous data entry was started.

[2] https://cordis.europa.eu/project/id/620533

Figure 5: Demonstration of city coverage by the traffic detectors (profile sections)

Target groups

The planned target groups were originally utility providers, transport companies or the city management. At present, however, it appears that the main group of users will be traffic specialists from the SUPERDIO commission, who assess and permit road constructions and relevant closures. The second group of target users is the public itself. It is in the city's interest that these tools are also used by the utility providers and transport companies. The introduction of possible features to these users are still planned.

Objectives

By implementing the SUPERDIO module in the Traffic Modeler, functionality is now available that can be helpful in deciding on closures. In the first phase it is used to enter the proposal of closure. Depending on the importance of the closure, authorized traffic specialists verify its impacts on traffic both in terms of change in traffic intensity and in terms of collision with other works/traffic restrictions. The result of this activity will be its permission or recommendation to move to another date. The permitted closure thus becomes open to the public, which could see the expected impacts on traffic intensities in the future. We are satisfied with this functionality in this scenario and it corresponds to the originally set goal.

Impact

The greatest profit from the introduction of this tool in the decision-making processes of the city will have the public, which, in addition to an overview of valid and planned closures, should also have at their disposal their impacts on traffic intensity. This allows users to better plan their short- and medium-term activities. Transport and logistics companies can also benefit from the public part, where they can better plan their routes. Infrastructure administrators can then obtain information to improve the planning of their work.

Of course, there is an impact on the city itself and its components, which would have to partly adjust the well-established workflow. Negotiations on its change will take place in the near future. However, the benefits should be improved coordination of road works, fewer closures and thus improved public impact.

3.2.4. Data Management Scenario D: Big data analysis and outputs

Action points

The action points defined for this scenario include choosing data and formats for presentation; data analysis via heatmaps; and presenting outputs. They were all involved in the scenario during the project.

Big data processing has been a major prerequisite for success in all previous scenarios. Therefore, important data sets were created right at the beginning of the project, which had the potential for more versatile use. Whether it was the traffic model itself, data from traffic detectors, profile sections and more. Before the actual use of data and their publication, it was necessary to analyse and process the available data into the required form (for example, hourly aggregation from the data of traffic detectors in individual profile sections of the road, etc.).

In order to be able to use this data further, some of them were published on the open data portal of the city (https://opendata.plzen.eu/). In addition to the initial goals, an API was created to provide prepared data to other applications.

The API is used, for example, in applications based on the WebGLayer platform, which present and analyse data in the form of heat maps: The Map of Traffic in Pilsen and The Pilsen Traffic Safety Map.

During the project, other big data sets were also presented using the heat map method. This includes for instance analysis of traffic-related offenses registered by the Municipal Police and of traffic accidents registered by the state Police.

The datasets created during the PoliVisu project were also used for further experiments and work of application developers - for example during the Hackathons (organized by SITMP and ZČU).

Figure 6: The Pilsen Traffic Safety Map

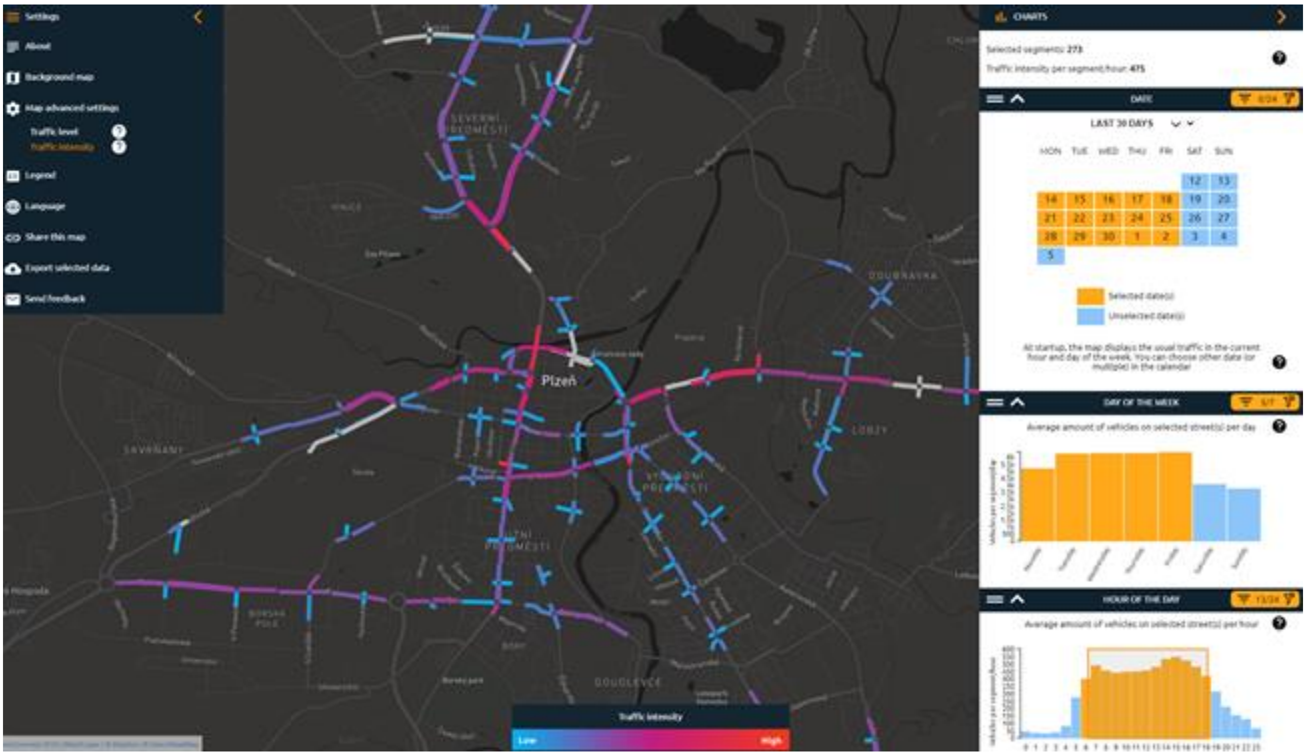


Figure 7: The Map of Traffic in Pilsen

Target groups

The target groups defined for this scenario include students, businesses, academics and other organizations; city GIS; and city management, police, policy makers, and the public. They were all involved in the scenario during the project.

The data sets presented on the city Open Data portal are available to the public, but are mostly used by students and city and private organizations working with traffic data.

The resulting applications based on the WebGLayer platform are presented on the GIS website and on the specialized city website TUTA Plzeň, which focuses on innovative technologies that make life easier and create a smart city. The applications extend the already rich urban GIS with another modern platform.

Each created application targets specific users: Traffic specialists, city management, police etc. During the project, the application was demonstrated to individual target groups. The plan is a larger presentation of the achieved results of the project to the general public.

Objectives

The first of the achieved goals of this scenario was a detailed analysis of the available big data, their processing and the creation of the required data sets, which are the source for other scenarios. When we, together with the technical partners, learned how to work with the data needed for our project, some of the data were published as open data for further possible use, which was also one of the goals of the project.

The objectives of the scenario were also met in terms of creating understandable interactive heat map applications that are easy-understandable to the general public and political representation. It is necessary to continue working on the populating of project results and to ensure the use of the applications by the users for whom they were created. This requires the support of relevant city departments management.

Impact

The impact on target groups defined for this scenario include students, businesses, academics and other organizations; city GIS; and city management, police, policy makers, and the public. They were all involved in the scenario during the project.

The results of the work in scenario D have had a positive impact on data provision. Students, businesses, academics and other organizations can obtain the necessary data on the Pilsner Open data portal and through the Traffic Intensity API for free. They do not need to ask for them, they do not have to pay for them and they do not need to sign a contract (e.g. about using or licensing). These data sets are already prepared in a workable form.

The resulting applications expanded the city GIS with a new type of maps (heat maps), which provide clear visualization of problematic locations (hotspots identification). Heat maps based on the appropriate accumulated big historical data and linking to interactive charts offers interesting analysis options for city management, police, policy makers, and the public because it provides clear visualization of problematic locations (hotspots identification).Linking to interactive charts offers interesting analysis options. It has not been possible to integrate this type of map into existing map systems and city GIS platforms (in the form of WMS/WFS). On the contrary, layers from the city GIS were added to the WebGLayer map platform, which are related to the topic of displayed heat maps.

3.3. Issy-les-Moulineaux

In PoliVisu, Issy-les-Moulineaux decided to work, with its urban agglomeration Grand Paris Seine Ouest (GPSO), on car traffic and roadworks as they, due to their location and economic vitality, are heavily impacted because many people from the whole Paris area come to or transit through Issy and GPSO for work, very often by car.

Moreover, the launch of the project “Grand Paris Express”, one of the most ambitious in Europe around mobility, will lead to the construction of an automated metro in the Paris Region up to 2030. This project will highly improve the public transports offer, but it was supposed to impact mobility and traffic during its construction. One of the first lines to be built in the Grand Paris Seine Ouest, touching 5 cities (Boulogne Billancourt, Vanves, Meudon, Sévres and Issy-les-Moulineaux), being already impacted by a quite large number of cars in a normal situation. The impact of these roadworks is hard to estimate as it will influence many areas of the urban agglomeration.

Based on that assumption, the **different policy themes/issues** targeted were:

- Acceptability of roadworks due to major transport projects;
- traffic management;
- multimodal shift;
- information and communication to drive new and better uses of transport services;
- definition of new transport services.

In this context, Issy has chosen to work mainly on two scenarios that were fully implemented in the PoliVisu project, obviously those were adapted to the policy making context that has matured and changed over time.

The first scenario was targeted on the definition of the traffic situation and to have a complete overview of commuters using Big Data analytics and visualizations in order to determine the traffic situation and the possible impact of exceptional events and roadworks in order to make the right policy decisions.

The second scenario was more ambitious. It represented an evolution of the first scenario, as it aimed at designing and implementing an information and communication campaign proposing good alternatives to the use of cars in order to stimulate a multimodal shift. This was done in collaboration with companies. This scenario was slightly shifted by COVID-19 as it made the adoption of measures about bikes easier and a behaviour shift almost automatic, but it created a real need of evaluation of the mentioned measures and the behaviour change of users in his period.

3.3.1. Data Management Scenario A: Anticipate and propose solutions to detected road works impacts on traffic

Action points

The assumption of Issy-les-Moulineaux in this scenario was "*design of new policies to reduce traffic and, more generally, cars on urban roads is required. To identify effective policies we need a clear vision of "hot points" and sufficient detailed and granular data*".

In the original plan, Issy planned to define 4 major points:

- Definition of overall traffic situation
- Detection of "Hot Points" and possible deviations
- Estimation of use of cars on the overall number of commuters
- Calculation of evolutions according to new situations

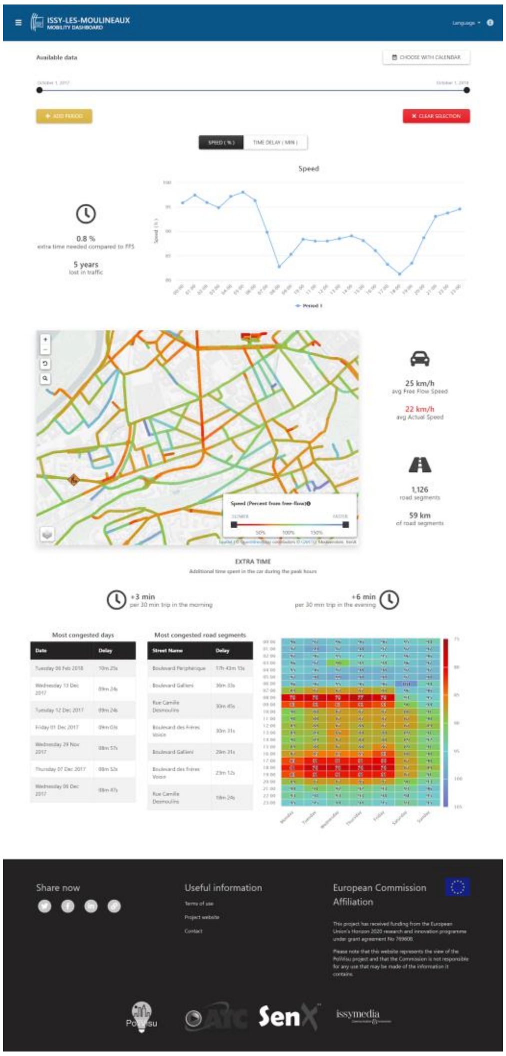
This plan was strictly related to the various uses of the application, but it didn't originally include actions to be able to build it and to achieve the results.

To this end, Issy worked on an ambitious plan based on 3 focus groups3 and oriented to deploy the various actions necessary to achieve the target of the pilot. In particular, Issy worked on 4 different main actions.

Identification of existing data. Issy worked, with the data dedicated focus group, with various stakeholders to benchmark the existing data, particularly the available one. This activity made possible to have a clear vision on the usefulness and the limits of the various data. It was clear that data about car traffic was fragmented and, in some cases, not really useful, making it necessary to work on finding new data sources.

Identification of new data sources. This second activity was highly related to co-creation with external companies. Actually, public car traffic data wasn't available or the quality of it wasn't sufficient, consequently Issy has to work with private companies to identify the ones with useful data. In this framework, Issy could involve Be Mobile and ,later, My Anatol.

[3] Data, urbanism and communication focus groups



Identification of needs in terms of use of potential users. During the identification of data, Issy closely worked with users to define their needs, this was important for the data in itself, but also to build the tools coming out of it.

Construction of a dedicated data dashboard. Once completed the first three steps, Issy could work to build the dashboard with the collected data with Be-Mobile. The choice of the dashboard is also an outstanding result of the Issy pilot, as it will lead to an improved version in the following scenario, in collaboration with My Anatol.

Target groups

Issy worked with the local ecosystem with activities highly related to participatory design, originally based on three different stakeholders involved in the Issy scenarios:

- Public servants (communication, mobility and urbanism);
- Companies and start-ups, mainly involved in the local So Mobility project;
- Final users of transports and mobility services (citizens, students…).

Due to the first findings, it was decided to adapt the plan to the existing situation detected and put the attention on the first 2 groups, being particularly useful on defining the needs in policy making and data.

As described above, the target groups were divided in 3, namely:

- *An urbanism Focus Group*, composed by the City of Issy-les-Moulineaux (urbanism and sustainable development departments), the Urban Agglomeration Grand Paris Seine Ouest (GIS and mobility departments) and the company Be-Mobile.;;
- An information and communication Focus Group, composed of the Issy Média team (responsible of the whole communication of the City and on top of Open Data portal visualisations), highly involved in finding good visualisations/tools to allow to link policy making and population;
- A data Focus Group, composed by some public and private bodies highly involved in data. This group, sharing some members with the urbanism's, made possible to have useful data as two of the members were Be Mobile and My Anatol. The participants to this group were mainly members of the local project So Mobility, which puts together the most of companies, public entities and start-ups in Issy.

Objectives

The main planned objective was “*to define the traffic situation and to have a complete overview of commuters using Big Data analytics and visualisations in order to determine the traffic situation and the possible impact of exceptional events and roadworks in order to make the right policy decisions.*”.

Moreover, this was supposed support in the definition and identification of possible measures to reduce the numbers of cars on roads.

The COVID-19 crisis had a huge impact and it made necessary to reshift the priorities, consequently, if during the lockdown traffic improved, the congestion can hardly be reduced now due to the reduction of use of public transport which is key in the region.

At the same time, the work done on this scenario has a huge impact in improving the following one which, in Issy view, was the step following this scenario.

Impact

The expected result was to have a realistic and clear view on the situation at all levels and to be able to define and deploy effective policies.

The work done on this scenario had an impressive impact in Issy-les-Moulineaux.

First of all, it allowed the City to be aware of the situation of data, particularly in mobility, in Issy and the Region, this awareness is an important achievement. Additionally, Issy could learn how to collect data (through a negotiation with a private company) and to work in the construction of a dashboard. That positive impact is testified by the work done by the City on dashboards, both with My Anatol and independently to build one for policy makers.

Moreover, referring to the impact in terms of traffic and congestion due to roadworks, the work done with the various local companies and the dashboard itself gave a clear vision on their impact. If the expectations were quite negative, the collected data over one year, making possible to compare the situation before and after the start of the yards, made clear how the roadworks didn’t really have a meaningful impact in Issy.

At the same time, it made clear how some problems were there, as average speed in free flow was lower than expected, driving Issy to look for solutions through My Anatol, going up to a new dashboard built through the lessons learnt in this scenario.

3.3.2. Data Management Scenario B: Improving individual mobility and modal shift through information communication tools

Action points

As previously explained, due to this location and economic vitality, this area of Paris Region faces substantial traffic, because many people from the whole Paris area transit to or through Issy for work, very often by car.

Therefore, the city requires new means to effectively communicate with citizens and organisations in order to change their commuting behaviour.

In a short term it was necessary to respond to any unforeseen situations and communicate with the public to change their immediate behaviour (e.g. alternative routes, cancel toll, free public transportation, ...). In the longer term it is necessary to realise a substantial and lasting change in behaviour and driving a modal shift away from cars towards "greener" alternatives to reduce road traffic and relieve the road infrastructure.

Issy-les-Moulineaux started its strategy around this scenario working in parallel with the previous one and consequently feeding itself also with it. This work was based on the following actions.

Brainstorming about needs and solutions. Issy in this case worked around potential solutions and concrete use cases about use of data in communication, also trying to co-design communication policies in a lab mode. This phase was important to improve the knowledge of Issy in the field.

Test of existing tools on social media. In the framework of the project, two tools, Truth Nest and Truly media, were tested in real conditions (to detect behaviours of spectators to a local concert) to define the potential, in terms of usefulness of those tools.

Use of an app to improve communication and behaviours (My Anatol). Issy identified an application, Myanatol, allowing to combine Google Map algorithms, information and local tips from the City and artificial intelligence to make it simple for you to move. The application, on a particular segment, re-routes users on two different options studied by the start-up managing it and the City, according to various data, using, on request of the City, the same calculations and processes used by the dashboard, to allow to understand how the use of data in that format may have positive impact in defining re-routing with a positive impact on congestion. The use of this application was supposed to help to improve the communication to citizens often stuck in traffic on a particular route, proposing them a re-routing chosen by the city on a data basis. Unfortunately, this action, including also a street marketing campaign, was stopped by COVID-19.

Construction of a dashboard to evaluate impact of new measures on traffic and bike use. Once the COVID-19 outbreak happened, the City and My Anatol, obliged to stop the ongoing pilot (point above), started a new pilot on data analysis using the very specific situation of lockdown to better understand mobility practices. This first phase made it possible to identify the most useful places and axes, then My Anatol built a dashboard, in collaboration with the city, with traffic and bikes data.

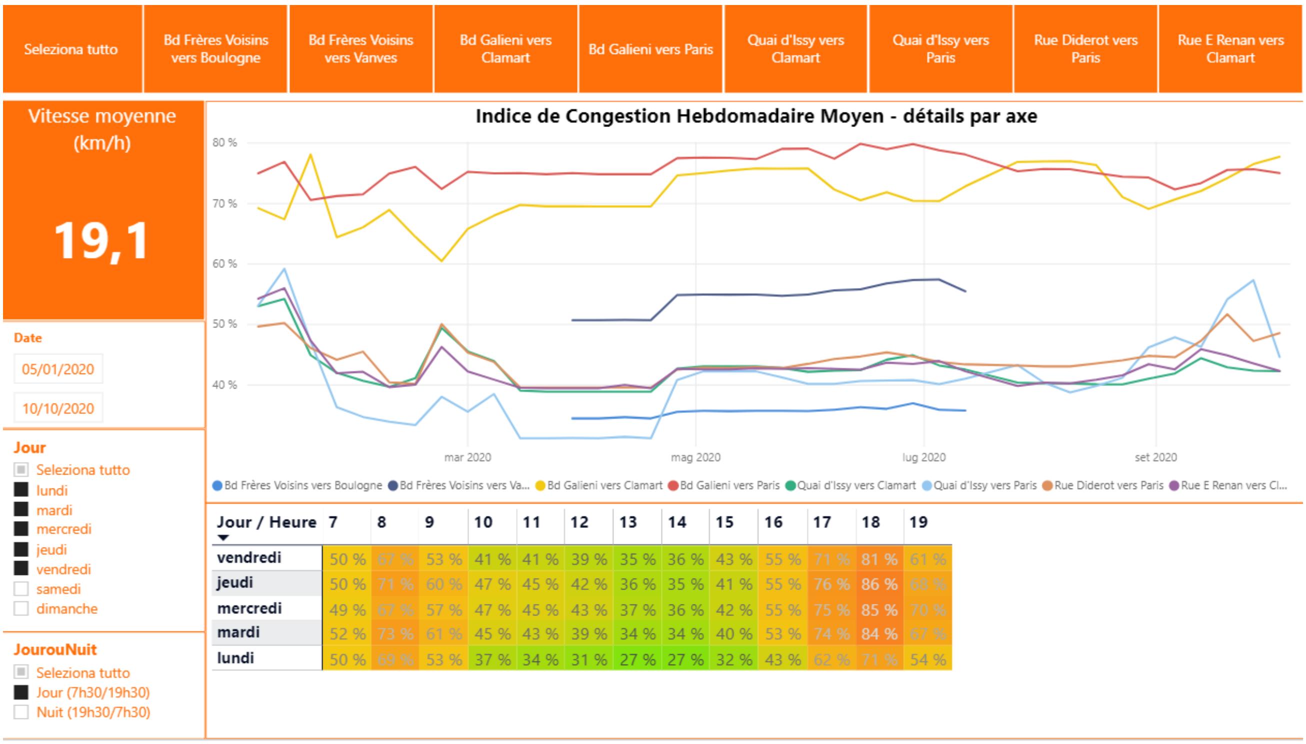


Figure 8: Page about car congestion on My Anatol dashboard

Figure 9: Example of Communication in Issy (May 2020)

Evaluation of the measures and communication about bikes. Issy strongly communicated about the measures to help cyclists, also to give visibility to many measures taken by Issy, such as the reduction of speed limit to 30 km/h in the whole City and the construction of many "urgency bike lanes". Data was used to evaluate the effectiveness of measures and communication on use of bikes.

Target groups

The group is similar to the one of the previous scenario, but, in this case, Issy has worked also with normal citizens, in particular on the pilot about the My Anatol application.

Also the dashboard was open to everyone and followed by many people (about 1.000), consequently the target groups were reached and participated actively.

Objectives

The original objective was to stimulate "*the adoption of mobility services allowing the reduction of cars on roads, always taking into consideration the need to alert the population in advance, providing solutions, in case of exceptional situations.*".

Due to the ongoing situation, it wasn't possible to reduce the cars on road, at the same time it is possible to say that many users have changed their behaviours due to COVID and, instead of moving to the use of cars from public transports, they had a good reaction as they adopted soft modes (like bikes). It can then be stated that the objectives were met.

Impact

The expected impact was "*the design and the implementation of an information and communication campaign proposing to people, also through agreements with companies, good alternatives to the use of cars and to stimulate a multimodal shift*."

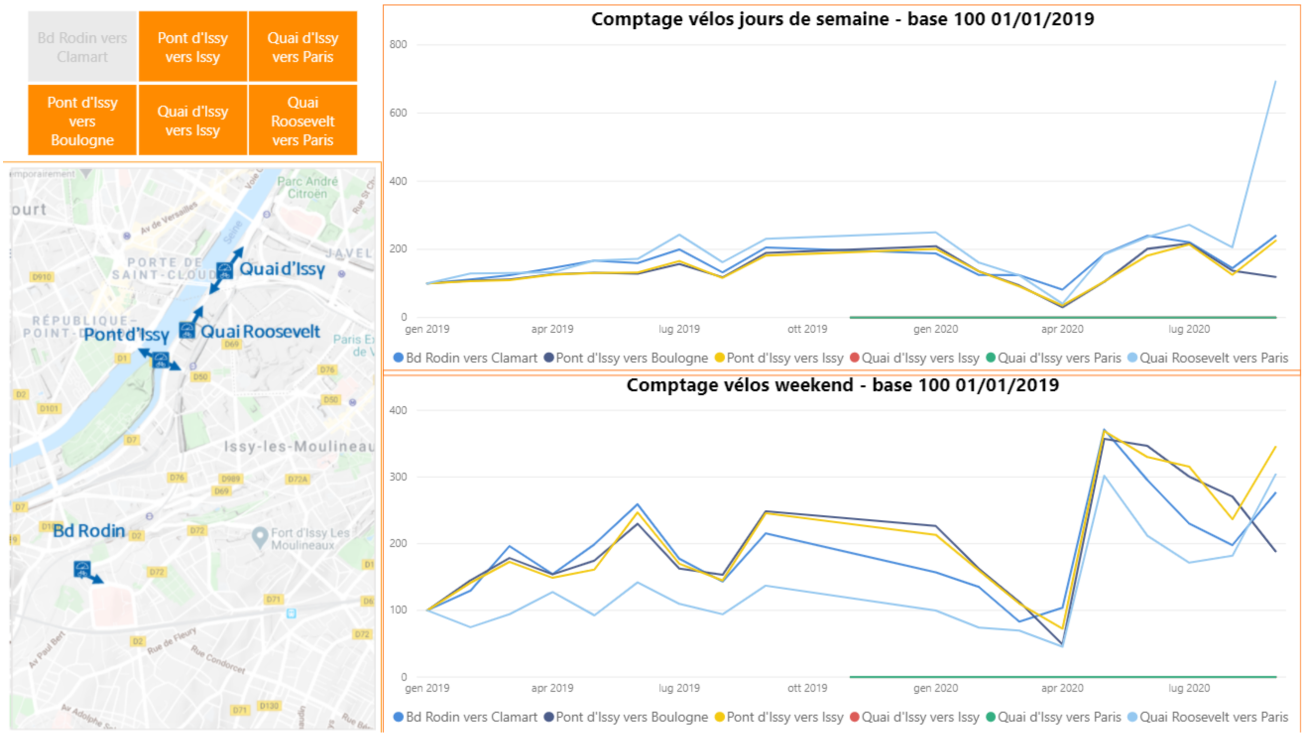


Figure 10: My Anatol dashboard showing bike counts (May 2020)

Taking into consideration the new situation , this result was achieved, but the use of data was used mostly to evaluate the results of a communication campaign.

We can see how, during the strikes (end of 2019 / beginning of 2020), combined with the improvement of bike lanes led to a significant development of the practice of cycling from the first quarter of 2020 - the number of bicycles counted in January and February being twice as high as it was a year earlier. The high levels of January 2020 (transport strikes) were again reached in June and September.

This data allowed the City to positively evaluate its policies about bikes introduced after the lockdown, but also to have a wider view on bike use.

3.4. Flanders Traffic safety map

The Flanders Traffic safety map, and the pilots of Mechelen and Police Zone Voorkempen, are new pilots of the PoliVisu project, that did not exist during the creation of deliverable 6.1. Therefore it is not possible to evaluate the progress of these pilots compared to where they were during the construction of D6.1. Nevertheless, we asked the pilots to define action points, target groups, objectives and foreseen impact in congruence with the other pilots.

The Flanders traffic safety map pilot is a project in collaboration with the federal police of Belgium. Data about accidents in Flanders is made available through a map for police zones, citizens and municipalities to use.

Action points

- The **first action point** was to open up accident data as a source of widely available data for policy making. The data about accidents was already available in a previous project, namely OTN, and the goal of this pilot was to expand the data available in the original project. This proved to be challenging since the police first did not want to open up the data. Finally it was agreed upon that the information could be made available through an interactive map, but the raw data cannot be shared with citizens or public administrations.
- The **second action point** was to integrate accident data with other related traffic safety data to provide better insights for professionals and citizens. In this way the traffic safety map could be used to investigate and evaluate traffic safety in general. This goal was achieved by adding information layers to the original accident data. Layers about the location of schools, the location of average speed cameras, and the borders of municipalities were added.
- Finally, the **third action point** was to employ accident data as an instrument for co-creative policy making around traffic safety as part of the smart city policy. To this end several instances were contacted and the traffic safety map was demonstrated. Unfortunately, and possibly due to other priorities such as covid, a positive response was lacking.

Target groups

- Municipalities: the mobility departments of several municipalities were contacted, the traffic safety map was demonstrated during events and conferences, such as the conference for traffic safety.
- Police zones were part of the construction of the traffic safety map, this happened through a co-creation process. The traffic safety map was also demonstrated during a course about data for police work.

Objectives

- The main objective was to Improve traffic safety. It was the intention to use the map as part of the first stage of the policy making cycle (problem identification). Unfortunately the map was not implemented by municipalities.
- Supporting a traffic safety culture based on evidence based data available for everyone

Impact

- The foreseen impact was that by opening for the first time accident data to the public, local communities and citizen groups would see the opportunities of sharing data and of collaborations. New possibilities become evident, rendering new projects possible with a wider perspective.
- Secondly, the use of the tool as an evidence based instrument for co-creation and policy making around traffic safety demonstrates how the police, public administration and communities can work together to achieve a common goal.

3.5. Mechelen Schoolstreet

The city of Mechelen had plans to introduce school streets, which implies that cars can no longer enter streets around schools during the periods children arrive at or leave the school. The goal of this endeavour is to increase traffic safety around schools, stimulate the use of bikes for travel to schools and reduce the number of cars around schools. The city of Mechelen was looking for a way to objectively measure the impact of school streets on traffic, and whether the goals are achieved or not. To do this “telramen” are introduced. These are small devices that are placed in front of windows of houses close to the schools that measure the flow of traffic, including cars, bicycles and pedestrians. Finally all of this information was brought together in an attractive, accessible dashboard that is open to use for everyone.

Action points

- The **first action point** consisted of building a scientific and educational approach around the initiative. This was achieved since a scientific approach was applied to measure the impact of school streets. Instead of having the debate based on feelings or impressions, there are facts and figures available. Because the situation was measured before and after the introduction of school streets it is possible to scientifically measure the impact on the mode of transport, and on possible cut-through traffic in the neighbouring streets. Finally the data is openly available and can be used for other projects and in the classroom.
- The **second action point** was to gain experience in citizen science as a tool for evidence based policy making. It became clear that engaging citizens in the policy making process, by hearing their concerns, visualizing the data collection process by including them in the process, and by openly sharing the results, poses a great benefit. Citizens understand the impact of a policy decision better, and the cost is reduced for the public administration.
- The **final action point** was to roll out the concept of the schoolstreet dashboard in more schools. The method and the tools are ready to do this, but unfortunately due to covid the schools have other priorities at the moment.

Target groups

- Policy makers were part of the co-creation process, where a plan was constructed to objectively and scientifically measure the impact of the introduction of school streets.
- Schools (teachers, students and parents) coordinated the distribution of the telramen. Among the people who hung the telramen in their homes were teachers, neighbours and parents. During an informative meeting from the traffic and mobility office the project was explained through the school to teachers and parents.
- Reaching local communities is important to ensure the continuation and broader implementation of the project. The political party “Groen” liked the idea of using telramen to measure the impact of school streets and plans on implementing it in other cities as well.
- Local neighbourhoods were included as they put up the telraam sensors.

Objectives

- The **first objective** was to improve traffic safety around schools. From the data it became clear that the number of cars went down, even in the neighbouring streets, and that the number of bicycles went up.

- The **second objective** was to use citizen science data as a reliable source for policy making. This is fulfilled because the telraam data is a valuable source of information for policy making concerning school streets.
- **Lastly,** the objective was to prove the effect of co-creation and citizen participation as an important element for local policy making. As the citizens were included in the policy making and data collection process they adopted the results better and are willing to contribute. The results are highly valuable for policy making. This shows that the concept can be expanded to other policy domains.

Impact

- It was foreseen that more than one school would enter into the pilot, or that the project would be expanded to more schools. However, as an effect of COVID-19, only one school was rolled out.
- The impact of being a co-creative potentially impactful community initiative cannot be underestimated. Experience was gained in citizen science and policy making based on citizen science data. It also became clear that it is possible to communicate with citizens through data, instead of feelings or impressions.

3.6. Mechelen Traffic model integration with management of road works and the public domain

The second Mechelen pilot is an extension of the Pilsen pilot. A proof of concept was developed where the traffic model developed by Pilsen was integrated with the model from the province of Antwerp.

Action points

- The **first action point** was to integrate traffic modelling with road works as a smart city planning tool (Spotbooking[4]). The two models were integrated and it was possible to use the smart city planning tool with enriched information from the Traffic model.
- The **second action point** was refining the traffic model (right scale - local vs regional traffic model). The resolution of the model was measured through a coarse-grained model, but since this implied a proof of concept the resolution should be improved if a next stage was embarked.
- The **final action point** was to integrate the traffic model tool as part of wider smart city planning processes (for example as part of public space occupation & public works planning decisions). This is achieved as a proof of concept, but to be fully functional the resolution of the tool should be improved.

Target groups

- Municipalities were reached, the city of Mechelen cooperated in the development and evaluation of the tool.
- Citizens (as a communication tool). While in the city of Pilsen the tool is widely available in a web browser, this was not implemented for this proof of concept, since it was still in the proof of concept stage.
- Other target groups included utilities providers, companies, organisations and citizens who are planning events or works where a temporal occupation of the public domain is needed . They would be able to consult the tool when a good time for roadworks or a temporal occupation of the road would be. This is however not yet possible since this project is still a proof of concept.

[4]https://www.geosparc.com/spotbooking/

Objectives

- The first objective is providing an end to end smart city application to manage traffic flows, this is achieved in a proof of concept manner.
- The second goal is efficient management of the public domain. In a further stage this would be possible through this tool.

Impact

- This proof of concept provided insights into the usability of the current traffic models in Flanders. The impact is until today limited because of the high level scale of the existing models. A more local traffic model predicting the effect on the local road network is needed.

3.7. Police Zone Voorkempen

The question that started this pilot was how to measure the impact of campaigns on traffic. A new information campaign was about to be started with the goal to reduce the speed of traffic, and instead of measuring the impact through surveys (e.g. 'will this campaign make you drive slower?') it was investigated how the actual speed, and the difference in speed before and after the campaign, could be measured.

Data collected by ANPR cameras could be used, so an area was identified with a large coverage of ANPR cameras. Since only police officers can use the data from ANPR cameras, exports of the data were shared with the PoliVisu project that did not contain privacy sensitive information.

Action points

- The **first action point** was to further promote ANPR data as a smart city data source (anonymized data) regarding traffic safety and other mobility related use cases. If the data are sufficiently anonymised or pseudonymised a lot of information on traffic safety can be gained. This pilot showed that this is possible.
- **The second action point** was to measure the effect of the implementation of average speed control zones (evidence based data). Soon it became clear that a significant effect could be observed, where the average speed dropped after the implementation of average speed control zones.

Target groups

- Police zones. In collaboration with the police the policy questions were constructed. The police delivered the data necessary for the analysis and visualisation, and the results were again shared with the police. It was also further explored which other questions could be resolved through the use of ANPR cameras.

Objectives

- Measuring the effect of average speed control zones on traffic behaviour

Impact

- Interest from multiple police zones and also local communities (once the use of ANPR data by non-police is allowed) to use the data for policy making
- First big data analysis based on ANPR data in Flanders

4. What comes after the PoliVisu project?

We have looked at the goals that were originally set, such as action points, target groups to be reached, objectives and foreseen impact of the PoliVisu pilot. We have reported which goals were met, which ones weren't, and what happened along the way. In this part we will describe what comes after the PoliVisu project. Does the pilot stop after the PoliVisu project is finished, or is it continued? In what way are the processes and learnings from the PoliVisu project embedded in the city's administration?

4.1. Ghent

In Ghent the PoliVisu project resulted in a large gain in data maturity. A 'datatrack' was initiated, a large project that aims to increase data maturity throughout the organisation, The city's administration got familiar with big data sources outside of the organisation and learned of the advantages of collaborations with external companies. The mobile phone data will continue to be used for policy making for other policy domains as well, such as tourism and crowd control. Its use will be more valuable since the limits and the workload related to working with mobile phone data is visible now.

The project that investigates where residential students live during the academic year continues and new data sources will keep on being investigated. Policy makers look at the policy problem with a more open mind.

In general, the data maturity of the organisation will keep on being improved in the coming years.

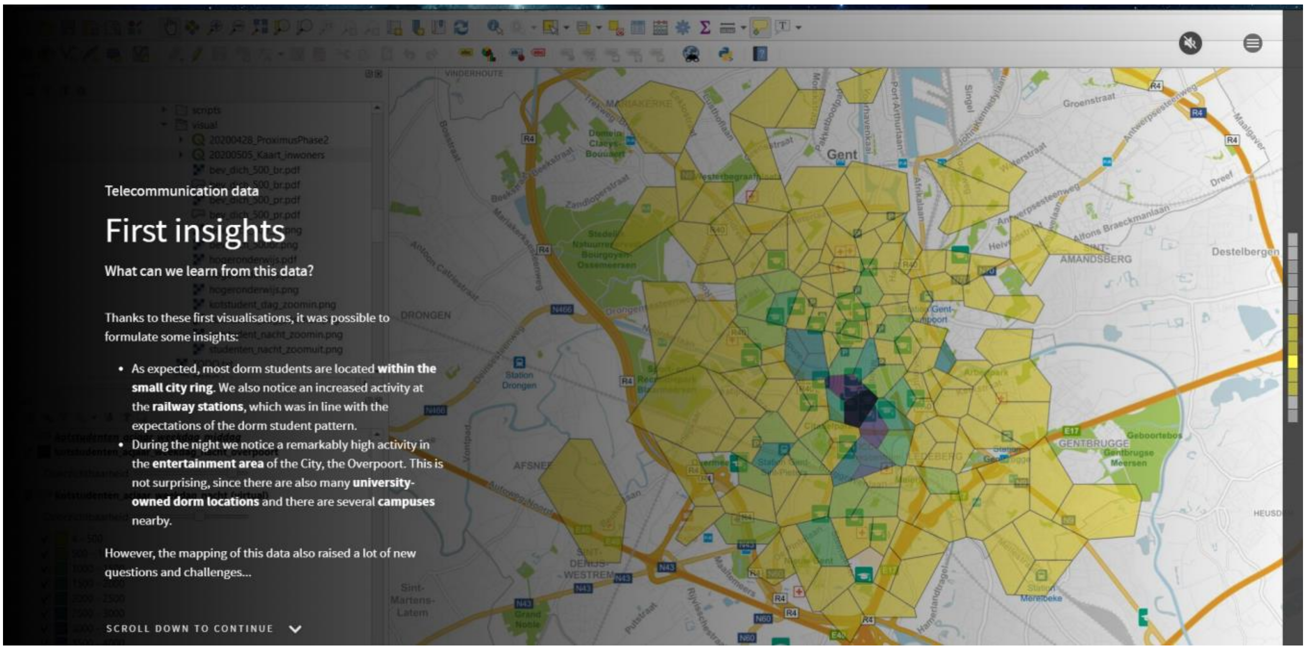


Figure 11: Picture of the storytelling tool that Ghent used to communicate the results from the Proximus project

4.2. Pilsen

The Pilsen pilot enhanced a traffic model (publicly available in this application https://intenzitadopravy.plzen.eu). Aggregated data from traffic detectors and developed tools are openly available for the public administration, companies, citizens and more (https://opendata.plzen.eu/dataset/gisdopravni-detektory). After the PoliVisu project ends the traffic model will continue to be used and is a significant contribution to the efficient functioning of the city. Furthermore the connection with policy makers was strengthened, rendering data supported policy making more easy in the city of Pilsen. At least in the area of work with SUMP measures and in the coordination of road works, the developed tools should be used.

The development and refinement of the traffic model will continue in the following TRAFFO and DUET projects. Within the planned metropolitan dispatching, there will be an effort to cooperate and implement data from ANPR cameras (project S4AllCIties).

Finally, the city of Pilsen gained a lot of experience in communication with the public through visualisations, an essential skill. In the coming years this skill will remain useful and frequently employed.

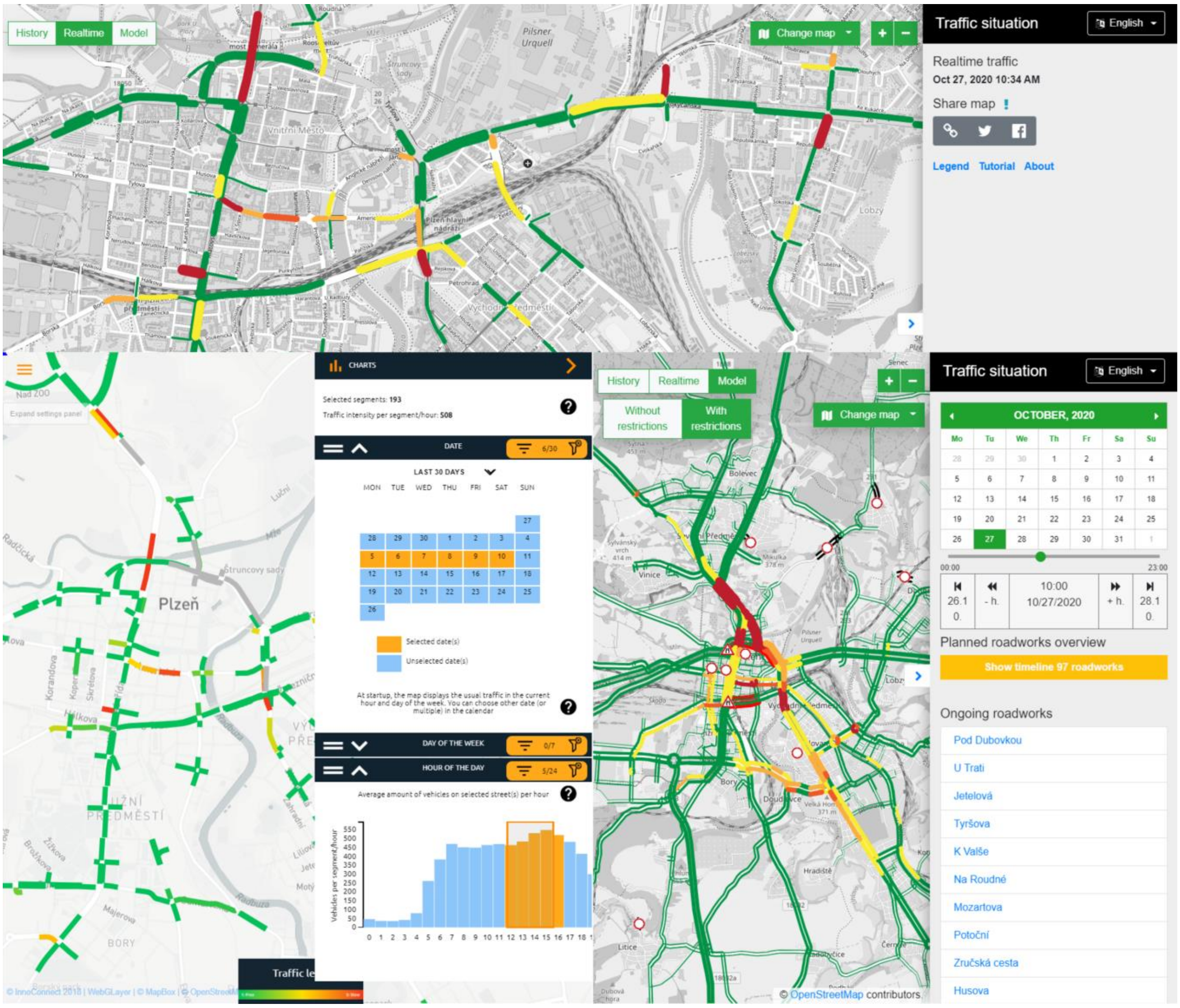


Figure 12: Three views on traffic in the city of Pilsen. The view of current traffic on top, which is recorded to be analysed as historic traffic (left) and calculation of expected traffic model (right)

4.3. Issy-les-Moulineaux

The pilot of Issy-les-Moulineaux laid out the base for a more data supported policy making process. The importance of data became evident to policy makers and relations between data scientists and policy makers were strengthened, making future collaborations more straightforward.

Insights in the cause of traffic problems were gained, which is paramount for a city that receives a lot of drive-through traffic and it learnt a lot about behavioural patterns (i.e. bike use vs. cars and public transports). Finally the city of Issy-les-Moulineaux improved its use of data to communicate to citizens, also to make more acceptable policy decisions. Moreover, Issy could end this project with various new data projects and results strictly related to PoliVisu:

- A dashboard with KPIs about public services (not mobility)
- A traffic dashboard about mobility (still improved)
- An ongoing collaboration with a local start-up (My Anatol)

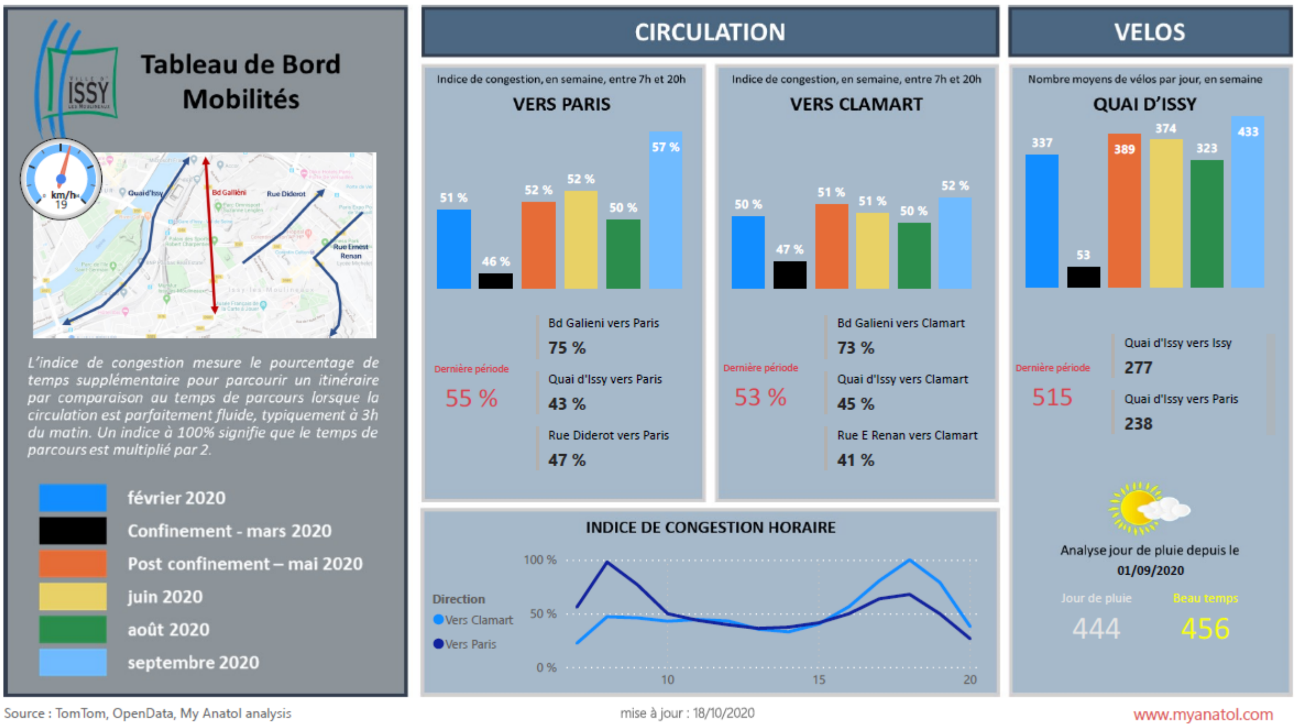


Figure 13: Final dashboard created by My Anatol for policymakers

4.4. Mechelen

Mechelen has gained experience in citizen science. In the future it will be easier for the city of Mechelen to start a project with citizen science, but also for other cities, who have learned from Mechelen, this will be more straightforward. The school streets project can be expanded to other schools.

Figure 14: Citizen science camera counting traffic

4.5. Flanders

Through the traffic safety map the Flanders pilot gained experience in extracting information from data by combining data sources. In this project this was done through the addition of layers to a map. The insights from the project can be extrapolated to other projects.

Figure 15: Accidents, schools, average speed cameras combined

4.6. Police Zone Voorkempen

The partners involved in the project of the police zone Voorkempen discovered the advantages of data from ANPR cameras. Experience from this project will be applied in future projects, both by the PoliVisu team, as the police zone.

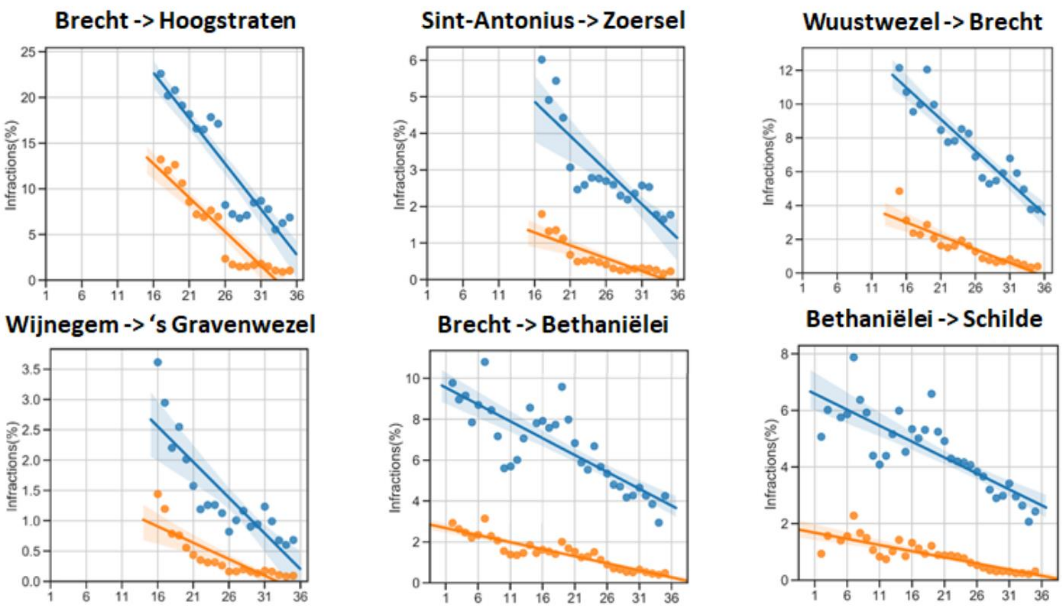


Figure 16: Insights gathered about impact of ANPR cameras on speeding

5. Conclusion

In this deliverable, the final report, we described the road taken and the goals achieved of the PoliVisu pilots. First we do this chronologically by constructing timelines with highlights from the project written on them. In a second part we compare the achievements to the goals that were originally set in D6.1. Finally we illustrate the lasting impact of the PoliVisu project on the pilots for future endeavours.

Over all pilots we now clearly see that experience has been gained concerning data maturity of the public administration, an increase in collaboration between policy makers and data scientists, a higher proficiency in communication through visualisations (both to the public as to other stakeholders) and finally a broader network where this knowledge is shared.

The gain in data maturity is not limited to the central actors of the pilots. The main gain in data maturity is caused by the different actors being aware of their specific roles and responsibilities in the process of data supported policy making. In the city of Ghent the need for more data maturity became evident and hence a plan was designed to stepwise increase the data maturity of all layers of the public administration, called the datatrack. The developed tools, the gained experience with working with big data and increasing data literacy fit exactly into the Smart City concept of the city of Pilsen.

Realising the advantages and the importance of data supported policy making, and the subsequent common goal, strengthened the relationship between policy makers and data scientists. A good relationship is essential for a good **collaboration**. As a consequence data supported policy making becomes more natural for the public administrations of the PoliVisu pilots.

Another beneficial factor for collaboration is effective communication. The PoliVisu pilots learned how to **communicate through visualisations**. Visualisations adapted for policy makers, citizens and data scientists. These visualisations are essential for the dialogue necessary for data supported policy making.

Finally, the knowledge and experience gained is spread throughout the broader knowledge network through presentations, conferences, webinars, a massive open online course and, of course, informal communication.

This ensures the continued valuable influence of the PoliVisu project on public administrations all around the world.

6. Annex 1

6.1. Overview of activities of Ghent

Activity	Description	Output	Period
Work group	Student Housing Data Analysis	Combining the existing datasets with the data collected from the living department of the city	November 2017 - April 2018
Focus group	Presentation of Student Housing results	Creating a clear buy-in for a new and more comprehensive data analysis exercise.	September 2018
Focus group	Focus group with Proximus, economic department, tourism department and festivity department	Agreement on methodology & next steps. Also further appointments for next meetings and how we will define the policy problem.	February 2019
Brainstorm & whiteboard session	Brainstorm session with telecommunication provider Proximus	Better defining of policy problems & clear understanding of the student problem. Creating a 'student pattern'.	March 2019
Stakeholder meeting	Stakeholder meeting building information - operation & administrative housing data	Discussion about operating methods & next steps.	May 2019
Focus group	Intermediary focus group with Proximus	Redefining question, updating on progress.	May 2019
Focus group	Internal focus group about new coalition agreement	Creation of a clear buy-in within the city coalition agreement. (Where does PoliVisu fit in?)	June 2019
Result presentation	Showing the first visualisations during Major Cities of Europe event	First reactions to the new data visualisations. New feedback for Proximus.	June 2019
Stakeholder meeting	Stakeholder meeting building information -	Next steps and a better buy-in within the different stakeholderS.	June 2019

	operation & administrative housing data		
Working group	Analysis of social media data	Twitter & facebook data investigation. (Facebook= no data; twitter = useless data)	/
Brainstorm	Meeting with Proximus: starting up 2nd iteration of data collection + defining terms etc.	Creating a clear new 'exercise' with new questions for the 2nd data collection iteration.	September 2019
Workshop	Workshop with policy makers during the GA meeting	Presentation of the project for policy makers & creating awareness of the project.	October 2019
Meeting & showing first results	Lunch Meeting about Proximus data for the civil servants	Presentation for a wide group of city civil servants about the project & the data collection.	December 2019
Brainstorm & workshop	Brainstorm/workshop with Proximus: fine tuning possible results	Fine tuning of the final results & status update.	January 2020
Presentation	End delivery of iteration 2 of the Proximus data exercise.	Delivery of last results from Proximus	February 2020
Meetings	Meetings and brainstorms about data management. Input from PoliVisu experience.	Start roadmap for structural approach for data management concerning building information	April 2020
Brainstorm	Internal evaluation & brainstorm of new Proximus data	Planning of follow-up meetings with Proximus, better requests for the last data iteration.	May 2020
Workshops and working groups	Analysing Proximus datasets.	First draft visualisations and more data refinement questions	June - July 2020
Working group	Analysing, visualising the data; making storyboards.	Visualisations based on the latest data from Proximus + Story in the storytelling tool on the website of Ghent.	September - October 2020

6.2. Overview of activities of Pilsen

Activity	Description	Output	Period
Functional analysis	Definition of tools and visualisation features	Apps - definition of functionality Functional analysis - Application for scenarios A, B, C, D	May 2018
Workshops	Data from traffic detectors	Sensors - availability, usage, Open data, API, updates and maintenance	June - July 2018
Workshops	Presentations of Heatmaps technology	Heatmaps - closed testing of the prototype application visualising municipal police data (point heatmap)	June - July 2018
Co-creation / design workshop	Improving the traffic model	Traffic model - definitions of requested changes and enhancements, sources	September 2018
Traffic intensity map - online survey	user testing and online survey to provide feedback on usability, UX, practical use etc.	recommendations for further development in terms of usability and usefulness	January 2019
Traffic Intensity map workshop	Workshop for evaluating application testing and user feedback.	To get familiarized with the proposed solution and identify problems. Discuss the enhancements for version 2.0.	February 2019
SUPERDIO electronization	Co-creation group for converting SUPERDIO XLS list of closures to webapp. Presenting PoliVisu tools that may help.	To get familiarized with the developed tools in PoliVisu project (WebGLayer, STM)). Proposed principles of inserting closures into app/map + simulation options.	April 2019
Pilsen Pilot for Policy Makers	Presentation of PoliVisu project and the role of Pilsen as a pilot city. Introducing developed tools and their possible use.	A match between PoliVisu project activities and the new coalition's program statement was found. Some specific scenarios that are interesting for the city were identified.	April 2019

Technical partners Skype call	A web call informing about the last activities and results of previous negotiations.	Specification of requirements for further development, preparing some visualizations and setting deadlines for presentation of results.	April 2019
Policy Makers at the Pilsen PoliVisu meeting	Discussions important for the PoliVisu project.	Not yet available.	May 2019
Workshops	Traffic map in Pilsen (WebGLayer)	• testing and presentation of „Map of traffic in Pilsen“ 2.0 • Police datasets deploying • online survey	September - October 2019
Workshops	Traffic safety map (WebGLayer)	• traffic offences registered by the Municipal Police since 2015; • traffic accidents registered by the Police of the Czech Republic in Pilsen since 2016.	October - December 2019
Workshops	Traffic modeller	• simplified version for public • testing simulations and interface for entering roadworks • deployment of hourly/daily variations	November 2019 - February 2020
Workshops Presentation	Traffic model	• testing behaviour • improve detector updates • presentation	February 2020
Workshop	Impact of coronavirus on traffic	• article: Loops Analysis Covid19 • Map of COVID-19 in Czechia	March - May 2020
Workshop	Virtual meeting Traffic Modeler		April 2020 - September 2020
Workshops Presentation	Pilsen Traffic Map	Released application for the public	May - June 2020
Workshop	Testing Traffic Modeller	testing spring version 78 feedbacks	June 2020

Workshop	Pilsen Safe Roads Map	Meeting Police and other road security stakeholders	June 2020
Webinar	Webinar Traffic Modeller	demonstrated on real-life case studies of the cities of Pilsen, Františkovy Lázně (CZ) and Mechelen.	September 2020
Presentation	Pilsen Safe Roads Map	Released application for inner using	September-October 2020

6.3. Overview of activities of Issy-Les-Moulineaux

Activity	Description	Output	Period
Data Focus Group	Find business and public partners to collect the most of mobility data useful for the deployment of the pilot and to widen the scenario as much as possible	Identification of useful datasets with Mediamobile (now Be Mobile) and My Anatol. It also allowed a first prevision on consequences of roadworks on traffic (So Local/Mappy data) and a work on traffic sensors data to understand its usefulness. Also a preliminary study on uber movement data was done.	All period
Communication Focus Group	Find new approaches in use of data for communication of policies and improve their effectiveness.,	The results of the activity met expectations and allowed us to define various improvements and potential new needs to be included in future development. A pilot on social media tools was defined.	All period
Urbanism Focus Group	Find a common vision with policy makers and civil servants about scenario and the state of the art around data and its use in policy making	The results of the activity met expectations and allowed us to define various improvements and potential new needs to be included in future development. This allowed also to make the whole City strategy about data, as it showed real needs.	All period
Students visualisation challenge	A group of students of ISEP worked on data and on the Issy scenario to propose a visualisation	Definition of some visualisations on parking, public transports and bikes. This activity allowed us to understand that the data management requests a high level of skills.	march - June 2018
My Anatol preparation	Preparation of a pilot to test My Anatol	Definition of a planning and strategy	September 2019 - January 2020
Dashboard building and improvement	Construction of a traffic dashboard with Be-Mobile data	Creation of a dashboard (issy.polivisu.eu)	September 2019 - January 2020

First My Anatol pilot	Deployment of My Anatol pilot	Deployment of the pilot which allowed the first results (about 300 users), but this was not completed due to COVID.	January – February 2020
Workshop with policymakers	Test of traffic dashboard	Feedback about the dashboard to define the potential of this type of tool in policymaking.	January 2020
Data meeting with Be-Mobile	Meeting to seek new collaborations with Be-Mobile	No particular output, but a good feedback about the dashboard.	January & July 2020
My Anatol New pilot preparation	Pilot set up and launch	Point on Street Marketing Campaign Definition of new pilot Discussion about traffic data Construction of a dashboard and a datastory	March – October 2020

6.4. Overview of activities of Mechelen, Flanders and Police Zone Voorkempen

Flanders traffic safety (accidents) map pilot

Activity	Description	Output	Period
Development	Development of the accident map	Getting the data, interpreting and formatting the data, adding the data to the WebGLayer tool - for version 1.	2018-2019
Meeting	Regular follow-up meetings	Dedicated progress meetings with Flemish government organizations and Federal Police.	2018-2020
Workshop	Feedback gathering sessions representatives of Federal Police	Feedback on the functionalities of the accident map. Discussing use cases.	December 2019
Meetings	Meetings with VIAS institute	Awareness raising about the map to the VIAS network	November 2019
Meetings	Meetings with the Flemish institute for traffic safety	Awareness raising about the map to the VSV network	January - March 2020
Congress	Flemish traffic safety congress	Presentation at the Flemish Traffic Safety congress	March 2020
Workshop	Interactive workshop	Accident data improvement session Federal Police/Flemish government for accident map	March 2020
Meeting	Meeting	Meeting Flemish house for traffic safety related to accident map	April 2020
Meeting	Follow-up meeting	Meeting Flemish house for traffic safety related to accident map (2)	April 2020
Meeting	Follow-up meeting	Meeting Federal Police related to accident map	June 2020
Meeting	Follow-up meeting	Final demo and alignment with house for traffic safety related to accident map (3)	October 2020

Mechelen schoolstreets pilot

Activity	Description	Output	Period
Workgroup	PoliVisu for Mechelen brainstorm	First sessions delivered vague requirements regarding monitoring traffic based on ANPR. This wasn't possible regarding legal boundaries. The schoolstreet implementation was new in the coalition agreement and could be performed with citizen science data	March 2019
Workgroup	Brainstorm session schoolstreet concept	Brainstorm about schoolstraat concept	September 2019
Workgroup	Design sessions for Schoolstraten	Mocks, kpis for schoolstraten dashboard	November 2019
Workshop	Roll-out Telraam schoolstreet devices Mechelen	Interactive workshop in the school with the city of Mechelen to inform and roll-out the Telraam devices	January 2020
Workgroups	Schoolstreet dashboard review and design sprints (x7)	Series of demo sessions and discussions about the features and functionalities	February - May 2020
Workshop/presentation	Schoolstreet presentation education department	Idem	June 2020
Meeting	Meeting "paraat voor de schoolstraat" project	Meeting, discussing cooperation and actions towards the Flemish department of education	September 2020
Note	Formal note to the Secretary-general of the department of education	Explaining the project and asking for support as a traffic safety and educational initiative	October 2020

Mechelen traffic model integration with management of road works and the public domain

Activity	Description	Output	Period
Meetings	/	/	April & December 2019
Meeting	Technical brainstorm about possibilities	feasibility of the solution	July 2019
Meeting	Define development plan	Development plan	September 2019
Development	Development	Develop 2 way api and develop prototype UI	October - November 2019
Evaluation workshop	Discuss results with Mechelen	Big potential, but available traffic model not detailed enough	January 2020

Police zone voorkempen average speed control pilot

Activity	Description	Output	Period
Internal workgroup	Internal brainstorm Macq, ISP, AIV ANPR policy relevance	First definition of mock-up - project definition	December 2019
Contact PZ Voorkempen - DPO, Head of the police	Define scope & needed data, Police DPO arrangements	Agreement to start the cooperation	January 2020
Internal workgroup	Brainstorm Macq, ISP, AIV to define dashboard to analyse relation between ANPR cameras and speed profiles	First set of mock-ups and graphs based on processed ANPR data	January 2020
Workgroup	Contact with the PZ Voorkempen and VSV about analysing the impact of control cruiser	Agreement and concept for analysing the ANPR data of the zone Voorkempen	January 2020
Workgroup	PZ Voorkempen ANPR analysis presentation	Presentation of the ANPR analysis results to the police zone and the 4 mayors in the PZ Voorkempen	February 2020
Internal workgroup	Based on the interest in having a dashboard displaying the results of measured speed infringements and traffic safety	Designing a mock-up for a working dashboard	July 2020
Workshop	Workshop average speed control zone impact for police zones	Discussing mock-ups and functionalities	September 2020
Workshop	Workshop 2 & Demonstration average speed control zone impact for PZ.	Demo of the first dashboard version - discussing functionalities	September 2020