



DELIVERABLE

D7.2 Recommendation for future deployments (It. 1)

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Every effort has been made to ensure that all statements and information contained herein are accurate, however the PoliVisu Project Partners accept no liability for any error or omission in the same.

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Executive Summary

This deliverable reports PoliVisu's evaluation activities from the first iteration and defines actions for the following ones, also according to the first results.

It benchmarks the outcomes of the pilots and the related project activities, using the results to guide improvements to tools and strategy. The main objective is to assess whether and how the proposed PoliVisu approach, processes, tools and use of big data are beneficial in the policy-making process.

The evaluation of the first iteration, so called « *Closed Iteration* », provides guidance for the project partners, following the formative evaluation conducted by pilots to refine and confirm their scenario execution and related activities before moving to the full implementation in the next three iterations, when summative evaluation will take place.

During this first iteration, the evaluation strategies allowed PoliVisu to better benchmark the success criteria of the project and provide feedback to the research and development teams, creating also the basis to move now to the three 'benchmark' iterations.

The evaluation and validation of this first iteration was mainly focused on 3 perspectives:

- users' needs for the development of tools and visualisations
- data literacy of users on big data
- barriers to the potential use of big data in policy making

This Closed iteration allowed to detect and define in the various pilots:

- the concept and the final roadmap for the production of the project tools
- the state of the art about data in the various pilots
- the state of the art and the role of data in the policymaking cycle in the various pilots
- various groups of potential collaborators in pilots
- a precise plan and the related actions for next iteration

1. Introduction

This deliverable is focused on the results of the first iteration and the first year of the project in the pilot sites to propose recommendations to the technical and research team.

It describes how the planned evaluation methodology and plans were executed and indicates, with the support of Key Performance Indicators (KPIs), how the project has moved forward and how policy-making needs, reported in WP3 and pilot results of WP6, were met. This document also reports any barriers that have been identified and the related solutions of the project.

The pilots have conducted various activities (9 overall) in iteration 1, mainly following the evaluation framework, strongly focused on formative evaluation in this phase. This approach has been identified to achieve various results necessary, during the following iterations, to move to a summative evaluation, namely:

- Users' needs for the development of tools and visualisations;
- Data literacy of users on big data;
- Barriers to the potential use of big data in policy making.

Concretely, this has enabled project partners to identify:

- A clear benchmark around data use in policy making;
- Potential barriers on data and its use in policy making;
- Potential acceptance of the policy making model.

To achieve this result, pilots have involved their closed networks and proposed interactive activities and workshops with them. These networks included:

- Users working in the pilots, not involved in PoliVisu, and involved in policy making at various levels;
- Users working in municipal services agencies;
- Users working in the network of the municipality, in the public and private sector.

This was declined by pilots and supporting project partners in clear recommendations for development of visualisations and tools and in identification of the most important issues around data and its use in policy making.

This evaluation plan has six substantive sections:

- **Section 2:** describes the evaluation methodology of the Evaluation Plan, including the defined measures to evaluate the use of big data in policy making;
- **Section 3:** presents the activities conducted in Pilots, including objectives set and any issues and/or barriers identified;
- **Section 4:** presents the results of pilot activities from a living lab point of view with a clear picture of the positive achievements and potential improvements for the following iteration;
- **Section 5:** presents recommendations for technical and research partners with a division per objective (users/uses, visualisations/tools, data literacy, potential improvement);
- **Section 6:** the pilots' plan for next iteration, including any improvements to the preliminary program identified in Evaluation plan;
- **Section 7:** final conclusions with a synthetic vision of achieved results and solutions to overcome detected barriers.

2. Evaluation framework

As reported in the evaluation methodology, the Polivisu project assigns to the iterations (WP6), as well as to the Living Lab approach chosen for the pilots' implementation, the evaluation methodology which distinguishes between summative- and formative approach (Wholey, 1996; Tessmer, 2013).

These evaluations are strictly correlated as formative evaluation allows to obtain feedback each iteration while summative evaluation provides benchmarking and a clear picture of the project improvements iteration by iteration as shown in figure 1 below.

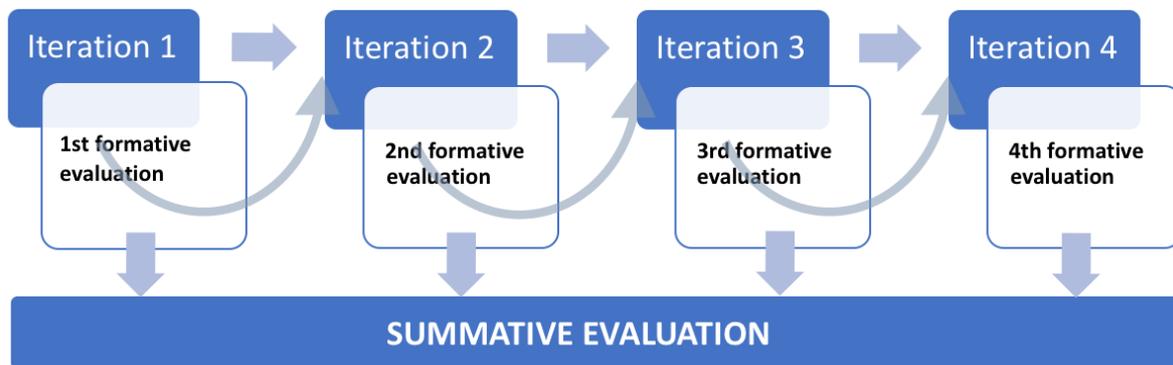


Figure 1 Relation between Formative and Summative evaluation

This correlation is explained in detail in the following two subsections that highlight the main features of both evaluations.

2.1 Formative evaluation

The first iteration, so called « Closed iteration », is mainly focused on *Formative evaluations*, aiming to gain quick feedback about the effectiveness of current pilot strategies with the explicit goal of enhancing and improving pilots' implementation during the project time and along the following 3 iterations.

Its main objective is to collect feedback to evaluate and benchmark pilots' implementation in order to enhance the learning process. These evaluations are pilot based and target specific pilots' issues or concerns.

Moreover, those evaluations must clearly define:

- One or more goals;
- A clear purpose;
- Provide feedback and engage users to enable actionable revisions;
- Be implemented within the action plan (time).

Formative evaluations are most effective when they are focused on a specific activity at the pilot level, mainly requiring:

- Clear understanding of the challenges;
- Well defined expectations;
- Clear definition of achievements;
- Preliminary list of data/information to be collected.

During the first iteration, running between May and September 2018, pilots have been organising workshops and activities around their scenarios to make it possible to clearly define:

- Users' needs for the development of tools and visualisations;
- Data literacy of users on big data;
- Barriers to the potential use of big data in policy making.

These activities targeted the main need of the project and the pilots, thus to define the concept and the final roadmap of the production of the project tools.

To achieve this and to lay a solid foundation for Big Data strategy in pilots' sites, these activities aimed to engage users in these locations for the next phases.

To this end, pilots recruited the core of their future users within their closed network, namely:

- Users working in the pilots, not involved in PoliVisu, and involved in policy making at various levels;
- Users working in municipal services agencies;
- Users working in the network of the municipality, in the public and private sector.

2.2 Summative evaluation

Summative evaluations have not yet reached their most important phase in iteration 1 as they represent an overall judgement of the project effectiveness over the project lifespan. Therefore, being their focus in terms of the measurement and documentations of achievements and outcomes, this is not supposed to provide opportunities for revision or modification of the project strategies, making it more adapted to future iterations.

Taking this into consideration, these evaluations will be collected from pilots' formative evaluations and put into summative evaluations. This will allow to define project advancement in future iterations, also with the use and support of the associated KPIs not yet evaluated in the Closed Iteration.

More precisely, this is due to the nature of summative evaluation that is supposed mainly to provide:

- Information concerning project adherence to call expectations;
- A means of determining the effectiveness of project activities;
- Pilots' comparison to determine general lessons learnt from the project;
- Information about strengths and weaknesses in project implementation.

D7.2 Recommendation for future deployments (Iteration 1)

We can then finally identify how the work proposed by pilots in the Closed iteration will be useful to prepare the Lab iteration with all the lessons learnt and represent a benchmark useful to define a project evaluation at the end of the above mentioned lab iteration.

3. Activities of “Closed iteration”

PoliVisu’s works comprises three phases: co-design, validation and co-creation, and validation/commercialisation. The first iteration was highly focused on the design of the project tools with all the stakeholders involved in the pilots scenarios. The pilots mainly focused on qualitative feedback collected not just to design the tools, but also to define how they might have an impact in the pilots’ policy making process.

The pilots have succeeded in meeting the KPIs and results related to this phase, as reported in the following section, proposing a good number of activities in their network, allowing to engage a good number of people (107 persons) in the project, including 44 people who are totally external to pilots’ environment. This will be the foundation for next iterations, allowing to start with a good user base which will be increased as new activities are implemented.

During this phase, feedback collection wasn’t done through interviews and surveys due its nature, which requires more qualitative feedback and engagement of stakeholders. Thus the best format for collecting feedback were interactive sessions (e.g. brainstorming). Altogether these yielded 59 responses.

Table 1 Activities carried in the 3 pilots sites

Date	Pilot	Workshops/Activities	Participants	Externals	Feedbacks
17 April, 2018	<i>Ghent</i>	Student data analyses	5	2	5
25 May, 2018 20 September, 2018 5 October, 2018	<i>Pilsen</i>	Definition of tools and visualisation features	15	0	8
14 June, 2018 18 July, 2018	<i>Pilsen</i>	Data from traffic detectors	15	3	4
20 June, 2018 26 July, 2018 18 Sept., 2018 4, 16, 18 October, 2018	<i>Issy</i>	Data Focus Group	20	16	13
25 June, 2018	<i>Ghent</i>	Presentation of student housing results	7	2	7
26 June, 2018	<i>Issy</i>	Urbanism Focus Group	7	5	5
7, 28 June, 2018 18, 25 July, 2018	<i>Pilsen</i>	Presentations of heatmaps technology	20	14	9
6 Sept., 2018	<i>Pilsen</i>	Improving the transport model	11	2	4
5 October, 2018	<i>Issy</i>	Communication Focus Group	7	0	5

From a more qualitative point of view, pilots have followed objectives according to their scenarios and their state of the art around data. It has to be highlighted how the Pilsen strategy is slightly different from the other

pilots as the City is already well equipped with sensors useful for the scenario implementation and SITMP had already ran co-creation activities about data in the past, making it possible to concentrate mainly on the visualisations/tools to be develop in the project.

On the other hand, Issy and Ghent worked intensively on the development of their scenarios, data harvest/collection and the definition of state of the art for the potential use of data in the policy making cycles. This activity allowed to identify the barriers, the associated strategies to tackle them and to detect the potential data owners/sources.

Moreover, Issy had to deal with geographical extent and related competences and data issues as it was highlighted how it will be necessary to have a Regional (or, at least, wider than Issy-les-Moulineaux) coverage, making it clear that a really tight collaboration with other public bodies and some private companies is necessary to have a fruitful pilot.

Anyway, all pilots had satisfying activities and the overall KPIs of Closed iteration were met, as reported above, and it allowed all pilots to move on with a positive impact on the project.

3.1. Ghent

Ghent's pilot is based on the identification of "hidden" citizen groups, exemplified first and foremost by the large group of students that live in the city. In the first iteration, the Living Lab activities were defined on co-creation of policy creation, implementation and monitoring tools with civil servants in charge of students, mobility, economy and housing.

This first cycle, involving mainly internal people, focused on its first policy scenario in which it is supposed to **investigate the student housing locations, namely those unknown to the city today**. The main goal of the first iteration was to **explore the current datasets** and identify the ones useful for the development of the pilot to ideally create a visualisation of the main student housing locations.

The strategy of the pilot was strictly focused on 4 activities:

- A student Housing data analyses;
- A field investigation to grab data on students;
- A presentation of student housing;
- A brainstorming about student housing¹.

Unfortunately, Ghent had to deal with important barriers around data, identified thanks to the activities conducted, not allowing yet to prepare a first visualisation. Actually, the field investigation couldn't be conducted due to a lack of collaboration of some external partners, namely universities, supposed to support Ghent with an important contribution.

Although, this early detection has allowed Ghent to quickly react and identify solutions for the next cycles. In particular, Ghent is today highly involved in defining a potential collaboration with a Telecom operator, that

¹ This activity cannot be reported on this document as it will take place later.

will provide samples of data to be tested by the pilot and validated, and with some new pilot partners in Flanders that will provide some new scenarios to be deployed (see section 6 for details).

Student Housing Data Analyses

This activity was split in various meetings involving the Ghent internal network, useful to gather the necessary people and profiles.

During those meetings, there were 5 participants of the Housing and Data departments of the City, and two moderators.

This activity was then identified as the first milestone of the pilot. To this end, the participants were contacted in advance and they were made aware of the question on the student housing problem related to the project scenario² that was already formulated months before this activity.

On the 21st of November (a few weeks after PoliVisu kick off), there were some first meetings with the housing department. The goal of this meeting was:

- The collection of the useful available *datasets*;
- The detection of the *needs* of the departments;
- The possible *solutions* related to their needs.

This was a really important step to move on a first data analyses and the possible solutions to be produced by the project partners.

During the months that followed, further analyses were made and there were several follow-up meetings internally as with the data-expert of the housing department in order to finalise and perfect the analyses on the student housing data.

On the 17th of April, the results of this analyses were presented to the core team of the housing department.

The goal of this meeting was to make the housing department aware of the data problem that is existing at this moment.

The activity had a positive impact as participants have been engaged on the scenario and they actively contributed to define the situation around data.

Presentation of Student Housing results

Ghent decided to address this problem at a higher level of decision makers, being the board of directors of the municipal development department.

Before doing this, Ghent gained some further insights by having a meeting with the city of Leuven, which is the 2nd biggest student city in Belgium. Attending this meeting were responsible people of Data & information in Ghent and GIS-coordinator of the city of Leuven).

² Reported in “D6.1 Pilots Scenarios”

The meeting with the board of directors was planned on the 25th of June. Attending were all the directors leading the different teams concerning housing and living. During this meeting, the results of the previous meetings and analyses were presented and the problem of data shortage was highlighted. Together with this, new ways of collecting data were suggested (such as big data, surveys, or a mandatory registry).

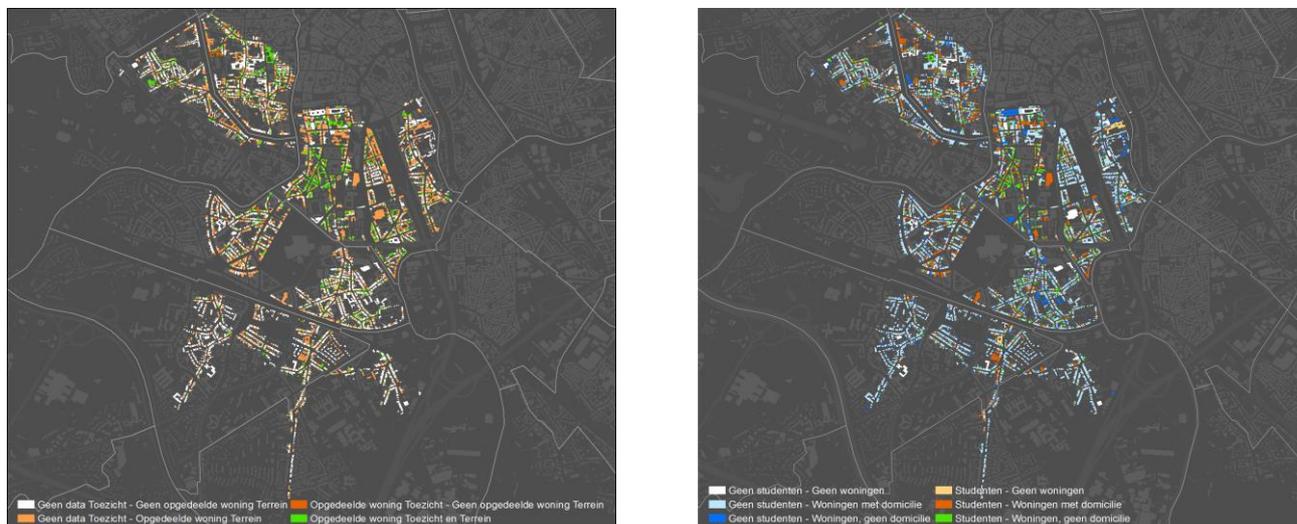


Figure 2 Data visualisations of student housing

The first meeting with the city of Leuven resulted in a better knowledge of the problem in Ghent. Although Leuven has found a way (by making some sort of building registry which included student housing), Ghent gained some new insights and detected the option of creating a similar building registry. Next to this, they've highlighted the importance and the opportunities of PoliVisu concerning this problem.

The presentation at the board of directors had as main result that all involved partners now know and understand the existing data problem. With a clear understanding of the complexity of this problem and the role of PoliVisu; further concrete steps can be made together with the different involved departments.

3.2. Pilsen

At the beginning of this PoliVisu project, Pilsen had defined scenarios that require the creation of new tools/applications as well as the acquisition and involvement of relevant data sources. The living lab plan identifies a high level plan, taking into consideration many activities with various goals, aiming at achieving all those and engaging a wide audience and various stakeholders.

During the first iteration, the team executed a set of activities that were aimed at identifying barriers and possible solutions, analysing data needs and providing the functional design for tools and visualisations as well as an implementation plan.

Thus, activities were mainly focused on the participation of technical partners and specialized groups to agree on real technical possibilities or to prepare demonstrations on data samples in 4 fields:

- Data from sensors, focused on the *use of data* (from a technical point of view) and mainly represented by technical partners of the project and multiple organisations of the City of Pilsen;
- Heatmaps, focused on *use of data* and confirmation of interest on *heatmap technology*, aggregating an internal group of the project and 8 other stakeholders;
- *Transport model*, focused on the definition and deployment of a new Transport Model also taking into consideration behaviours. This was composed mainly of technical partners of the project and the agency of the City SVSMP (public spaces management);
- *Tools and visualisations*, focused on the definition of features for tools and visualisations (starting from mock-ups) and composed by technical partners of the project and the City of Pilsen.

All workshops were divided in various sessions. In total Pilsen conducted 10 activities overall.

Definition of tools and visualisation features

The aim of this first activity, split in 3 sessions, was to perform a functional analyses for the pilot scenarios³. To this end, SITMP focused with a group of technical partners of the project and the City of Pilsen on some well-defined goals:

- Determining the basic assumptions for visualisation features
- Definition of tool requirements, identification of available resources and suggestion of changes.
- Investigation around technological options and barriers.

The expected outcome from the workshop was to confirm the functionalities of the identified tools and the related drafted solution and the definition of more functional requirements based on users' needs.

Next an interactive session was planned that allowed all participants to provide their feedback and input in the discussion. It was planned as follows:

- presentation and discussion around technology application;
- discussion about schedule;
- presentation of mock-ups of applications scenario by scenario;
- comparison of the state, the time series and history logging of the various mock-ups;
- rework and update of data sources, including traffic model and other traffic data;
- analyses of statistics and metadata.

The activity had a good participation and users of the City showed a great interest. With the support of the other participants, they had several suggestions for additional functionality, data enrichment and updates.

The participants agreed to continue the close cooperation on amongst others the provision of relevant data needed.

³ Scenarios are available on "D6.1 Pilot Scenarios"

Workshop - Improving the transport model

The goal of this activity, moderated by a representative of SITMP and one of Plan4All, was to achieve the state of the art around the creation of the new traffic model, to analyse and define realizable steps and the ones that cannot be realized for various reasons.



Figure 3 Picture of the transport model workshop held in Pilsen in September 2018

The workshop, involving 9 more participants, also partially touched the functional analyses of the developed application in connection with the integration of the traffic model into it.

The workshop saw the participation of project partners (SITMP, Plan4All, EDIP and InnoConnect) and 2 representatives of SVSMP (organization for the management of public spaces of the city - traffic engineering section).

The program was focused on the definition of the status of the Traffic model creation and plugging this model into the applications for the pilot scenarios.

Using a brainstorming technique, this activity aimed at receiving feedback to confirm the existing knowledge and to get further insights, more precisely:

- The state of the new traffic model creation and the schedule of it;
- The behavioural principles of the new transport model;
- Identification of and eventual solutions to barriers.

The results of this meeting were satisfactory, as it allowed to have good feedback from external participants that shared their needs and a particular feature they saw as a potential barrier, a control panel with access to updated information. This feature is now taken into consideration.

SITMP and the supporting partners work closely together, following this activity and its feedback, to the integration of functionalities for the first prototype during the next iteration. Some changes and refinements have been well identified in relation to the developed application (see sections 4 and 5).

Workshop - Data from traffic detectors

This workshop, moderated by a representative of SITMP and one of Plan4All (on two sessions), is a follow-up to some meetings and presentations on traffic detectors that were realized before the start of the first iteration and is partly related to the Heatmaps workshop and the functional analyses workshop of the developed application. This workshop saw also the participation of partners EDIP and Innoconnect and 2 representatives of SVSMP (organization for the management of public spaces of the city - traffic engineering section).

The goal of this activity was to review with these users the state of the traffic detector data, to analyse the contents of the datasets and to find/create tools for their modification and storage. In addition, ways of using and presenting them were identified.

The program was divided into the following parts:

- Data availability from sensors - its format and access from the traffic control panel, the way they are stored according to their intended uses, the conversion from DATEX II format;
- Dataset analyses - bad vs. usable records, attribute meanings;
- Using a dataset for a new transport model - creating profiles;
- Data usage in Heatmaps and Opendata.

The goals of this activity were mainly:

- Confirmation of data usage;
- Development of data preparation tools and their parameters;
- Find out more dataset requirements.

The cooperation of the external organisation SVSMP was really useful as it allowed to receive various comments and suggestions, such as the need to connect the open data portal of the City to the applications, related to their needs giving a real view on the needs of the pilot. Moreover, these participants showed satisfaction and they stated to be willing to further collaborate with the pilot and the project.

Finally, partners of the project confirmed that all the planned steps are realistic and it will be possible to adapt and enhance the tools according to the received user feedback.

Workshop - Presentation of Heatmap technology

The goal of this workshop, split in 4 activities and moderated by 3 representatives of Innoconnect and SITMP, was mainly to familiarize potential users with the technology of heatmaps especially with the possibilities of an improvement related to interactive connection with additional graphical features.

This workshop saw also the participation of partners EDIP and Innoconnect and of various external representatives of various entities of the private and public sector (14 overall).

It is important to notice the participation of external entities, such as the Municipal and National Police, Pilsen Region, Pilsen City Transport Company (PMDP), Pilsen public transport organiser (POVED), Regional Development Agency of the Pilsen Region (RRA), SVSMP (organization for the management of public spaces of the city - traffic engineering section) and Department of security, crime prevention and crisis management, City of Pilsen (OBPK).

To make the presentation more effective and increase external user engagement, data samples of the city were used during the presentation. The main goal was then to engage the stakeholders' participation and to receive feedback, in terms of needs, about the use and further development of this technology.

The presentation was split in 4 parts, namely:

- Presentation of heatmaps possibilities on data of traffic accidents from JSDI⁴;
- Presentation of heatmaps on a data sample of incidents recorded by the Municipal Police;
- Identifying interest in this technology, needs and conditions for the presentation;
- Ensuring relevant data.



Figure 4 Picture of one of the sessions of heatmap workshop

The cooperation of the external organisations was really useful as it allowed to receive various comments and suggestions (more than 20 overall) related to their user needs giving a real view on the pilot requirements.

Overall the (external) participants were satisfied and confirmed they will continue to collaborate with the pilot and the project.

Finally, partners of the project considered that all the planned steps are realistic and it will be possible to adapt and enhance tools according to the comments received user feedback.

⁴ The integrated Traffic Information System for the Czech Republic

3.3. Issy-les-Moulineaux

Issy conducted activities in the first period to introduce PoliVisu in the local ecosystem with activities highly related to participatory design, originally based on a workshop and 2 focus group activities with three different stakeholders involved in the Issy scenarios:

- Public servants (communication, mobility and urbanism);
- Companies and start-ups;
- 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 putting the attention on the first 2 groups, being particularly useful on defining the needs in policy making and data.

It was then finally defined to have 3 main activities, one of them divided in various sub-activities, namely:

- An urbanism Focus Group, composed by 4 entities: 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 Mediamobile;
- 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, divided on 5 working meetings and composed of 5 entities (4 private and 1 public).

The aim of this first iteration was to start introducing the participants to Issy's ecosystem but also to capture feedback, suggestions for changes, first visualisation and tool requirements, identify datasets and good policy ideas to improve the local scenario. The Communication Focus Group was also strongly set to define a pilot communication strategy to increase the recruitment of users in the next iterations to make them as effective as possible.

It was decided to have these activities with different stakeholders, to capture expectations, feelings and ideas of users on help received from tools using data in policy making.

Urbanism Focus Group

This activity was moderated by 2 Issy Média representatives who introduced the project to the participants and engaged them. The session was mainly directed to discuss with the participants 3 main topics:

- The use of big data in Policy making in Issy urbanism and sustainable development services and Grand Paris Seine Ouest (GIS and mobility departments) aiming at defining the needs in terms of policy cycles (including the confirmation of the PoliVisu one) and data needs (tools and datasets);
- Presentation and discussion around visualisation techniques, in particular the existing WebGLayer based example of Pilsen and the first mockup for Issy;
- Possible collaboration with Mediamobile and gaining an understanding of the potential impact on the scenario working with private companies (how to collaborate with them);
- Discussion about the scenario of Issy and possible additional ones.

This structure was defined with clear goals, particularly to be able to obtain valuable feedbacks about:

- Users' needs to communicate to the technical team and contribute to the functional analyses;
- Data needs and identification of potential missing datasets (with today use of data);
- Confirmation of the policy making model;
- Identification of improvements of the existing scenario;
- Have a first feedback on the WebGLayer based visualisation tool;
- Effectiveness of the interactive methodology used to capture feedback.



Figure 5 Slide example of the presentation to the urbanism Focus Group

This activity received a positive feedback from public partners that showed a real interest in the project (details in next section) and in the various solutions and models presented. The participants showed also a real good reaction to the smooth methodology used, avoiding surveys or fixed interviews. The experience of Issy in these kind of activities actually allowed them to engage them more and finally receive consistent feedback.

It has to be noticed that Mediamobile, as a company, was more reluctant to participate to the project due to its focus on decision making that they felt not being part of their core business, then they struggled to find a real interest. Next to this point, they accepted to collaborate with the project with data (traffic and related events) and to work with Issy and PoliVisu in the framework of the Data Focus Group, finally creating value to the pilot and the project.

Data Focus Group

D7.2 Recommendation for future deployments (Iteration 1)

As mentioned above, this activity was divided in 6 sub-activities to make it more agile and maximise the possible results.

Every activity had a clear purpose and was moderated, time by time, by one or two persons as reported in the table below.

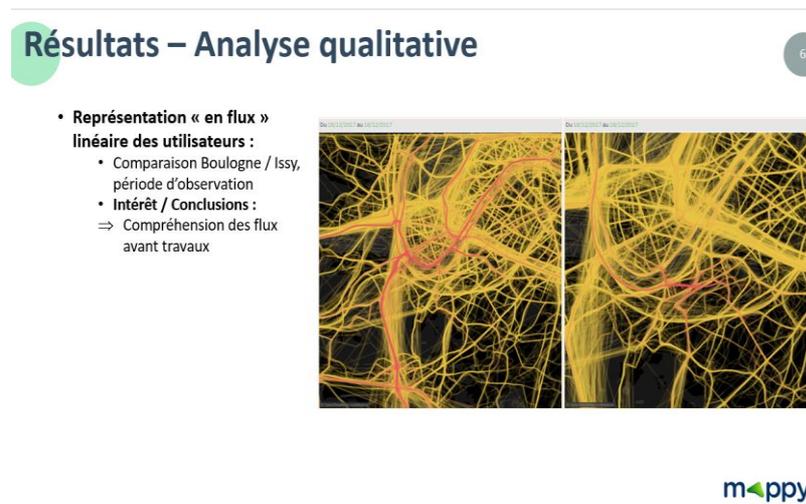
Table 2 Sub-activities of Data Focus Group

Date	Stakeholder	Objective	External Participants
20/06/2018	Mappy/So Local	<i>Identification of the situation of traffic vs. roadworks</i>	3
26/07/2018	ICADE Dataactivist	<i>Cross presentation of projects to define a possible common scenario</i>	6
18/09/2018	Dataactivist	<i>Exchange about carpooling data and possible collaboration about PoliVisu</i>	3
04/10/2018	Joul (Zenbus)	<i>Definition of possible collaboration with data provision of bus rides</i>	1
16/10/2018	Mediamobile/Cityzen Data	<i>Organisation for use of mediamobile data in pilot</i>	2⁵
18/10/2018	Hauts de Seine Department Grand Paris Seine Ouest urban agglomeration	<i>Exchange around the project to define a possible collaboration and use of traffic data of the department in the project</i>	2⁶

The main objective of this activity was to 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, aiming at creating a real local demonstrator useful to show the potential impact of data on policy making and how communication/information management has a real role in policy making co-creation.

⁵ Results not yet part of this deliverable, they will reported in D7.3

⁶ Results not yet part of this deliverable, they will reported in D7.3

Figure 6 Example of slide of the Mappy/So Local meeting in the framework of Data Focus Group


These activities had a good impact on the results of closed iteration as they made it possible to create some partnerships that will support next iterations, the main achievements were:

- *Mappy/So Local* meeting involved 3 representatives of the company that have conducted for Issy a first analyses of the traffic around the area. This study allowed Issy to understand the value of the scenario and to identify possible improvements. Moreover, Mappy/SO Local showed interest in further collaborations under the condition of splitting costs with the City.
- *ICADE/Dataactivist* meeting (4 participants of ICADE and 2 of Dataactivist) was set around an open exchange between PoliVisu and a private open data project conducted by ICADE with the support of Dataactivist. ICADE, a real estate company, collects a lot of data around its buildings and it wishes to share this data (energy, occupation...) with their inhabitants, but it also wishes to associate mobility information. In this framework, ICADE proposes co-creation workshops with their customers, thus it was decided to try to collaborate and run these jointly. The barrier encountered is related to the data sharing as ICADE is more interested in receiving data rather than sharing its own. This will be further investigated.
- *Dataactivist* meeting was fixed following some findings of the previous meeting with ICADE that made clear how this stakeholder is highly active in activities to make data clearer and more understandable. Moreover, they had some information on carpooling data, highly interesting for Issy. The meeting was fruitful and allowed them to understand the project and give some suggestions on the scenario. The biggest achievements was a list of contacts of companies willing to work on data on usage of carpooling.
- *Joul* meeting was set up to explain them the project and to define a possible collaboration around data. In fact, Joul is a company running a digital service, called Zenbus, of real-time bus tracking and they have a big amount of rough historical data about busses in the whole urban agglomeration “Grand Paris Seine Ouest” that is today not really used. The biggest achievement was their interest in the project and their willingness to support it providing the mentioned data. The next step will be a new meeting, including some technical representatives of the project to have a direct discussion with their technical team.

- Mediamobile/Cityzen Data and Department of the Hauts de Seine/Grand Paris Seine Ouest meetings results will be reported in the following reports due to timing. It has to be noticed that the two meetings will set a strict collaboration around data on two sides:
 - Organisation around data to be provided by Mediamobile both from a technical and business point of view, as next to creating a visualisation with it, the collaboration aims at finding a good business model on collaboration around data between the public and private sector;
 - Harvesting of new data from the Department as there is a potential interest of the project in a dataset about real time traffic data on roads managed by the department itself.

These activities had a big impact on the Issy pilot, and similar activities will be driven continuously all along the project to keep engaging users, not just as testers, but also as active contributors in terms of data and analyses of business models.

Information and Communication Focus Group

The latest activity of the pilot was a workshop with the Focus Group about Information and Communication.

This activity was moderated by 2 Issy Média representatives. First the project was introduced to the participants making it possible to engage them. The activity was mainly directed to discuss with the 5 participants:

- understand the use of data in Policy making in Issy communication services, aiming at defining the current use, the experience and feelings of users about this and the challenges and barriers met day-to-day;
- Understand the barriers that can influence negatively the relations between communication and other services when sharing data;
- Receive feedback about the scenario and refine it;
- identify possible solutions to communicate at local level around the pilot;
- define if TrulyMedia and TruthNest can play a role in the pilot.

This was done to allow to identify:

- Users' needs in terms of tools/visualisations;
- Data needs and identification of potential missing datasets (with today's use of data);
- Confirmation of the policy making model;
- Identification of improvements of the existing scenario;
- Effectiveness of the interactive methodology used to capture feedback.



Figure 7 Participants of the Focus Group working together

This activity was conducted also to test a gamification technique allowing to engage the users more and to obtain from them feedback in a smooth way. This was done also to test this technique before going to a larger and external public.

This activity received a highly positive feedback, as they stated they understand the project, they have a better understanding about data and they are ready to concretely move on to the next project steps. Participants particularly appreciated the way the activity was structured and conducted:

- Introduction to the project and the pilot (including the scenario);
- Explanation of the activities of the workshop to be conducted together:
 - Division of the participants in 2 groups, according to their professional profile;
 - Canvas to be filled in about current use of data and its role in policy making in their daily professional life;
 - Canvas to be filled in on a challenge around Issy scenario to be chosen between parking and carpooling to define a description of a visualisation/tool;
 - Small communication plan to be done to valorise/disseminate the visualisation/tool conceived by the users;
- Discussion around the tools TrulyMedia and TruthNest, tested before the activity by users, to understand whether this might play a real role in their work and to define whether a test is needed for iteration 2;
- Final wrap up.

4. First Iteration evaluation

The first iteration was implemented following the methodology and the process reported in the evaluation plan without important deviations for Issy and Pilsen, while Ghent met important obstacles during the implementation, making necessary to drop one of the planned activities.

In any case, KPIs, as reported in table 3 below, due in the first iteration were met, as Issy and Pilsen could achieve larger numbers than expected.

Table 3 KPIs and Success criteria of pilots' activities⁷ vs results of Closed iteration

ID	Outcome	Success criteria	Results in Closed iteration
1	Number of focus groups for requirements identification and challenges	6 workshops (min. 2 per pilot)	9 workshops
2	Identification of relation between big data, open data and policy	Network map	First relations found
3	Number of expert lens interviews	15 interviews (min. 5 per pilot)	NA (iteration 2)
4	Number of open activity to be organised for testers engagement	6 (min. 2 per pilot)	NA (iteration 3-4)
5	Number of surveys	45 (min. 15 per pilot)	NA (iteration 3)
6	Number of visualisations	5 (min. 2 per pilot)	<i>First progress :</i> 2 visualisations (Pilsen)
7	Number of datasets used	Min. 5 (min. 2 per pilot)	<i>First progress :</i> 5 datasets (Pilsen)
8	Number of stakeholders collaborating	60 (min. 20 per pilot)	44
9	Number of policies explored	12	<i>First progress :</i> 12 (to be completed)
10	Number of successful policies	2	NA (iteration 3-4)
11	Acceptance of the model	80% overall	NA (iteration 2)

⁷ Success criteria of pilots' KPIs may not be 100% of project KPI, as in some cases KPIs may apply also to other activities. As a simple example, expert lens interviews do not apply just to pilot and living lab activities.

ID	Outcome	Success criteria	Results in Closed iteration
12	Usability of the model	90% overall	NA (Iteration 2)
13	Acceptance of the tools	80% overall	NA(iteration 2)
14	Usability of the tools	90% overall	NA (iteration 2)
15	Clarity of the impact of the tools	70% overall	NA (Iteration 2)

Moreover, the project showed a consistent ability to manage this deviation involving 3 potential additional pilots, described in section 6, and working in a redefinition of the Ghent pilot to allow to move to the next iteration without changing the project plans.

It has to be noticed that the increasing evaluation strategy, as described in section 2, showed to be effective as it made possible to detect the Ghent's case early and use the first iteration to re-plan the pilot effectively.

4.1. Data literacy of users on big data

As mentioned in section 3, most of the analyses about data literacy in use of big data was done by Issy and Ghent, representing the two pilots more concerned by this need, while Pilsen focused more on users' needs, being the City of Pilsen already involved in the data process. It has to be highlighted that this activity of pilots was done on top of the the "Data Literacy Survey Report"⁸ and the related enquiry.

The pilot activities showed results that made clear that today most of the users are ready to work with data, as they showed a good appetite to it and a real understanding of the advantages data might give for their daily activities.

Although, participants to activities highlighted that they daily struggle with some barriers (see section 4.3) that, for various reasons, prevent them to use that data as desired.

Moreover, it has to be noticed that, in all pilot cities, we witness the absence of two key roles in the use of data: the data analyst and data scientists.

If the second one, the data scientists, allows cities to find the skill in outsourcing, the data analysts' absence is more crucial as it has consequences on data itself. Actually, the need of analyses makes digital data less used or used in a non-correct way in public administrations.

This evidence can be represented by two examples that can clarify the problem:

- Cities having the data and not a tool or a person giving some insights will provide the data to a subcontractor that will make the analyses, but this will be done in a paper document including also data. Consequently, data in digital format loses its role and it doesn't allow civil servants to understand its value;

⁸ This report was delivered on May in the framework of Work Package 3 (D3.3 Data Literacy Survey Report)

- Some civil servants will do the analyses themselves, but without the tools, reducing the impact of data. An easy example reported by some civil servants in Issy is event participation, in most cases the participation is evaluated just on overall figures, instead of using more detailed data (arrival by time, average profile of participants...). This has also the constraint of making the civil servants to lose motivation, due to the lack of insights.

This is a point that will always have to be taken into consideration while developing tools as they will have to tackle this point, allowing public servants to easily extract figures.

4.2. Users' needs for the development of tools and visualisations

Most of these results have been reported in D3.6, but we report here the main needs in terms of visualisation and tools that were raised in the various pilots, mainly Issy and Pilsen, allowing to identify many user needs as reported in the table below.

Any needs have also been coupled, whenever users and moderators were able to detect a potential technical solution, with a possible output as reported in the following section.

Table 4 Users' needs detected in terms of tools during iteration 1

N.	Pilot	Tool/visualisation	Need detected
1	Issy	Traffic	Additional features to normal traffic visualisation
2	Issy	Traffic	Additional information needed to normal traffic visualisation
3	Issy	Traffic	Visualisation needs to propose insights
4	Issy	Traffic	An effort needs to be done on design of the tools to have a better impact on potential adopters highly used to commercial tools
5	Issy	Traffic	A ranking of most congested roads should be displayed next to the map
6	Issy	TrulyMedia TruthNest	Set up of the tool needs to be defined with technical team to organise an internal test in real conditions, including sentiment analyses
8	Issy	Traffic	Tool needs to work on historical data and be updated with latest data
9	Issy	Traffic	Various datasets need to be integrated in the visualisation
10	Pilsen	Traffic	Application options with different filters and data
11	Pilsen	Traffic	Various situations comparison
12	Pilsen	Traffic	Export of data to Excel/CSV
13	Pilsen	Traffic	Data needs real time or short time update
14	Pilsen	Traffic	Statistics/insights of absolute numbers vs. % in charts
15	Pilsen	Traffic	Statistics/insights of numbers per segment

N.	Pilot	Tool/visualisation	Need detected
16	Pilsen	Traffic	Current state and traffic model prediction for planned closures (1 year)
17	Pilsen	Traffic	Link with existing open data is requested

All the needs reported below are to be considered additional to the current features of tools/visualisations and/or their mock-ups. Thus, the various points reported above have been shared, with more details, with the technical team and/or the involved partners through regular reports (to be done within a week after that an activity has ended) and the related regular calls. Moreover, the below results have all been taken into consideration by partners for further actions and they have been included in the *high level operation plan for the development of the tools*.

4.3. Barriers to the potential use of big data in policy making and PoliVisu policy model

This Closed iteration was crucial to detect and define precisely which barriers prevent or limit the use of data in policy making. The feedback collected showed clearly (at least) some of the reasons that prevent the smooth transition from paper to data. Some of the reasons are technical or they have an impact on more technical aspects, but many other are more related to:

- the organisation of the public sector and the skills of public servants, some examples are:
 - Lack of analysts in public entities;
 - Data value is not totally understood by some services;
 - Data remains on paper (PDF, paper, other formats not usable);
- lack of a common business model between private and public sector:
 - Businesses are often reluctant to collaborate with the public sector;
 - Available data (open data) is not sufficient or doesn't have enough value for businesses;
- Policy (division of competences on a same field and a same territory):
 - Data is fragmented between various entities on the same field and the same territory, making data lose its value;
 - Public opinion doesn't really recognise the value of data as they still use it indirectly (articles, applications...);
- Technical:
 - Tools are not satisfactory and are not including enough data;
 - Data formats are incompatible;
 - Data is often provided in formats that are too complicated for users.

D7.2 Recommendation for future deployments (Iteration 1)

Si c'était JOURD'HUI... C'EST QUOI?

12/20

Éditorialisme
Métier de journaliste
Vulgarisation

Infos vitales
Temps réel
Interactivité
→ Financer le vie des
Régions

Transparence
Ouverture des données / liberté
réutilisation

CONSTAT
Pléthorique
OBJECTIFS
Réalisation de l'objectif
à réaliser le top de
recherche d'un plan de
partage

→ Sélection massive / techniques
uniques / consommation
Promouvoir
répartition

propriété
L'APPAREIL
Si le document
→ capture des données
brutes

→ traitement → visualisation carte
démocratique

→ Services et support des
experts

TECHNIQUE
- manque de formation
- top de données mais peu de manipulation
TRAP en silo

PAS DÉMOCRATISER (amis)
↓
population

PAS CONTRAIRE
→ déperdition des données
A la vitesse

Figure 9 Example of data status in Issy co-created by one of the groups of Communication Focus Group

5. Recommendation for technical partners

This section is mainly a wrap-up of the most important feedback, in terms of potential solutions or technical unsolved needs, received by potential users during the first iteration to allow all the involved partners to be able to take the due actions.

It has to be highlighted how most of the information summarized here was already shared with partners through the existing management tools and procedures put in place in the framework of PoliVisu and this work package. In particular, the identified solutions have been shared with the whole consortium, or the relevant part of it, through 3 main tools/channels:

- A dedicated management tool for technical partners called Jira;
- Regular calls on pilots' deployment (2 per month);
- Activity reports to be completed by pilots in the week following every activity.

Consequently, this section reports a summary of the most important feedback received, while the completed reports can be found in annex to this document.

Finally, all relevant feedback is included in the project functional analyses⁹ conducted and built in parallel to this document.

5.1. Users and uses of big data

Following the detected needs and the related barriers defined and explained in section 4.1 and 4.3, it was possible to identify various potential solutions allowing the pilots to deploy smoothly their activities.

The table 5 below provides a good overview of the barriers and most of the potential solutions. It also mentions the priority to underline the importance that each solution has. As reported in section 4.3, it has to be noticed not all barriers and/or solution are technical, some are directed to pilots themselves or to other partners having other roles, such as exploitation and/or data management.

Table 5 Identified solutions to data needs collected during iteration 1

N.	Pilot	Barrier	Solution/turnaround	Priority
1	<i>Issy Ghent</i>	Available data (open data) is missing or not enough	<i>Obtain data from third parties</i>	High
2	<i>Issy Ghent</i>	Businesses are often reluctant to collaborate and to provide data	<i>A business model needs to be found between private and public sector through a tight collaboration during the project</i>	Medium
3	<i>Issy</i>	Data analysts are missing	<i>Tools/visualisations need to have insights included</i>	Medium
4	<i>Issy</i>	Data value is not always known	<i>Tools/visualisations need to be easy and training needs to be provided</i>	High

⁹ "D3.6 Policy experimentation and functional design"

D7.2 Recommendation for future deployments (Iteration 1)

N.	Pilot	Barrier	Solution/turnaround	Priority
5	<i>Issy</i>	Data is “on paper”	<i>Data provided from third parties is digital/cloud (datasets) and not just reported in reports</i>	Medium
6	<i>All</i>	Data is fragmented	<i>Data of various entities that have different competences needs to be collected and harmonised.</i>	High
7	<i>All</i>	Tools are: missing incomplete too complicated	<i>Next to open data portals, it is necessary to design tools including various sources of data easily manageable by any users and not having a big financial impact.</i>	High

5.2. Tools and visualisations

Following section 4 results, explanation of solutions (link with D3.6) highlighting the type of tools to develop/refine/test and, if any existing tool was tested, improvement of existing ones. It is possible to find all these comments in the below table 5.

Table 6 Identified solutions to tools and visualisations needs collected during iteration 1

N.	Pilot	Tool Visualisation	Solution	Priority
1	<i>Issy</i>	Traffic	<i>Additional features (delta with different colours) to normal traffic visualisation</i>	<i>Medium</i>
2	<i>Issy</i>	Traffic	<i>Additional information (data on other mobility, like buses) to normal traffic visualisation</i>	<i>High</i>
3	<i>Issy</i>	Traffic	<i>Visualisation needs to propose insights</i>	<i>High</i>
4	<i>Issy</i>	Traffic	<i>An effort needs to be done on design of the tools to have a better impact on potential adopters highly used to commercial tools</i>	<i>High</i>
5	<i>Issy</i>	Traffic	<i>A ranking of most congested roads should be displayed next to the map</i>	<i>High</i>
6	<i>Issy</i>	TrulyMedia TruthNest	<i>Set up of the tool needs to be defined with technical team to organise an internal test in real conditions, including sentiment analyses</i>	<i>Medium</i>
8	<i>Issy</i>	Traffic	<i>The visualisation/tool needs to work on historical data and be updated with latest data</i>	<i>Medium</i>
9	<i>Issy</i>	Traffic	<i>Various datasets need to be integrated in the visualisation (data needs to be evaluated and validated)</i>	<i>High</i>
10	<i>Pilsen</i>	Traffic	<i>Application options with different filters and data</i>	<i>High</i>
11	<i>Pilsen</i>	Traffic	<i>Various situations comparison</i>	<i>Medium</i>

N.	Pilot	Tool Visualisation	Solution	Priority
12	<i>Pilsen</i>	Traffic	<i>Export of data to Excel/CSV</i>	<i>High</i>
13	<i>Pilsen</i>	Traffic	<i>Data needs real time or short time update</i>	<i>High</i>
14	<i>Pilsen</i>	Traffic	<i>Statistics/insights of absolute numbers vs. % in charts</i>	<i>Medium</i>
15	<i>Pilsen</i>	Traffic	<i>Statistics/insights of numbers per segment</i>	<i>Medium</i>
16	<i>Pilsen</i>	Traffic	<i>Current state and traffic model prediction for planned closures (1 year ahead)</i>	<i>High</i>
17	<i>Pilsen</i>	Traffic	<i>Link with existing open data is requested</i>	<i>High</i>
18	<i>All</i>	All	<i>National languages should be an option</i>	<i>Low</i>

5.3. Solutions to improve data literacy in policy making

The data and technical solutions are reported in the previous sections and their subsections, but PoliVisu is not just a technical project. The project is about policy making and one of the objectives is to assess and improve the use of (big) data and data-based services in the public sector.

This objective makes clear that technical solutions are just part of the answer as this project aims at enhancing the use of data in policymaking. Many other elements, such as data literacy count and need to be taken into consideration.

Actually, an important aspect of the whole project is related to the improvement of the appetite of public servants on the use of data and their understanding of the value that data can give to their daily professional life. This is also related to the lack of valuable business models between public and private sectors, making data highly expensive for Cities and other public authorities and creating a clear and tangible limitation to the use of it.

One of the slogans of PoliVisu is that the project is a state of mind, this is actually an important point that needs to be highlighted of the project, supporting potential users with activities that can have a real value to stimulate and motivate users. Actually, in the pilots of the project, particularly in Issy and Ghent that worked more on this side, it was highlighted how data processes are still to be improved and well refined as public servants are not always aware of the value of data. Being this happening in Cities with a “data background”, it can be stated that this is a common need in Cities of all sizes and in all countries of the European Union.

That evidence allows also to explain some of the technical barriers met by partners, such as lack or fragmentation of data and tools not yet available, being this a clear consequence of the need of high value training of public servants. Data use, as wished by the project and pilots, is still moving its first steps. It is then needed to provide support to pilots.

Project partners will mainly need to support pilots on the following aspects:

- Training tools, as PoliVisu toolbox, will be crucial to have positive results;
- Business model to be defined in the collaboration between private (data providers) and public sector to find a balance and a common understanding;
- Supporting material, such as user manuals of tools, to make users as comfortable as possible.

These recommendations are well known by the partners, but they have clearly been confirmed by the different internal and external stakeholders of the project, making those as a priority of the project, at the same level of the deployment of tools and visualisations.

6. Next steps on iteration 2

Following this first iteration, the pilot partners, with the support of the whole project, a larger community phase will start.

Now, after the definition of high level requirements in pilots during the first iteration and the ongoing development and/or enhancement of the tools and the visualisations in their first version and a first internal test to refine them, each pilot will start deploying its own scenarios dealing with the specificities. To this end, this second cycle will define the first tests with an open group, but in a controlled lab environment, including also training of users, to allow to validate and improve the tools of the project.

To this end, the cycle will be mainly conducted on groups composed of potential users' part of the network of pilots, allowing them to receive feedback about:

- Users' needs satisfaction in terms of usefulness;
- Usability of the tools and solutions;
- Potential role of the tools and visualisations on a policy making process.

The recruitment of users to participate to the different activities, mainly based on observation workshops and focus groups as in closed iteration, will be based on classical communication (such as e-mails, small groups' newsletters, partners of local projects).

Moreover, the activities will be set up and based on two dimensions:

- Training about the tools and big data;
- Receiving feedback about their feeling about the tools (satisfaction, usability and potential role).

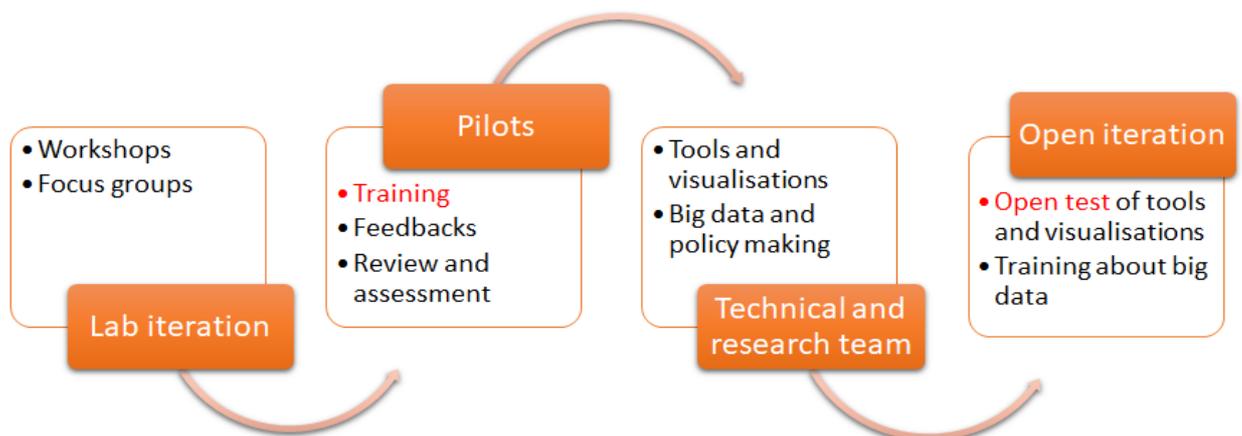


Figure 10 Lab iteration to open iteration flow

6.1. Ghent

During the first iteration Ghent mainly focused on data-analyses activities and creating awareness of the PoliVisu project in the involved departments of the city. In the second iteration, Ghent wants to focus on the first realisations of the student housing visualisations and start working on the student mobility patterns.

Focus group with students about data problem

After an elaborate internal analyses of the existing student housing datasets; Ghent wants to broaden the discussion about possible data-solutions for the student housing problem.

During the internal analyses exercise of the city, Ghent came to the conclusion that the quality of the existing datasets was not good enough to ensure good student housing visualisation. After different discussions with the appropriate departments and with the PoliVisu consortium during the Antwerp meeting, it was still hard to get a clear answer on how to address this problem. By opening up the discussion to other stakeholders, in this case students (with a more technical background) themselves, we can investigate new data (-gathering) possibilities and discuss the feasibility of these new methods.

Student housing extra data gathering

As discussed in the Antwerp Meeting, Ghent will gather more data on student housing since the already existing data is not sufficient to create the needed insights. More concrete, we will contact the following companies/organisations and try to obtain data (samples) from them.

- The mobile telecom operator: is it possible to find patterns in the telecommunication data of the people living in Ghent.
- The bike rental company of Ghent: do they have data on the students who rent a bike?
- The mobility company of the city: recently, they've installed new bike counting systems throughout the city. Not only can this data be interesting for the student housing case, this data can also be relevant for the student mobility patterns.

Workshop TruthNest in function of student housing and student mobility

For the second iteration, Ghent wants to investigate the possibilities created by social media monitoring tools in function of their pilot topics. Since the city has little knowledge about this tool, thorough research into the functionality and possibilities is needed. This is why the city wants to organise a workshop/discussion together with our communication department (and other interested departments), so we can explore the opportunities with this tool for the coming iterations.

Focus groups / discussions with the mobility department

Where the first iteration mainly focused on the student housing problem and the lack of good and available data, our second iteration will focus more on our second topic, the student mobility patterns. In order to start this investigation, we need to inform the necessary partners and think about possible data sources and how to use them properly. Together with the mobility department of the city, we will discuss this topic and make a concrete planning for the next steps.

Table 7 Planning second iteration in Ghent

Activity	Description	Output	Timing	Participants
Focus group	Student discussion	New insights on possible (new) data sources that can be used in the student housing case.	January 2019	10 - 15
Extra data gathering	Internal/external data	New and very valuable data sources	October 2018 - January 2018	3
Workshop	Communication tools	A clear understanding of the possible functions of ThruthNest and a clear defined investigation goal in which we can use this tool.	February 2019	10
Focus group	Mobility department discussions	A clear buy-in from the mobility department of the city. Only by doing this, we can create a concrete next-steps-planning and get access to interesting datasources of the mobility company.	March 2019	10

6.2. Pilsen

In the first iteration, Pilsen was able to create the necessary bases for the successful continuation of this project and for the development of the planned tools. Some tools have already been developed and presented in a prototype state. Contacts with potential users or owners and data providers have begun.

During the second iteration, the various forms of activities will lead to the testing, validating and commemorating the first functional version or enhance the already developed prototypes. These activities will involve more users or staff from the city. It will be necessary to definitively solve the quality and availability of the necessary data. Still, an effort will be made to find new usable data sets.

Focus group - Detectors API

In the first iteration phase, data from the detectors at the Opendata city portal was already made available. These were mostly samples of data, or data only from the recent past. It is now necessary to focus on the development of a filtering tool that will allow data users to obtain the data they require. Therefore in the HTML page, users will be able to select, for example, by crossroad, according to the time interval, the required aggregation, etc. For direct access to data from the traffic control panel via DATEX II, a simple step-by-step guide should be prepared and presented. A major challenge will be the upgrade of the traffic control panel, which will keep all the necessary data flows set in the first phase.

Workshop - Heatmaps

Pilsen completed the first phase successfully. This was mainly concerned with the specification and introduction of an interactive heatmap visualisation technology. The next step is to evaluate and incorporate

comments from the first phase. Now the city will try to make the prepared samples officially presented, which mainly involves the solution and availability of data sets. Therefore, dealing with the Police of the Czech Republic and the Municipal Police will take place to release their data for this application as well as to ensure their up-to-date information. The prototype in WebGLayer technology displaying the sensor data will continue to develop. The team will investigate how to present aggregated data from sensors linked to road network segments so that the output for users is as comprehensible as possible.

Focus group - Traffic model

After a new transport model has been created and calibrated in the first phase, its correct function will now be verified. This will initially be done in the direction of technical partners. The model will also be made available in a newly developed application and visualization. In the second iteration the model will be calibrated with detector data. Pilsen will look for the best way to capture data from detectors in the data model. It will be tested whether the model behaves according to city requirements which means mainly the possibility to visualize the intensities in both directions and whether the displayed values correspond to the actual measured data from the detectors.

Interviews - Data

As the project progresses, new data sets that can be potentially exploited are emerging. Either these can be used “passively” as a simple visualization, for example, to illustrate the traffic situation, or the data can be analyzed and displayed in the chosen technology. Therefore, it will be up to both owners of data sets and technical partners if these data sets will be used in this project. Data on parking (parking areas, parking data, parking lots) or data showing the position of the public transport vehicles and their current delays (GeoTimeSeries) could be available. The list of datasets provided in D6.2_Dataset_Overview that shows available and unavailable data sets for Polivisu project has been updated with the new datasets.

Co-creating/design workshop - New application - simulating

At the end of the first iteration the new web application was designed, its first version should be available at this stage. Traffic experimentation functionality will be step by step integrated into the application. First the behavior of the transport model will be verified with the involvement of future users in the city environment. Also covered is a functional testing where it will be possible to change the parameters of the transport network segments and subsequently to visualize the results of the reshaping of the model. The appearance of the application and the behavior of the tools, as well as the response rate and the accuracy of the calculation, will be tested.

Workshop - New application - traffic events management + current status

The application should be gradually developed and tested, and at the end of this iteration, the city could expect the other required functionality. This is mainly the public part of the application, which should show the current state of transport as well as planned roadworks in the long run. For this functionality, a traffic events management module will be needed to manage the events that affect the repair. Pilsen expects to test the mobile version.

Table 8 Planning second iteration in Pilsen

Activity	Description	Output	Timing	Participants
Focus group	Detectors API	To focus on the development of a filtering tool that will allow data subjects to obtain the data they require.	February 2019	6
Workshop	Heatmaps	Displaying the detectors data will continue to develop, present aggregated data from sensors linked to road network segments. To obtain the accidents and criminality data from the state police. Police 'security app' v3.0 released for testing and feedback	February 2019	7
Focus group	Traffic model	The model will be calibrated with detector data. The possibility to visualize the intensities in both directions and whether the displayed values correspond to the actual measured data from the detectors.	February 2019	6
Interviews	Data	The new datasets will be used data on parking (parking areas, parking data, parking lots) or data showing the position of the public transport vehicles and their current delays.	March 2019	4
Co-creation/design workshop	New application – simulating	It will be possible to change the parameters of the transport network segments and subsequently to visualize the results of the recomputing of model.	April 2019	8
Workshop	New application - traffic events management + current status	Expected the other required functionality, the public part of the application, which should show the current state of transport as well as planned roadwork in the long run. A traffic events management module.	May 2019	10

6.3. Issy-les-Moulineaux

Following the first iteration, fundamental to introduce PoliVisu in the local ecosystem, to increase available data and to refine the pilot scenarios, the second iteration in Issy will follow the first one both in terms of users and activities.

In fact, the Lab iteration will be characterised by 4 activities (3 Focus Group/workshops and 1 test in real conditions) and it will move around three different stakeholders involved in Issy scenarios:

- Public servants (communication, mobility and urbanism);
- Companies and start-ups with a clear interest in data;
- Final users of transports and mobility services (citizens, students...).

The aim of this iteration is to start introducing users to tools and visualisation and to raise the awareness of the importance of the use of data in policymaking, but also to capture feedback, suggestions, improvements of tools and visualisations. Moreover, social media analytical tools, namely TrulyMedia and TruthNest, will be tested in real conditions by the Information and Communication Focus Group of the first iteration.

As happened in the Closed iteration, Issy will involve various stakeholders to receive feedback from various points of view. Moreover, having this being highlighted in the first iteration, Issy will work with the first iteration Data Focus Group to identify a business model about data between private and public sector. The participants to this group will be also be involved tool testing to receive their feedback.

Similar to the first iteration, Issy will keep working with small groups, starting from the 3 Focus Groups of the first iteration to be enriched with new participants. It has to be highlighted how the test of TrulyMedia and TruthNest will be done with the indirect support of normal users as they will be stimulated to tweet.

Data Focus Group

During the first iteration, a group of stakeholders working on data were made aware of PoliVisu and its goals. In some cases, those started collaborating with Issy to increase the base of data and they have showed interest in potential results, including the research of a common business model to work together with data.

Issy will work, using its network, to increase the number of stakeholders and participants to be included in this group. As already happened, this group will be made of various activities inviting stakeholders according to their profiles and their data.

The various tools and visualisations will be presented to the the various stakeholders to identify with them their potential and to identify possible new data to be integrated in it.

In this framework, some of the more engaged stakeholders will be interviewed.

Urbanism Focus Group

Following the first iteration activities, the urbanism focus groups will be involved again to present them the tools and to receive feedbacks from them about the potential usefulness of it and any potential improvements.

This activity will be driven on various sessions, namely:

D7.2 Recommendation for future deployments (Iteration 1)

- A presentation of the tools/visualisations with discussions to grab feedback, comments will be sent to the technical team for improvements. In this session, participants will also be requested to identify potential use;
- A presentation of the improved tools with training requesting to have a small group of testers (in real conditions) of it. In this session, a group of testers will be defined;
- Training to testers (optional for users);
- A real test with feedback (interviews) following it.

The second and the third phase of this activity will allow to have not just feedback about usability, but also on usefulness/adaptability on policy making, also to prepare at the best the following open phase.

The results will be analysed and sent to the technical team to be taken into consideration in the development of the different visualisations and tools.

TrulyMedia/TruthNest Real tests

The first iteration has allowed to engage users in charge of the whole communication of the City of Issy-les-Moulineaux and supporting the communication of the Grand Paris Seine Ouest urban agglomeration.

This group helped in defining the tools that enable to have a real use of data to communicate with all the stakeholders at local level. This group will now be used to have a confirmation/validation of the usefulness of the tools.

This activity will be cut into various sessions to make it more effective, in particular:

- A presentation of the tools developed (traffic) to define together a real conditions test. This session, also including dedicated training, will enable the identification of improvements and a detailed plan;
- A real test of TruthNest and TrulyMedia, to make it possible to validate its use (and define the best use of the tools), during a local event to be defined (City schedule 2019 is still ongoing);
- A final brainstorming to make a balance of the activities, followed by interviews of key people.

The results will be analysed and sent to the technical team to be taken into consideration in the development of the different visualisations and tools.

Workshop

Later in the iteration, a workshop involving potential end users, ideally students, will be proposed to have feedback from them before moving to the open iteration.

Users will be engaged through the existing collaborations with local research/Educational institutes and the challenge proposed to them will be driven through a clear scenarisation, proposing also clear goals. The participants, ideally Smart City students, will then try to reach the goals through the visualisations/tools and they will give feedback about it.

To make this activity more effective, the methodology used in the previous workshop (first iteration) will be further developed and used in this activity to make students more involved and to allow to obtain useful feedback.

This activity will include also training of students on tools and data, also to test the PoliVisu toolbox.

At the end of the activity, students will be requested to answer to some surveys and, some selected ones, will be interviewed.

Table 9 Planning second iteration in Issy-les-Moulineaux

Activity	Description	Output	Timing	Participants
Focus group	Data	Increase interest of companies in PoliVisu/improvement of tools	All the period	10
Focus Group	Urbanism Tests	Validation/improvement of tools	February-June	8
Focus Group	Communication Tests	Validation/improvement of tools	February - June	7
Workshop	Students Tests	Validation/improvement of tools to move to open iteration. Validation/improvement of PoliVisu toolbox	June	10

6.4. New Pilots

The first iteration was particularly useful for the project, next to the achievements of the 3 pilots of project and the related KPIs, PoliVisu was engaged to find more Cities (or public authorities) to be involved in it.

The support of some partners¹⁰ allowed to identify and to involve 3 of them during this first iteration, making the role of these 3 additional pilots, even if some obvious limitations, more important as they will also support the project in meeting and/or improving its KPIs and to increase the stakeholders.

The 3 pilots identified, the Cities of Mechelen and Kortrijk and the Flanders Region, will work on specific scenarios and uses cases that are shortly summarized in the next paragraphs, allowing to have a wider spectrum in terms of feedbacks, allowing the project to move on more efficiently to the last two iterations.

Furthermore, this strategy allows also to have a potential backup for existing pilots, lowering the risk in case of important barriers met by those during their deployment.

The full planning of these 3 pilots is still a tentative one and it will be better refined during the months between the Closed and Lab iterations, anyway the below table gives a first overview. It has to be highlighted how these pilots in next iteration will be mainly focused on the construction of the tools and visualisation, proposing activities slightly less ambitious of existing pilots, due to their late coming into the project. This is not supposed

¹⁰ Namely, AIV, GEOSPARC and Macq

to impact in any ways the project and their role in the project, also because those pilots will be able to use the lessons learnt by other pilots during their deployment.

Table 10 Planning in new Pilots

Iteration/Pilot	Mechelen	Kortrijk	Flanders
Setup	<ul style="list-style-type: none"> • Data analyses • Definition of needs • Validation of scenario 	<ul style="list-style-type: none"> • Data analyses • Definition of needs • Validation of scenario 	<ul style="list-style-type: none"> • Data analyses • Definition of needs • Validation of scenario
2 (lab)	<ul style="list-style-type: none"> • Improvement of tools 	<ul style="list-style-type: none"> • Improvement of tools 	<ul style="list-style-type: none"> • Improvement of tools
3 (open)	<ul style="list-style-type: none"> • Validation of tools 	<ul style="list-style-type: none"> • Validation of tools 	<ul style="list-style-type: none"> • Validation of tools
4 (impact)	<ul style="list-style-type: none"> • Evaluation of final tools • Use in policy making 	<ul style="list-style-type: none"> • Evaluation of final tools • Use in policy making 	<ul style="list-style-type: none"> • Evaluation of final tools • Use in policy making

City of Mechelen: ANPR Cameras for mobility

In Mechelen, the aim of the pilot is to create a new form of mobility management based on the ANPR cameras that are located throughout the city. In Mechelen, certain areas of the city are car-free during certain times of the day, in order to verify that no cars are entering that areas, more than 150 smart ANPR cameras were installed to control the car free zone and for general safety reasons.

At this moment, there are different topics of interest and opportunities in the Mechelen pilot. However, they all aim to achieve a smarter mobility policy in the city:

- To enhance traffic safety: is it possible to use the ANPR cameras to enhance traffic safety?
- Traffic management in the city - study how traffic is moving in and around the city, getting more information about origin destination of the traffic in Mechelen with a distinction between vehicle types;
- The introduction of a low emission zone (LEZ);
- The introduction of MobiPoints.

For now, the Mechelen pilot has not yet defined a clear and specific policy question on which they want to work on within this project. That is why the first step of this pilot will be the creation of a clear policy question and a detailed planning for the coming months in the project. It is to be expected that traffic safety in relation to road congestion will be one of the major policy questions. A second question is probably the impact of road works on the city traffic and the accessibility of mobility generators as shopping zones, schools and important public transport spots.

The Mechelen pilot case can give the PoliVisu consortium great insights on the usage of big data from ANPR cameras.

Table 11 Actions of Mechelen pilot

Timing	Action
2018	Creation of a clear policy question and a goal for the pilot
2018	Data collection & preparation
2019	Creating the first visualisation & tools
2019	Collecting feedback & update the visualisation & tools

City of Kortrijk: use of Big Data to detect Parking behaviours

The Kortrijk pilot will focus mainly on parking management. In Kortrijk, more than 1000 on-street parking spots are equipped with a sensor, which registers the status of the parking places. Besides the 1000 on-street parking sensors also open and live data is available of all the important public parking garages and terrains.

In the city centre, it is only allowed to park your car for a half hour on around 1000 so called 'shop & go' parking spots, this is monitored by parking sensors. Similar sensors can be used to monitor the behaviour on a statistically relevant sample to evaluate the current parking policy and the effect of measures to update the policy.

The Kortrijk case will provide insight how advanced sensors can be used for policy making and policy measuring. By combining the relation between different sensors AI can be used to predict the most efficient parking policy to support a liveable city and the local economy.

Table 12 Actions of Kortrijk pilot

Timing	Action
2018	Data collection and data preparation
2018	Further investigation of the specific policy question
2019	Creating the first tools/visualisations + user testing
2019	First evaluation of the tools/visualisations and adaptation

Flanders traffic safety & management pilot

The goal of the Flanders pilot is to visualize relevant (open) and (big) mobility policy related dataset to a regional level by combining different data sources. The visualisations are related to traffic safety, traffic management and any related elements. A first visualisation will be a traffic accident heatmap which will be comparable with the Pilsen traffic accident map.

The traffic accident map will test if a traffic safety heatmap is:

- Usable in a bigger area (Flanders region);
- Usable on comparable categories and filter criteria;
- Helping to formulate a regional traffic safety policy and actions;

- Helping to assess new measures like speed control zones and trajectory speed control;
- Helping to align regional and local traffic safety policy and actions.

The idea is to have a smart traffic safety map that allows the Flemish region to plan new traffic safety measures and to influence where new road investments taking traffic safety in mind are needed or where other measures like speed limitations are necessary taking different road user into account.

Table 13 Actions of Flanders pilot

Timing	Action
2018	Data collection and data preparation
2018	Data selection (what will be shown on the map)
2018	Building the heatmap including static background layers: Schools
2018	Presentation of the map during the Barcelona world smart city expo in Barcelona
2018	Extension with new data sources: Speed cameras, trajectory control zones
2019	User testing, application of AI to scrutinize traffic safety patterns

6.5. Future recommendations

As in iteration 1, the various pilots will regularly report the new needs, the bugs/issues and additional features requested by users detected during the activities mentioned above with the technical team and/or the involved partners through regular reports (within a week after activities end) and during the related regular pilot calls taking place every two weeks.

Issy, in charge of evaluation, and Ghent, in charge of pilot scenarios and deployment, will make sure that all those requirements might be taken into consideration by the involved partners, allowing a smooth development procedure.

Moreover, technical partners will have to include those features in their *high level operation plan for the development of the tools* and to closely work on those with the related pilot to assure to meet the requests in accordance with pilot planning. The technical team uses an *ad hoc* project management tool (*Jira Software*) to allow all partners involved to follow their work and the related achievements.

Finally, all those recommendations will be included in the deliverable reporting results of iteration 2 (so called *Lab iteration*).

7. Conclusion

During its first iteration, PoliVisu has applied its formative evaluation strategy with success, making possible to move to its second iteration, called Lab, respecting its principal of a summative and increasing evaluation strategy.

During its first iteration, the project has met the expected KPIs and, in some cases, it has overcome them, achieving the targets useful to the development of tools and proposing an effective planning for the second iteration to meet the expected results, including a potential satisfactory advancement on project and pilots' KPIs.

The project is now ready to move to the second iteration with a good base as it can now rely on those achievements, particularly on:

- Around 20 external stakeholders aware of the project and actively collaborating on the project;
- Around 40 representatives of those stakeholders supporting the project;
- 3 additional pilots, working with the project;
- A better knowledge on use of data on policymaking;
- Additional important datasets harvested/obtained from external stakeholders;
- Confirmed and/or refined methodologies on co-creation activities.

To achieve this, pilot cities were adequately supported by non-pilot partners to make them equipped with all the tools necessary to succeed with their objectives.

Moreover, when barriers were met, as happened in the Ghent pilot, the project has shown a good flexibility and management responsiveness by proposing support and identifying solutions. At this level, it has to be noticed how the identification and involvement of 3 additional pilots, in the Ghent area, allows that pilot and the project to answer adequately and to lower the potential risk associated.

All these achievements have allowed to define a detailed planning, pilot by pilot for the next iteration, putting the project in a comfortable situation to achieve the expected results in that Lab iteration.

Finally, it has to be noticed how the project, and consequently the pilots, will move to a more quantitative and operational phase. Consequently, it will be possible to start to test the tools/visualisations, applying the additional KPIs substantially related to the identified policies and to further develop the tools and visualisations of the project. To this end, as reported in section 5, a structure was set up to make partners work together and to allow all the involved partners to be able to know pilots' achievements and needs and, at the same way, to let pilots follow the development of tools/visualisations.

Annex I - Reports of pilot activities

A. Pilsen

Functional analyses - Definition of tools and visualisation features

Iteration 1 - Closed iteration

General Information

Date: 25/05/2018, 20/09/2018, 05/10/2018

Pilot city: Pilsen

Type of activity (refer to [D7.1](#)): Workshop

Moderator of the session: Stanislav Stangl and Karel Jedlicka

Overview of the activity

The aim of this first iteration is to start introducing to Functional analyses application for scenarios A, B, C, D. Determining the basic assumptions for visualisation features. Ensuring definition of tools, available resources and suggestions of changes. Technological options and limitations have been sought.

Here are the main agenda items:

- *presentation and discussion around technology application*
- *discussion around getting suggestions for scheduling closures*
- *presentation of output formats made from applications from individual scenarios*
- *state comparisons, time series and history logging*
- *update data resources: traffic model and other traffic data*
- *statistics and data description*

The expected outcome from the workshop was:

- *Confirmation of the functionality of the selected technology and drafted solution*
- *Find out more requirements for application functionality*

Results of the activity

*It was decided to have these activities to a group of technical partners from Pilsen. The basic workshop was held on **May 25, 2018** at the SITMP and it was a closed cycle meeting. To this group, finally participated:*

- 4 people of City of Pilsen - SITmP
- 3 people of Plan4All
- 2 people of EDIP
- 1 person of Innoconnect

Participants have been invited through personal invitations and almost all of them participated. Results met expectations, feedback was positive.

Interest in technology has been shown. The participants had suggestions for additional functionality, data enrichment and updating.

A cooperation have been promised in providing the relevant data needed. Promised further cooperation.

*Another working meeting with the plans for next steps took place on **September 20, 2018** during Meeting Antwerp, with the participation of SITMP (3), Plan4ALL (1), EDIP (1), Innoconnect (1) and HSRS (1).*

There were among the stakeholders divided sub-activities that are needed to be ensured in the near future. And another meeting was arranged at the beginning of October.

*The last most important meeting was held on **October 5, 2018** at SITMP, with the participation of SITMP (3), Plan4ALL (3), EDIP (1), Innoconnect (2) and HSRS (4).*

The agenda related to the preparation of this Plan of visualization of sensors and STM for Pilsen scenarios:

- *Spark Traffic Modeller (STM) and HS Layers. The binding of scenarios to technology has been mentioned and the workflow definitions in the different scenarios have been consulted.*
- *Was solved by extension GUI and Mockups proposal for individual workflows and expansion of GUI applications intenzitadoprvy.plzen.eu to allow implementation of individual workflow.*
- *Consulted STM API for communicating with HS Layers.*
- *It will be necessary to solve User Management for STM, HS Layers by scenarios and workflows. And verify the domain login.*
- *It is necessary to prepare Visualization of historical traffic detectors states from the database.*
- *From the traffic model will be delivered Extraction day curves of the detectors*

There was an agreement on "persons and occupation" with technical partners and specification of the development schedule::

Development schedule

Specification of the [development schedule](#).

- WebGLayer apps (**INCO**)
 - 31 Oct - traffic intensity app v1.0 release for testing and feedback
 - January 2019 - traffic intensity app v2.0 release
- Oct-January - Plzeň (**SITMP**) to obtain the accidents and criminality data from the state police

- approx. April - Police 'security app' v3.0 released for testing and feedback
- Traffic modelling (dates are subject to change after a meeting in Pilsen in the first week of October)
 - Status update:
 - delivered: Spark traffic modeller (STM) prototype
 - delivered: one year sensor matrix gathering and clean up
 - Planning:
 - Computation of seasonal/weekly/daily graphs of traffic volume changes (**EDIP**: October)
 - Basic traffic model (**EDIP**: October - mid November)
 - STM testing and calibration at Pilsen Use Case (**P4A**: November - mid December)
 - (Workflow and mockups for Pilsen Scenarios (**Pilsen, HSRS, INCO, P4A**: October)
 - GUI for STM (**HSRS**: October-November)
 - API for STM (**HSRS**: October-November)
 - User management for STM (**HSRS**: October-November)

Participation table

Fill a table using this exemple

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited (specify channel and)</i>	11	-	-
<i>Participants</i>	<i>Number of participants</i>	15	10	0
<i>Feedbacks</i>	<i>Number of feedbacks</i>	5	-	-

Insight on feedbacks of the activity

The main findings have been:

- *Technology:*
 - *Server specification - Spark technology, distributed GeoSpark counting*
 - *Client part - the user will see an application similar to the Traffic Visualization with multiple tabs*
 - *Appearance of application -web application with tabs according to scenarios - refined in other documents ([20180731 Functions proposal](#)).*

- *Getting suggestions = event stack:*
 - *Data of the city will be in a stack of actions with a fixed minimal structure (name, spatial location, date-to-date, restriction 1-100%)*
 - *It will include all actions affecting traffic*
 - *Web applications will work with this stack*
 - *It will be specified in other documents ([20180713 Event list proposal](#)).*
 - *From the first [Mockap design](#) app, the first GUI design was created.*

- *The presentation will be based on the original transport model, but will take into account the planned closure, and will create a “clone” of a separate presentation on the new URL. There can be created scenarios C1 for the flood, C2 for the football match, C3 for the city parade,C50.*

- *The transport model will be the same (it will change once every 5 years), the closures will be only in partial states (ie not in the model).*

- *At this time, via the web application is not planned following:*
 - *change the number of cars entering the model;*
 - *change the number of cars that generate connectors;*
 - *adding new connectors.*

Technical Feedback

Technical feedback was provided by the stakeholders to the technical team directly at the workshops and (after further testing) via email. Following the agile development methodology, this feedback has been regularly converted into tickets for the development team and is being implemented according to the defined priorities.

Workshop Data from traffic detectors

Iteration 1 - Closed Iteration

General Information

Date: 14/6/2018, 18/7/2018

Pilot city: Pilsen

Type of activity (refer to [D7.1](#)):

Moderator of the session: Stanislav Štangl and Karel Jedlička

Overview of the activity

*This workshop is a follow-up to some meetings and presentations on traffic detectors that were realized before the start of 1st iteration and is partly related to the Heatmaps workshop (**June 26, 2018**) and the functional analyses of the developed application (**May 25, 2018**).*

The goal of this activity was to get to know the state of traffic detector data, to analyze the contents of the datasets, to find/create tools for their modification and storage. In addition, ways of using and presenting them were identified.

The program was divided into the following parts:

- *Data availability from sensors - its format and access from the traffic control panel, the way they are stored according to their intended uses, the conversion from DATEX II format*
- *Dataset analyses - bad vs. usable records, attribute meanings*
- *Using a dataset for a new transport model - creating profiles*
- *Data usage in Heatmaps and Opendata*

The expected outcome from the workshop was:

- *Confirmation of data usage*
- *Development of data preparation tools and their parameters*
- *Find out more dataset requirements*

Results of the activity

*The basic workshop was held on **June 14, 2018** at the University of West Bohemia with the participation of SITMP and technical partners Plan4All and EDIP - 8 participants*

*A follow-up meeting was held on **July 18, 2018** in a city environment with representatives of the SVS - Division of the concept of traffic engineering, who work with the data from the traffic control panel.*

All addressed participants took a part in the meeting.

The results of the meeting were positive, all the planned steps are realisable with the promise of further cooperation.

Participation table

Name	Description	Result	KPI	Result vs. KPI
Recruitment	Number of people invited (specify channel and)	10	-	-
Participants	Number of participants	14	10	+4
Feedbacks	Number of feedbacks	4	-	-

Insight on feedbacks of the activity

Insight participation on feedbacks received:

SITMP

- Retrieving daily summaries into MSSQL is working - 2 days back
- Analyses/listing possible combinations of record was done
- Request for delivery of tools for on-line data retrieval from DATEX II and connection with daily status
- Identification of detector drawings was done
- Topological road map checks were done

Plan4All

- Testing on-line loading of DATEX II - code passed to SITMP for integration into city environment
- Records defined + possible interpolation applicable to data modeling

EDIP

- Creates an entirely new transport model
- Passed sensors grouped into "profiles"
- Profiles will be linked for visualization with the closest sections
- Use a topologically modified street chart
- Street map feedback solved - attribute ID_USEK is enough

SVS

- Explained how they use detector data - exports for designers, yearbooks, "pentlograms"
- They would welcome connections to Opendata.plzen.eu with filtering and data aggregation options - have so far recalculated data in MS ACCESS
- They welcome the demonstration of Heatmaps technology
- They need to see the latest data possible in the map + close past - eg for responding to public questions

- *The possibility of updating and identifying the detectors in the GIS and on the control panel were discussed - with added loops can be identifiers added as well, the complete reconstruction will not be possible - SITMP will implement the status histories*

Technical Feedback

Technical feedback was provided by the stakeholders to the technical team directly at the workshops and (after further testing) via email. Following the agile development methodology, this feedback has been regularly converted into tickets for the development team and is being implemented according to the defined priorities.

Workshop a presentation of Heatmaps technology

Iteration 1 - Closed iteration

General Information

Date: 27/6/2018, 18/07/2018, 25/07/2018

Pilot city: Pilsen

Type of activity (refer to [D7.1](#)):

Moderator of the session: Jiří Bouchal and Václav Kučera, Stanislav Štangl

Overview of the activity

The goal of this activity was mainly to familiarize potential users with the technology of heatmaps especially with the possibilities of interactive connection with graphs. Data samples directly from the city were used during the presentation. An interest in the use and further development of this technology should be identified.

The program was divided into the following areas:

- *Presentation of heatmaps possibilities on data of traffic accidents from JSDI*
- *Presentation of heatmaps on a data sample of Municipal Police events*
- *Identifying interest in this technology, needs and conditions for the presentation*
- *Ensuring relevant data*

The expected output from the workshop was:

- *Confirmation of data usage and interest in this technology*
- *Find out more requirements for application functionality*

Results of the activity

SITMP held 4 closed cycle meeting in total, where the relevant stakeholders from urban organizations and other institutions were invited.

*The basic workshop was held on **June 27, 2018** at the SITMP and beside the representatives of SITMP (3) and technical partner Innoconnect (2) the meeting were attended by representatives of Municipal Police (2) and the Police of the Czech Republic (1).*

*Another working meeting with a heatmap demonstration took place on **June 28, 2018** during a traffic data seminar from O2 mobile operator at the Regional Office, with the participation of SITMP (1), PK (1), PMDP (3), POVED (1) and RRA (1).*

*There were two other separate presentation for the employees of the city of Pilsen. The first took place on **July 18, 2018** at the SVSMP - Division of the concept of traffic engineering (2).*

*The second took place on **July 25, 2018** at Department of security, crime preventions and crisis management (3 from OBPK MMP).*

All addressed participants took a part in the meeting.

Results met expectations, feedback was positive.

Interest in technology has been shown. The participants had suggestions for additional functionality, data enrichment and updating.

A cooperation have been promised in providing the relevant data needed. Promised further cooperation.

Participation table

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited (specify channel and)</i>	8	-	-
<i>Participants</i>	<i>Number of participants</i>	19	10	+9
<i>Feedbacks</i>	<i>Number of feedbacks</i>	8	-	-

Insight on feedbacks of the activity

All participants were part of the discussion, their feedback and some agreements on further cooperation took place during the meeting. Feedbacks and agreements are as follows:

SITMP

- *The ability to store the necessary data in db in city environment confirmed*

- *Application options with different types of access, with different filters and data*
- *Work links for internal application testing passed*
- *Prepares the technical content of the e-mail with the definition of the data to reach the Police of the Czech Republic through the OBPK*

Innoconnect

- *Attributes from the JSDI dataset are generated by text analyses tools - may not always be correct*
- *Records in the JSDI are inputted in the case of accident, in the beginning but no longer contain any real conclusions after the accident (injuries, participant, property damage, etc.) - it would be more appropriate to provide structured accident data directly from the Police of the Czech Republic*
- *Parting of MP events can be changed/split for better filtering based on user requirements*
- *Comments from the presentation will include in application*

MP

- *MP uses its heatmaps - but they are not as sophisticated and intuitive as the presented ones - they are interested*
- *Event MP data can be online - they are in db of the city*
- *The would like, if the data from the Police of the Czech Republic are included - this is also a condition for a possible public presentation*
- *They would like to compare two states/filter sets*

PČR

- *It has its public web environment for accident reporting, but they like the application*
- *It is recommended to contact the higher places of Police of Czech Republic with request for source structured data - it is recommended to use OBPK workplace*

SVS

- *They are interested in application, especially in traffic accidents*
- *Provided samples of source data from the Police of the Czech Republic in HTML*
- *In the future they are also interested in the heatmap of traffic intensities based on sensor data*
- *Interest in excel export of the data for the applied selection*
- *useful not only for SVS but also other urban planning professionals (architects, traffic engineers, noise map producers etc.*
- *Interest in more advanced data query interface on the Plzen Open Data portal described by Vaclav*
- *Interest in having very recent data in the app (update every day overnight?) in order to reply on public's traffic complaints with evidence*
- *Absolute numbers vs. % in the charts*
- *Absolute numbers interesting per segment/intersection*
- *Otherwise it makes better sense to display the variation of traffic in % when 100% is the average (because the same car can be detected on 20 sensors when passing through the city)*

- *Should we display % in the charts or maybe allow to switch % / real number?*

OBPK

- *They like the application, are interested*
- *So far, they mostly have table outputs*
- *They promised support and they will address the Police of the Czech Republic with request for the provision of source data*
- *They are interested in delicts committed by foreigners - they will add this in request for data for the Police*
- *They would like if the application is used by Police of the Czech Republic*

RRA

- *The run of the presentation showed, according to RRA, that there is a lack of a regional - municipal IT - GIS group that would tell what is being done, what is new, etc. It seems that more organizations are doing similar things in parallel.*
- *They want to send links for heatmaps*
- *RRA has a nice way to visualize commuting and migration trips or streams*

PK, POVED

- *Introduced collected data from O2 and T-mobile in 2 months about commuting and riding from/to Pilsen and surrounding areas with overlapping of the whole Czech Republic, data is in XLS*
- *will explore the use of heatmap data*

PMDP

- *offers data of delay of public transport vehicles (MHD)*
- *they collect data for 3 years - contact Mr. Rott*
- *PMDP showed its graphical outputs with dyed lines where there are delays*

Technical Feedback

Technical feedback was provided by the stakeholders to the technical team directly at the workshops and (after further testing) via email. Following the agile development methodology, this feedback has been regularly converted into tickets for the development team and is being implemented according to the defined priorities.

Workshop Improving the transport model

Iteration 1 - Closed Iteration

General Information

Date: 6/9/2018

Pilot city: Pilsen

Type of activity (refer to [D7.1](#)):

Moderator of the session: Stanislav Štangl and Karel Jedlička

Overview of the activity

The goal of this activity was to get to know the state of creating new traffic model, to analyze realizable steps and the steps that can not be realized for various reasons. The workshop also partially touched the functional analyzes of the developed application in connection with the integration of the traffic model into it.

The program was divided into the following parts:

- *Traffic model creation status*
- *Plugging the traffic model into the created application according to scenarios*

The expected outcome from the workshop was:

- *to get know the state of the new traffic model creation and the term of its completion*
- *to determine the behavioral principles of the new transport model*
- *to identify and solve eventually issues*

Results of the activity

The workshop was held on September 6, 2018 at the SITMP office with the participation of SITMP and technical partners Plan4All, EDIP, InnoConnect and representatives of SVS - Division of the concept of traffic engineering - total 11 participants

All addressed participants took a part in the meeting.

The results of the meeting were mostly satisfactory. We have to evaluate and discourse functionalities that will not be integrated in the immediate iteration. Some changes and refinements have been generated in relation to the developed application.

Participation table

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited (specify channel and)</i>	<i>11</i>	<i>-</i>	<i>-</i>

<i>Participants</i>	<i>Number of participants</i>	11	8	+3
<i>Feedbacks</i>	<i>Number of feedbacks</i>	4	-	-

Insight on feedbacks of the activity

Insight participation on feedbacks received:

EDIP

- *Spatially aligned traffic model will be done within one month, but only for one OD matrix (peak hour) .*
- *Model for other day time is issue at this time - we don´t know behaviour of traffic generators during the day. Proposal is to use individual street day profiles by street segment types computed from sensor data and the hourly volume of traffic during the day calculate in the visualization modul.*
- *Calibration of model using sensor data will be described..*

SITMP

- *Need to have both directional traffic model = differences between directions to/from the city. Two lines presentation in maps.*
- *We are storing on-line sensor data from DATEX II directly into city GIS database.*
- *Discuscouse about detection of time differences in map visualizacion - agreement that in the past delta will be computed from historical sensor data, in the future from traffic model.*

Plan4All

- *Confirmed the possibility of inserting a new section or changing the capacity of existing ones.*
- *Inserting new traffic generator will not be able in this iteration. Maybe in 2.-3. iteration will be tested.*
- *The same situation is with the possibility of increasing number of cars on arrival to the city.*
- *Near future within 1 day for current state scenario?*

InnoConnect

- *Prototype presentation showing aggregated data from sensors on traffic profiles. Profiles are only linked to those sections where we have accurate sensor data = discontinuous street net.*
- *Discoursed possibility of interpolating “missing” main roads using traffic model.*

SVS

- *They asked about versions of traffic model - current state and look-out for 20 and 30 years will be created*
- *They warned about the failure of the access control panel due to its planned upgrade.*

Technical Feedback

Technical feedback was provided by the stakeholders to the technical team directly at the workshops and (after further testing) via email. Following the agile development methodology, this feedback has been regularly converted into tickets for the development team and is being implemented according to the defined priorities.

B. Issy-les-Moulineaux

Focus Group Urbanism

Iteration 1 - Closed Iteration

General Information

Date: 28/06/2018

Pilot city: Issy

Type of activity (refer to [D7.1](#)): Workshop

Moderator of the session: Matteo Satta and Eric Legale

Overview of the activity

The aim of this first iteration is to start introducing to Issy's ecosystem but also to capture feedback, suggestions of changes, first platform uses foresights.

It was decided to have these activities to a group of public servants with the participation of a company having useful data for the Pilot. To this group, finally participated:

- 2 people of Issy Média moderating the session
- 2 people of the City of Issy (urbanism)
- 2 people of the Grand Paris Seine Ouest urban agglomeration (GIS and mobility)
- 1 person of Mediamobile (V-Traffic)

The moderators have introduced the project to the participants to allow them to understand the project and its main objectives.

Then the agenda was cut on 3 main moment:

- *discussion around the use of big data in Policy making in Issy urbanism service and Grand Paris Seine Ouest aiming at defining the needs in terms of policy cycles (including the confirmation or not of PoliVisu's one) and data needs (tools and datasets)*
- *presentation and discussion around WebGLayer, in particular the existing example of Pilsen and the first mock-ups about Issy*
- *discussion about the scenario of Issy and possible additional ones*

This was done to allow to understand:

- *technical needs*
- *datasets not yet present*
- *policy cycle of the project*

Results of the activity

Participants have been invited through personal invitations and almost all of them participated.

The result was satisfactory as it allowed to reach the target, quantitative and qualitative, of participants and to have the targeted stakeholders.

The main findings have been:

- *Urban service of Issy and Grand Paris Seine Ouest*
 - *they clearly described a flow similar to the one that PoliVisu reported in D3.6. They do use the data that they have, but it mostly paper/excel stuff, they stated that tools might really help.*
 - *They stated also that is more important is historical data (geo series) that allows them to make decisions, then if it is feeded in real time, it is, of course, even better.*

- *About WebGLayer (and related mock ups), reactions were not negative, but not even positive. It is necessary to show a mock up about urban agglomeration to allow them to have first insights*
- *They stated that just traffic data is limited, it would be better to have more (like public transport). This is positive as some data is already there and I'm now talking to STIF (Regional transport agency) to set a focus group.*
- *They proposed two more scenarios, one about parking (they are collecting data on that and they will share it with us) and one, the most important, about a project (urbanism, creating needs in terms of decisions around mobility such as where do I put a car sharing station to make it more useful?) taking place in Issy in the next two years.*
- *They are keen to keep working on us, next step will be to show them a « real mock-up ».*
- *Mediamobile:*
 - *they stated to have already a tool similar to WebGLayer*
 - *they stated not to feel really included in the project as they do not really be part of the public sector*
 - *they are keen to share their data and participate to further workshops*

Participation table

Fill a table using this exemple

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited</i>	<i>8</i>	<i>5</i>	<i>+3</i>
<i>Participants</i>	<i>Number of participants</i>	<i>7</i>	<i>5</i>	<i>+2</i>
<i>Feedbacks</i>	<i>Number of feedbacks</i>	<i>NA</i>	<i>NA</i>	<i>-</i>

Communication Focus Group

Iteration 1 - Closed iteration

General Information

Date: October 5, 2018

Pilot city: Issy-les-Moulineaux

Type of activity (refer to [D7.1](#)): co-creation workshop

Moderator of the session: Matteo Satta and Eric Legale (Issy Média)

Overview of the activity

The latest activity of the pilot was a workshop with the Focus Group about Information and Communication.

This activity, moderated by 2 Issy Média representatives, was mainly directed to, next to the introduction of the the project to the participants and make possible to engage them, discuss with the 5 participants :

- understand the use of data in Policy making in Issy communication services, aiming at defining the use done today, the feeling of users about this and the barriers met everyday.
- understand the barriers that can influence negatively the relations between communication and other services in share of data.
- receive feedback about the scenario and refine it.
- identify possible solutions to communicate at local level around the pilot
- define if Truly Media and Truth Nest can play a role in the pilot

This was done to allow to identify:

- users needs in terms of tools/visualisations
- data needs and identification of potential missing datasets (with today use of data)
- confirmation of the policy making model
- Identification of improvements of the existing scenario
- Effectiveness of the interactive methodology use to capture feedback

This activity was conducted also to test a gamification technique allowing to engage more the users and to obtain from them feedback in a smooth way. This was done also to test this technique before going to a larger and external public.

This activity received a highly positive feedback, as they stated to understand the project, to better understand data and to be ready to move on concretely to the next steps of the project, from participants that appreciated the type of activity that was settled as it follows:

- introduction to the project and the pilot (including the scenario)
- explanation of the activities of the workshop to be conducted together:
 - division of the participants in 2 groups, according to their professional profile
 - canvas to be filled in about current use of data and its role in policy making in their daily professional life
 - canvas to be filled in on a challenge around Issy scenario to be chosen between parking and carpooling to define a description of a visualisation/tool
 - small communication plan to be done to valorise/disseminate the visualisation/tool conceived by the users
- discussion around the tools Truly Media and Truth Nest, tested before the activity by users, to understand whether this might play a real role in their work and to define whether a test is needed for iteration 2.
- Final wrap up

Results of the activity

The activity was successful Participants have been invited through personal invitations and almost all of them participated.

The result was satisfactory as it allowed to reach the target, quantitative and qualitative, of participants and to have the targeted stakeholders.

The applied new methodology was extremely successful as all 6 users (also one of the moderators answered the survey on it as the conception was only of one of the moderators) showed great interest in it. Some comments were also made, in particular about timing as the workshop lasted a bit more than expected. It can be stated that this kind of activity needs at least 3 hours.

Referring to the content, it can clearly stated that the communication group highlighted some ideas and potential barriers:

- *the group showed high interest in carpooling, more than in parking*
- *the group showed that data strategy of the City is well accepted and recognised by them, but also that some other departments do not have the same feeling.*
- *the group confirmed the value of policymaking model, although they gave great attention to the implementation and validation cycles that they seem to consider more interesting.*
- *the group gave high interest on use of co-creation processes, involving start-ups/companies and other stakeholders involved in mobility*
- *the group highlighted a somehow wrong use of data in some departments (such as use of overall figures instead of use of insights)*
- *participants highlighted a lack of analysts or people being in a good position to make data analyses and indicated tools and visualisations as possible resources*
- *All users, but one, consider themselves as normal data users (one considers to be advanced)*
- *users consider that Truly Media and Truth Nest are tools with potential and that they think that a test in iteration 2 would allow them to give a clear and good feedback on it. They consider that the test has to be as real as possible.*

Group 1 produced feedbacks

D7.2 Recommendation for future deployments (Iteration 1)



Si c'était
AUJOURD'HUI...
C'EST QUOI ?



Je suis un vrai Geek moi, je suis top en open data et pour tout le reste... bon ok, je ne suis pas encore là, mais je vais bientôt y arriver. Ma note est 15.



- Conscience / nécessité / utilité
- Réflexion + début d'installation + ~~app~~
- Expérimentations de projets.

évaluation fréquentation sur un événement (Novembre / Concert)



Réception
1. Réception de la donnée (Ticket d'entrée) (Capteur affluence)

2. Stockage + ~~analyse~~
 ~~analyse~~
 (base, ~~17000~~
 ~~révision~~ ~~SQL~~)

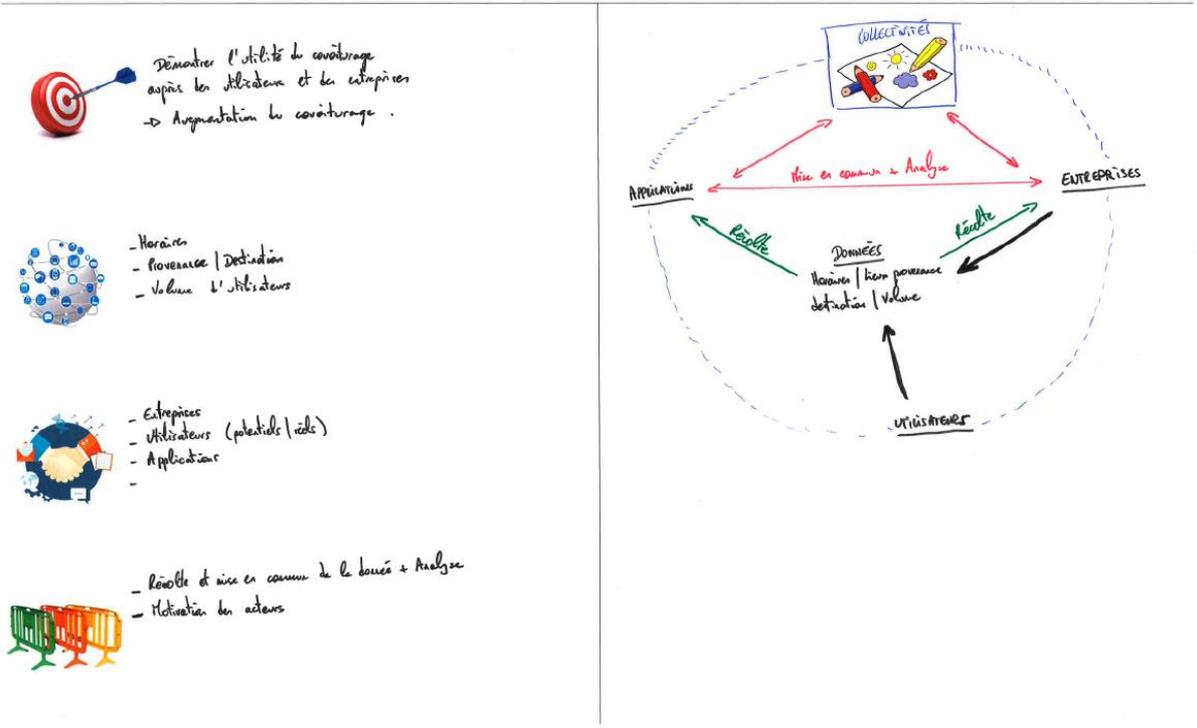
→ *13 000 visiteurs au Forum de Reims*

Frais



- Manque d'outils au niveau de la récolte (type de données, type, #)
- Manque d'intérêt (qualité des données)

D7.2 Recommendation for future deployments (Iteration 1)



Projet

1. Si on arrive à montrer l'utilité du covitragage (via PoliVisu), les habitants vont utiliser davantage le covitragage.
2. Si plus de covitragage → moins de voitures → moins d'embouteillages

Pilote

Slogan important ("Si 30% de la population utilise le covitragage, les embouteillages seraient réduits de 60%")

Sensibilisation (Affiches, Flyers)

Incitatif pour inciter (prixs, lots, réduction)

Afterwork "Bancs au covit" → Inciter les reports humains.



Data Focus Group

Iteration 1 - Closed Iteration

General Information

Date: 20 June, 2018, 26 July, 2018, 18 Sept., 2018, 4 October, 2018, 16 October, 2018, 18 October, 2018

Pilot city: Issy-les-Moulineaux

Type of activity (refer to [D7.1](#)): Focus Group

Moderator of the session: Matteo Satta and Eric Legale (Issy)

Overview of the activity

This activity was divided in 6 sub-activities to make it more agile and maximise the possible results.

Every activity had a clear purpose and was moderated, time by time, by one or two persons as reported in the table below.

Table 2 Sub-activities of Data Focus Group

Date	Stakeholder	Objective	External Participants
20/06/2018	Mappy/So Local	<i>Identification of the situation of traffic vs. roadworks</i>	3
26/07/2018	ICADE Dataactivist	<i>Cross presentation of projects to define a possible common scenario</i>	6
18/09/2018	Dataactivist	<i>Exchange about carpooling data and possible collaboration about PoliVisu</i>	3
04/10/2018	Joul (Zenbus)	<i>Definition of possible collaboration with data provision of bus rides</i>	1
16/10/2018	Mediamobile/Cityzen Data	<i>Organisation for use of mediamobile data in pilot</i>	2¹¹
18/10/2018	Hauts de Seine Department Grand Paris Seine Ouest urban agglomeration	<i>Exchange around the project to define a possible collaboration and use of traffic data of the department in the project</i>	2¹²

The main objective of this activity was to find business and public partners to collect the most of mobility data useful for the deployment of the pilot and to wide the scenario as much as possible, aiming at creating a real local demonstrator useful to show the potential impact of data on policy making and how communication/information management has a real role in policy making co-creation.

Results of the activity

These activities had a good impact on the results of closed iteration as they made possible to create some partnerships that will support next iterations, the main achievements have been:

- *Mappy/So Local* meeting allowed to define This activity involved 3 representatives of the company that have conducted for Issy a first analyses of the traffic around the area. This study allowed Issy to understand the value of the scenario and to identify possible improvements. Moreover, Mappy/SO Local showed interest in further collaborations with the only limit of a split of costs with the City.
- *ICADE/Dataactivist* meeting (4 participants of ICADE and 2 of Dataactivist) was set around an open exchange between PoliVisu and a private open data project conducted by ICADE with the support of Dataactivist. ICADE, a real estate company, collects many data around its buildings and it wishes to share this data (energy, occupation...) with inhabitants of those, but it wishes to associate also mobility information. In this framework, ICADE wishes to propose co-creation workshops with their customers,

¹¹ Results not yet part of this deliverable, they will reported in D7.3

¹² Results not yet part of this deliverable, they will reported in D7.3

thus it was decided to try to commonly collaborate. The barrier encountered is related to the data share as ICADE is more looking to receive data than to share its own. Anyhow, this will be further investigated.

- *Dataactivist* meeting was fixed following some findings of the previous with ICADE that made clear how this stakeholder is highly active in activities to make data clearer and more understandable. Moreover, they had some information on carpooling data, highly interesting for Issy. The meeting fro fruitful to allow them to understand the project and give some suggestions on the scenario. The biggest achievements was a list of contacts of companies willing to work on data on usage of carpooling.
- *Joul* meeting was a set to explain them the project and to define a possible collaboration around data. In fact, Joul is a company running a digital service, called Zenbus, of real time bus tracking and they have a big quantity of rough historical data about buses in the whole urban agglomeration “Grand Paris Seine Ouest” that is today not really used. The biggest achievement was their interest on the project and their willingness to support it proving the mentioned data. The next step will be a new meeting, including some technical representatives of the project to have a direct discussion with their technical team.

Participation table

Fill a table using this exemple

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited</i>	20	10	
<i>Participants</i>	<i>Number of participants</i>	17	10	
<i>Feedbacks</i>	<i>Number of feedbacks</i>	15	10	

C. Ghent

Working group: Student data analyses

Iteration 1 - Closed iteration

General Information

Date: 17/04/2018

Pilot city: Ghent

Type of activity (refer to [D7.1](#)): Working Group

Moderator of the session: Jonas Verstraete

Overview of the activity

This activity was the first major 'endgoal' in a series of activities prior to this one. The question on the student housing problem was already formulated months before this activity. On the 21st of november (around the time that PoliVisu kicked off), there were some first meetings with the housing department. The goal of this meeting was to obtain the different available datasets, what the needs of that department are and what the possibilities are. By obtaining this information, first analyses could be made on the data.

During the months that followed, further analyses were made and there were several follow-up meetings internally as with the data-expert of the housing department in order to finalise and perfect the analyses on the student housing data.

On the 17th of april, the results of this analyses were presented to the core team of the housing department. The goal of this meeting was to make the housing department aware of the data problem that is existing at this moment.

Results of the activity

For this meeting we used our internal network to gather the necessary people. In this meeting, there were 5 participants:

- Hanna De Voogt - housing department, responsible for student houses & KotatGent
- Hilde Reynvoet - housing department, chief of the department.
- Joran Van Daele - Data & Information cel
- Jonas Verstraete - Data & Information cel, leading the meeting
- Els Verhasselt - Data & Information cel, data expert.

At the start of this exercise, the goal was clear. We wanted to have a clear view on where the students live based on the already available datasets.

During this analyses, it became more and more clear that there are severe shortages in the available datasets.

The goal of the meeting on the 17th of april was to inform the housing department of this situation and problem. If the department is aware of this problem, we can create a clear buy-in from them and inform them about the possibilities of big data solutions for this problem.

Participation table

Name	Description	Result	KPI	Result vs. KPI
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Participants	Number of participants	5	10	50%
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Feedback table

Name	Description	Result	KPI	Result vs. KPI
Datasets	Number of useful datasets identified	4	15	26%

Insight on feedbacks of the activity

The housing department acknowledges the data problems that can be derived from the made analyses. With this, they also recognize the added value PoliVisu can offer in this matter.

As a result of this meeting, a new meeting with the board of directors of the municipal development department. By having this follow-up meeting, we hope to address this problem at a higher level of decision making.

Another result of this meeting was that our data & information cell decided to present this analyses to the Issy and to rework the presentation to add some new insights gained during this meeting.

Presentation of student housing results

Iteration 1 - closed iteration

General Information

Date: 25/06/2018

Pilot city: Ghent

Type of activity (refer to [D7.1](#)): Focus Group

Moderator of the session: Jonas Verstraete

Overview of the activity

Following to the meeting in Issy, at which we presented the results of the previous activity, the data analyses, we decided to address this problem at a higher level of decision makers, being the board of directors of the municipal development department.

Before doing this, we gained some further insights by having a meeting with the city of Leuven, which is the 2nd biggest student city in Belgium. Attending this meeting were:

- Jonas Verstraete (Data & information cel Ghent)
- Diedrik Gaus (Data & Information cel Ghent)
- Joris Voets (GIS-coördinator of the city of Leuven)

The meeting with the board of directors was planned on the 25th of June. Attending were all the directors leading the different teams concerning housing and living. During this meeting, the results of the previous meetings and analyses were presented and the problem of data shortage was highlighted. Together with this, new ways of collecting data were suggested (such as big data, surveys, or a mandatory registry).

Results of the activity

The first meeting with the city of Leuven resulted in a better knowledge of the problem in Ghent. Although Leuven has found a way (by making some sort of building registry which included student housing), we gained some new insights. We also can look into the option of creating a similar building registry. Next to this, we've highlighted the importance and the opportunities of PoliVisu concerning this problem.

The presentation at the board of directors had as main result that all involved partners now know and understand the existing data problem. With a clear understanding of the complexity of this problem and the role of PoliVisu; further concrete steps can be made together with the different involved departments.

Participation table

Name	Description	Result	KPI	Result vs. KPI
Participants	Number of participants	7	10	70%

Feedback table

Name	Description	Result	KPI	Result vs. KPI
Users	Number of needs identified	1	NA	NA