# INTEGRATED
## ACTION PLAN

## NEVERS AGGLOMERATION

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## ACTION PLAN

**NEVERS AGGLOMERATION**

nevers
AGGLOMÉRATION

IoT Xchange

URBACT
Driving change for
better cities

EUROPEAN UNION
European Regional Development Fund

## DENIS THURIOT

**PRESIDENT OF NEVERS AGGLOMERATION,
MAYOR OF NEVERS,
BOURGOGNE-FRANCHE-COMTÉ REGION COUNCILLOR.**

**The** European territorial cooperation program URBACT is the only one that is exclusively dedicated to the exchange of good practices and feedback between cities organized in thematic transnational networks; this is what makes this program a valuable asset. Nevers and its conurbation have been partners, since 2019, in the IoTxChange network on digital transformation, which allows the local actors involved to think about innovative ways of building the city together. Invited by the city of Fundão, we joined without hesitation this cooperation project around connected objects which echoes the idea of co-development via innovation and digital technology that we are promoting through the International Summit of Innovation in Median Cities and the Network of Innovative Cities which is being built little by little, including on a European level.
Nevers and its agglomeration have chosen, since 2014, innovation and new technologies as pillars of development and attractiveness.

And it was necessary to quickly take the turn, both technological and strategic, of the IoT. A tool for managing territories, improving the quality of services to users, both individuals and professionals, but also improving the performance of a certain number of economic players, the Internet of Things represents a major challenge for communities, urban or rural, even more so with the deployment of 5G. The IoTxChange network allows us to share experiences and thoughts in order to ensure an optimized deployment of connected solutions on our territory, but also the necessary securing of these new "doors" which are opening and which may be the targets of cyberattacks. This Integrated Action Plan, which details the action proposals, the implementation framework and the analyses of needs and costs, is the result of discussions and reflections carried out since 2019. It also illustrates the undeniable added value to belong to the IoTxChange network which offers cities the possibility of co-innovating together and, thus, investing for the future.

## ALAIN BOURCIER

**VICE-PRESIDENT OF NEVERS AGGLOMERATION
IN CHARGE OF ECONOMY, INNOVATION, ATTRACTIVNESS
AND HIGHER EDUCATION.**

**MAYOR OF GIMOUILLE**

**Since** the beginning of the 2010s, the notion of smart territory and/or smart city has taken on the landscape of European median cities.
It was from the start that NEVERS AGGLOMERATION took on board the opportunity of the digital transformation of its urban development.
In order to achieve this metamorphosis an architecture was put in place which looks like this:
At the center of the IT system, a core process allowing all the peripherals and applications to be linked;
Among these applications, IoT solutions comprising sensors and data restitution devices.
All with the data storage and management project on the territory of NEVERS AGGLOMERATION.
This is how the URBACT- IoTXchange collaboration was born, seen as an exchange of best practices between median smart cities.
Tomorrow digital requests will allow an improvement of environmental issues through the processing carried out in the heart of our median cities.

# CONTENT

## PART 1

## PART 2

## PART 3

# GENERAL PRESENTATION

**NEVERS AGGLOMERATION
IS A PUBLIC INSTITUTION OF
INTERCOMMUNAL COOPERATION
(EPCI) MADE UP OF 13 MEMBER
MUNICIPALITIES**

**NEVERS**

**VARENNES-VAUZELLES**

**FOURCHAMBAULT**

**GARCHIZY**

**SERMOISE**

**CHALLUY**

**COULANGES LES NEVERS**

**POUGUES LES EAUX**

**SAINCAIZE-MEAUCE**

**GERMIGNY S/ LOIRE**

**GIMOUILLE**

**PARIGNY LES VAUX**

**MARZY**



Parigny-
les-Vaux

Germigny-
sur-Loire

Pougues-
les eaux

Loire

Garchizy

Varennes-
Vauzelles

Fourchambault

Coulanges-Lès-Nevers

NEVERS

Loire

Marzy

Sermoise-
sur-Loire

Gimouille

Challuy

Allier

Saincaize-
Meauce
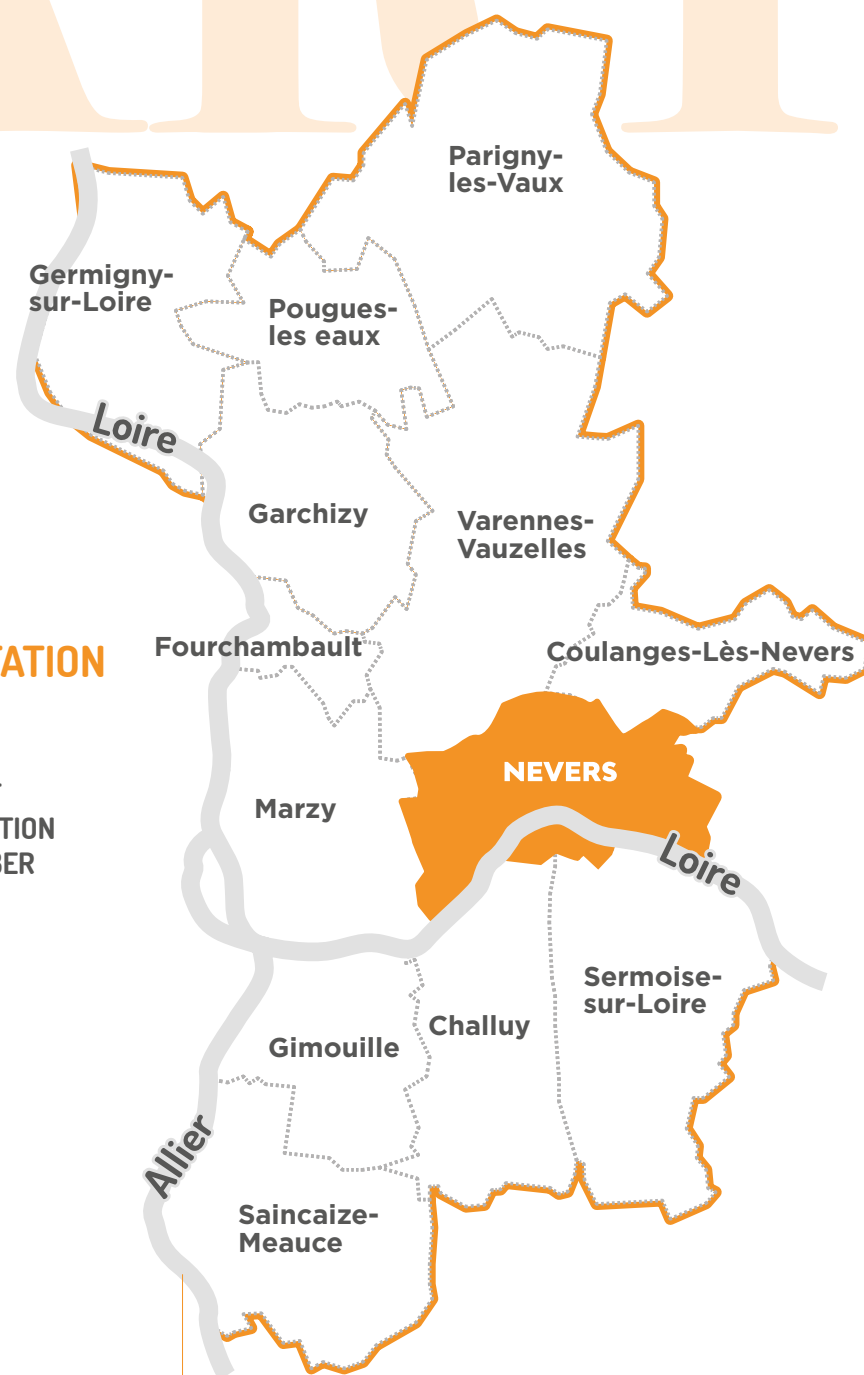
This institution of nearly 70,000 inhabitants alone
concentrates 1/3 of the population of Nièvre, of
which the city center, Nevers, is the departmental
prefecture and the most important city of the
territory with approximately 34,000 inhabitants.
Nevers is the 6th largest urban area in the
Bourgogne-Franche-Comté region in terms of
population.
Halfway between the Parisian and Lyonnais basins,
located to the west of the Bourgogne Franche-
Comté region, its position is at the crossroads of the
Center and Auvergne regions.



**Le Bec d'Allier,
confluence of river Loire
and Allier**

**Nevers
The ducal palace
and the cathedral**

# 33 286
### CITIZENS
### IN NEVERS

# 67 531
### CITIZENS
### IN NEVERS AGGLOMERATION

## DEMOGRAPHY

**NEVERS AGGLOMERATION HAD A TOTAL OF 67 531
CITIZENS, WITH THE SMALLEST TOWN HAVING
JUST UNDER 500 INHABITANTS, AND THE BIGGEST
ONE (NEVERS) ALMOST 34,000.**

The population has been declining over the years,
although the trend has started to turn since the
pandemic, with the city of Nevers gaining over 200
inhabitants last year for the first time in decades.
It has an aging population, with over 30% of its
population aged 60 or above in 2018, higher than
the national average, but an unemployment rate of
9.1%, so identical to the national one.

Lille

PARIS

Nantes

Dijon

NEVERS

Lyon

Clermont-Ferrand

Bordeaux

Montpellier

PARIS
230 km

A77

Loire

DIJON
200 km

NIÈVRE

RÉGION
BOURGOGNE
FRANCHE-COMTÉ

NEVERS
AGGLOMÉRATION

Allier

N7

Loire

CLERMONT
FERRAND
150 km

## ECONOMY

A historically industrial territory, during the second
part of the 20th century, Nevers Agglomeration's
economy revolved around big industrial companies
(such as Philipps for example), who were then
important employers.
This sector still has an important place in the
economy (3000 jobs and 93 industrial facilities in
the metallurgy, mechanics and equipment sectors)
With the evolution of the economy and the
expansion of the tertiary sector, 71% of employment
now depends on trade and services sectors, with
public administration, health, social sector and
education gathering 37% of employment.

However, very high speed broadband, ICT, and
sustainable development are also economic
development drivers on the territory.
Nevers Agglomération has thus developed an
entrepreneurial ecosystem with a particular focus
on the transport and mobility sector, and R&D
departments. The core of this ecosystem is L'INKUB,
an old army building that has been successfully
converted into a pole of innovation, gathering
coworking, meeting rooms, start-ups, and more
advanced companies.
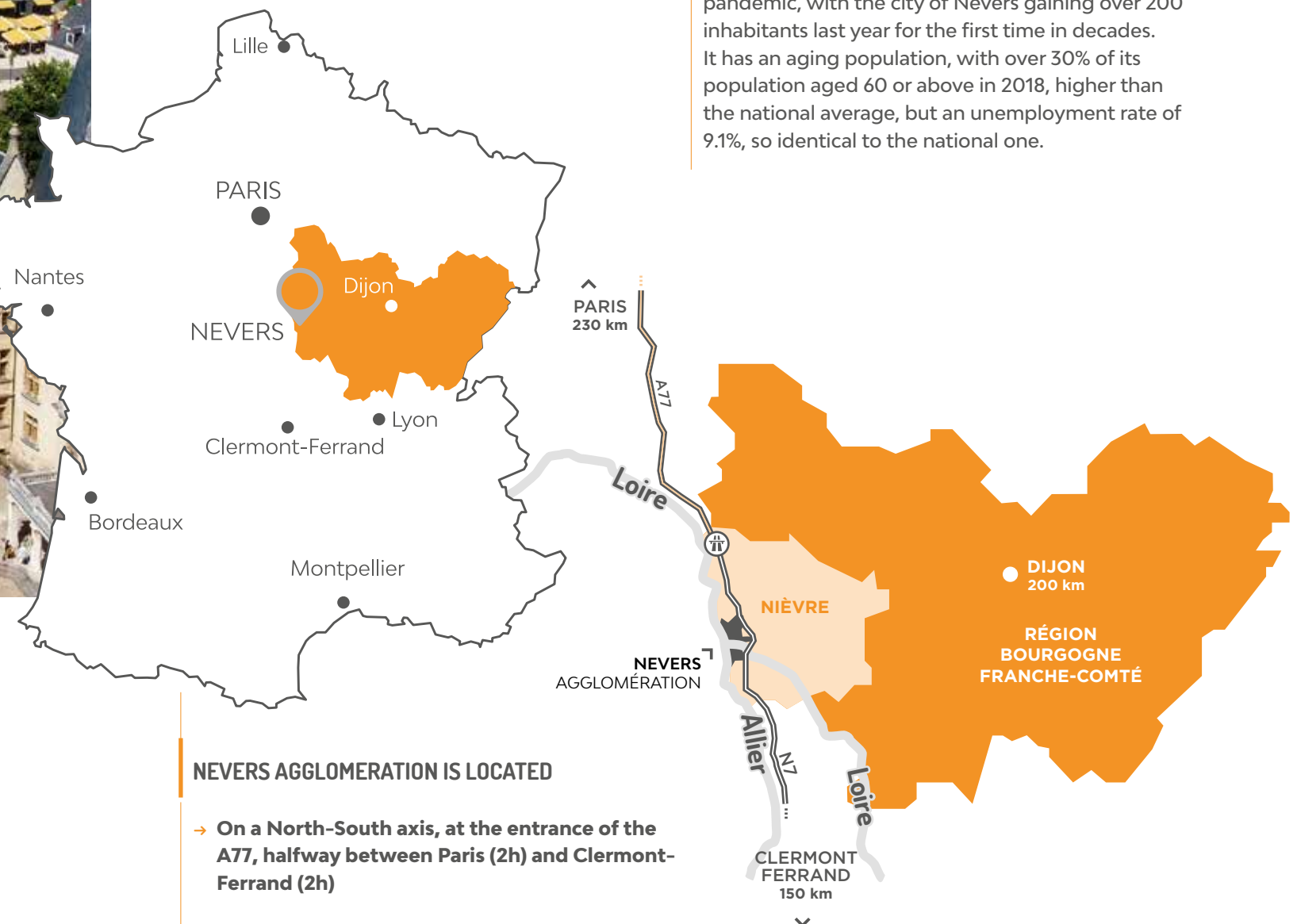
**NEVERS AGGLOMERATION IS LOCATED**

→ **On a North-South axis, at the entrance of the
A77, halfway between Paris (2h) and Clermont-
Ferrand (2h)**

→ **On an East West axis, halfway between Dijon
(3h) and Tours (2h30).**

# 1

## INNOVATION AND SMART TERRITORY

Nevers Agglomération has indeed since 2014 given more and more importance to digitalization, as a tool of economic development and life improvement for our citizens, and better management for the community.

It has also positioned itself as a "median city", and as a leader in Digital Transformation for these types of cities, not only in Europe but also exploiting links with overseas cities.

### THE MAIN SUCCESSES OF THESE PAST 5 YEARS ARE (AMONGST OTHERS):

→ **Only conurbation to be a territorial OPEN DATA facilitator**

→ **Organization of recognized event on innovation( the SIIViM International Summit of Innovations in Median Cities)**

→ **Implementation of different projects : smart urban furniture (etree, a digital solar tree), first autonomous shuttle to be used on public space as an experiment of 2 months.**

→ **Robotics for pupils in Nevers Agglomération, etc.**

In 2019, Nevers Agglomération also created a Smart Territory and Innovation Department gathering officers with a mission of coordination between the different services. It then became the Sustainable Digital Territory Department, a mutualized department also including IT services from both the City of Nevers and Nevers Agglomération.
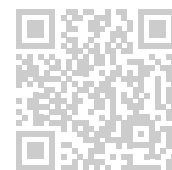
## URBACT AND THE IOTXCHANGE NETWORK

**URBACT** is a European program relying on cooperation between different cities: URBACT's mission is to enable cities to work together and develop integrated solutions to common urban challenges, by networking, learning from one another's experiences, drawing lessons and identifying good practices to improve urban policies. URBACT III (2014–2020) follows the success of the URBACT I and II programs, and has been developed to continue to promote sustainable integrated urban development and contribute to the delivery of the Europe 2020 strategy

It is managed in France by the *Commissariat Général à L'Egalité des Territoires* and built around 4 main objectives:

**01.** **Capacity for Policy Delivery**

**02.** **Policy Design**

**03.** **Policy Implementation**

**04.** **Building and Sharing Knowledge**

More than a network, URBACT also offers methods (co-creation, stakeholders participation) and support for the development of the IAP, Integrated Action Plan to be the implemented by the city.

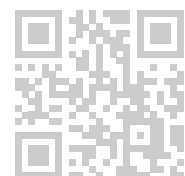## IOTXCHANGE–« CONNECTING CITIES FOR BETTER LIFE »

The IotXchange network is made of 8 European partners : the cities of Fundão (Portugal- Lead Partner), Razlog (Bulgaria), Dodoni (Greece), Nevers (France), Jelgava (Latvia), Ånge (Sweden) and Kežmarok (Slovakia) and the Åbo Akademi University (Finland). It was built around the Internet of Things as a policy instrument for the city change.

It encourages the creation of a network of European partners committed to the design of digitalization plans based on Internet of Things (IoT) solutions to increase the quality of life in small and medium sized EU cities. URBACT methodology based on transnational cooperation between cities and engagement of local groups offer to our network of 8 partners the conditions to each develop an Integrated Action Plan that will guide us through a new age of digital transformation.

## FOCUS

| STRENGTHS | WEAKNESSES |
|---|---|
| **A STRONG DYNAMIC ENGAGED FOR A FEW YEARS ON INNOVATION, DIGITAL AND NEW TECHNOLOGIES:** | **AS FOR EVERY PUBLIC ADMINISTRATION, REDUCED BUDGET AND HUMAN RESOURCES;** |

**A STRONG DYNAMIC ENGAGED FOR A FEW YEARS ON INNOVATION, DIGITAL AND NEW TECHNOLOGIES:**

IoT already well developed on the territory, and in various departments, at the scale of the agglomeration and the municipalities :

» **INNOVATIVE PROJECTS** with for example the first eTree (connected solar tree) in Europe,

» **EXPERIMENTS Examples: Autonomous shuttle** in public space for 2 months, **"Transmitter head – IoT LoRAWAN" experiment** on around fifty large consumer water meters, deployment of other types of sensors for the operation of its water network.

» **ALSO PROJECTS THAT GO BEYOND EXPERIMENTATION,** and have been operational for several years, eg:

– URBAN SERVICES
**Urban transport network:** development of ticketing, real-time information, monitoring of the use of the transport network in real time, etc.
**Traffic lights:** supervision of traffic controllers, bus priority.
**Mobility, parking:** Installation of sensors for parking spaces (blue zone), geolocation of bike stations, etc.

– ENERGY AND ENVIRONMENT
**Heating network:** measurements of heat consumption in customer meters.
**Public lighting:** installation of smart lampposts.
**Buildings:** gradual implementation of the GTC of buildings (INKUB, etc.).

» **BEYOND INVESTMENTS IN THE IOT,** development of tools for reporting and sharing this information, including with the general public;
**Examples:** "Nevers agglo dans ma poche" application, Encouragement of partners to use Open Agenda.

**AS FOR EVERY PUBLIC ADMINISTRATION, REDUCED BUDGET AND HUMAN RESOURCES;**

Operating in silo: today, each department of Nevers Agglomeration and its 13 municipalities has its own tools, IoT, platform, and service provider.

The state of the art realized at the beginning of the project has indeed revealed :

» **NOT LESS THAN 14 DIFFERENT PLATFORMS** used by 7 departments within the agglomeration and City of Nevers ;

» **TOOLS AND PLATFORMS THAT REMAIN LIMITED TO DEPARTMENTS AND DO NOT COMMUNICATE WITH OTHERS :** no optimization of tools, no possibility of cross-referencing these data and the informations they provide



Autonomous Shuttle

## OPPORTUNITIES

NEVERS AGGLOMERATION, THANKS TO THE POLICY THAT HAS BEEN CONDUCTED FOR SEVERAL YEARS IN TERMS OF ATTRACTIVENESS AND INNOVATION, IS NOW IDENTIFIED AS AN INNOVATIVE TERRITORY :

» **ORGANIZATION OF EVENTS SUCH AS SIIVIM**, bringing together the major players in new technologies ;

» **INTERNATIONAL PRESENCE AT MAJOR TECH EVENTS ;**

» **WILLINGNESS AND SUPPORT OF ELECTED OFFICIALS AND OF THE GENERAL MANAGEMENT OF SERVICES.**

Visibility allowing to be sollicited, to receive proposals, and willingness to be a territory of experimentation: access to the latest technologies and solutions.

## THREATS

LIMITS DUE TO :

» Providers, limiting interconnections in order to maintain a certain control over their solutions, and a dependence on customers ; willingness or lack of willingness to evolve on this subject ;

» The current tools : do they allow us a complete interconnection, and thus the implementation of a global IoT policy as planned ?

» The heterogeneity of the territory : a conurbation of 13 municipalities of different typologies, ranging from a municipality of 34K inhabitants, prefecture of the department, to a village of 600 inhabitants ; and therefore different needs, resources and capacities ;

» Lack of training and knowledge in the field ; lack of sharing of data, of interoperability and interconnection.

IT APPEARS THAT THE CURRENT SITUATION OF IOT ON THE TERRITORY COULD BE SUMMARIZED BY THE DIAGRAM BELOW :
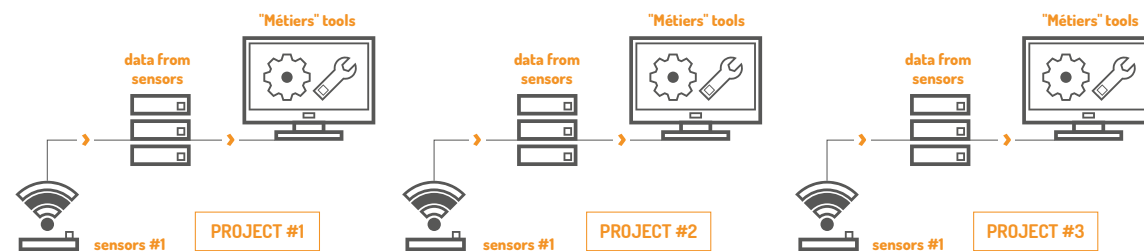


**CURRENT SITUATION**
Each tool/IoT sends its data to its own platform that doesn't communicate with others

WHEN THE OPTIMAL SOLUTION WOULD BE:
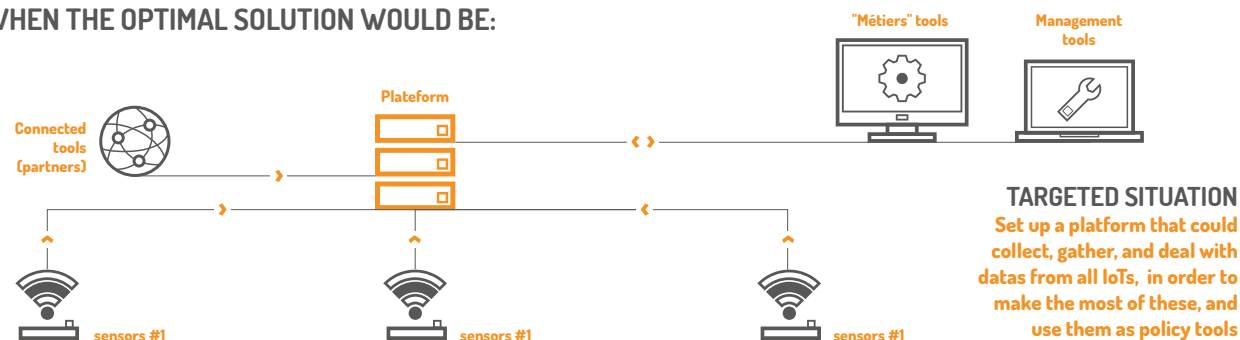


**TARGETED SITUATION**
Set up a platform that could collect, gather, and deal with datas from all IoTs, in order to make the most of these, and use them as policy tools

We can thus see that the question of IoT and data in general is present at all levels, and requires a real policy of rationalization and optimization, at the scale of the agglomeration. Indeed, if this necessity applies to IoT, it should not be limited to it. To become a real political instrument, the issue of data must indeed be addressed as a whole, starting with the IoT, but not only.

### THE IAP THUS AIMS TO ACT IN THE AREAS IN WHICH THIS DATA OPTIMIZATION WILL BE DECISIVE, NAMELY:

| THEMES | ACTIONS |
|---|---|
| 01. IoT Public Services / Service to residents | 01. Transversal/Horizontal thematic workshops |
| 02. IoT mobility | 02. Search for funding |
| 03. IoT: service management tools (for local authorities) | 03. Call for proposals |
| 04. IoT: management / decision-making tools | 04. Technical implementation of the platform: choice, connectors to be implemented, data recovery and integration |
| 05. IoT Sustainable Development | 05. Training (manager, users, elected officials, etc.), education/ information/monitoring/feedback – sharing experiences |
| 06. Transversal - Infrastructure and data management | |

### KEY OBJECTIVES AND EXPECTED IMPACTS



PREPARE THE FRAME

SET UP A BUDGET

SET UP THE PLATFORM

GATHER THE ACTORS

ACHIEVE FINANCIAL AND ENVIRONMENTAL SAVINGS

—end-of-part-1

## INTEGRATED ACTION PLAN

**AN INTEGRATED ACTION PLAN (IAP) IS A DOCUMENT DEFINING ACTIONS TO BE IMPLEMENTED, COVERING TIMINGS, RESPONSIBILITES, COSTINGS, FUNDING SOURCES, MONITORING INDICATORS AND RISK ASSESSMENTS. IT IS THUS A POLICY INSTRUMENT THAT CAN BE USED TO RESPOND IN A CONCRETE WAY TO A POLICY CHALLENGE.**

**EACH IAP IS UNIQUE, IN TERMS OF LOCAL CONTEXT, THEME AND COVERAGE.**

It is produced based on the URBACT methods, and results from a participative process; the IAP is developed with the stakeholders involved in the URBACT Local Group.
The URBACT Local Group coordinator normally leads the process of physical production of the IAP, but the URBACT Local Group members may also take responsibility for drafting and revising all or parts of the document.
 Ideally, the Integrated Action Plan should reflect and integrate all URBACT Local Group members' knowledge and perspectives and what they learn from transnational exchange with other URBACT cities.

# 2

## DESCRIPTION OF THE PROCESS

### ULG

### IN IAP, THE "INTÉGRATED" PART MEANS:

→ **Positive externalities**

→ **Addressing social, economic, physical and environmental dimensions**

→ **Working across dept. silos**

Using the URBACT method, the ULG was thus set up by inviting all actors concerned by IoT: head of other services within the administration, representatives from the State, from the Bourgogne-Franche-Comté Region, the Nièvre Departement, from higher education, but also corporates such as major companies (energy suppliers, ICT, transport companies...) were thus at some point associated to the project

### NATURALLY, AS THE PROJECT BECAME CLEARER AND MORE DEFINED, THE ULG SHREDDED TO A FEW KEY MEMBERS:

→ **IT directors from both Nevers Agglomération and the city of Nevers,**

→ **Innovation and smart territory department,**

### BUT ALSO STILL OTHER ACTORS SUCH AS

→ **The water department,**

→ **The procurement (public contracts) department,**

→ **The deputy general director head of attractiveness and territorial development of Nevers Agglomération.**

→ **The deputy general director in charge of support (Human resources, IT, public contracts, and finances)**

→ **The general director.**

### ULG MEETINGS

Over the course of the project, no less than 12 meetings took place, digitally, physically, or both, due to the pandemic.
Up to 15 people participated in these meetings, with the average/core group gathering 8 people.

### TRANSNATIONAL MEETINGS

The work from this ULG was both fed and guided by the transnational meetings, that allowed partners to share their experience, and to benefit from their peers'.
Due to the pandemic, these were held mainly digitally, of course limiting somehow the interactions, but good practices could still thus be learnt from.

→

## EXTERNAL EXPERT

For the first phase of the project, Nevers Agglomeration chose to call onto an external expert. The ArxIT company thus helped the ULG on the diagnosis phase, but also in defining the actions to be set up and to be integrated in the IAP.

## SMALL SCALE ACTION

One of the first stones towards the future bigger IoT and data platform project that will be the core of the IAP has been an experiment with the water department, for which the contract was signed on May 19th for 3 months, and made possible by the Small Scale Action line part of the URBACT project: a brand new, tailor made intuitive analytics dashboard to better manage the water network and supply.
The Water Utility team is in charge of managing the drinking water distribution for 11 of the 13 towns of Nevers Agglomeration, and supervising a telemetry network which controls and monitors 4 treatment plants, 14 water tanks, 400 km of water pipes, 1.4 million m³ produced per year.
They have relied on Smart Water Network for a long time. As in all telemetry networks, their SCADA system centralizes all the data coming from the field, process it and display all their KPIs in several mimics. The Water Utility team invested in a premium telemetry solution to control & monitor the entire drinking water network, with 22 cybersecured RTU controlling all strategic sites, and 66 data loggers to monitor critical points such as daily volumes, and min, max, average & night flow rates.
The Water Utility team made a huge work in 2019 to configure a GIS application; moreover, A SCADA system is relevant to manage in real-time a water network but cannot always address all data analytics use cases. Therefore, following a cooperation initiated for the SIIVIM 2020, the water utility team asked the company LACROIX to develop and industrialize intuitive analytics dashboards able to correlate data coming from their telemetry network & GIS application, and bring advanced visualization. The objective? To inject their expertise into an Analytics application, to better understand the water network, ant to predict leakages and reduce Non Revenue Water.

These dashboards allow to compare real vs theoretical water consumptions; identify areas with abnormal water consumptions; validate if the consumption profile is normal or not; estimate the reactivity to detect and repair leakage; ensure a follow up of interventions; quantify water loss; and to tune the consumption and flow rate thresholds for the troubleshooted site. The first results were significant, with an annual saving estimated at 200,000 m³ of water. This unprecedented experiment has also been recognized worldwide, being the winner of the first Word Artificial Intelligence in Cannes, and being the subject of interventions by the Lacroix-Sofrel company around the world at various summits, the next one being planned in Washington.
Such a success that the partnership was renewed and the project will be further developed, with the next objective being to work on energy efficiency (water production, pumps,...)
Beyond the significant results, this experiment once again showed the limits of data ownership and sharing: in fact, it only applies to municipalities where the water is under management (managed by Nevers Agglomération directly).
There is no data sharing, no access to the data of the 2 municipalities for which water is managed by a private supplier, like the city of Nevers for example. So the application developed in water management cannot be extended to these 2 cities, and thus be applied to the complete Agglomération.
That is a lesson to be learned, to make sure that data ownership and recovery must be imposed in the negotiations of future contracts.

A COMMERCIAL VIDEO WAS RELEASED BY THE SUPPLIER ON THIS PROJECT

https://youtu.be/O54-sMiiZI0
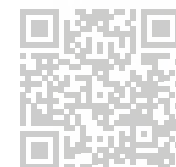


## FACTS AND FIGURES

**SOLUTION:**
Intuitive analytics dashboards to better manage the water network and supply.

**VENDOR**
Innovation Lab By Lacroix

**BUDGET**
10.000€

**PROCUREMENT PROCESS**
"innovation contract"

**TIMEFRAME**
Contract signed on May, 19th, 2021 for 3 months

## CONTACT PERSON AT CITY HALL

**DOMINIQUE DERANGERE**
HEAD OF THE WATER DEPARTMENT
dderangere@agglo-nevers.fr
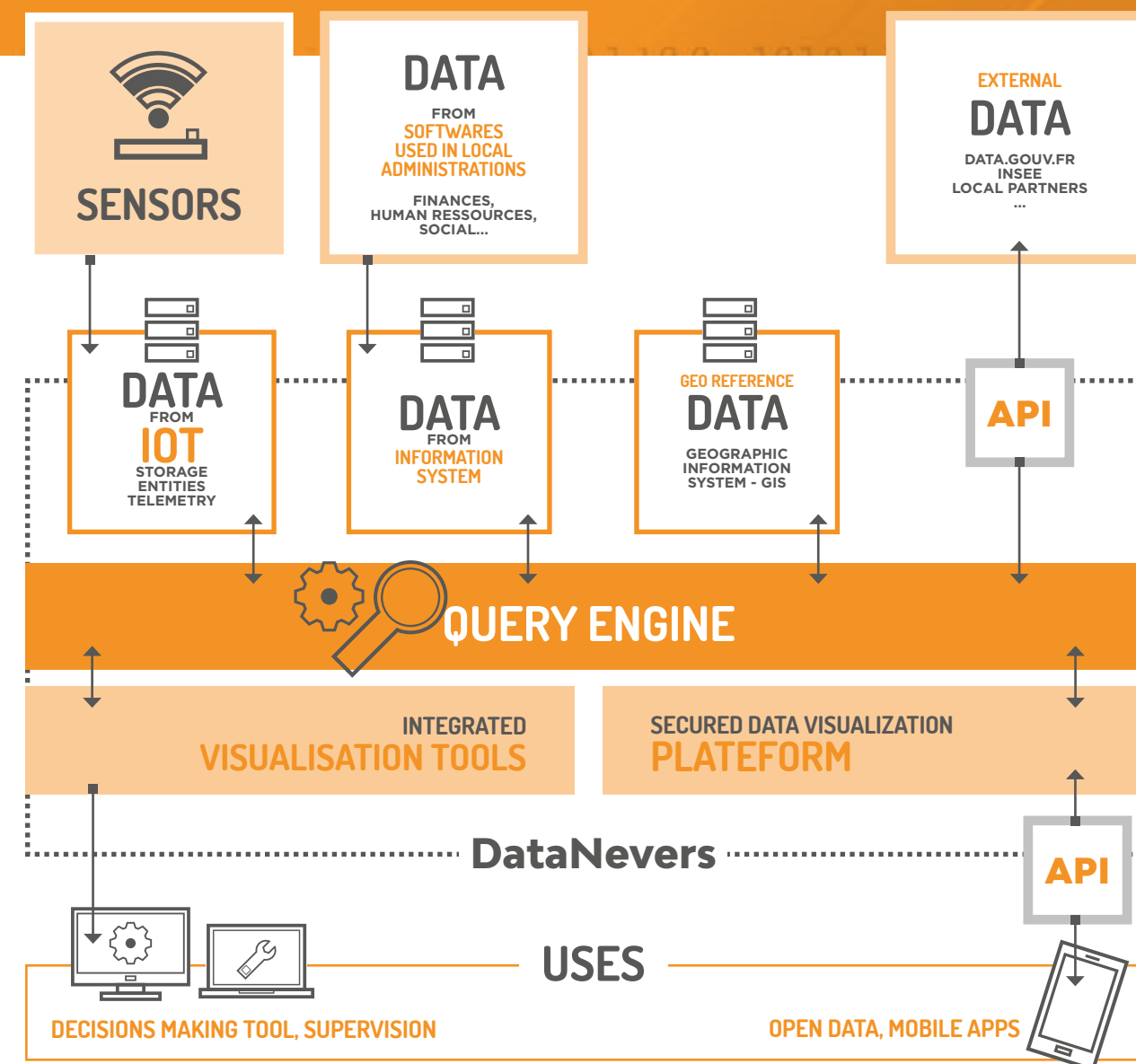
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## "DataNevers" Platform
Schematic diagram



## IAP THEMES AND KEY OBJECTIVES:

This IAP focuses on the strategy on IoT and data in general to be implemented in the territory. This strategy consists first of all in rationalizing the existing, by grouping the data from the various IoT platforms already in place.

This data could then be supplemented with data from other partners, private and public.

**PUBLISHED IN OPENDATA, THEY WOULD THUS MAKE IT POSSIBLE TO DEVELOP USES:**

→ **For citizens,**

→ **And for the different directions of the agglomeration, by developing and integrating the new needs of the departments, by facilitating the organization, homogenization and restructuring within the services, and by relying on this data to make the authority progress in the different themes targeted by the IAP:**

### 01
**IOT PUBLIC SERVICES / SERVICE TO RESIDENTS:**

This is the primary objective of the agglomeration: to work on a daily basis to improve and offer more services to its inhabitants.
Streamlined data will enable:

→ **The development of new innovative services intended to make everyday life easier and improve the living environment of residents,**

→ **Better management of the citizen relationship.**

### 02
**IOT MOBILITY**

→ **Better understanding of the movements of citizens to improve the urban traffic plan.**

→ **Development of alternative forms of mobility to the individual car.**

### 03
**IOT: SERVICE MANAGEMENT TOOLS (ADMINISTRATION)**

→ **Acceleration of the modernization of public services,**

→ **Development of inter-municipal solidarity through the implementation of shared tools and infrastructures,**

→ **Support for the evaluation of public policies via public data analysis engineering,**

### 04
**IOT: MANAGEMENT / DECISION-MAKING TOOL**

Open and interconnected, the data will thus be able to

→ **Be crossed to give elected officials a global vision**

→ **Feed interoperable tools to help local authorities' management**

### 05
**IOT SUSTAINABLE DEVELOPMENT**

Better management of our resources by detecting waste, correcting/optimizing our practice of the territory, and rationalizing/optimizing tools to limit environmental impacts.

### 06
**TRANSVERSAL - INFRASTRUCTURE AND DATA MANAGEMENT**

The IoT platform must be the first brick of a general platform of the territorial data, "DataNevers". This territorial platform will then gather, in addition to the data produced by the connected objects that are deployed, the data also coming from the information systems of the municipalities of the agglomeration that will have been re processed to make them accessible in structured formats.

## THE IMPLEMENTATION OF THIS STRATEGY WILL GO THROUGH 4 MAIN STAGES:

### 01. Preparing the (legal) frame

**A. OBJECTIVE**
Understanding by the services and elected officials of the project, in order to obtain their validation to launch it, and launching of the procedures (call for proposals)

**B. INDICATOR OF PERFORMANCE**
Call for proposals published and contract signed with a provider

**C. TIMEFRAME**
Mid 2021- January 2022

**D. NEVERS AGGLO REFERENTS**
Sustainable Digital Territory Department + public procurement

**E. INTEGRATED APPROACH**
Information meetings, commissions/mayors meetings (community bodies), CAPA/CAO

### 02. Setting up a budget

**A. OBJECTIVE**
To be able to set up the project

**B. INDICATORS,**
Allocation of funds

**C. TIMEFRAME**
From the beginning of the project and throughout its duration

**D. MAIN ORGANIZATION**
Nevers Agglo, + Region

**E. INTEGRATED APPROACH**
Upstream work with the BFC Region to identify potential subsidies and responses to call for proposals

### 03. Setting up the platform

**A. OBJECTIVE**
Operational implementation

**B. INDICATORS**
Connected sensors and platforms

**C. TIMEFRAME**
from contract award to 12 months

**D. MAIN ORGANIZATION**
Nevers Agglo, City of Nevers

**E. INTEGRATED APPROACH**
Meetings, workshops between departments and plateform and connected products providers.

### 04. Training (manager, users, elected officials, etc.), education / Bringing the stakeholders together

**A. OBJECTIVE**
understanding and appropriation of the strategy and the tool

**B. INDICATORS**
Use of the tool

**C. SCHEDULE**
The entire duration of the project

**D. MAIN ORGANIZATION**
Nevers Agglo, member municipalities.

**E. INTEGRATED APPROACH**
Meetings, workshops between departments, local authorities, then extended to partners, and to other local authorities member of the SIIViM network.

→

# 2

## ACTION PLAN BREAKDOWN
# AMO LOT NEVERS – ACTION PLAN

### ACTION TABLE 1/4
### GOAL : PREPARING THE FRAME OF THE FUTURE PLAFORM

| | 01 | 02 |
|---|---|---|
| **ACTIONS** | **Define all the needs, anticipate all restraints for the project as a whole; write down the technical contract specifications and conditions** | **Appointment of a head of project** |
| **EXPECTED RESULT** | Making sure that all the criteria aimed at are taking into account, and the offers will match what is expected | Having a pilot, someone to drive the project and make evryone accountable |
| **RESOURCES/ASETS** | Results from the external expertise | skills from the different agents ; concertation |
| **LEADER** | Nevers Agglomération | tbc |
| **KEY PARTNERS** | legal, IT, finance, smart territory departments; external expertise potential providers | Elected representative in charge of Innovation; general deputy director |
| **TIMEFRAME** | $T_0$ | $T_0$ |
| **LOW-LEVEL INDICATORS (E.G. Nº OF SENSORS INSTALLED, ETC.) FOR EACH OF THE ACTIONS** | Requirements specifications | Head of project |

### ACTION TABLE 2/4
### GOAL : SETTING UP BUDGET AND FIND FUNDINGS

| | 01 | 02 |
|---|---|---|
| **ACTIONS** | **Evaluate the total and detailed costs of the project** | **Search for funds at different scales: own, department level, Region level, State, Europe** |
| **EXPECTED RESULT** | Knowing the amount necessary to set up the project, and have the elected representatives validating it | Being able to set up the project |
| **RESOURCES/ASETS** | Results from the external expertise | Call for proposals/ public funds |
| **LEAD AGENCY** | Nevers | Nevers |
| **KEY PARTNERS** | External expert; potential providers | |
| **TIMEFRAME** | $T_0$ | $T_0$+2 years |
| **LOW-LEVEL INDICATORS (E.G. Nº OF SENSORS INSTALLED, ETC.) FOR EACH OF THE ACTIONS** | Budget | Amount of fundings received |

### ACTION TABLE 3/4
### GOAL : SETTING UP THE PLATFORM (TECHNICALLY)

| | 01 | 02 | 03 | 04 |
|---|---|---|---|---|
| **ACTIONS** | **Install and set up a Nevers Agglomération private LoRaWan IoT Network** | **Set up the IoT Platform's hosting** | **Set up an hypervision and data managment platform** | **Provision of the existing compatible IoTs** |
| **EXPECTED RESULT** | Gateways set up, in use, and connected to internet | Hosting ready to host the platform and administrator trained and ready | Plateform and databases set up and running; platform connected to the gateways making the IoT Network Sensors provisonned on the platform Telemetry of sensors of compatible platforms reachable form the new platform Dashboards defined, created and running; telemtry rules created | Sensors provided into the platform; telemetry database fed |
| **RESOURCES/ASETS** | Results from the external expertise ; requirements specifications budget; offers | Contract specifications budget training | Results of the IoT external expertise requirements specifications budget offers providers API SQL database ready Results from SSA | Platform + SQL database Platform + NoSQL database Result of the SSA |
| **LEAD AGENCY** | Nevers Agglomération | Nevers Agglomération | Nevers Agglomération | Result of the SSA |
| **KEY PARTNERS** | External expert; IT and innovation services Network providers Head of the installations' locations | External expert; provider | External expertise platform provider IoT providers | Iot Providers; Iot Network providers |
| **TIMEFRAME** | $T_0$ +5 months | $T_0$ + 2 months | $T_0$+ 7 months | $T_0$+2 months |
| **LOW-LEVEL INDICATORS (E.G. Nº OF SENSORS INSTALLED, ETC.) FOR EACH OF THE ACTIONS** | Network running; numberb of gateways | | Platform running ; number of connected gateways | Number of sensors |

52.471
12.984
20.893
14.73

**2**

## ACTION TABLE 4/4

**GOAL :** GETTING ALL ACTORS TO EMBRACE THE PROJECT AND COOPERATE TO MAKE IT A SUCCESS

| | 01 | 02 | 03 |
|---|---|---|---|
| **ACTIONS** | Explain and keep the elected representatives up to date | Explain and keep all the services up to date | Get the general public to understand the project |
| **EXPECTED RESULT** | Getting the elected representative to validate the project (including the budget) | Making the most of the investment and of the platform; make it a real and efficient policy instrument | Getting them to not be afraid of it |
| **RESOURCES/ASETS** | Results from the external expertise ; institutional meetings | Results from the external expertise ; regular meetings | Results from external expertise; meetings; communication |
| **LEAD AGENCY** | Nevers Agglomération | Nevers Agglomération | Nevers Agglomération |
| **KEY PARTNERS** | External expert; IT and innovation services | External expert; IT and innovation services | Communication department |
| **TIMEFRAME** | $T_0$ to as long as the platform exists | $T_0$ to as long as the platform exists | $T_0$ to as long as the platform exists |
| **LOW-LEVEL INDICATORS (E.G. N° OF SENSORS INSTALLED, ETC.) FOR EACH OF THE ACTIONS** | Steering committees | Technical committees end information meetings | Developed uses: nb of views of web pages/apps |

## RESOURCING

### 01 FINANCIALLY

This is something that was worked on very early in the project.
Namely thanks to the work with one member of our ULG, the Bourgogne-Franche-Comté Region, who informed us before it came out of a future call for proposals that could fund a great part of smart and sustainable territory projects. This is how on April 30th, 2021, Nevers Agglomeration was one of the first candidate to answer to this call for proposal, based on the work of the ULG and the external expert.
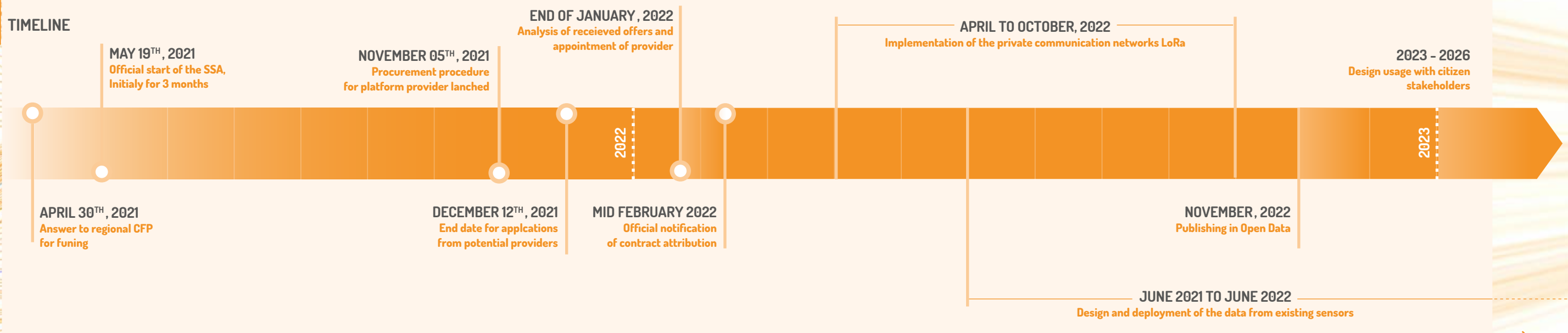
### 02 STAFF

This point has been at the center of several meetings, due to the departure of the Innovation and smart territory director, who was the trigger and leader for this project.
This one not being replaced, there was no pilot anymore. However, thanks to the great team work of the ULG, and the support of the lead expert and lead partner, the administrative difficulties are being overcome, and a new organization should soon allow a better, clearer and smoother management of the project.

Indeed, the IT and innovation departments from both the city of Nevers and Nevers Agglomeration should next year merge into one single department, thus gathering all the skills needed for the management for this project.

**663 000 €** ESTIMATED BUDGET

SO **464 100 €** ALREADY FUNDED.

ON JULY 30TH, 2021, NEVERS AGGLOMERATION GOT THE OFFICIAL CONFIRMATION THAT ITS PROJECT OF A TERRITORIAL DATA PLATFORM WAS ACCEPTED, AND WILL GET A GRANT OF 70% OF THE TOTAL PROJECT

Other resources still need to be looked at, at state and European level, especially since the strategic orientations currently being worked on for the next ERDF programming includes a significant part for digital projects, among which smart and sustainable territories.

## TIMELINE

- **MAY 19TH, 2021** Official start of the SSA, Initially for 3 months
- **NOVEMBER 05TH, 2021** Procurement procedure for platform provider lanched
- **END OF JANUARY , 2022** Analysis of receieved offers and appointment of provider
- **APRIL TO OCTOBER, 2022** Implementation of the private communication networks LoRa
- **2023 – 2026** Design usage with citizen stakeholders
- **APRIL 30TH, 2021** Answer to regional CFP for funing
- **DECEMBER 12TH, 2021** End date for applcations from potential providers
- **MID FEBRUARY 2022** Official notification of contract attribution
- **NOVEMBER, 2022** Publishing in Open Data
- **JUNE 2021 TO JUNE 2022** Design and deployment of the data from existing sensors

# FRAMEWORK FOR DELIVERY

## PROVIDER

A call for tender was launched on November 5th, 2021 for an answer until December 22nd, 2021, to find a provider for:

→ **LoRA gateways**

→ **Setting up of an IoT network and its platform**

→ **Providing of software needed to process and transfer data**

thus starting the implementation of the project.

The specifications of this procurement called **"IMPLEMENTATION OF AN INTELLIGENT AND CONNECTED TERRITORY MANAGEMENT STRATEGY"** were written thanks to the work of the ULG, assisted of the external consulting company IDeau Conseil, and were based on this present IAP (including the budget, action tables, framework for delivery,...). After an analysis of the 12 offers that were received and its validation by the elected representatives making the procurement Commission on Jan 27th, 2022, the contract was awarded to the Sogetrel/Requea consortium on Feb 15th, 2022

## PROCESS

The platform project shall be implemented in 3 main phases :

→ **Phase 1 : implementation of the private communication networks LoRa**

→ **Phase 2 : design and deployment of the data platform, interconnection of data from existing sensors. The objective of this phase is to complete the inventory of the functionalities, the costs of setting up and maintaining the solutions in place, and to have the first structured data.**

→ **Phase 3 : Communication on the platform, making it essential for any future project, development and promotion of uses using collected data.**

### PROJECT'S FOLLOW UP AND MONITORING

A steering committee set up at the launch of the project will meet for any arbitration necessary for the smooth running of the project, at least 3 times a year. It is made up of :

→ **Elected officials**

→ **The General Directors of Services**

→ **The Director of "Responsible Digital Territory" (Green-IT), DRDT**

→ **The Innovative Projects Laboratory (City of Nevers)**

→ **The Water and Sanitation Department (Agglomeration of Nevers)**

→ **And representatives of Sogetrel /Requea, the companies selected for the implementation of the platform.**

A small project group will coordinate actions between the service provider, elected officials and local authority services. It will ensure compliance with the planning and budget execution of the project. Technical working groups will also be mobilized throughout the project, depending on the topics covered:

### "LoRA network" group

A group specifically in charge of following the gateways set up:
Made up:

→ **Water supply department**

→ **IT Head of department**

→ **Members of the providing companies, Sogetrel / Requea**

### One group per technical platform to be integrated

→ **Green IT departement**

→ **Representative of the concerned department**

This group's goal will be to work together on the data transfer, so as to ensure that it runs as smoothly as possible for each service/department.

Presentations of the progress of the project, in the Digital Commission and in the Community Office (working and executive bodies of the agglomération), will be proposed in order to guarantee the proper execution of the project, to adapt its scope.

**PROJECT'S SETTING UP**

## PHASE 1

A first "construction" work of the LoRA communication network will be carried out by the company Sogetrel.

**01 Network coverage study, validation of the sites selected for the installation of LoRA antennas**

**02 Installation/configuration of antennas and communication gateways**

**03 Reciping**

**Provisional schedule :**
April – October 2022
**Indicators :** territory coverage rate, number of active gateways, availability rate

## PHASE 2

**01 Based on the inventory (existing platforms / connected objects) carried out as part of the AMO ArxIT in 2021, sectoral meetings will be held with the business departments.**

> **API or Application Programming Interface**
> An API is an IT solution that allows applications to communicate with each other and to mutually exchange services or data.

For each existing technical platform, a dedicated working group will be formed and will be responsible for assessing its level of integration with the territorial data platform.
Based on a presentation by the departments concerned, the working group will consolidate the initial inventory (functionalities of the platform, data collected, implementation costs, maintenance costs, level of satisfaction), and will propose a scenario for integration.
Depending on technical criteria (solution already integrated by Requea, availability of **API**, specificity of business functionalities, interactions with other projects, etc.) or political (contractual relationship with the publisher of the solution, other issues, etc.), the choice may be made on:

→ **Maintaining the existing business platform, with the implementation of a connector allowing the data collected to be integrated into Requea.**

→ **The integraton of data in Requea, and implementation of a connector allowing the maintenance of the existing business platform**

→ **Integration of data and resumption of business functions in Requea, with abandonment of the business platform in place.**

**02 Meetings with each operator will be organized by Requea and the local authority:**

→ **Presentation of the global project (IOT & data platform)**

→ **Feasibility study of the proposals validated in phase 1: technical feasibility, costs, deadlines.**

→ **Exchanges with suppliers: possible restrictions on the dissemination of confidential/personal data, data sets to be shared between the community and suppliers, uses to be developed.**

Each meeting will make it possible to complete a "use case" summary sheet describing the methods, cost and provisional schedule for integration into the community's IOT platform. These sheets will be presented to management and elected officials; a selection and prioritization of the planned integrations will be proposed for arbitration to the steering committee.

**03 A first work of structuring the data concerned by the selected use cases will be carried out by the company Requea, in connection with the Green IT Department and from national repositories and "good practices".**

The implementation of the interfaces and the development of the selected business tools will then be carried out.
The business departments will be fully involved in this stage.

**Provisional schedule** : June 2022 – June 2023
**Indicators :** number of integrated platforms, number of connected sensors, volume of data stored, number of data sets available, number of business platforms shut down, financial gains

## PHASE 3

The "DataNevers" platform must become the "center nerve" of the data produced or collected by the local authority: any new project launched must include a stage of integration of its data within the platform, any new tool or service must rely primarily on use of stored data.

**01 Development of business supervision tools and decision-making dashboards for services and elected representatives of the local authorities.**

**Provisional Schedule: 2023– June 2026**
**Indicators:** number of dashboards created, access statistics

**02 Organization of events around data, in order to encourage the development of new tools and services useful to the population or to territorial development: co-construction workshops around identified issues, hackathons, etc.**

**Provisional Schedule: 2023 – June 2026**
**Indicators:** number of annual events

**03 Communication with departments, elected officials, partners and citizens on the evolution of the platform: integrated data, published data, tools and uses being deployed**

**Provisional Schedule: 2023– JUNE 2026**
**Indicators:** number of annual meetings, number of published articles

# 2

## RISK ANALYSIS

The ULG carried out a risk analysis by category as follows, these risks having been the subject of a rating out of 10 based on the probability for this risk to occur, and, if necessary, its impact on the project.

### 01.

#### LEGALLY

→ **Risks related to contractualization: any contract awarded by the community is likely to be subject to appeal.**

We are going through the safest procedure to set up this platform, and the legal aspects have been anticipated by the external expert and studied by the ULG, and in particular the head of public contracts, legal affairs and insurance.

→ **Risks related to confidentiality, intellectual property: IoT solution provider partners could have locked data sharing via the intellectual property component, or a confidentiality clause in the service contract.**

Check existing contracts, exchange with partners, and anticipate for future contracts

### 02.

#### TECHNICALLY

The platform project is based on the openness and interoperability of data; beyond the legal aspect and the question of intellectual property, the operation of the platform therefore depends on the interconnection of the solutions of the different service providers, and the technical feasibility of this interconnection.
For any future contract, make sure to include this element in all CCTP/future contracting.

### 03.

#### FINANCIALLY

This is a project initially estimated at nearly € 700,000 excluding tax in investment only. To these initial investment expenses will be added operating expenses, which must be provided for every year; to justify these operating expenses, their ROI must be able to be established, which is currently difficult to assess, and uses developed as soon as possible

→ **A safety margin has been taken into account in estimating the cost of the project, and the 70% subsidy from the Region partly secures the initial financing for the investment part Regarding operating expenses, particular attention should be paid to reporting and monitoring tools: savings made, use cases developed thanks to the platform, etc.**

### 04.

#### BEHAVIOR

Once set up, the operation of the platform should be fairly accessible, clear, and relevant for most of the people concerned (departments, elected officials, population, etc.) and more effective policy management -> the interest must be understood by different actors.
However, there has always been mistrust or suspicion of data and its processing, mainly due to lack of or incorrect information.

And a reluctance to share its data and its "power".

→ **Need for appropriation and acculturation. Communication and education will therefore be 2 major aspects to work on: workshops, information meetings, etc.**

### 05.

#### OPERATIONALLY

→ **Internally : The success of the platform is linked to the ability of the various actors (all departments) to take ownership of the subject, to exchange and contribute;**

This means, beyond agreeing to share your data and therefore renouncing sole control of your tools and data as mentioned above, modifying working habits and methods.
In addition to the information and educational work, a training action should be carried out with all of these actors.

→ **Risks related to service providers : The call for proposals to award the contract for this platform has already been been launched and closed. The contract was awarded, the provider is actually two companies that are going to work together.**

The risk of failure linked to the service provider is therefore increased by the number of stakeholders: beyond the failure of the supplier, the latter can also encounter problems with its partner, for example.
Particular attention should be paid to this point when analyzing the offers.

### 06.

#### HR

As said previously, the issue of personnel was sufficiently raised during the project for the ULG to measure its importance.
The implementation and success of this project requires having a pilot/coordinator, not only on writing the strategy, but also on implementation and monitoring. In the absence of a project manager with the necessary technical and animation skills, the viability of the project would be called into question.
Education and awareness work to be implemented with elected officials and the DG.

| TYPE OF RISK | LEVEL OF RISK |
|---|---|
| Staffing | 8/10 |
| Operationnal | 7/10 |
| Technical | 7/10 |
| Behavioural | 5,5/10 |
| Financial | 4/10 |
| Legal | 3/10 |

—end-of-part-2

# PART 3

## CONCLUSION

The Urbact project was the opportunity for Nevers Agglomeration to structure a "data" approach initiated in 2016.

The methodology provided, exchanges with partners, and the financing of project management assistance have enabled us to consolidate an initial inventory of our management of the data produced by our connected sensors, and to communicate with our departments and elected representatives on the need to harmonize and structure our projects in this area.

This experience carried out in a particular context, health crisis and internal reorganization of services (editor's note), also helped us to acculturate the actors of the territory on the issues of control and structuring of digital data, essential for the emergence of new innovative uses for the local authority's services and our citizens.

This project is also fully in line with the "Responsible Digital" or Green IT approach undertaken with the elected representatives of our local authority, aimed at proposing Useful, Usable and Used solutions in order to limit the environmental impact of the uses that we deploy on the territory.

We are fully aware that the initial objective that we had set ourselves has only been partially achieved, and that we had probably underestimated some technical obstacles and reluctance of some partners when it came to getting involved in sectors hitherto relatively closed. For example, we have not been able to sufficiently involve citizens in the process, nor all the partners initially targeted in the ULG. Nevertheless, the results beyond the expectations of the Small Scale Action that we were able to put in place within the framework of URBACT confirm us in the need expressed, and the benefits that can be drawn from the implementation of this IAP. Indeed, the win-win private/public partnership implemented between the water supply department of Nevers Agglomeration and the Lacroix-Sofrel company has made it possible to structure the data from the sensors of the local authority's water network, and to optimize its use. This experiment based on the sharing of expertise has led to unprecedented savings in the consumption of a precious natural resource (and therefore in costs) for the community and the environment.

We are thus convinced, partly thanks to the support of the community and our own experience as well as that of our partners in the IoTXchange project, that this structuring project for our territory is on the right track and will be able to continue over the months and years to come.

## ELISE DUQUENNE

### HEAD OF PROCUREMENT SERVICES

**It** is really interesting to see that other cities in Europe are facing the same challenges... We get feedbacks and can only get better. URBACT projects are very useful in terms of sharing good practices and exchanging information about each other.

Also, regarding the internal process, as part of the public procurement department, it's very enlightening to work with different departments (Water, Digital, Economy Development,...) on a same project !

## DOMINIQUE DERANGERE & FABRICE PACCAMICCIO

### WATER DEPARTMENT & REFERRING OFFICERS FOR THE SSA

**URBACT** and the implementation of the SSA has been the opportunity to cross 2 expertises in distinct fields, and the conclusion of a win-win private / public partnership, each partner providing its expertise for research and the emergence of intelligent solutions used, in the case of our experiment, for the preservation of a resource that is becoming scarce: water.

This very beautiful project supported by URBACT was also the winner of the World Artificial Intelligence Cannes Festival on April 15, 2022!

THIS ACTION PLAN HAD THE PARTICIPATION AND CONTRIBUTION OF A BROAD SET OF PEOPLE AND ENTITIES THAT HAVE CONTRIBUTED GREATLY TO THE DEVELOPMENT OF THIS PROJECT.

THE TEAM OF THE NEVERS AGGLOMÉRATION VERY MUCH APPRECIATES THE CONTRIBUTION OF ALL.

## NEVERS AGGLOMERATION'S TEAM

Stéphane BERNIER, Director of the "Responsible Digital Territory" (Green-IT), DRDT, City of Nevers and Nevers Agglomération
Sandrine COCHET Digital and Innovation City of Nevers and Nevers Agglomération
Dominique DERANGERE, Head of Water and sanitation department
Elise DUQUENNE Head of Procurement Services
Elise GERVAIS, economic development and IoTXchange project coordinator
François-Paul IVART, Head of IT Services
Fabrice PACCAMICCIO, Head of Water supply management service

### WITH CONTRIBUTION OF ALSO
Lucie LABURTHE, Deputy General Director
in charge of Territorial Development
Fabienne STIOT, Deputy General Director
in charge of support services
Joël FOURNIE, General Director of the City of Nevers
and Nevers Agglomération,

Didier GAUTHE, former General Director and current Head of the Mayor's cabinet
Didier HENRY, President's cabinet

Stéphanie ARNAUD, Head of waste management service,
Xavier BADIA, Head of Transport and Mobility Service
Charlotte DETAILLE, Head of Energy and Climate Department,
Nathalie GENTY, Director's assistant, Territorial Development
Jérémy GILBERT, Fluids and energy service, City Of Nevers
Catherine LEBRETON, Head of the Partnership Policy and Territorial Support Department

Géraldine BABUT, director of the Communication Department of the City of Nevers and Nevers Agglomeration
Nathan GOUNOT, Claudine REVENIAU, Benjamin ROCH, Communication Department of the City of Nevers and Nevers Agglomeration

Pascal MINGUET DESCHAMPS, Sarah PINEAU POUPELIN, and Sophie VALDENAIRE RATTO, Digital transformation departement, Bourgogne-Franche-Comté Region,
...

And Jérémie NESTEL, former Head of Smart and Innovative Territory

### UNDER THE LEAD OF OUR ELECTED REPRESENTATIVES
Denis THURIOT, Mayor of Nevers, President of Nevers Agglomération, and Bourgogne Franche Comté region elected representative,

Alain BOURCIER, Vice-president in charge of Economy, Innovation, Attractiveness and higher education , Nevers Agglomération

Bertrand COUTURIER, deputy mayor in charge of mobility and innovation, City of Nevers

## ACKNOWLEDGMENTS

Nevers Agglomération would like to thank to everyone who participated, may it be only once or permanently, may they be colleagues, private or public partners, or simple citizens, to the URBACT LOCAL GROUP and more generally to the construction of this IAP.
Thank you to ArxIT who assisted us during the first part of the project for the diagnosis and analysis part of it.
Thank you to the URBACT team for the tools and events designed to help us along the way.
And a special thank you to all our IoTXChange partners: Abo Akademi, and the municipalities of Ânge, Dodoni, Jelgava, Kezmarok, Razlog and Fundão of course, and our Lead Expert Eurico Neves. These past 3 years have been quite an adventure, especially as a first ever participation for Nevers Agglomération in an URBACT project, and during a pandemic crisis never seen before. Thank you all for your always constructive and goodwilling help and advises, and for the great experience!

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