City Intelligence · Smart Urban Spaces

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Madrid, Digital Capital: Digital Transformation Strategy

Digital Capital

City management intelligence

The Strategy includes action plans designed to integrate new enabling technologies for the digitisation of municipal and city services.

Digital Transformation Strategy

2022-2027

Mobile App Strategy

5G Agenda

IoT MAD LAB
UNA CIUDAD CONECTADA

Smart Urban Spaces

5G FORO DIGITAL

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City intelligence in the management of Madrid

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USER CENTRICITY Principle: It is about putting the citizen at the centre and tailoring the service they receive to their specific needs and interests. We must know who we are addressing and tailor the service to what he or she really needs or wants.

Smart Urban Spaces will deliver **BETTER SERVICES TO CITIZENS.** In these streets, parks... we will show the most innovative equipment of each municipal service, AND citizens will have the experience designed with the interrelationship between services in mind: the result will be more than the addition of the parts, and the coordination will deliver a better experience for each citizen, the most precise for each one.

The added value is then the **COORDINATION BETWEEN SERVICES**, because the City Council is a very large organization and joint action is not easy. The Digital Office will take on the issues not covered by anyone else, if there are any, but above all it will coordinate the initiatives of each area, in order to strengthen them.

The challenge is to coordinate in a **COLLECTIVE INTELLIGENCE** the **EXPERT KNOWLEDGE** of each municipal area and allow that of the IoTMADLAB, focused on interoperability,

DEFINE: PROBLEMS that are pending or do not have fully satisfactory solutions.
IMPROVEMENTS designed jointly from different perspectives.

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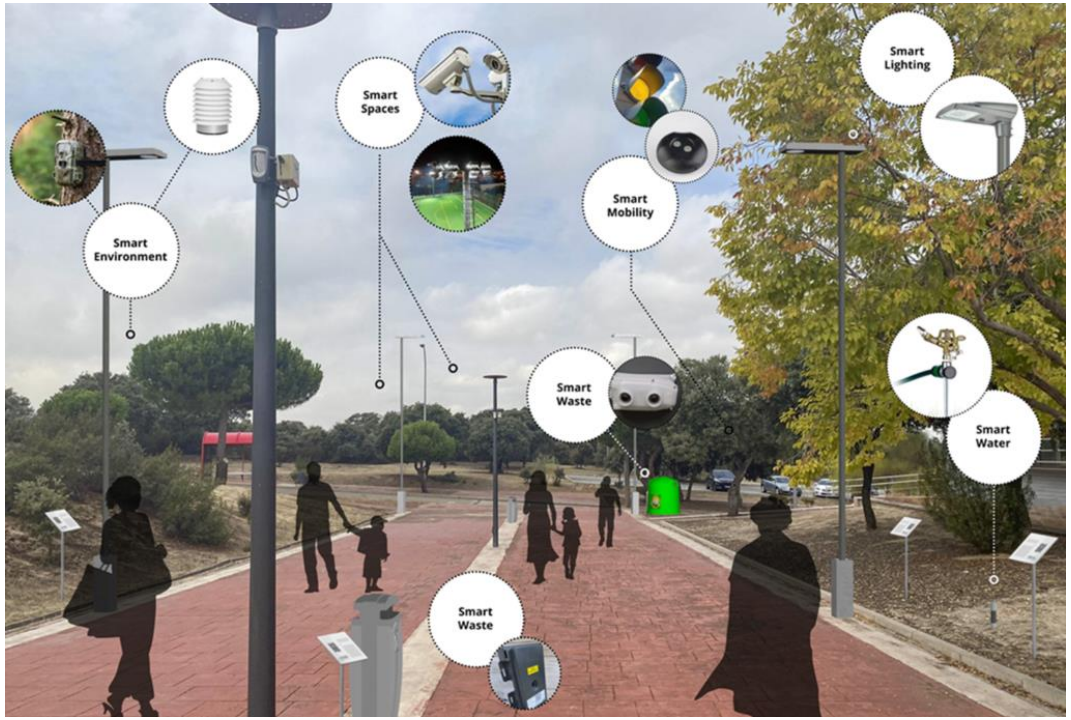
What is a Smart Urban Space?

HYPERCONNECTED SPACES, DATA-DRIVEN, with intensive application of **SUSTAINABLE TECHNOLOGIES** for a smart and climate-neutral Madrid in 2030.



The Smart Urban Spaces are specific physical spaces in Madrid where, through different technologies such as **IoT**, the application of **SENSORS** in urban facilities, the mobile phones of citizens who participate... data collected, analyzed and used, allows a more intelligent and sustainable management, based on them, and provide personalised **VALUE SERVICES** for each citizen. The information available, from each service, will allow to the municipal staff to operate and plan their services with the best and most accurate knowledge.

These **DEMONSTRATOR SPACES** will take advantage of the **interoperability** of the equipment installed in the EUI (environmental sensors, energy meters, lighting network, traffic lights, street furniture, containers, sensors in trees, urban facilities, etc.) as well as the information provided by the mobile phones of the participating citizens. By processing and integrating all the data collected, **DECISIONS** can be made for management, either for real-time operation or to feed a new city model for long-term planning, based on accurate knowledge.

The **TWIN TRANSITION PRINCIPLES (GREEN & DIGITAL)** being implemented in European cities such as Madrid need such data.

For what purpose are they created?

Taking advantage of the **GREEN AND DIGITAL TRANSITION**, a holistic transformation of Madrid is sought as an integral vision and management: social, technological, environmental, economic and political to **PROVIDE SUSTAINABLE AND HIGHER VALUE SERVICES**. The EUIs are pilots for:

Citizens: In this intelligent urban space, the city is adapted on a small scale to give people the opportunity to **INTERACT** with, evaluate and even contribute to the design of the innovative services that are proposed as possibilities, because technology favours the evolution of municipal services.

Municipal areas: In these places we all have the opportunity to evaluate the impact on **REDUCTION OF CONSUMPTIONS and EMISSIONS**, to experiment new capacities of **PREDICTIVE MAINTENANCE** (anticipating incidents, reducing possible service interruptions) and **CONTROL THE IMPLEMENTATION** with as much or more information than the company that carries it out.

SKILLS
GOVERNMENT
INFRASTRUCTURES
BUSINESS

European Green Deal

EU MISSION LABEL
CLIMATE-NEUTRAL & SMART CITIES

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Implementation in Madrid: Typologies

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Recreational and tourist areas

Parks and green areas

Cultural and sports centres

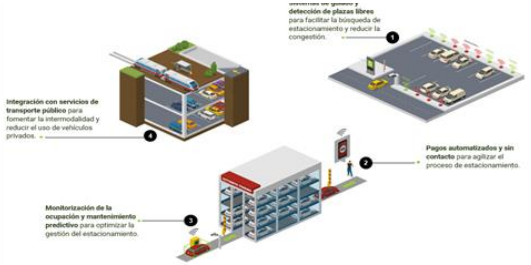
Climate oasis

Commercial and residential spaces

Trade axes

Residential areas

Car parks and garages

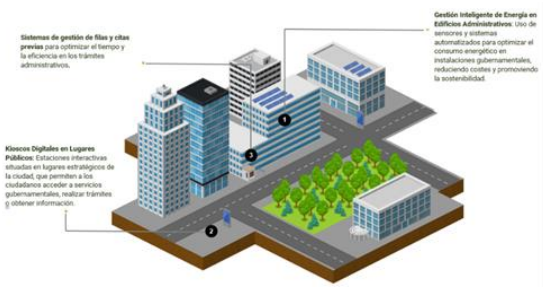


Public services and mobility

Educational environments

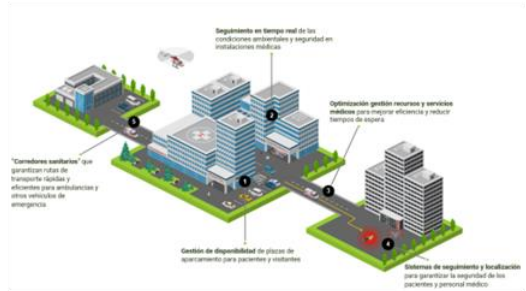
Public transport

Areas of governance and administration



Infrastructure and security

Health centres



Industrial areas

Emergency and security areas

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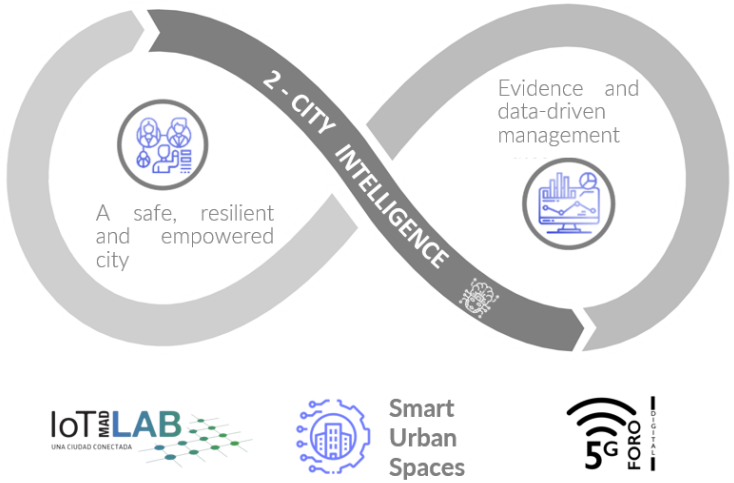
Implementation in Madrid: Beneficiaries

DIRECT

- **CITIZENS:** will have access to more efficient & accurate services, real-time information and a better quality of life.



INDIRECT

- **VISITORS AND TOURISTS:** will experience a more organised, accessible and friendly city.

- **MUNICIPAL ADMINISTRATION:** will be able to manage resources and services more efficiently, making decisions based on data.

- **BUSINESSES AND COMMERCES:** will benefit from more efficient urban management and the opportunities offered by new technologies.

- **ENVIRONMENT:** The implementation of sustainable and efficient technologies will reduce the ecological impact of the city.

- **FUTURE GENERATIONS:** They will inherit a city that is more sustainable, resilient and adapted to the challenges of the future.

Ifrastructure for Smart Urban Spaces

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5G + IoT = HYPERCONNECTED AND HYPERAUTOMATED SPACE: for the collection of DATA from smart devices and sensors connected in space and transmitted to be managed even in real time.

DATA MANAGEMENT PLATFORM: Centralized data management to collect, store and processing. **BIG DATA**, data analytics and **ARTIFICIAL INTELLIGENCE** (AI).

REAL-TIME DECISION MAKING for service management adaptation and optimization.

CITIZEN CO-DESIGN: Technology designed with citizens and the environment, making it easier for citizens to be an active part of the interaction. Digital applications and services with real-time notifications (control, GIS geographical information, online payment reservations, etc.).

IDENTIFICATION AND BRANDING ELEMENTS: Signage around the space with panels identifying the services, details of their operation and an application for citizens to interact. People will be aware of all the options available in order to evaluate them.

CYBER SECURITY AND PRIVACY: Protecting information and guaranteeing the confidentiality, integrity and availability of data. Cyber security protection is a must.

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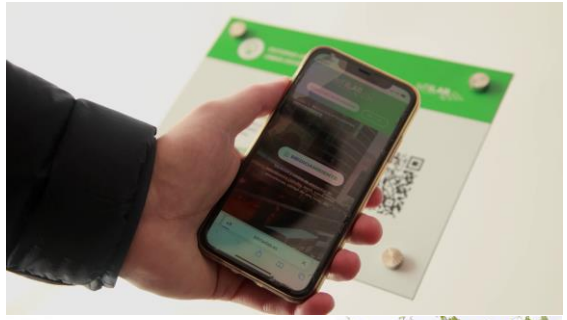
5G

IoT

Impact for Madrid and citizens (1 of 2)



- **INTERACTION** with citizens, devices and **ADJUSTMENT OF SERVICE OFFERING.**
- Physical and digital **ACCESSIBILITY** to spaces and **MOBILITY**: Management of urban mobility elements (SER, APR, ZBE, parking spaces, connected traffic lights, EMT, BiciMad, etc.).
- Transition towards **DATA-BASED MANAGEMENT** and **AUTOMATION OF SERVICES** and **OPTIMISATION OF OPERATING AND MAINTENANCE COSTS** of municipal services.
- **MONITORING** of licenses, authorizations, responsible declarations and prior communications to verify compliance (town planning, activities, taxes, occupation of public roads, etc.).
- **CLEANING AND WASTE:** Monitoring of containers, litter bins, rubbish bins, sweeping and clean points. Optimization of waste collection and treatment, promoting recycling and reducing environmental impact.
- **GREEN AREAS, PARKS AND GARDENS:** Monitoring and management of equipment and facilities and their use, as well as trees, flora and fauna, irrigation and water and energy meters.
- **ENVIRONMENT:** Monitoring of biodiversity, air quality, noise levels, atmospheric conditions, light pollution. **EMISSIONS REDUCTION.**

Impact for Madrid and citizens (2 of 2)

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- **INSTALLATIONS AND URBAN FURNITURE:** Management and maintenance of furniture, fountains, galleries, and other city facilities. Benches, bus stops, fountains and other elements can integrate technologies to offer additional services, from charging mobile devices to real-time information.
- **SMART LIGHTING:** Regulation according to needs, reducing energy consumption and improving safety in public areas. Reduction of light pollution.
- **TRAFFIC:** Improvement with sensors, reducing congestion, optimizing routes, improving fluid and safe driving.
- **SECURITY AND EMERGENCIES:** Monitoring to increase public safety and improve emergency response.
- **CYBER SECURITY** and resilience of services to reinforce ethics and trust in technology.
- **ECONOMIC AND SOCIAL COHESION** with new professional profiles and the data economy.
- **REDUCTION OF ENERGY CONSUMPTION** and configuration of **POSITIVE ENERGY** spaces.

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geoportal

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Buscar dirección o lugar

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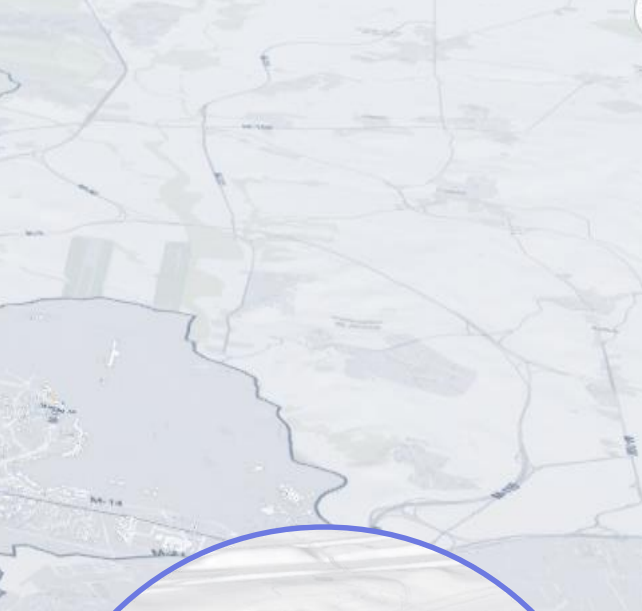

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2

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City intelligence · Smart Urban Space

Efficient and effective planning and management through the intensive use and availability of the City's daily data.

#connectedness
#citizencentric
#madridatadriven
#smartmobility

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