

AUMENTAR A DIGITALIZAÇÃO DAS CIDADES E REGIÕES PORTUGUESAS

Em colaboração com



FASE 1: PLANEAMENTO

30 de junho de 2025





BOAS VINDAS

BOAS VINDAS



PEDRO SARMENTO

AGÊNCIA PARA A MODERNIZAÇÃO ADMINISTRATIVA

ANALISTA DE NEGÓCIO

Sessões de formação

PORTUGAL

Fase 1:

Fase de Planeamento Como explorar o potencial da digitalização?

- Como avaliar a Maturidade Digital Local e Regional com o Lordimas?
- Como implementar a metodologia da UE para definir o seu próprio roadmap da digitalização?
- Como utilizar os modelos de contratação alinhados com os princípios e padrões da UE
- Como as cidades e regiões podem explorar a digitalização para a criação de gémeos digitais?

 **30.junho.2025**

 **14:30 – 16:00**

Fase 2:

Fase de Preparação Como definir a infraestrutura para o seu roadmap?

- Compreender a importância dos dados abertos e partilhados para a sua infraestrutura de dados
- Como implementar plataformas de dados abertos e data spaces através de uma arquitetura de referência suportada por MIMs
- Descobrir ferramentas de código aberto disponíveis na Toolbox da EU para os Gémeos Digitais Locais

 **02.julho.2025**


 **11:00 – 12:30**

Fase 3:

Fase de Empowerment Qual o apoio da comunidade Living-in.EU?

- Conhecer a comunidade Living-in.EU: Como utilizar os recursos criados pela comunidade e participar ativamente nas suas iniciativas
- Conhecer oportunidades de financiamento da UE: Como se candidatar e preparar a sua proposta a fundos europeus


 **03.julho.2025**

 **11:00 – 12:30**

Agenda detalhada

Fase 1: Fase de Planeamento – Como explorar o potencial da digitalização?

 30.junho.2025

 14:30 -16:00

HORAS	TÓPICO	ORADOR(A)
14:30-14:35	Boas vindas	Pedro Sarmento - AMA
14:35-14:50	Avaliar a Maturidade Digital com LORDIMAS	Ana Correia - Deloitte
14:50 – 15:05	Desenvolver o roadmap da digitalização	Ana Correia - Deloitte
15:05 – 15:20	Aprender sobre os modelos de contratação personalizados da UE	Eliana Gerardi – Intellera
15:20 – 15:40	METACITY - Planeamento da utilização de ferramentas de IA para gémeos digitais	Ricardo Gonçalves – CM Fundão
15:40 – 15:55	Perguntas e Respostas	Pedro Sarmento - AMA
15:55 – 16:00	Encerramento	Pedro Sarmento - AMA

A person in a white shirt is holding a tablet. The tablet screen shows a vibrant city skyline at night, with several skyscrapers illuminated. Overlaid on the city is a white digital network consisting of interconnected nodes and lines, symbolizing digital connectivity. The background of the entire image is a blurred cityscape under a sunset sky.

AVALIAR A MATURIDADE DIGITAL COM LORDIMAS

AVALIAR A MATURIDADE DIGITAL COM LORDIMAS



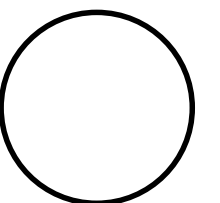
ANA CORREIA
DELOITTE
MANAGER

LORDIMAS

Learn what is the Local and Regional Digital Maturity Assessment
for local authorities

What is LORDIMAS in one sentence

‘Interactive tool aimed at helping local and regional governments to understand where they are in their digital transformation journey’



EVALUATE

A digital maturity tool

Governance, Service design, Data management, Interoperability, Technology, Service delivery and Networking

COMPARE

An interactive dashboard

Presenting your data in real-time and allowing you to compare with other cities in Europe

SHARE

Repository of good practices

Sharing your success and challenges to promote the European way for digital transformation

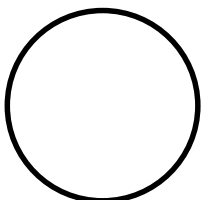
LEARN

Policy recommendations

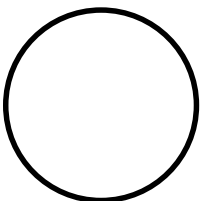
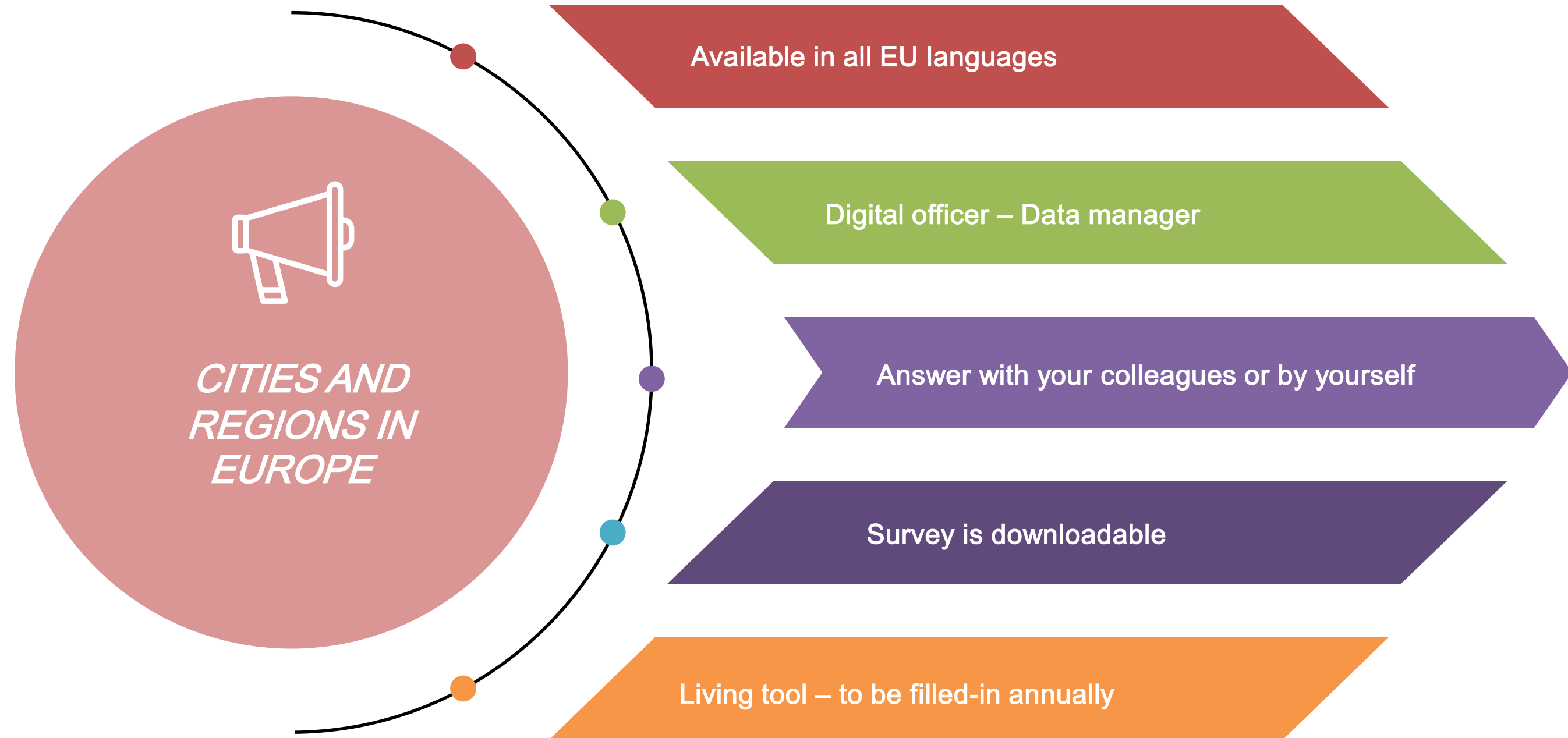
Bringing awareness about emerging topics at the EU level and to giving policy advice

What is LORDIMAS?

A functional approach

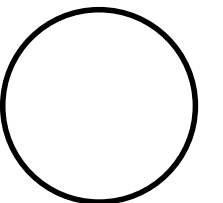
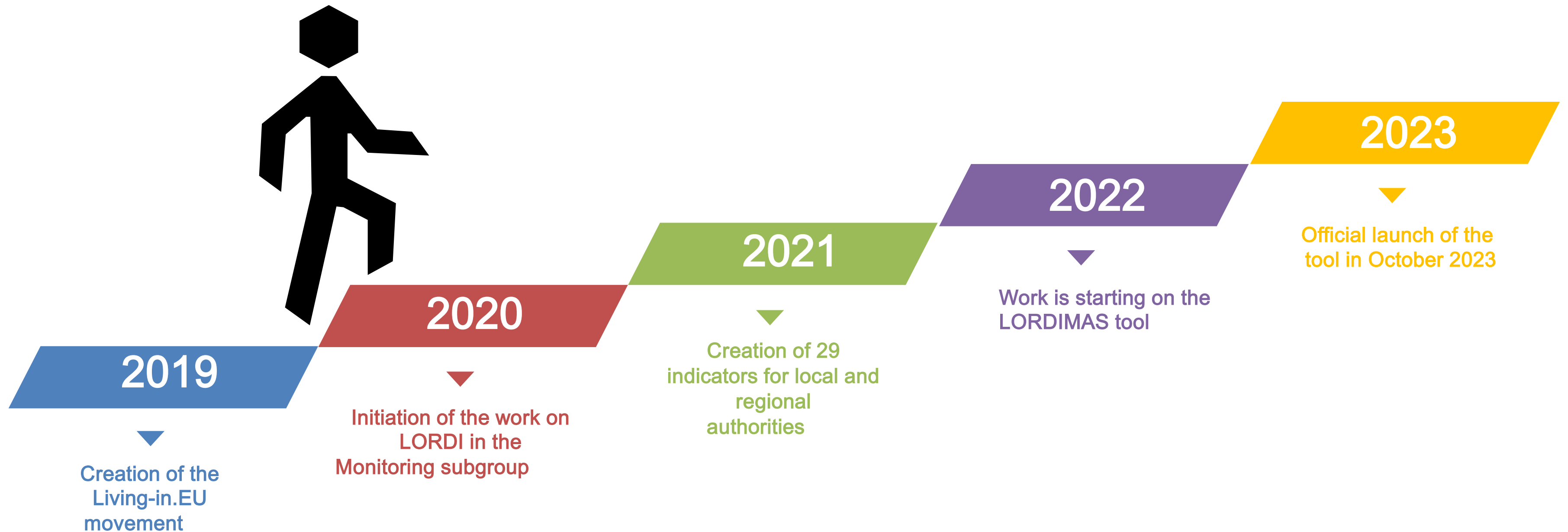


What else to know about LORDIMAS?



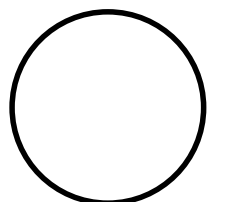
Where does LORDIMAS come from?

A collaborative process

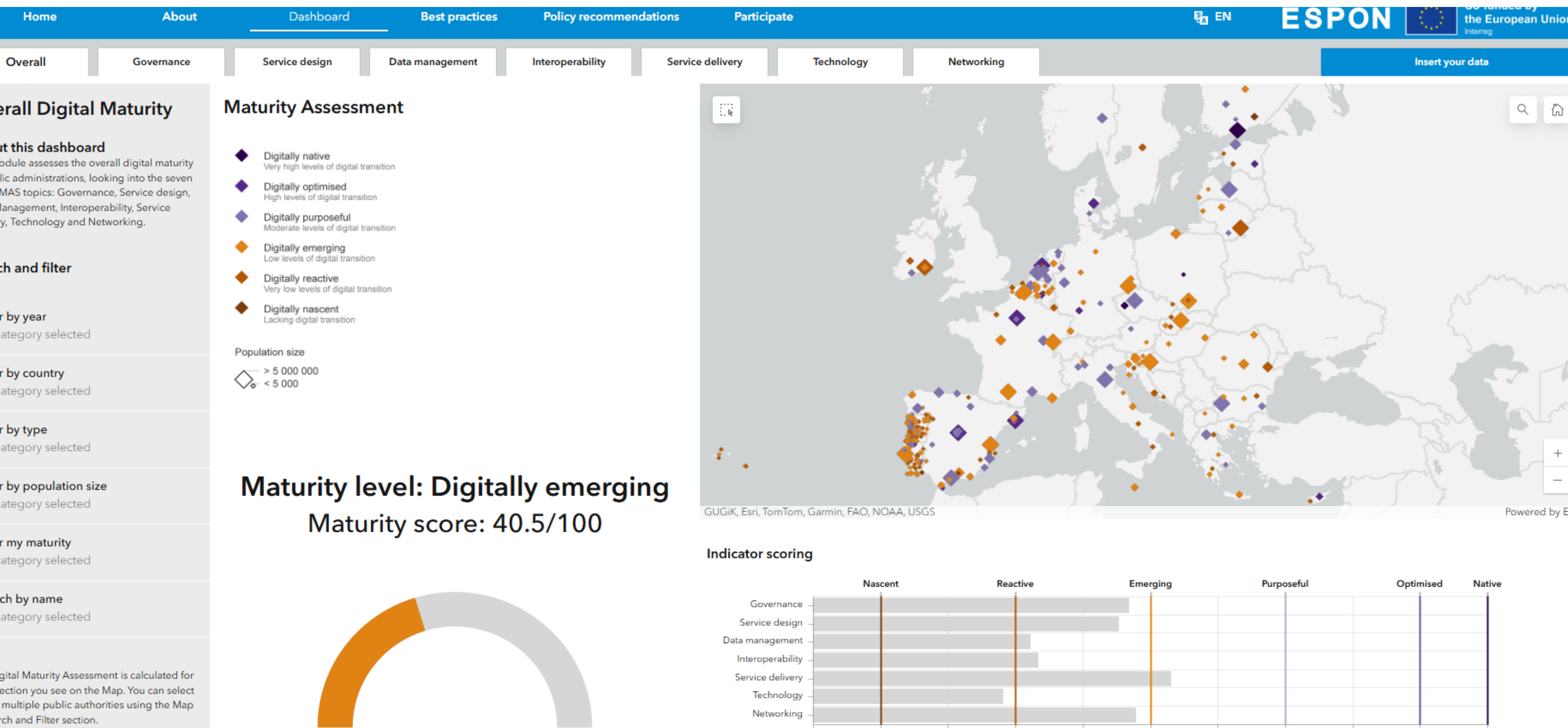


How was LORDIMAS created?

A collaborative work with many stakeholders



What else to know about LORDIMAS?



You can access LORDIMAS at:



lordimas.espon.eu


If you want to contribute to shape the future development of the tool you can join the Monitoring & Measuring Working Group of Living-in.EU:





living-in.eu


Call to Action – How to Get Started

 Go to the platform, click on [participate](#) and download the offline form.

 Identify your list of key city stakeholders you would like to invite for the assessment. Share the questionnaire with the stakeholders.

 Organise a workshop to discuss the questionnaire and collect information on all dimensions.

 Complete the assessment online, compare yourself to other cities, consult good practices and recommendations

 Summarise and discuss digital maturity assessment results jointly with the stakeholders, share learnings on strengths and weaknesses

JOIN,
BOOST,
SUSTAIN

A person in a white shirt is holding a tablet. The tablet screen shows a vibrant city skyline at night, with numerous skyscrapers illuminated. Overlaid on the city is a white, glowing geometric network of lines and dots, resembling a digital or blockchain structure. The background of the entire image is a blurred cityscape under a sunset sky.

DESENVOLVER O ROADMAP DA DIGITALIZAÇÃO



European
Commission

DESENVOLVER O ROADMAP DA DIGITALIZAÇÃO

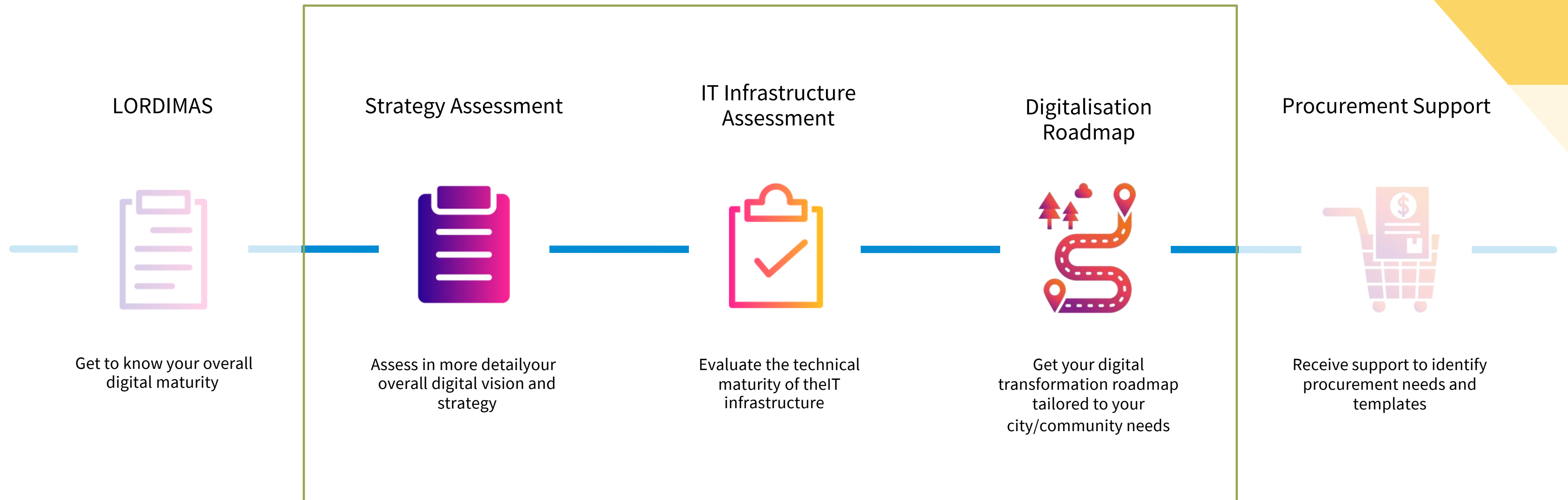


ANA CORREIA
DELOITTE
MANAGER

Developing your digitalisation roadmap

Learn how to implement the EU methodology to define your own
digitalisation roadmap

Focus of this training



LORDIMAS

Governance	Service design	Data management	Interoperability	Service delivery	Technology	Networking
Twin transition	Digital-by-default	Data strategy	Technical specifications	Digital services	Big data	Cross-sector
Strategy	Agile and iterative	Data catalogue	Open source	Once-only principle	Immersive tech	Multi-level
Institutions	User engagement	Data platform	Open standards	One-stop shop	AI	Peer-to-peer
Capacity	Data-driven	B2G/G2B data sharing	Shared data models	Digital inclusion	IoT	International
Monitoring	Innovation ecosystems	Sensor registry	Open APIs	Proactive services	Robotics	
Privacy & Security		AI registry	Building blocks		Blockchain	
		Personal data			5G	
		Digital twin				

Assessments Methodology



Strategy Assessment

This Assessment will be composed of two main sections:



Business and Strategic View As-Is:

Aims to understand the community's as-in ambition and strategy and capture the sectors and services that the city has already invested in



Business and Strategic View To-Be:

Understand what the community's strategic future for objectives, ambitions, services and sectors are which it aims to leverage technology to improve urban living and efficiency



IT Infrastructure Assessment

This Assessment will be composed of two main sections:



Digital systems/applications:

Seeks to comprehend what the community's current and future digital systems and applications are and how data is collected from IoT devices to feed them.



Infrastructure:

Aims to understand the infrastructure that the community has in place, namely the physical and technological backbone that could support or is supporting the operation of Smart City solutions

Strategy assessment



The main goal of this Assessment is to identify the position of the community as-is and target digital



Business and Strategic View As-Is:

- Identify city/ community's digital ambition and strategy
- Identify sectors that the city is already investing in



Business and Strategic View To-Be:

- Identify city/community's goals on implementing local digital platforms (and later on local digital twins)
- Identify use cases that can benefit from the implementation of digital twins
- Identify enabling factors such as a smart city office and KPIs

ASSESSMENT

EXAMPLE ASSESSMENT QUESTIONS OF

ASSESSMENT OUTPUTS

AUDIENCE



Multiple Choice Questions

Questions to be answered in a Multiple-Choice format, allowing for more targeted answers



Open Questions

Questions to be answered whenever more detail is needed of a certain topic, allowing to understand the business and strategic view more deeply



Which of the following digital resources do you currently share with other communities?



How extensively defined is your strategic vision for digitalisation?



Valuable Insights

Collect valuable information to understand the community's current situation and how it can be addressed during the roadmap design, with regards to its vision, organisation and goals



Participants

Inputs should be provided by the following profiles:

- Chief Executive Officer or similar*
- Chief Technology Officer or similar*
- Chief Data Officer or similar*

**Applicable, if the city has someone with this role*

Strategy assessment

Strategic Priorities

Vision & Objectives

Multi-City Platform

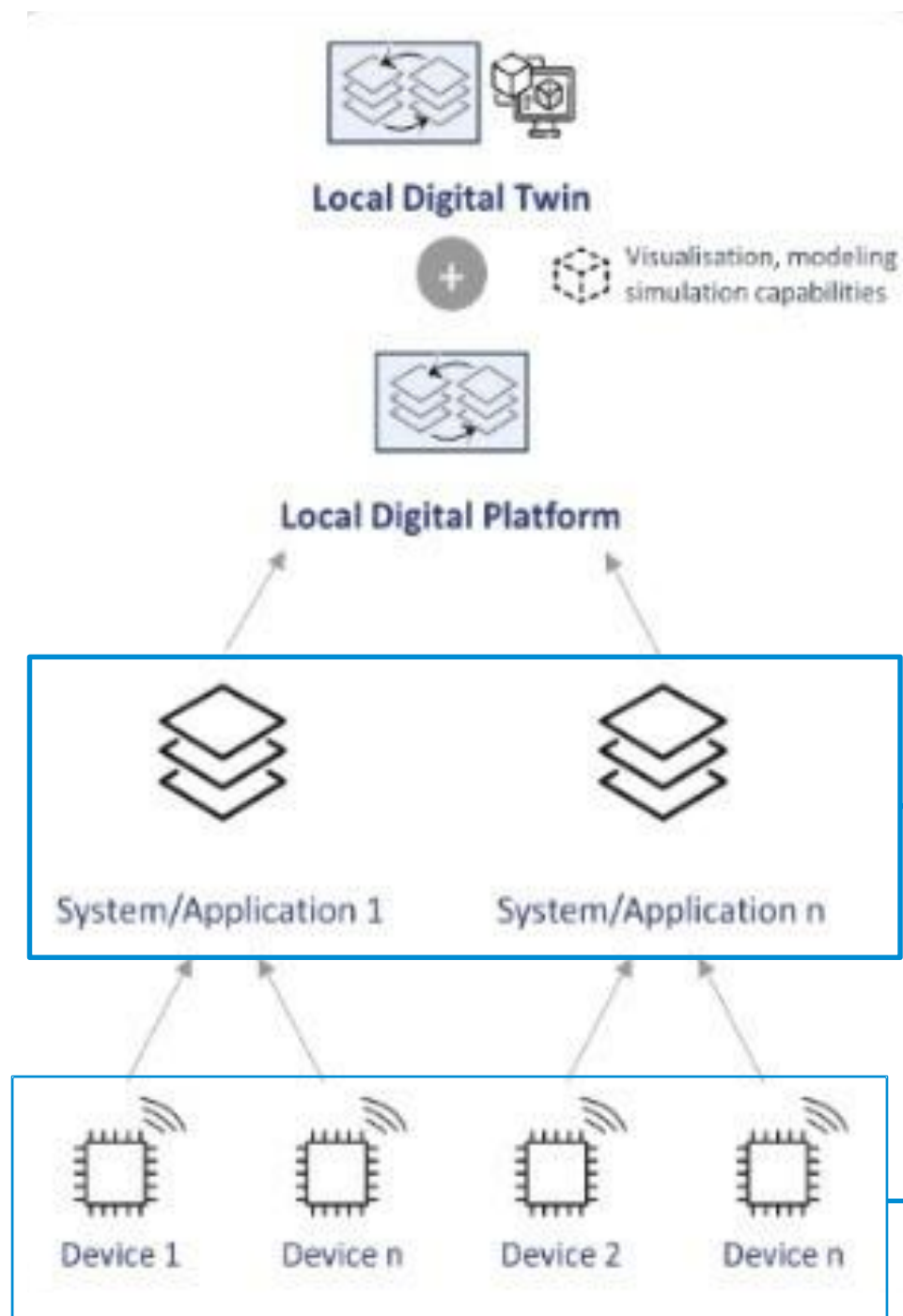
Governance

Strategic KPIs

IT Infrastructure assessment



The main goal of this section in the Assessment is to understand the city/community's digital platform maturity and



SYSTEMS/
APPLICATIONS

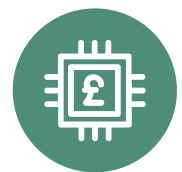


Definition:

Responsible for aggregating and processing sensor data to control and forecast often sector-specific operations

Target of the Assessment:

Understand if the community has any platform already in place and if those platforms are being shared between multiple cities/communities



IOT EVICES
D



Definition:

Responsible for collecting, preparing, and managing community data to be used by the sectorial platforms

Target of the Assessment:

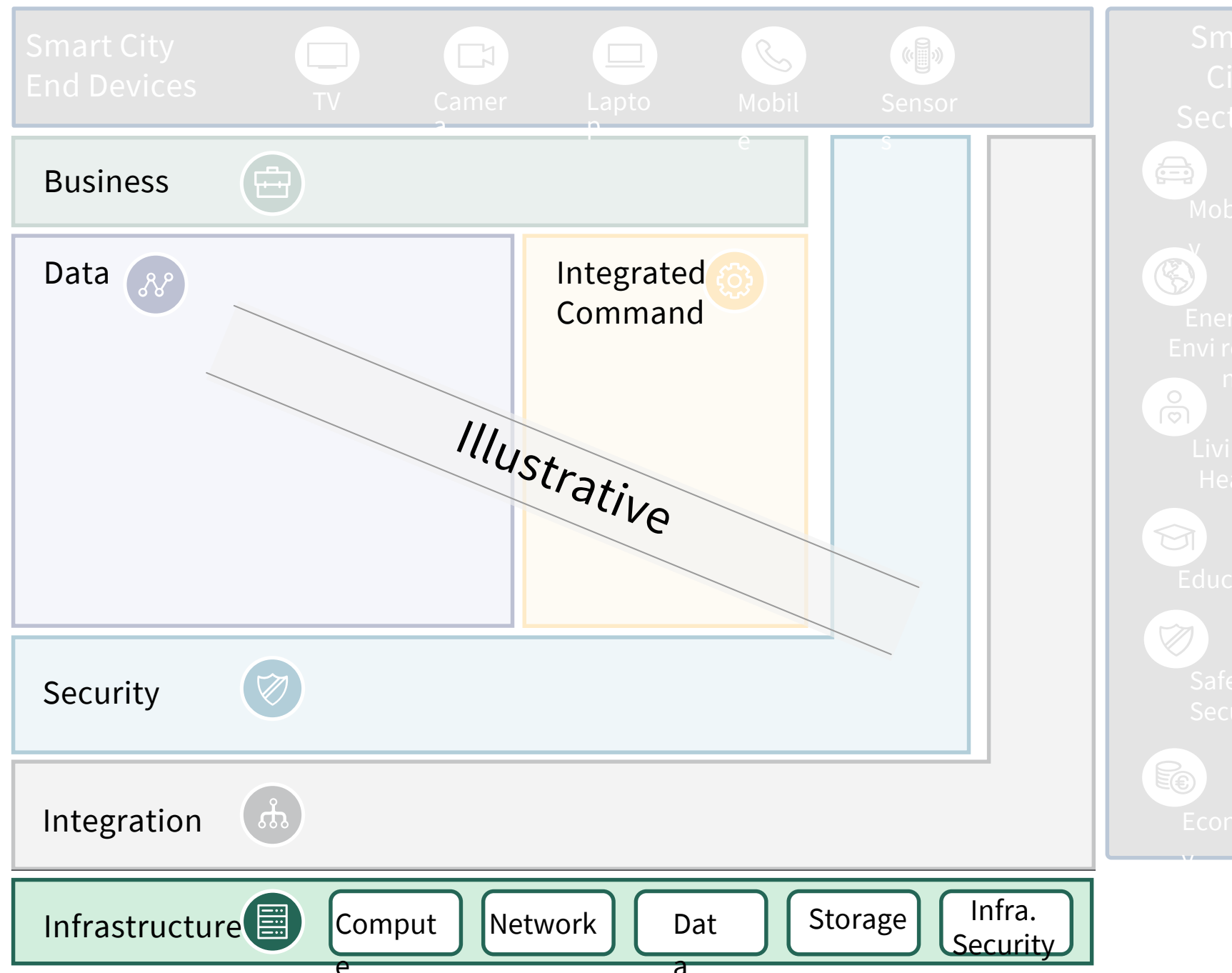
Understand if the community has any sensors in place from which they are collecting data

IT Infrastructure assessment



The main goal of this section in the Assessment is to assess the city/community technical level of maturity and have valuable insights on it.

REFERENCE ARCHITECTURE



INFRASTRUCTURE

CAPABILITIES

Compute

Applications and workloads require a great deal of compute capabilities, these services can be provisioned on demand or reserved

Network

Enables capabilities such as load balancing, segmentation and virtual data centres

Data

Examines large amounts of data to uncover hidden patterns, correlations and insights. Helps organisations harness their data and use it to identify new opportunities

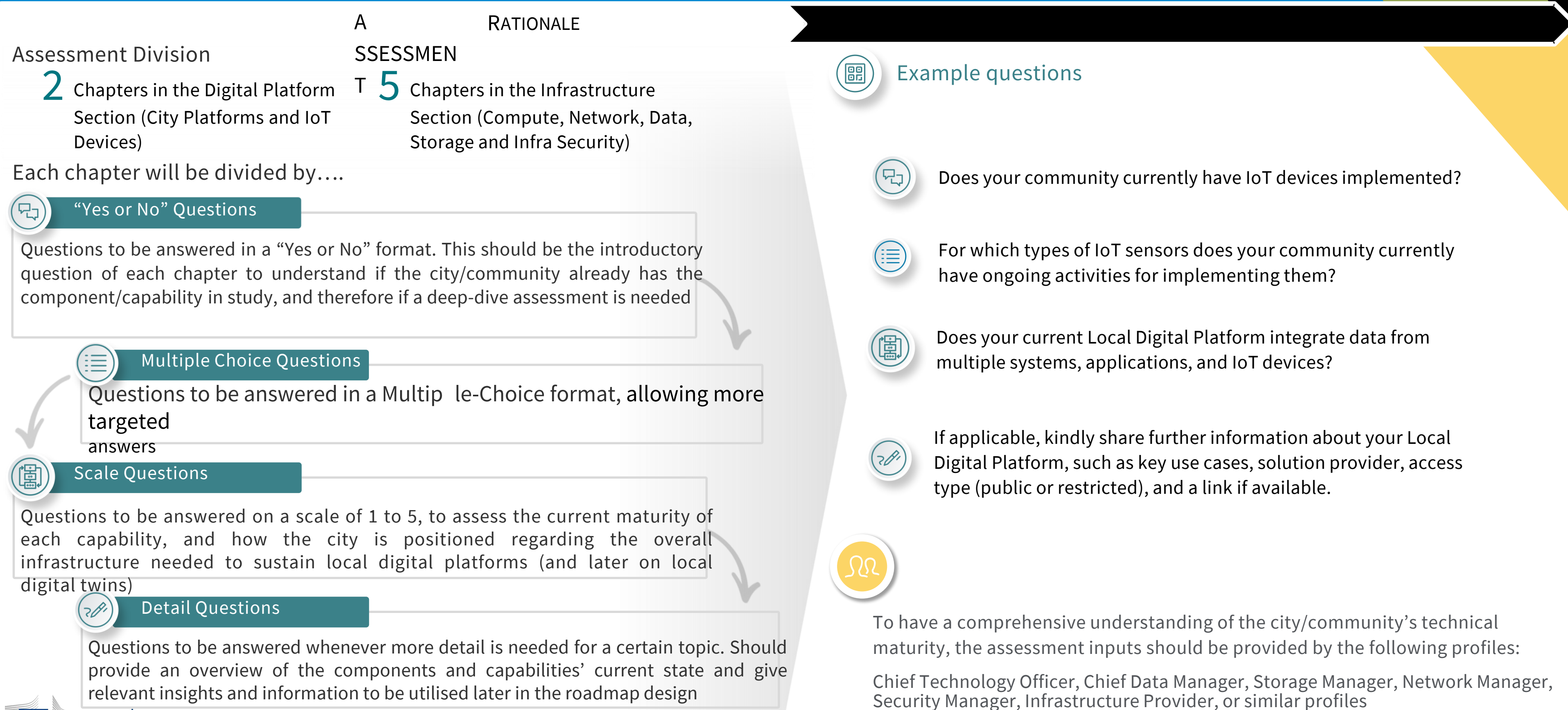
Storage

Delivers scalable, flexible and redundant storage capacity through web services API, online interfaces and thick client applications

Infrastructure Security

Secure the entire infrastructure which includes all hardware and software

IT Infrastructure assessment



IT Infrastructure Assessment

IoT	Systems & applications	Data	Storage	Compute	Network	Infrastructure Security
IoT	Smart City Applications	Data Strategy	On Premises	On Premises	Network Capacity & Effectiveness	Cybersecurity Policy
Device Management Strategy	Local Digital Platform	Data	Cloud	Cloud	Network Adaptability	Plan, Monitor & Test
Device Management Platform		Data Collection & Management		Cloud Computing Advanced Tech	Network Connectivity	Security Advance Measures
		Data Analysis			Network Coverage	Security Segmentation
		Data			Network	Privacy Compliance
		Data Retention & Backup			Reliability Network Redundancy	Disaster Recovery

Assessment to Roadmap

Assessments Contribution to the Roadmap



Strategy Assessment

Will allow for a targeted roadmap through the vision and strategy of the city/community, focusing on the sector that the city/community is investing in or wants to invest in



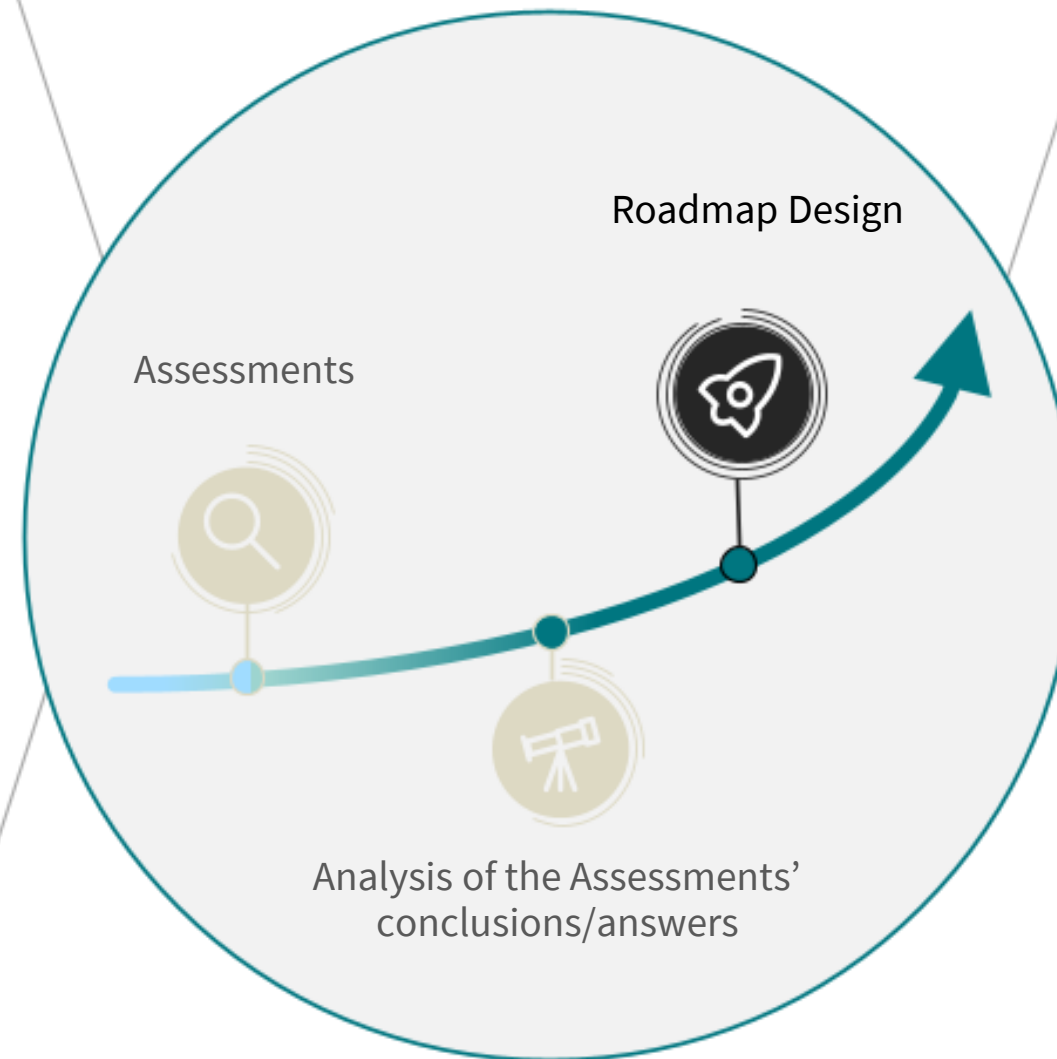
IT Infrastructure Assessment

Will allow for a more focused roadmap on what the city/community really needs to invest in and evolve, because of the following view:

- If the city/community has digital platforms

or sensors in place

- If the city/community is interoperable and the state of it
- The maturity level of the city/community's infrastructure and their current technical condition



First Look to the Roadmap Template Methodology

Roadmap Templates based on the Infrastructure Maturity Levels:

- Digital Absent
- Digital Embryonic
- Digital Pioneer

Digital Foundation
Digital Growth

Main Topics needed to be included in the Roadmap Template for each City/Community:

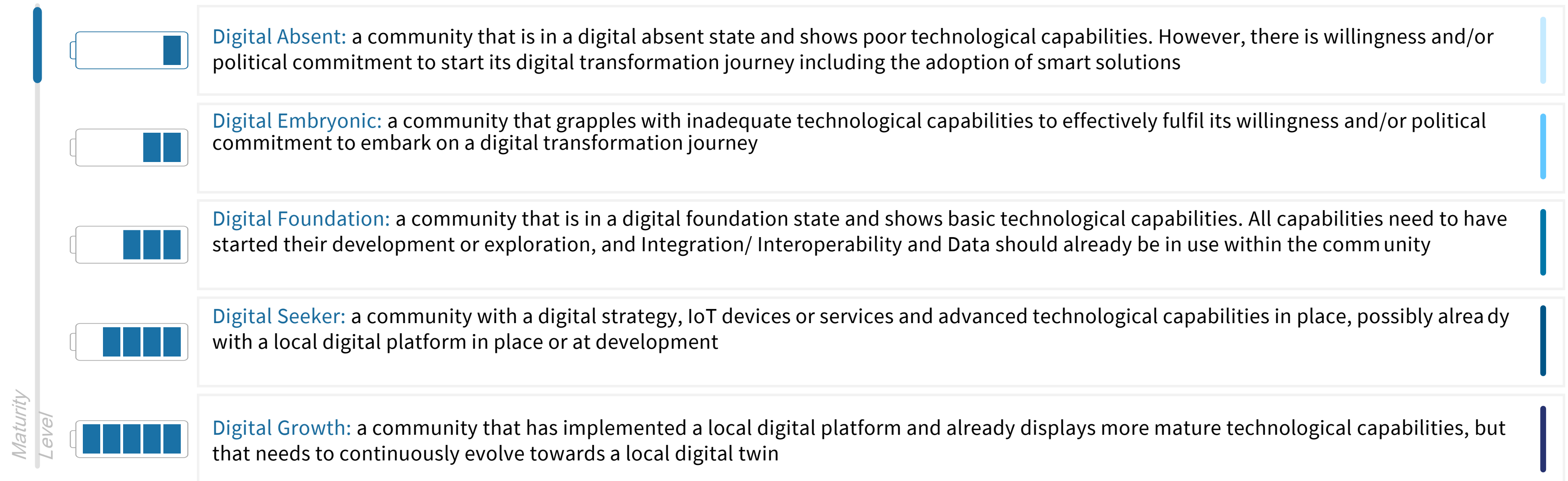
- Suggested Activities and “Must-have” Core Capabilities
- Use Cases Development and their Requirements
- Milestones, including the Procurement Processes and Templates

Technical Maturity Level



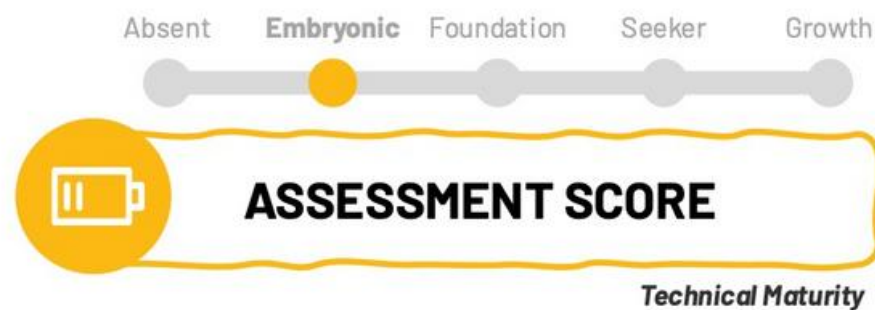
Technical Maturity Level

Based on the answers, calculate a maturity level that will serve as a benchmark for selecting the most appropriate roadmap template for each community



Assessment score

Your Maturity Level!



Note: The two maturity levels presented cover similar but somewhat different scopes of analysis, which may result in differences. The Digital Maturity results directly from LORDIMAS, while the Technical Maturity score focuses on IT core capabilities and aligning them with the strategic ambition of the community. The Technical Maturity Scores are derived from the combination of assessments performed within the helpdesk's scope and underpin the presented roadmap.

COMMUNITY NAME Assessment Scores:

Digital Maturity (LORDIMAS Assessment)

Governance	Service Design	Data Management	Interoperability	Service Delivery	Technology	Networking

Technical Maturity (LORDIMAS Assessment, Strategy Assessment, IT Infrastructure Assessment)

Digital Strategy	IoT Devices	Local Digital Platform	Integration/ Interoperability	Data	Storage	Compute	Network	Security
✓ Under development		✗						

Caption: ✓ In place ✗ Not in place 1 Not at all 2 Initial exploration 3 Basic utilisation 4 Advanced utilisation 5 Outstanding utilisation

Key Considerations

- > Add text
- > Add text
- > Add text
- > Add text
- > Add text
- > Add text

Roadmap structure

The community's

The Enablers and Capabilities that are shown in the community's roadmap will translate into more detailed initiatives

Roadmap

Phase



Enablers & Capabilities



Initiatives

The community's roadmap can be divided in up to **3 main phases** according to its level of maturity, from the **beginning of the community's digital journey** until the implementation of a **Local Digital Twin**, namely:

- i. **Foundation**
- ii. **Growth**
- iii. **Expand & Accelerate**

Enabler

The roadmap may include up to **10 enablers** that facilitate and support the implementation of local digital twins. **Each enabler can have one or more sub-enablers** that collectively define the overall enabler

Examples: Strategy, MVP Digital Platform



Capability

The roadmap may include up to **9 main capabilities** that the community needs to have in place to enable efficient urban management and data-driven decision-making. **Each capability can have one or more sub-capabilities** that collectively define the overall capability

Examples: Data Capability, and Data Collection and Management Sub-

For each capability and enabler outlined in the community's previously defined roadmap, a corresponding **list of initiatives** is associated. The **initiatives will be refined** to what the community needs to **invest and ensure to have an outstanding utilisation** of the capabilities and enablers, according to its level of maturity in each sub-capability

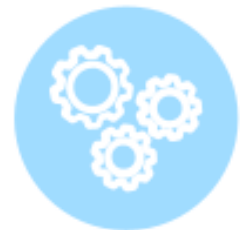
Examples: "Identify and implement a Backup Tool to streamline and enhance the effectiveness of the community's data retention and backup strategy and principles"

Reference Roadmap

Starting the Digital Journey

Implementing a Local Digital Twin

Increase of the digital transformation (local digital platforms and local digital twins)



Foundation

The main goal of this phase is to understand the strategy of the community and identify the core foundational capabilities and enablers to implement a Local Digital Platform



Growth

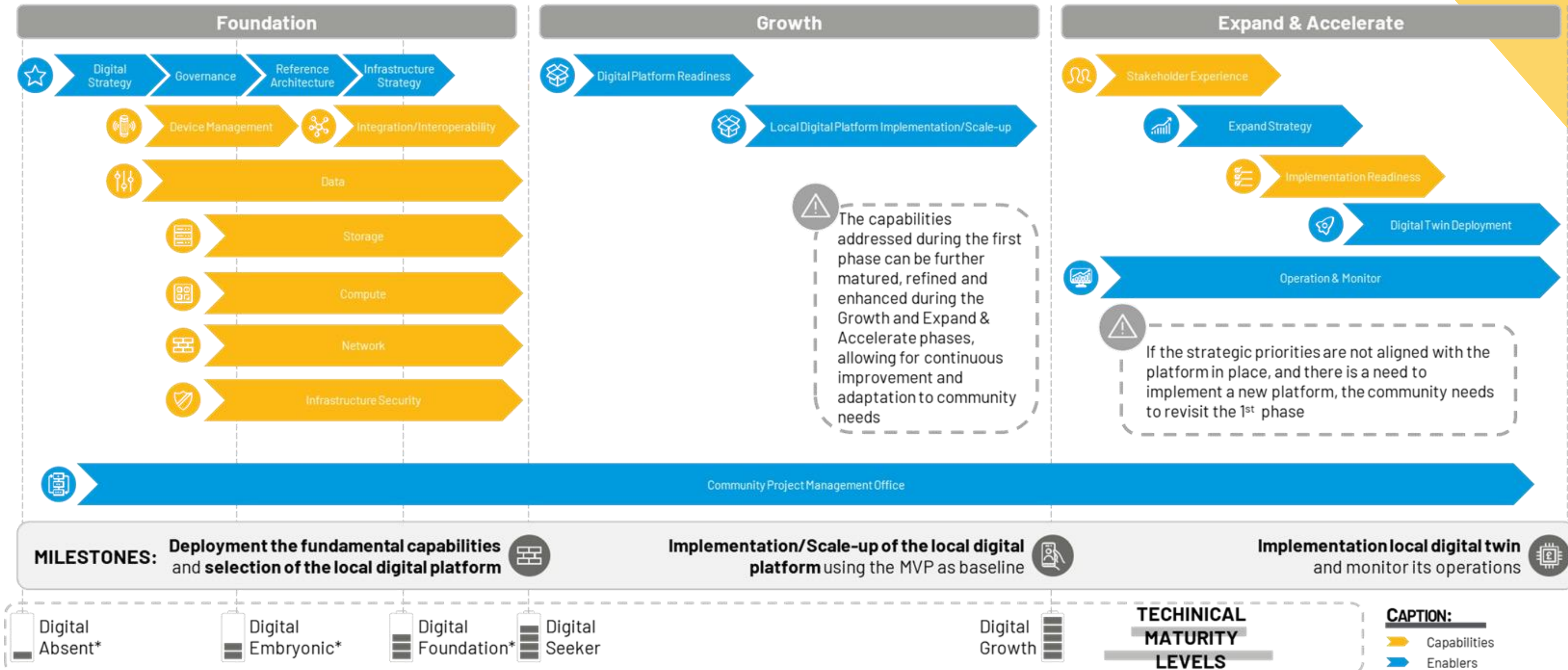
Growth phase focus on testing that the systems/applications, to be feasible, validate if the chosen systems/ application(s) are a fit for the community. Following successful validation, the deployed MVP will serve as a foundation to accelerate the implementation of the Local Digital Platform



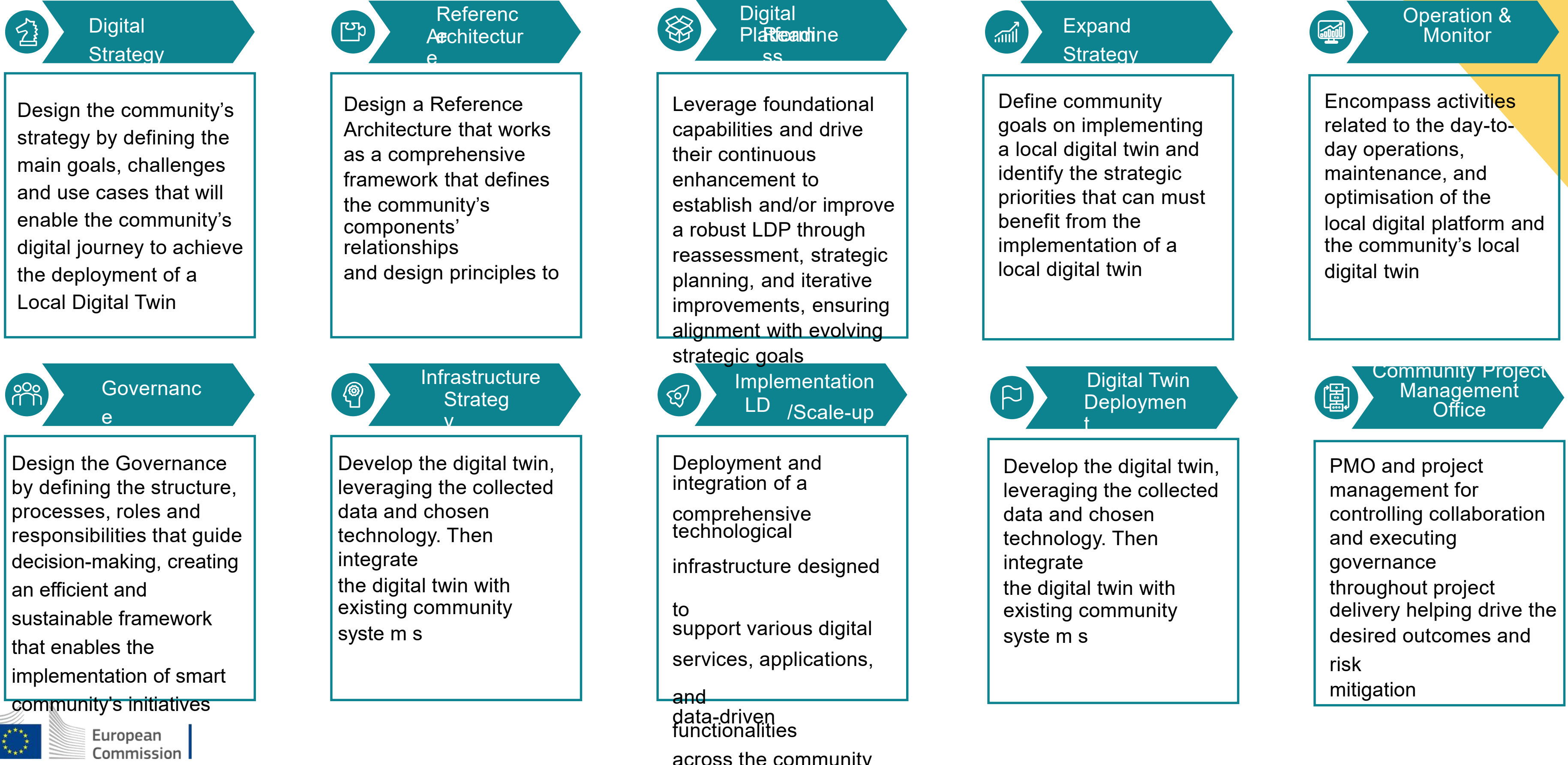
Expand & Accelerate

Address the strategy of the community to implement a Local Digital Twin. Ensure all essential tools and initiatives are in place and achieve a successful implementation of the Local Digital Twin. If the community's ambition is not aligned with the platform in place, and there is a need to implement a new platform, the community needs to go back for the 1st phase

Reference Roadmap



Roadmap streams (1/2)



Roadmap streams (2/2)

Device Management

Develop and implement strategies for effective management and maintenance of community devices or services, ensuring optimal performance and longevity

Data

Implement effective data management practices to collect, organise, and utilise data from various sources within the community's infrastructure, supporting data-driven decision-making

Network

Establish and maintain a robust network infrastructure to ensure seamless connectivity and communication across all community devices, enabling efficient data exchange

Security

Promote the delivery of a community's cybersecurity framework covering different capability elements such as people, process and technology

Implementation Readiness

Collect multi-source real-time/historical data, choose the technology best suited for community needs and collaborate with community/regional stakeholders, fostering knowledge sharing and goal-alignment

Integration/ Interoperability

Foster seamless interaction and data exchange among devices and applications, promoting an integrated and connected urban ecosystem

Storage

Analyse future storage requirements versus current state and develop recommendations for the proposed initiatives concluded around the deployment of storage infrastructure

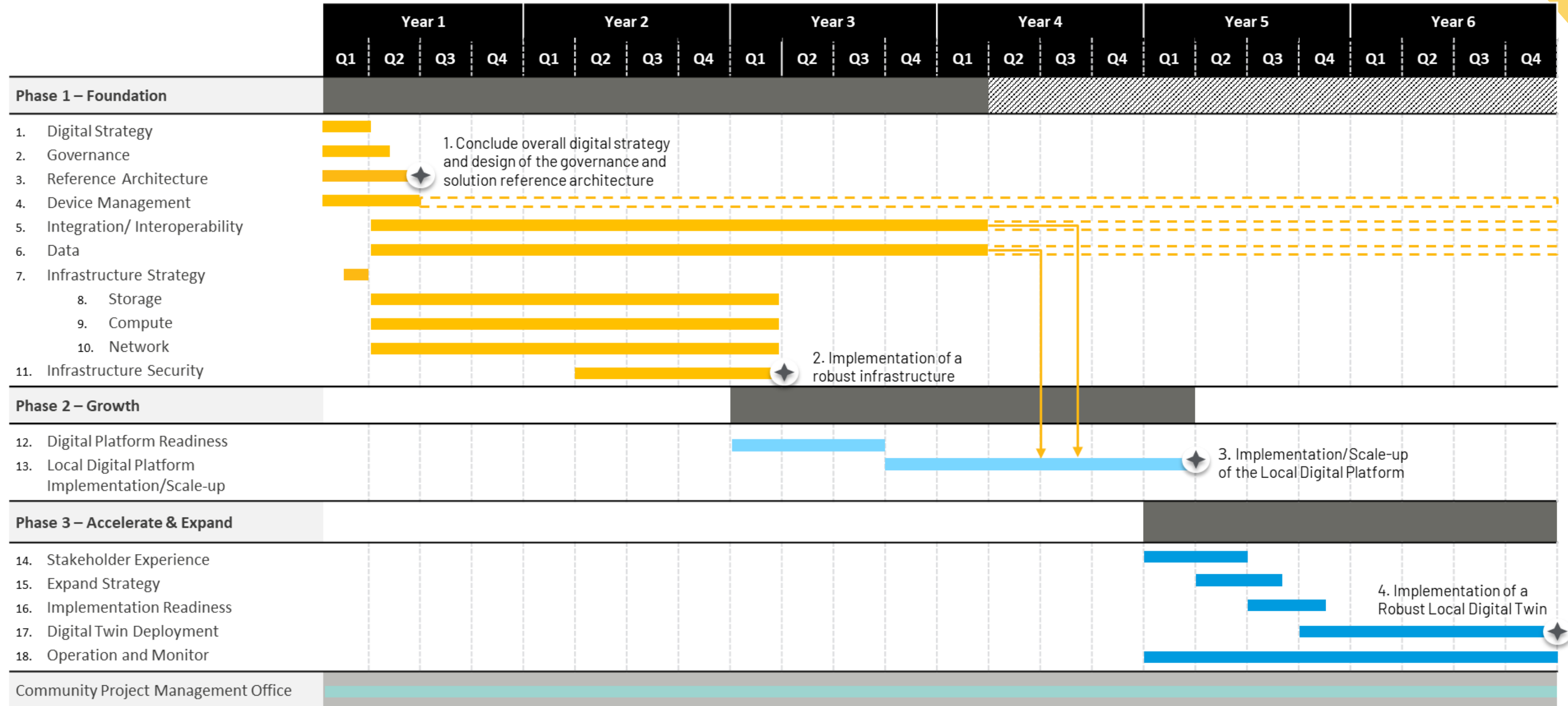
Compute

Implement robust computational capabilities that facilitate efficient data processing and decision-making within the community's ecosystem

Stakeholder Experience

Communicate and collaborate with community's stakeholders to understand their concerns and manage their vision of the community's goals and ambitions

Reference Roadmap



Note: The arrows represented in the reference roadmap illustrate that during the implementation of the local digital platform, both Integration/ interoperability and data capabilities should be addressed. It is essential to ensure the seamless concatenation of Integration/ interoperability and data collection within the local digital platform during its implementation

Caption: ● Phase ◆ Milestone

Initiatives

5 Data

Data Capability refers to the city's ability to effectively collect, process, manage, and utilise data from various sources and domains, including infrastructure, technologies and processes in place. This capability can be divided into 6 major sub-capabilities: Data Strategy, Data Governance, Data Collection & Management, Data Analysis, Data Centralisation and Data Retention & Backup.

☰ Main Initiatives (1/2)

Data Strategy

- Design/ Review the Data Strategy which sets the approach for the acquisition, storage, management, sharing, usage and governance of data, in support of enhancing city digital services and improving quality of life for residents

Data Governance

- Review the Data Governance Principles, Framework and Tool selected, ensuring that is aligned with the community's ambition
- Identify Governance Tools for managing and ensuring the policies and standards, quality, security and compliance of the data used and collected by the city
- Implement a Data Governance Tool for managing and ensuring the policies and standards, quality, security and compliance of the data used and collected by the city

Data Collection & Management

- Review the Data Collection and Management Strategy, ensuring that is aligned with the community's ambition
- Drive the community towards a more data-driven paradigm by modernising data collection methods, as well as implementing and improving the collection of the data sources, e.g., based on specific events, periodically, and considering the integration of real-time data collection. Real-time collection is one of the most important components for a smart city, since it helps the community to make informed, timely decisions, enhancing efficiency and the quality of decision-making
- Gradually increase the variety and quantity of data sources to enrich the community's information landscape and enhance the quality of insights that can be produced from an increasingly integrated view

Foundation

Growth

Accelerate &
Expand

Calendar Estimate

Year 1				Year 2				Year 3			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Year 4				Year 5				Year 6			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Procurement Objects*

- Data Governance tool
- Real-time data collection tools
- Data providers
- Data analytics tool

**The procurement objects provided are preliminary versions and subject to further refinement*

Interdependencies

- 2 Reference Architecture
- 3 Device Management
- 6 Infrastructure Strategy

A person in a white shirt is holding a tablet. The tablet screen shows a vibrant city skyline at night, with several skyscrapers illuminated. Overlaid on the city is a white geometric network of lines and dots, resembling a data or communication network. The background of the entire image is a blurred cityscape under a sunset sky.

APRENDER SOBRE OS MODELOS DE CONTRATAÇÃO PERSONALIZADOS DA UE

APRENDER SOBRE OS MODELOS DE CONTRATAÇÃO PERSONALIZADOS DA UE



ELIANA GERARDI
INTELLERA CONSULTING
MANAGER

**Procurement support for Smart Communities:
Learning about the EU tailor-made procurement
templates and guidelines**

A person in a white shirt is holding a tablet. On the tablet screen, a digital cityscape is visible, featuring several tall skyscrapers. A white network diagram, consisting of interconnected nodes and lines, is overlaid on the cityscape. The background of the entire image is a blurred cityscape at sunset or sunrise, with a warm orange and yellow glow.

METACITY – PLANEAMENTO DA UTILIZAÇÃO DE FERRAMENTAS DE IA PARA GÉMEOS DIGITAIS



METACITY – PLANEAMENTO DA UTILIZAÇÃO DE FERRAMENTAS DE IA PARA GÉMEOS DIGITAIS



RICARDO GONÇALVES

CÂMARA MUNICIPAL DO FUNDÃO

CHEFE DE DIVISÃO DE INOVAÇÃO, INVESTIMENTO E PLANEAMENTO





SMART RURAL TESTBED

5G LAB
IoT OPEN LAB
DESIGN FACTORY
BUSINESS CENTER

INCUBATOR AND
ACCELERATOR
FAB LAB

ADVANCED
TRAINING
CENTER

LORA NETWORK
(700 Km2)

AGROTECH
CENTER

COWORKING

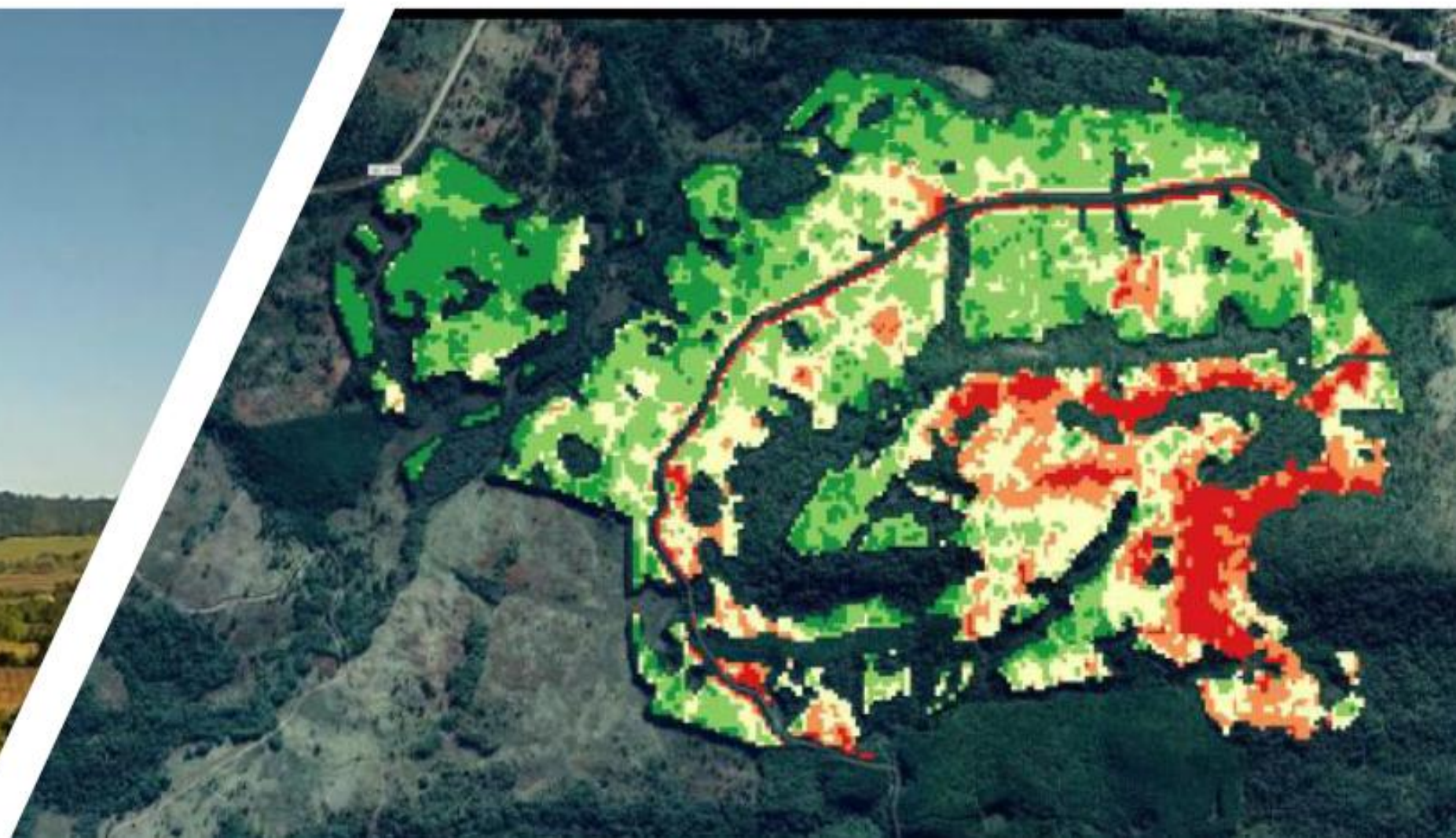
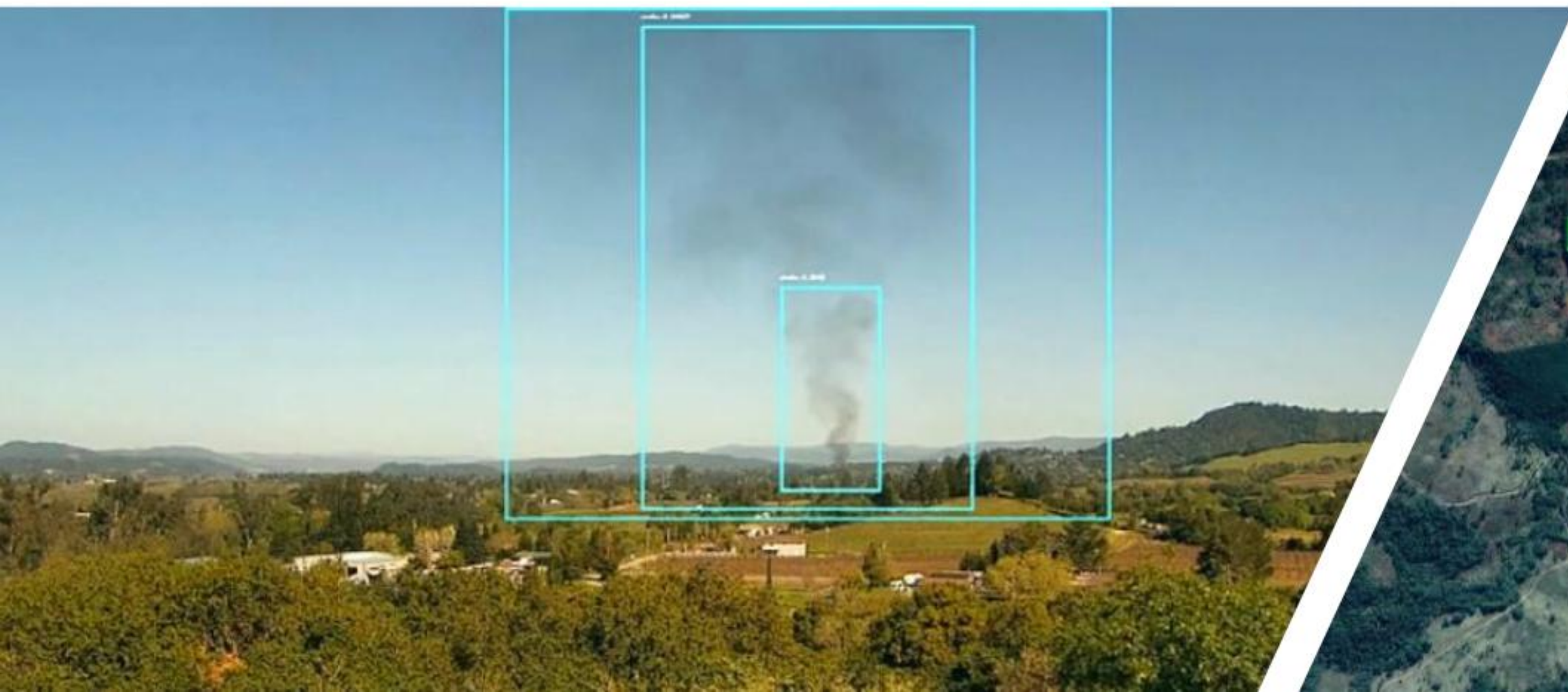
SOCIAL INNOVATION
LAB

BIOTECH PLANT
LAB









+ 80 projects in execution





Horizon2020
European Union Funding
for Research & Innovation

URBACT



Co-funded by
the European Union
Interreg

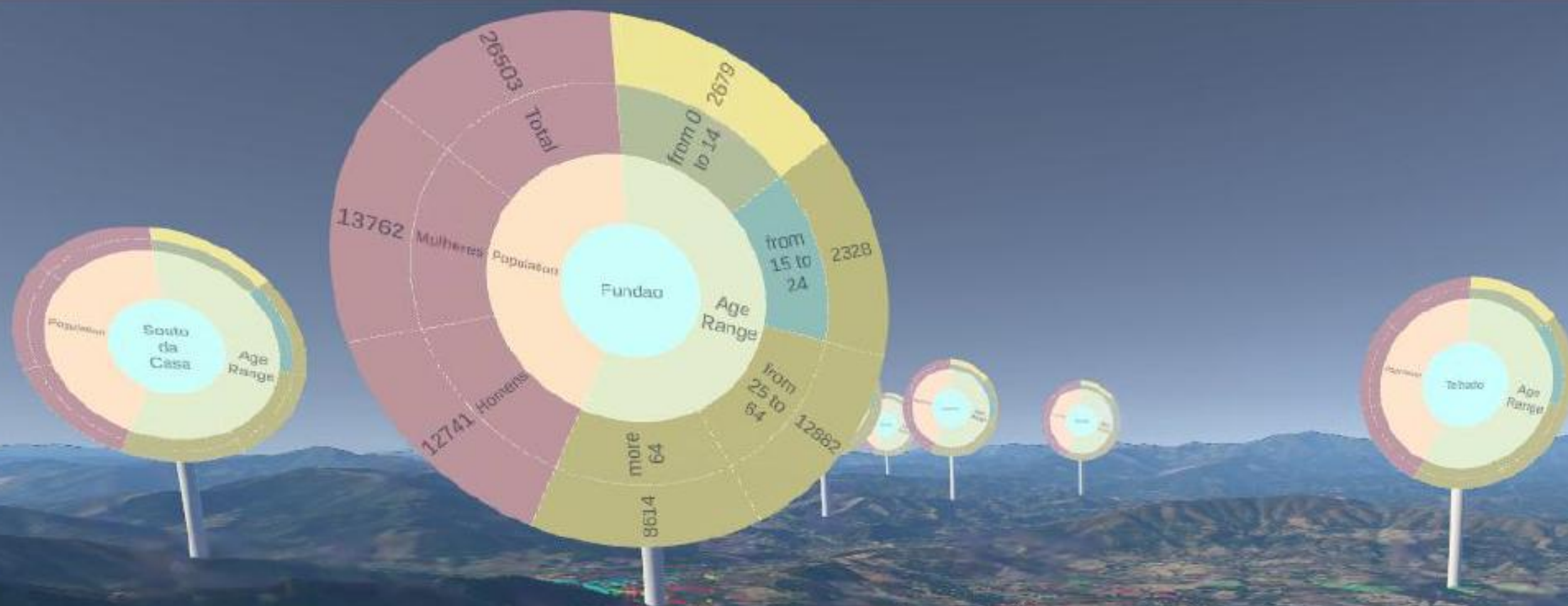


Road to Fundão Digital Twin

- **INNOVATION PLAN**
 - Innovation ecosystem
 - Smart City Strategy / IoT & LoRa
 - Mapping and Data gathering on [GIS](#)^o
 - New Masterplan
- **NETWORKS AND PARTNERS**
 - OASC (Lordimas, LDT Helpdesk, DataSpaces)
 - ENOLL
 - Data CoLab – CIT
- **PROJECTS**
 - MUV
 - IoTXChange
 - Agendas Route 25 / Blockchain
 - Plenty-LIFE
- **INSPIRATION**
 - Benchmarking
 - MIPIM
 - SCWE Barcelona
- **FUNDING**
 - SSA URBACT
 - Municipal Budget
- **DIGITAL TWIN DEVELOPMENT**
 - June to December
 - Data: GIS, [Google](#), IoT, LoRa, CIT, Copernicus
 - [Pilot](#) in Q1 2025
 - [Ambitious](#) and Ongoing process
- **BIM ACADEMY**

SCENARIO

- Sim Settings
- Data View
- Local Data
- External APIs
- EDIT SCENERY
- ENVIRONMENT
- ANALYZE TOOLS
- STATION ASSIGNMENT

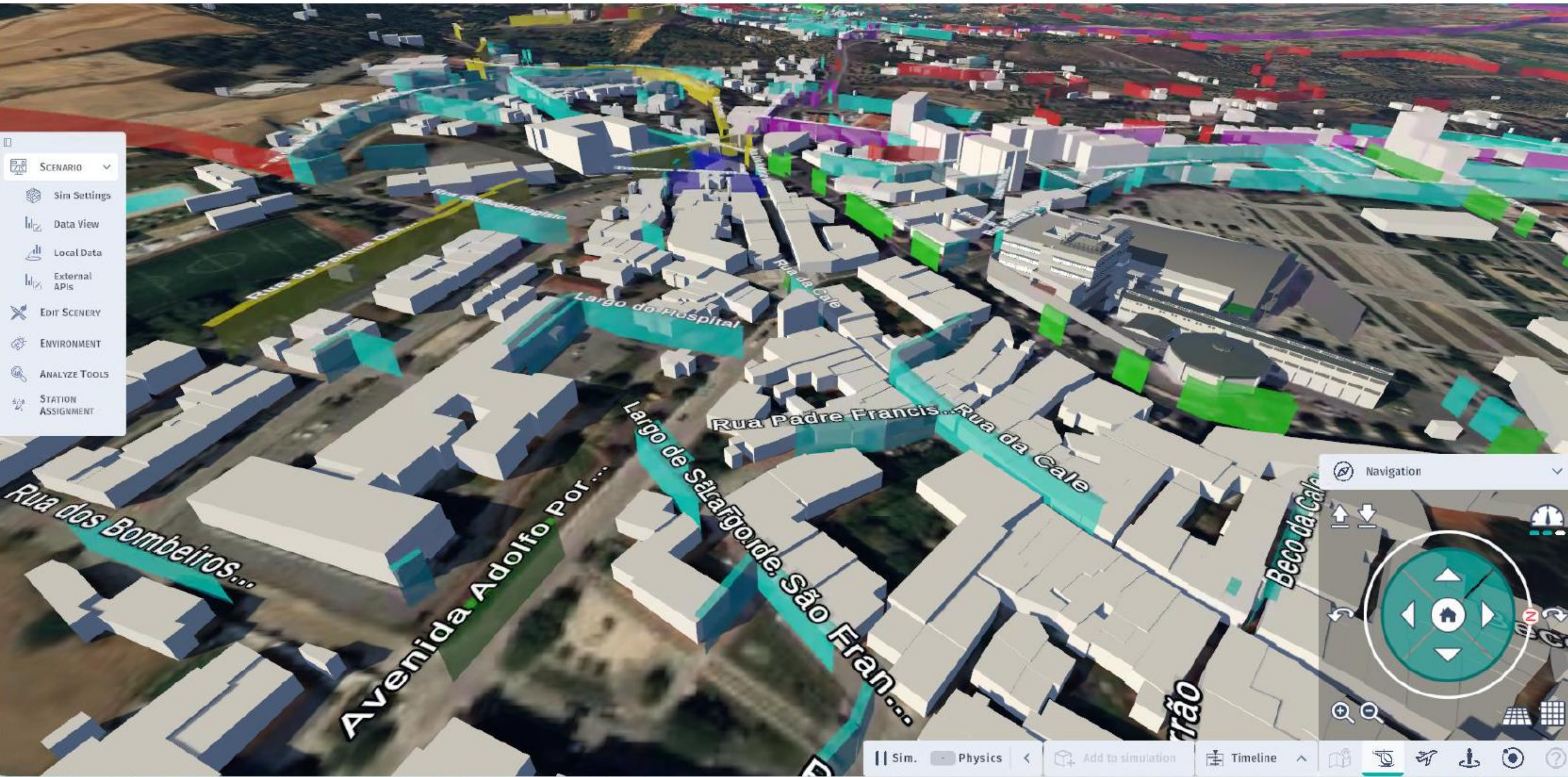


Navigation

Navigation controls including a compass, zoom in/out buttons, and a home button.

Sim. Physics Add to simulation Timeline

Simulation controls including a play button, a pause button, and a timeline slider.



- SCENARIO
- Sim Settings
- Data View
- Local Data
- External APIs
- EDIT SCENERY
- ENVIRONMENT
- ANALYZE TOOLS
- STATION ASSIGNMENT

Navigation

Navigation controls including a 3D navigation pad with directional arrows and a home button, and a 2D map view with zoom in/out buttons.

PERGUNTAS E RESPOSTAS

VALORIZAMOS O SEU FEEDBACK!



Participe na Ação: Registe-se nas sessões PORTUGAL

Fase 2:

Fase de Preparação Como definir a infraestrutura para o seu roadmap?

- Compreender a importância dos dados abertos e partilhados para a sua infraestrutura de dados
- Como implementar plataformas de dados abertos e data spaces através de uma arquitetura de referência suportada por MIMs?
- Descobrir ferramentas de código aberto disponíveis na Toolbox da UE para os Gémeos Digitais Locais

 02.julho.2025

 11:00 – 12:30

Fase 3:

Fase de Empowerment Qual o apoio da comunidade Living-in.EU?

- Conhecer a comunidade Living-in.EU: como utilizar os recursos criados pela comunidade e participar ativamente nas suas iniciativas
- Conhecer oportunidades de financiamento da UE: como se candidatar e preparar a sua proposta a fundos europeus

 03.julho.2025

 11:00 – 12:30

Registe-se enviando email para
territorios.inteligentes@ama.pt

Nome e apelido/Entidade/Cargo/email

AUMENTAR A DIGITALIZAÇÃO DAS CIDADES E REGIÕES PORTUGUESAS

Em colaboração com:



OBIGADO

