



# Local Digital Twins

## CxC Festival '22

Andrea Halmos, DG CONNECT, Unit C3 Technologies for smart communities



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Local Digital Twins can save USD 280 billion in city planning, development and operating plans

*(Source: ABI Research)*

Local Digital Twins can:

- Reduce operating costs by 35%
- Boost productivity by 20%
- Cut emissions by 50-100%

*(Source: CityZenith)*

- Operational decisions (short-term) - reactive

Public safety and crowd dynamics, traffic management, public transport and pedestrian management, facilities management, etc.

- Strategic (long-term) decisions - predictive

Urban planning and development, asset and infrastructure management, environmental and climate monitoring & planning, energy usage and solar deployment, etc.

Digital twins of the city are virtual replicas of urban environments, connected to both static and dynamic data sources that allow modelling multidimensional urban processes and perform simulations to improve decision-making.

# Examples of cities & regions using digital twins



Port of Rotterdam



Helsinki



Athens, Berlin, Flanders, Sofia



3D copy of Antwerp



Helsinki, Santander, Flanders



Madrid, The Hague, Budapest, Lyon, Oslo and Porto



Flanders, Athens, Pilsen

+ Amsterdam, Angers, Gothenburg, Hamburg, Herrenberg, Kongsberg, Munich, Rennes, Stockholm...



## A Europe fit for the digital age

Empowering people with a new generation of technologies

- [EU Ministerial Declaration of Digital Day 2021](#), where Member States have committed to ‘*work with local authorities and other relevant stakeholders to set up a European network of digital twins of the physical environment*’
- [EU Zero Pollution Action Plan](#) and EU Strategy on the [Adaptation to Climate Change](#) call for the use of Local Digital Twins to address environmental and climate-change challenges
- [Destination Earth](#) will unlock the potential of digital modelling of the Earth system; network of Local Digital Twins could in future be integrated
- [DIGITAL](#) will support the creation of a data space for smart communities, which will be followed by the deployment of the data space and a network of Local Digital Twins - funding to support the creation of an EU Local Digital Twin Toolbox to accelerate the rollout of some 100 twins across the EU, integrated within the Living-in EU initiative



... For resource efficiencies, tackling environmental and climate challenges more effectively, creating a thriving market, etc. enabled by:



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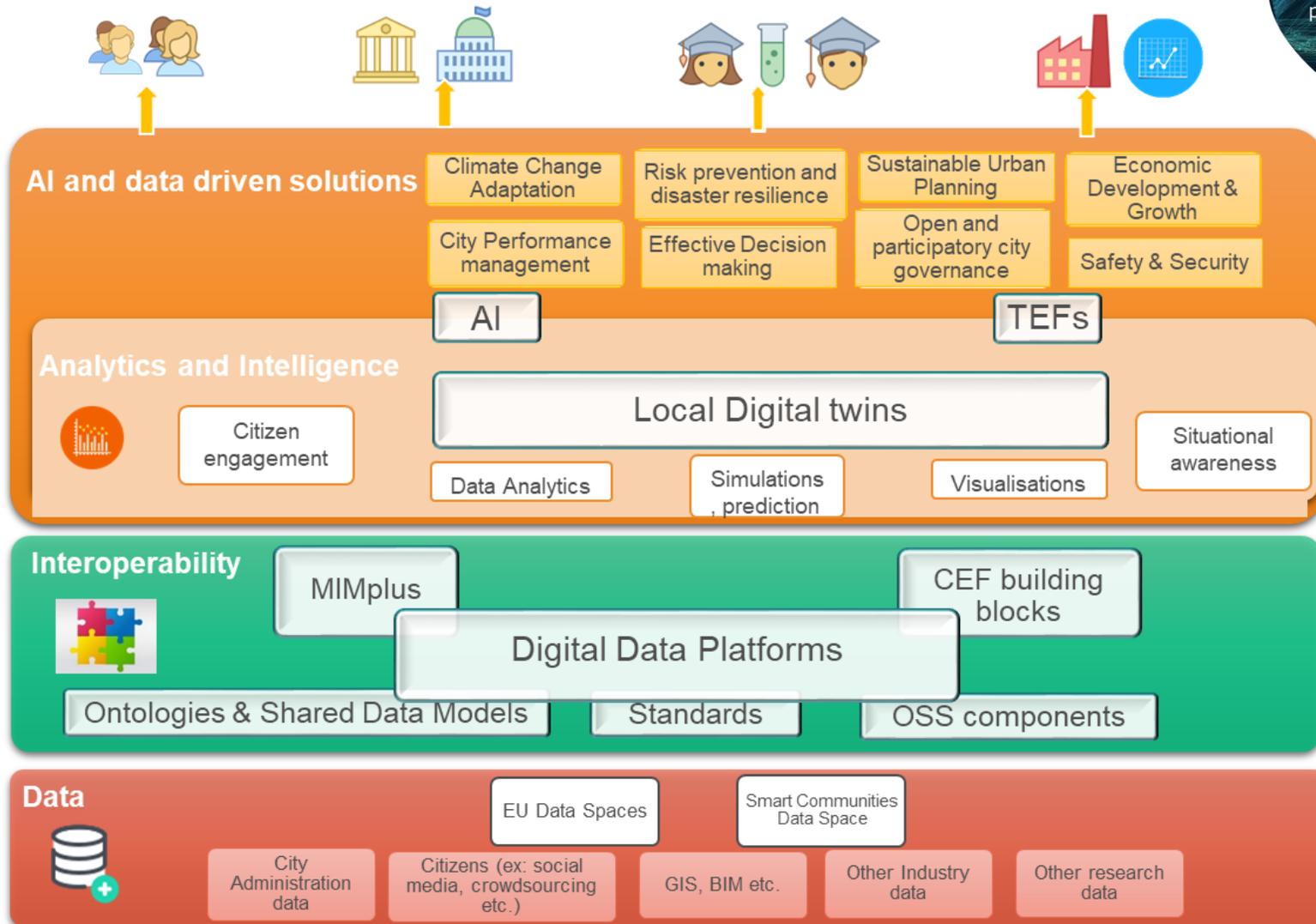
- **Interoperable platforms:** manage and share data and stakeholders, federation of many platforms to manage the city services in a holistic way - > supporting the take-up of interoperable, open standards-based platforms
- **Interoperable data:** data access, sharing, use and reuse - > fully-fledged, federated EU smart communities' data space
- **Interoperable Digital Twin components:** EU LDT Toolbox and sharing common principles and processes, enabled by interoperability and standards

# Local Digital Twin enablers



European Commission

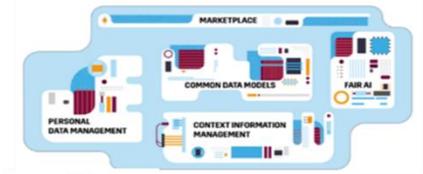
## Smart and Sustainable City/Local Ecosystem



Towards a new EU public sector interoperability policy



European Interoperability Framework for Smart Cities and Communities (EIF4SCC) – Interoperability governance



Minimal Interoperability Mechanisms (MIMs, INSPIRE, CEF building blocks, etc.)



## Data



Data space for climate-neutral and smart cities

- Developing data governance scheme
- Blueprint of data space
- Priority data sets aligned with blueprint standards and principles
- Roadmap
- Validation of the blueprint on at least two of the European Green Deal action areas

## Interoperability



Local Data Platforms

Help prepare the procurement and deployment of the interoperable local platforms

## Application building block & Smart Green services

AI

TEFs

Analytics and Intelligence



Local Digital twins

Procure a European toolbox for Local Digital Twins that all European cities could use when developing their digital twins



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The European way of digital transformation in cities and communities

Thank you!