

DIGITAL TWIN

A pathway to new planning horizons,
that you have already started...

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ISO/IEC JTC 1/SC 41/WG 6 N132

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Internet of Things and Digital Twin – Digital Twin
Convenership : SAC (China)

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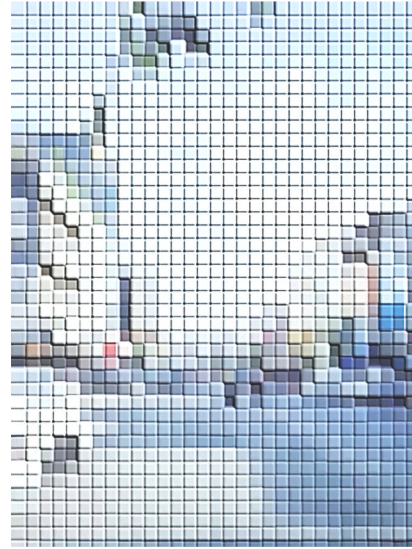
Standards, emerging:

- ISO/IEC 30172 – Use cases
- ISO/IEC 30173 – Concepts and terminology
- Maturity Models
- Reference Architecture

Standards are being developed



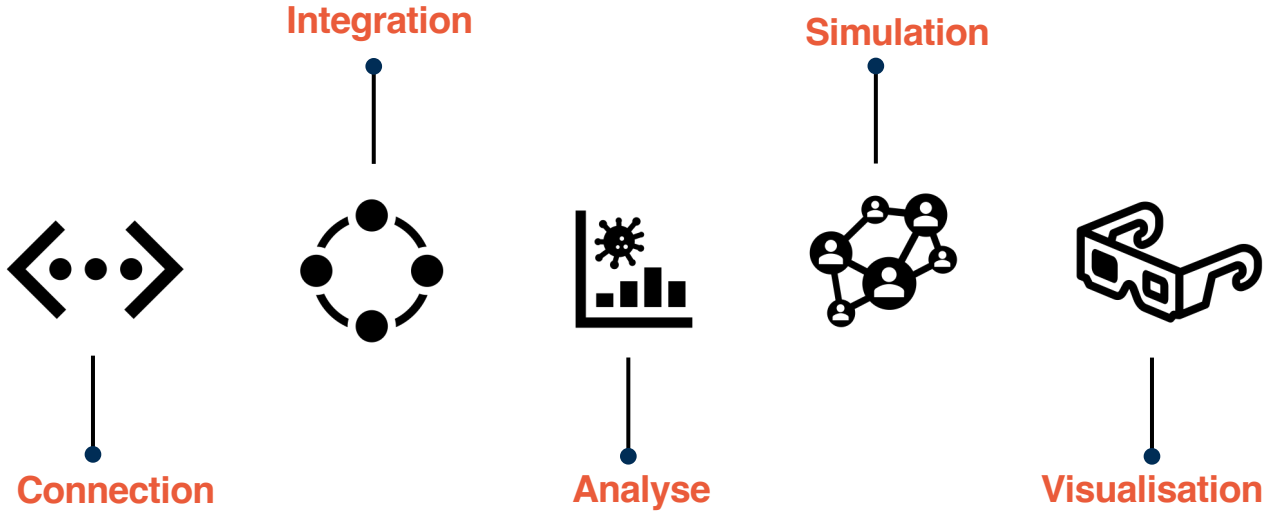
Physical entity / process



Digital replica

Photo by [Rio Lecatompessy](#) on [Unsplash](#)

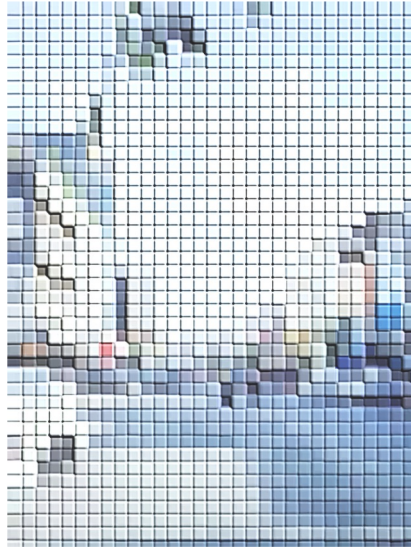
Unpacking the concept



Definition: Through capability



Real entity / process



Digital replica

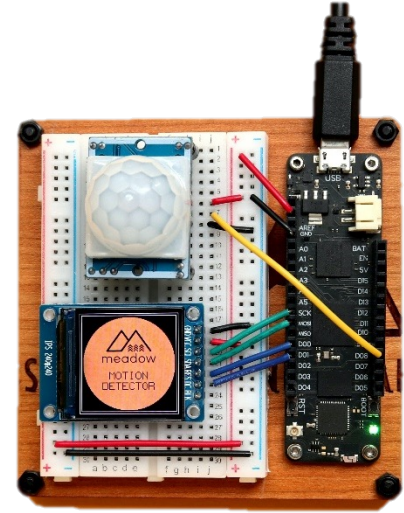
- Environmental conditions
- Mobility and transportation
- Economic development
- Utilities
- Social wellbeing and health

If you can measure it, a digital twin can help activate it

**Most organisations have some
digital twin capability**

Connection

There is a connection between the digital replica and the physical world so that as things change in the physical world, they also change in the digital replica.



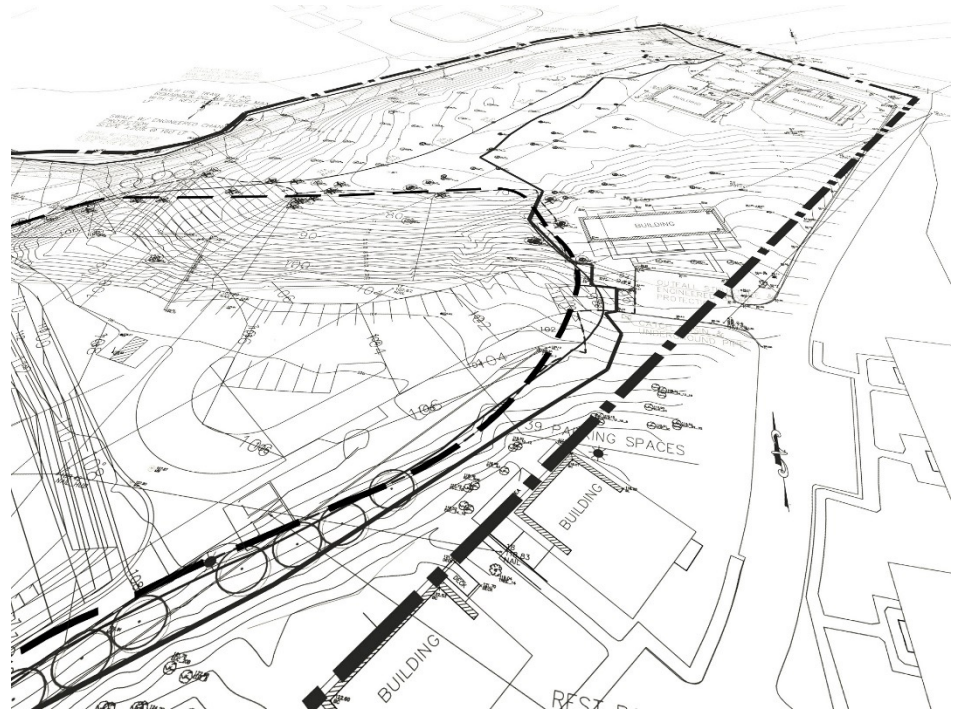
Cities have multiple digital connectivity networks in place, many being used for sensing and data gathering.

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Integration

The digital replica can ingest and/or reference data sets, aggregate them, link them and 'ready' them for analysis and visualisation.



Geographic Information Systems (GIS) have been a proven platform for data integration.

Analysis

The process of inspecting, cleansing, verifying, interpreting, transforming and modeling data for the purposes of creating new information and insights.



Many cities are already using dashboards to analyse and present data insights.

Photo by [Carlos Muza](#) on [Unsplash](#)

Simulation

The modelling of a system to gain insight into the potential real effects/outcomes of alternative conditions and courses of action.



Our ability to explore 'what if's?' continues to evolve as our data assets become more diverse and software innovations come to market.

Visualisation

The representation of multisource data in multiple dimensions that is easily accessible.



Augmented reality is just the beginning. Our visualisation capability is becoming more immersive, and engaging.

Finally, on digital twins:

- You have already started!
- But remember, digital twins are not for everyone (yet!)
- A clear vision and business case on how an investment in digital twins can support your city is critical
- Use cases that respond to specific targets/goals will make it tangible for your community
- Building up your own capability is key
- Seeking support on the potential technology and data enables will be required at some stage

Data diversification and activation for urban planning

Thank you

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