EOSC and Digital Twins

EOSC Symposium
Tuesday 22.10. 17:00-18:00

Funded by the
European Union

Introduction. Opening of the session

"Setting the scene on what Digital Twins are, and what is happening in the EOSC sphere"

- Digital Twins have proven their potential to revolutionise approaches to challenging tasks in the industrial sector. They are increasingly being leveraged as a research method bringing similar innovative approaches to the way science is performed.

- This session aims to bring relevant Digital Twins initiatives in Europe (DestinE, BioDT, DT-GEO, interTwin and ILIAD/aquaInfra) highlighting new dimensions of interoperability at data and service levels.

- A unique opportunity for the EOSC Community to discover the wide range of possibilities that Digital Twins can offer, in all research domains, and the role Digital Twin Platforms can play in future EOSC Nodes.
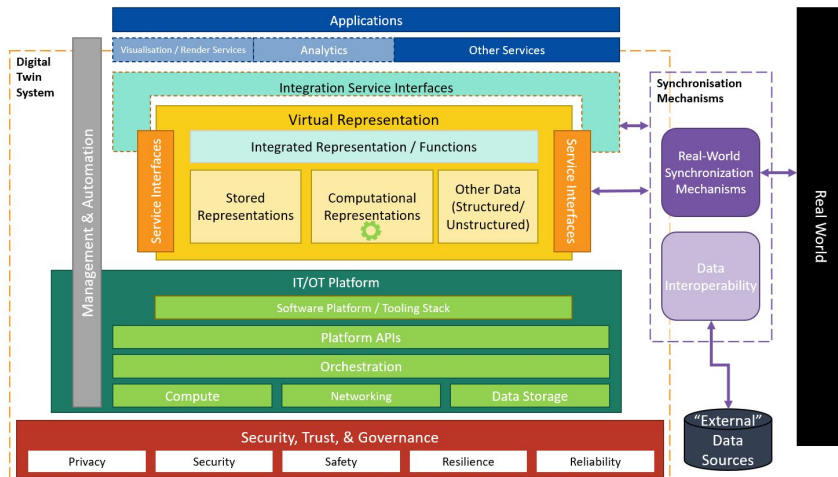
A **Digital Twin (DT)** is a **virtual** representation of a **physical object**, **process**, or **system**. It is created and sustained with information derived from one or many sources of data such as sensors or models considering historical as well as real-time data.
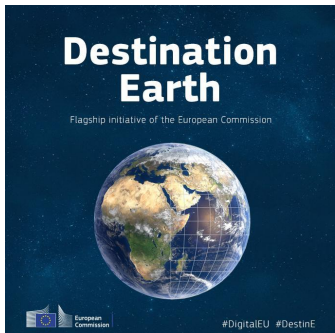
https://www.digitaltwinconsortium.org/glossary/glossary

https://www.deltares.nl/en/expertise/projects/digital-twins

Type	Industry	Cities & (air)ports	Environment
Goal	Life cycle management	"Smart" cities & (air)ports	Decision support, risk management & dissemination
Interventions	Adaptive design	Spatial planning and policymaking	System operation (e.g. sluices & locks) & policymaking
Cost reduction	R&D, construction & maintenance costs	Design, construction & maintenance costs	Disaster risk reduction, climate adaptation & biodiversity protection
System representation	Single object with many components	Many objects	Many systems
Timespan	Seconds – 5 years	Days – 10 years	Days or decades

BioDT, DT-GEO and interTwin (the 'Cross-DT Working Group') address important societal challenges, such as climate change, through piloting the use of digital twin technologies, developing and delivering novel data and services to research communities, policy makers and industry.

Standardization Efforts - IEEE WG on DTE with DT Iliad, interTwin and DT-GEO

4

Agenda

- Introduction & Opening of the session (Xavier Salazar, EGI, interTwin)
  "Setting the scene on what Digital Twins are, and what is happening in the EOSC sphere"
  - Project Presentations
    - interTwin (Xavier Salazar, EGI)
    - BioDT (Gabriela Zuquim, CSC)
    - DT-GEO (Ignacio Blanquer, UPV)
    - ILIAD / aquaInfra / DTO-Bioflow / EDITO-infra (Arne Berre, SINTEF Digital)
    - DestinE [video] (Thomas Geenen, ECMWF)

- Panel Discussion
  "Group discussion with representatives of DestinE, interTwin, BioDT, DT-GEO and DT of the Ocean (ILIAD / aquaInfra / DTO-Bioflow / EDITO-infra)"
    - Arne Berre, SINTEF Digital
    - Ignacio Blanquer, UPV
    - Gabriela Zuquim, CSC