



Biodiversity Digital Twin for Advanced Modelling, Simulation and Prediction Capabilities

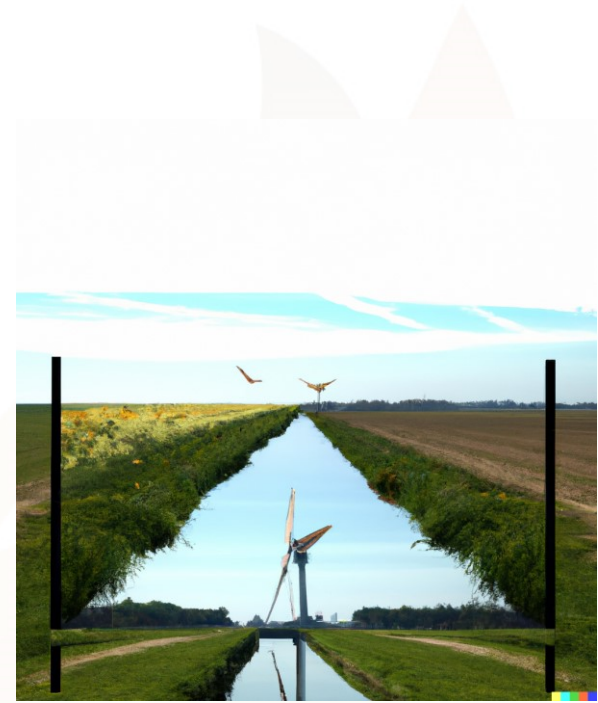
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NLBIF relatedag 7 maart 2023



The Biodiversity Digital Twin prototype will provide advanced models for simulation and prediction capabilities, through practical use cases addressing critical issues related to global biodiversity dynamics.



WHAT IS A DIGITAL TWIN?

Our planet is a complex system. To better understand how it works, we have created a simulated 'living' replica.

Driven by advanced AI, this computer model is fed by a continuous flow of observations from the physical world.

It allows us to revisit our past, understand our present and predict our future.

PHYSICAL WORLD

Planet Earth

DIGITAL TWIN

Computer model



The project responds to key EU and international policy initiatives, including the EU Biodiversity Strategy 2030, EU Green Deal, UN Sustainable Development Goals, Destination Earth.



DESTINATION EARTH

A DIGITAL REPLICA OF OUR PLANET

Destination Earth (DestinE) aims to develop a highly accurate digital model of Earth to monitor the effects of natural and human activity on our planet, anticipate extreme events and adapt policies to climate-related challenges.

ANTICIPATE
SIMULATE
UNDERSTAND
MONITOR

European Union ECMWF esa EUMETSAT

The graphic features a central glowing blue globe with a network of lines and nodes, set against a dark blue background with stars. Below the globe is a circular interface with four panels labeled 'MONITOR', 'UNDERSTAND', 'SIMULATE', and 'ANTICIPATE'. The ESA logo is in the top right corner, and logos for the European Union, ECMWF, and EUMETSAT are at the bottom.

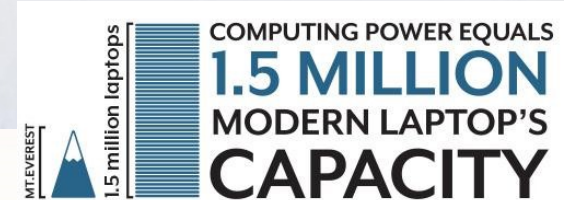
BioDT exploits the LUMI Supercomputer

More info:
<https://www.csc.fi/en/lumi>

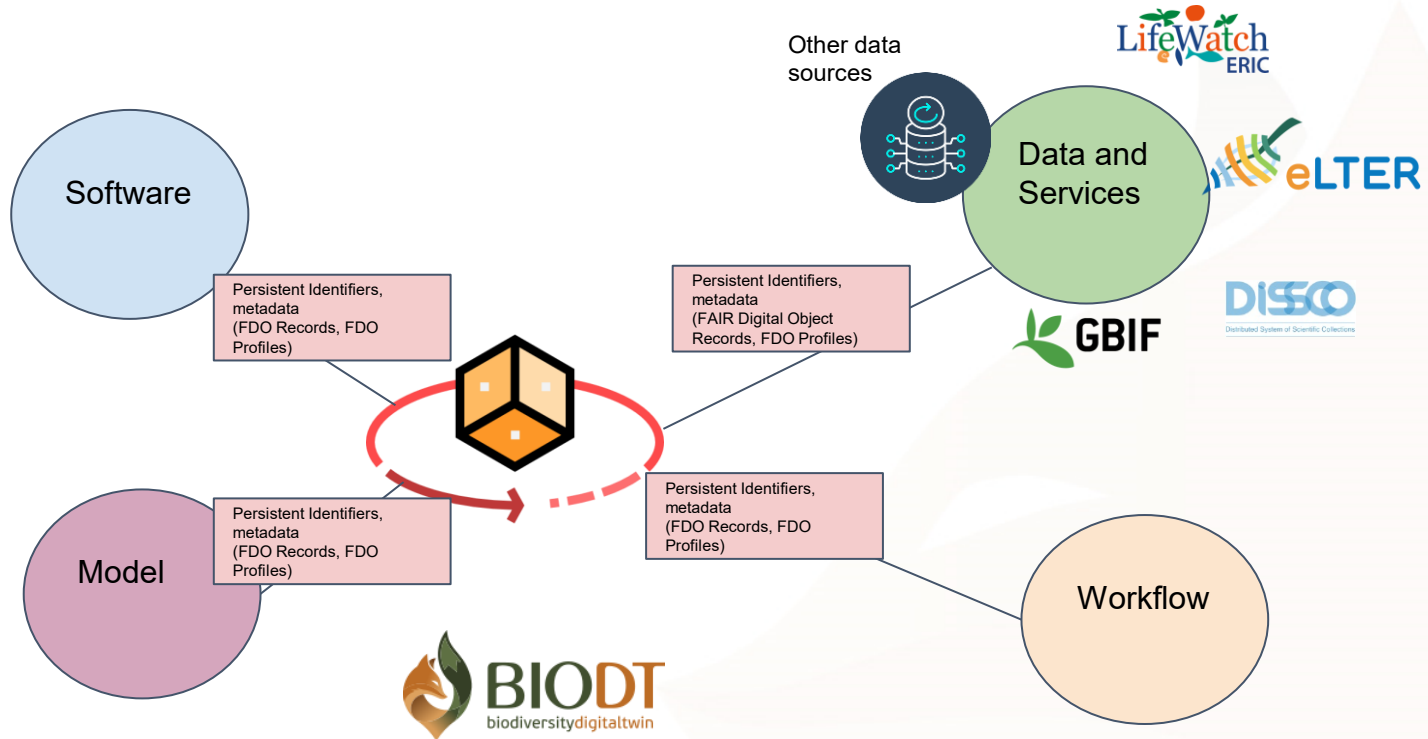


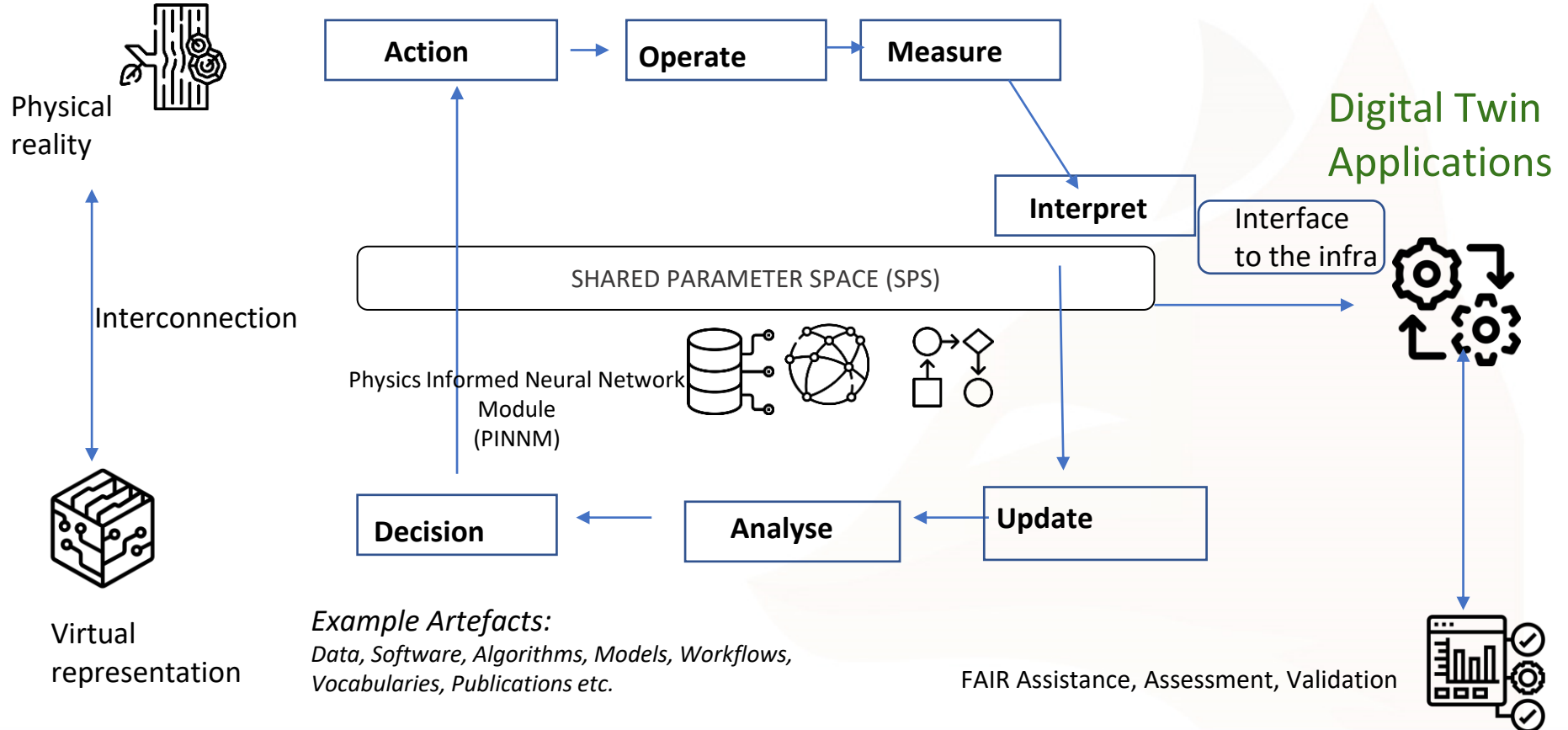
100%
HYDROPOWERED
ENERGY UP TO
200MW

COMPUTING POWER EQUALS
1.5 MILLION
MODERN LAPTOP'S
CAPACITY



MOUNT EVEREST
1.5 million laptops

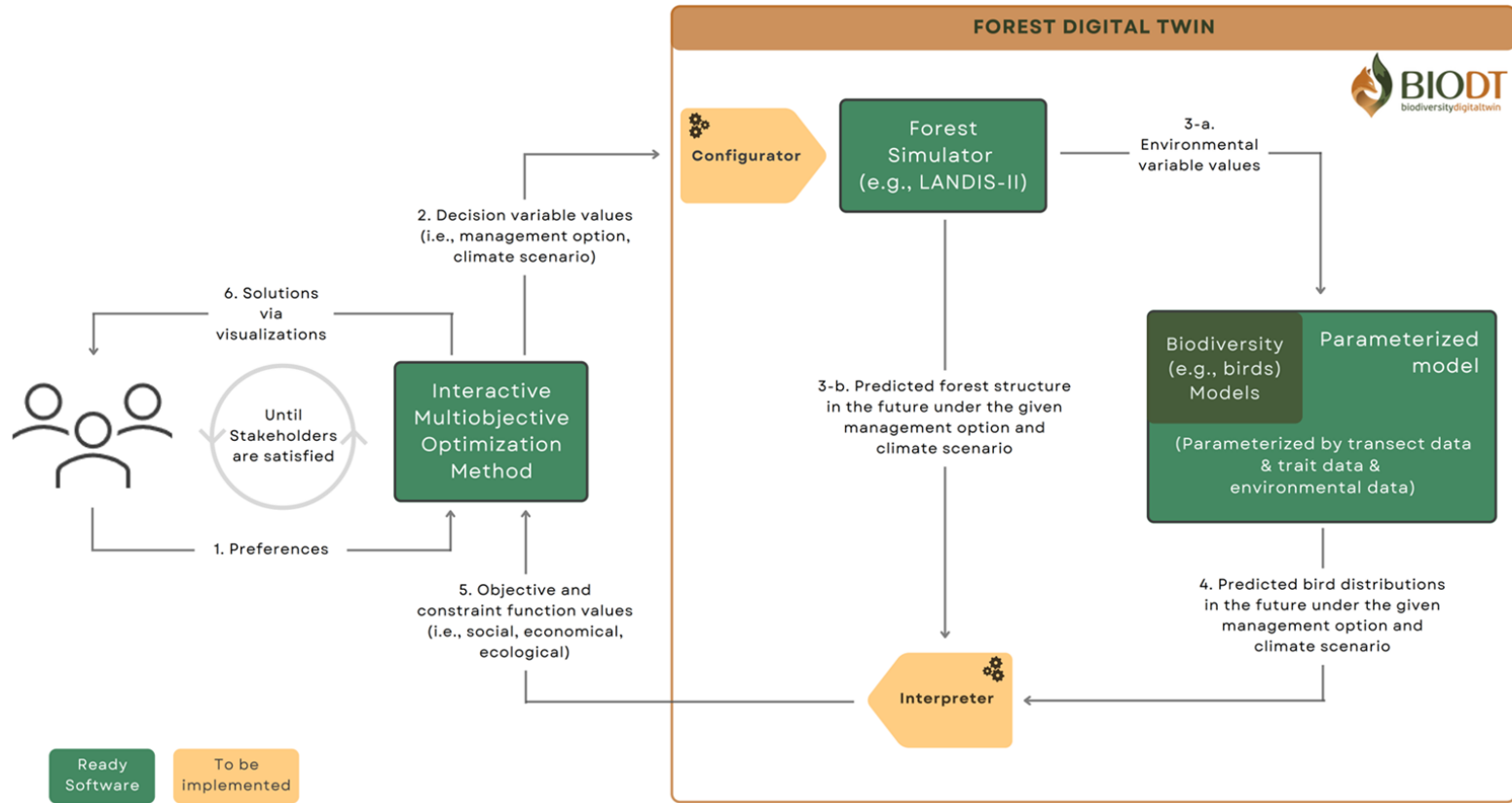




How will forest biodiversity change under different forestry and climate change scenarios, and how can these predictions be utilized in conservation and adaptive forest management?



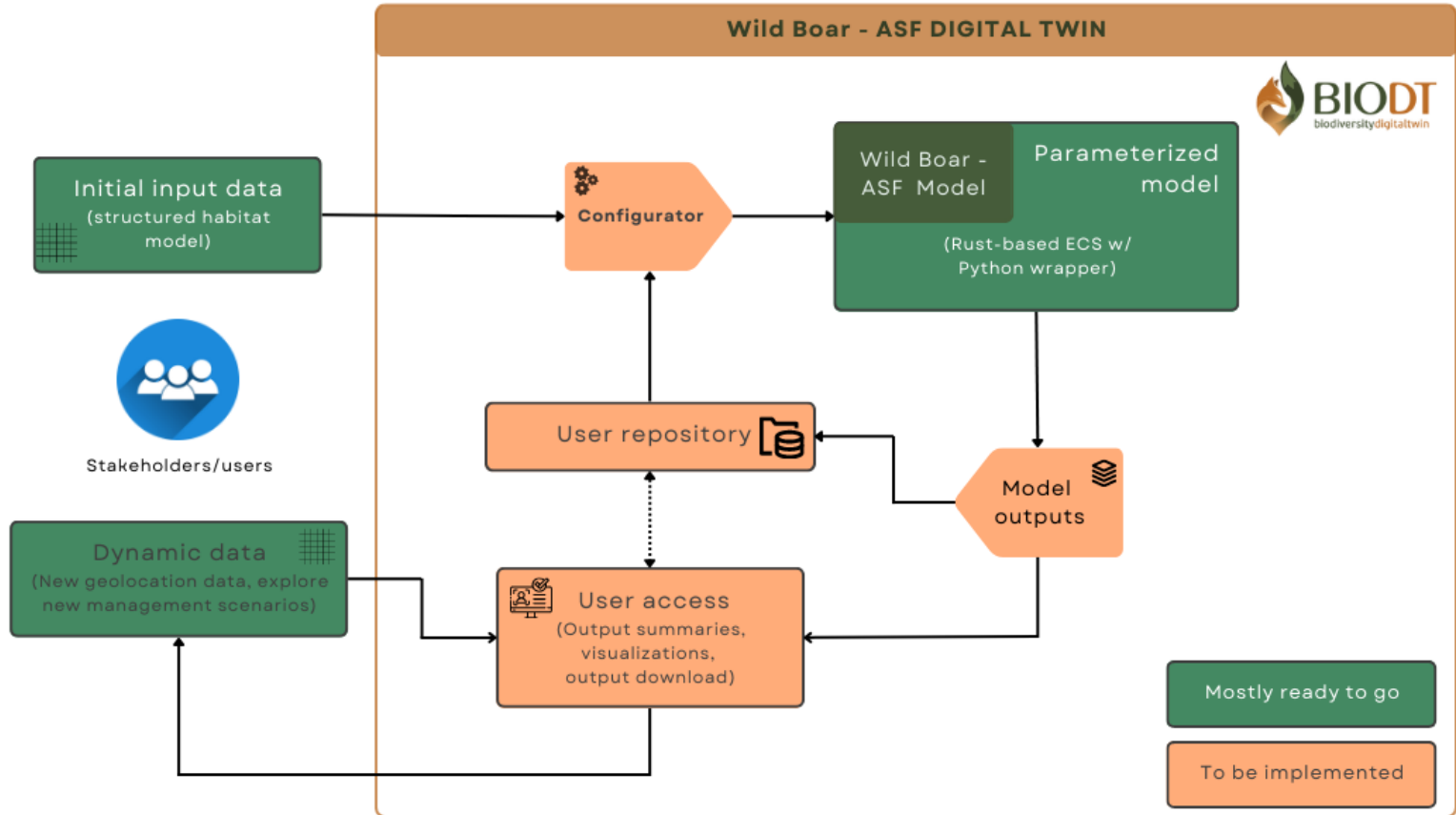
Digital Twin Application: Finding the most appropriate forest management strategy



Spatio-temporal modelling of coupled wildlife and domestic populations and assessing spillover risk for domestic pigs



Digital Twin Application: Inform data-driven responses to manage spread of wildlife diseases, specifically *African Swine Fever (ASF)*.



- A few highlights

- Several use cases in preparation (<https://biodt.eu/use-cases>)
- Use case and modelling workshop
- Architecture Design workshop for LUMI
- FAIR Digital Object interoperability layer implementation plan (due May 2023) – targeting the Research Infrastructure involved in the project
- User requirement collection (ongoing)
- Connection with other Digital Twin projects and DestinE
- First Digital Twin As a Service Is Available for Biodiversity RIs - Sept 2023.



BIODT
biodiversitydigitaltwin



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Funded by
the European Union