Factsheet

Safeguarding Nature's Gem through Precision Biodiversity

KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

AKADEMI SAINS MALAYSIA

Think Science
Celebrate Technology
Inspire Innovation

As the custodian of diverse ecosystems and species, Malaysia embraces cutting-edge technology to protect and preserve its rich biodiversity. These innovations are revolutionising the way biodiversity is maintained, monitored, and managed.

Mission

Monitoring our Biodiversity in real-time by 2040 in alignment with our national agenda of Digital Transformation.

DIGITALISATION AND DATABASE INTEGRATION

Drone

1) Canopy Measurement & Tree Mapping by Drone

Drones equipped with advanced imaging sensors

2) Vertebrate AI Trap with AI Identification

AI-powered traps identify and monitor vertebrate species

3) DBH Estimation by Terrestrial Robot

Terrestrial robots measure the diameter at breast height (DBH) of trees

Legged-Robot

Remote-controlled Observation

4) Records of Plant and Insect Identification by using AI and Machine Learning

Research by scientists and contributions from citizen scientists

5) Ecology Environmental Sensor

IoT sensors continuously monitor environmental conditions

DATA SERVER

Data from these technologies will be stored in the cloud and categorised into specific domains such as forest, plant, vertebrate, insects, and IoT databases for streamlined access and analysis.

BIODIVERSITY ANALYSIS

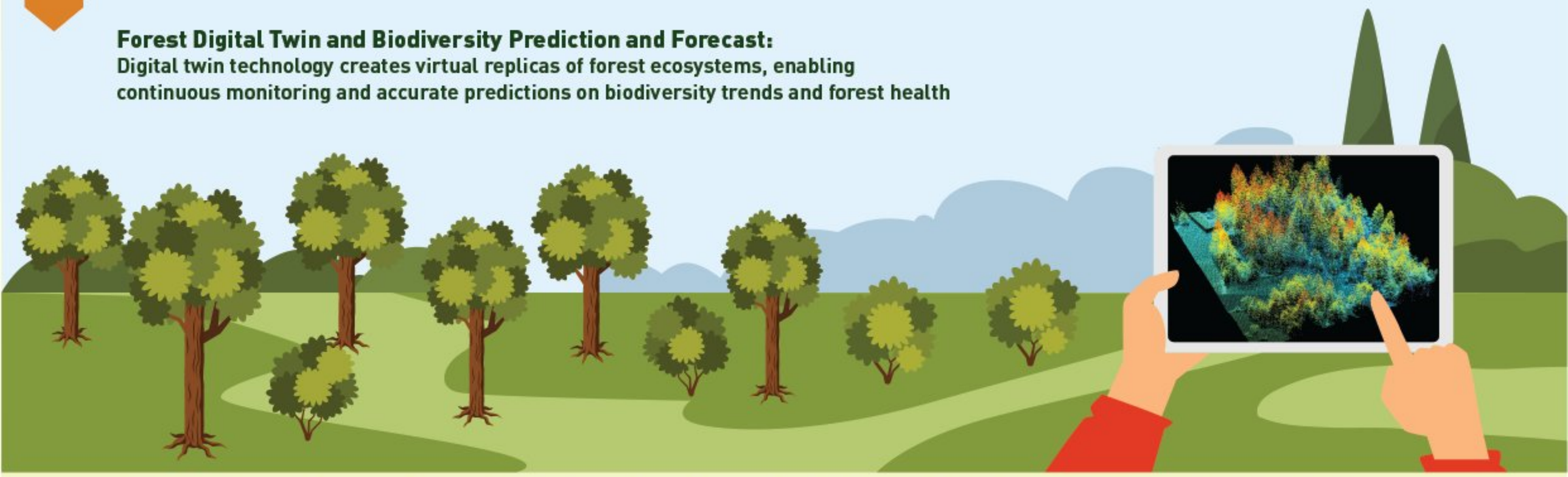
Ecology Trends:
Data analytics reveal trends in ecological data.

Growth Prediction:
Predictive models project the potential growth or decline of species.

Conservation Simulation:
Simulation tools evaluate the effectiveness of different conservation strategies.

FOREST MONITORING

Forest Digital Twin and Biodiversity Prediction and Forecast:
Digital twin technology creates virtual replicas of forest ecosystems, enabling continuous monitoring and accurate predictions on biodiversity trends and forest health



The Academy of Sciences Malaysia is dedicated to safeguarding Malaysia's rich biodiversity. Through an initiative known as Precision Biodiversity, ASM aims to be at the forefront of this frontier technology.