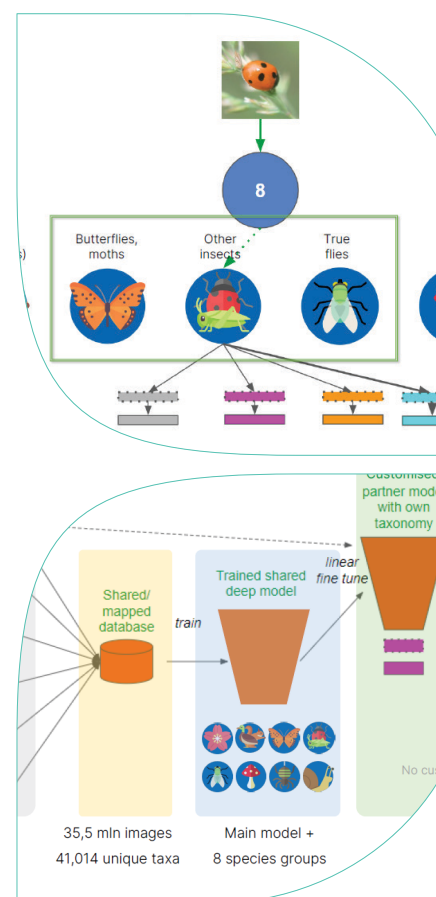


Image recognition for citizen scientists

DESCRIPTION

As part of MAMBO, significant work has been undertaken to develop and improve image recognition models for European species of animals, plants, and fungi. The resulting model, known as the Multi Source Model (MSM), is trained on validated images drawn from multiple citizen science portals across Europe. The current model is trained on 35 million images and supports the identification of over 41,000 taxa of European animals, plants, and fungi, with particularly strong spatial and taxonomic coverage for popular groups such as birds, butterflies, and dragonflies. The model is updated annually as new validated images become available, resulting in a steady yearly increase in the number of taxa included.

The MSM model and its API are published open access, allowing any organisation to deploy it locally. It is also centrally deployed to allow European biodiversity portals to share infrastructure costs, ensuring better scalability and 24/7 support. Currently, the model is used by over ten regional, national, and transnational biodiversity portals, including Waarnemingen.be (Belgium), Waarneming.nl (Netherlands), artsdatabanken.no (Norway), arter.dk (Denmark), and artdatabanken.se (Sweden), and is available throughout Europe via Observation.org and the ObsIdentify app.





BENEFITS OF USING THE TECHNOLOGY

The MSM model currently performs over 76 million identifications annually, one every three seconds, used by tens of thousands of volunteers generating millions of biodiversity records. Records collected with the support of the model are stored by biodiversity portals and, after validation, uploaded to GBIF, where they become accessible for biodiversity policy and research. The data supports understanding of species distribution patterns — including for invasive species — and is increasingly used to assess conservation trends.

The centralised deployment model also enables cost-sharing across portals, while still allowing national and regional platforms to maintain their own identity and connection with local volunteer communities.

TARGET USERS

-  Citizen scientists and volunteers using biodiversity portals and identification apps such as ObsIdentify
-  Regional, national, and transnational biodiversity portals seeking scalable identification tools
-  Research organisations and institutions requiring large-scale, validated biodiversity data
-  Policy bodies and conservation agencies using distribution and trend data for decision-making
-  Educational programmes introducing species identification to broader audiences

