

About Biomass

The Earth Explorers are research missions designed to address key scientific challenges, while demonstrating breakthrough technology in observing techniques. The family of Earth Explorer missions currently in orbit are providing important contributions to further understanding of our planet. **Biomass is the seventh mission selected for development**

What

ESA's upcoming Biomass mission will deliver new information about the global distribution of forest biomass

Why

Forests absorb and store huge amounts of carbon as biomass, which makes them crucially important for the global drive to tackle the climate crisis. As a result, world governments are accelerating their efforts to promote healthy forests. But, to achieve this ambition, an improved understanding of the state of the world's forests is required

Where

More than 50 industrial teams from Europe and beyond are delivering hardware for the mission. The satellite platform was assembled in the UK

1st satellite
to carry a
P-band synthetic aperture radar (SAR) instrument

To determine the
amount of biomass and carbon stored in forests



Biomass

Aims

Data delivered by Biomass will:

- advance understanding of the world's forests and how they are changing
- reduce uncertainties in calculations of carbon stocks and fluxes on land
- provide new insight into the role forests play in the carbon cycle
- support global action to reduce deforestation and forest degradation

On top of its primary goals, the mission will:

- monitor sub-surface geological features in arid and semi-arid regions
- track the movement of icesheets in Antarctica
- enable scientists to model terrain covered by dense forests

Instrument

Biomass will be the first satellite to carry a P-band SAR instrument, allowing interferometric and tomographic imaging to determine the amount of biomass and carbon stored in forests

Innovation

Biomass will address the huge technical challenge of mapping forest biomass from space. Its P-band SAR sensor will peer through clouds, which typically shroud tropical forests, and penetrate the canopy layer, allowing the biomass of trees to be estimated

Biomass mission page

earth.esa.int/eogateway/missions/biomass