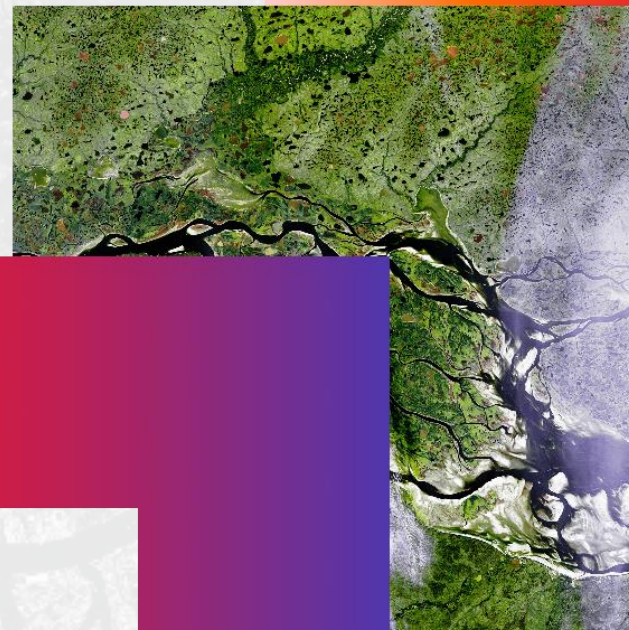




# European Space Agency Third Party Missions programme

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# ESA MISSION PROGRAMMES

Earth Explorers,  
Heritage Missions,  
Third Party Missions,  
Earth Watch,  
and Copernicus Sentinels

## MISSION PROGRAMMES

Explore the European Space Agency's Earth Observation satellite missions. Learn all about ESA's dedicated Earth Explorers or collaborations with other agencies through the Third Party Missions programme.

### Earth Explorers

ESA's Earth Explorer missions are dedicated to addressing key scientific challenges identified by the EO community....

[EXPLORE MORE](#)

### Third Party Missions

Through the TPM programme, ESA offers data from a wide range of EO satellite missions developed and operated by other agencies....

[EXPLORE MORE](#)

### Copernicus Sentinels

The Copernicus Sentinel missions are state of the art Earth observation satellites developed as part of an initiative between ESA and the EC....

[EXPLORE MORE](#) 

### Heritage Missions

ESA's Heritage missions programme preserves 30 years of historical data from more than 45 satellite missions that are no longer operational....

[EXPLORE MORE](#)

### Earth Watch

ESA's Earth Watch programme consists of missions developed and operated in partnership with other organisations....

[EXPLORE MORE](#)



# ESA

# Third Party Missions

Programme Introduction



# About THIRD PARTY MISSIONS PROGRAMME

## What are TPMs?

Third Party Missions are earth observation missions that are not owned or operated by ESA. The agency has an agreement with these third parties to distribute data products from their missions to scientific users

## History?

ESA's TPM arrangement has been operating for over

# 45 YEARS

providing EO data to users in Europe and worldwide for research and pre-operational applications development

## How many?

TPMs currently include over 60 instruments on more than 50 missions

**<60** **50+**  
INSTRUMENTS MISSIONS



## How?

TPM datasets are distributed under specific agreements with the owners or operators of the mission – some sets are available under the free dataset policy, requiring only a fast registration, others are part of a restrained data set and require the submission of a project proposal or service request

## Benefits?

Data is offered from a large number of international missions through a single programme. One of the criteria for selecting new missions is that they utilise instruments that offer similar data to those acquired by ESA missions, contributing to a wide range of data that may be used together. Other criteria include degree of innovation, opportunity for new international collaboration and experience to be gained for future missions

## Innovation?

**IN 2018** ESA changed the agreements with the commercial TPM data providers in order to also include start-ups and entrepreneurs in incubators, to access the data. This greatly supports ESA's Technology Transfer Programme Office (TTPO)

## Data Access?

<https://earth.esa.int/eogateway/search?category=Data>



# ESA archive of Third-Party Missions collections

The table below lists the collections available in the ESA archive, either of fixed content or still growing as ESA collects new products from the third-party missions. Click on the provided link to view the geographical coverage of the collection and verify whether the time period fits your needs.

 <b>ALOS International Polar Year</b> ESA Archive 2008-07-25 2010-03-31 	 <b>IKONOS</b> ESA Archive 2000-12-25 2008-12-09 	 <b>Komsat-2</b> ESA Archive 2007-04-18 2014-03-21 	 <b>Radarsat-2</b> ESA Archive 2008-07-27 2021-04-11 	 <b>TerraSAR-X</b> ESA Archive 2007-07-01 till present 
 <b>COSMO-SkyMed</b> ESA Archive 2008-09-15 till present 	 <b>Image 2006</b> (SPOT-4, SPOT-5, Resourcesat-1) 2005-02-03 2007-11-08 	 <b>PROBA-1 CHRIS</b> 2002-05-14 till present 	 <b>Rapideye time series for Sentinel-2</b> 2013-02-06 2015-08-15 	 <b>TropForest Dataset</b> (ALOS, Geosat-1, Komsat-2) 2009-01-27 2011-08-09 
 <b>GEOSAT-1/2</b> ESA Archive 2015 to 2021 	 <b>Image 2007</b> (UK-DMC-1, Beijing-1, NigeriaSAT-1) 2007-04-07 2007-10-09 	 <b>PROBA-1 HRC</b> 2002-10-10 till present 	 <b>SEASAT</b> ESA Archive 1978-07-13 1978-10-10 	 <b>WorldView</b> ESA Archive 2009-02-07 2020-12-01 
 <b>GeoEye-1</b> ESA Archive 2009-03-29 2020-07-31 	 <b>IRS-1C/1D</b> ESA Archive 1996-06-25 2004-10-28 	 <b>QuickBird-2</b> ESA Archive 2002-02-11 2012-05-25 	 <b>SPOT4-5 Take5</b> ESA Archive 2013-01-31 - 2013-06-09 (SPOT 4); 2015-04-08 - 2015-09-15 (SPOT 5) 	 <b>WorldView-2 European cities</b> 2010-07-20 2015-07-19 
 <b>SkySat ESA archive</b> 2016-02-29 present 		 <b>PlanetScope ESA archive</b> 2016-08-08 present 		



# An overview of the Pléiades Neo mission

## What

Pléiades Neo is a constellation of two identical, very high-resolution (VHR) satellites, developed as a follow-on to the Pléiades optical satellites.

The satellites bring unprecedented capability to provide imagery with a high level of detail, including more visibility of small objects, such as vehicles and road markings

## When

Launched on

28 APR 2021	16 AUG 2021
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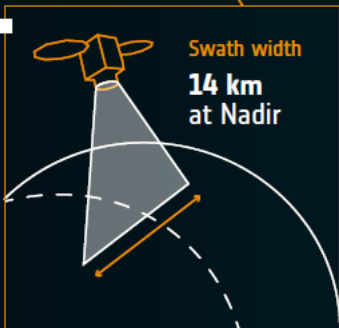
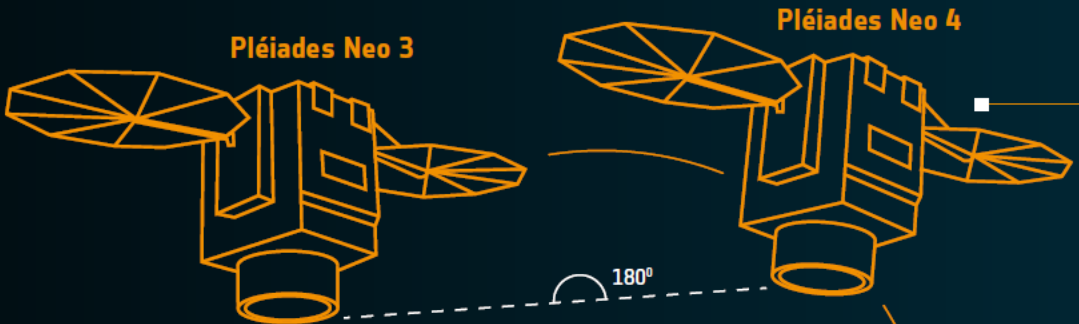
Pléiades Neo 3 Pléiades Neo 4

The two satellites launched in 2021, phased at 180° from each other. Their expected lifetime is ten years

## Instruments

The sensors carried onboard the satellites have a spatial resolution up to 30 cm (panchromatic) and 1.2 m multispectral imagery (4 or 6 bands), offering mono, stereo and tri-stereo acquisitions

**1 million km<sup>2</sup>**  
per day  
(half a million per satellite)



## Built by

The constellation is funded, owned, manufactured and operated by Airbus Defence & Space

## Objectives

The constellation has several remote sensing applications for commercial, institutional and governmental use, including:



- Defence, security and crisis management
- Maritime monitoring – such as oceans protection
- Agriculture
- Urban planning – such as mapping, civil engineering and mobility
- Forestry
- Environment

## Innovation

Pléiades Neo can be tasked at any time of the day and up to 15 minutes in advance. It has a revisit capability to any point on the globe at least twice daily

## Data access

ESA offers access to Pléiades Neo data and to the OneAtlas Living Library subscription via the TPM programme [earth.esa.int/eogateway/catalog/pleiades-neo-full-archive-and-tasking](http://earth.esa.int/eogateway/catalog/pleiades-neo-full-archive-and-tasking)



# About Vision-1

## What

Vision-1 refers to Airbus Defence and Space's imaging payload capacity of the agile Surrey Satellite Technology Ltd (SSTL) S1-4 satellite. It offers very high-resolution, sub-metric imagery to support activities in several economic sectors

## When

Launched on

16 SEP  
2018

S1-4 launched onboard the Polar Satellite Launch Vehicle from the Satish Dhawan Space Centre in Sriharikota, India

## Built By

The S1-4 satellite was built and is owned by SSTL. Vision-1 is the portion of S1-4 imaging capacity owned by Airbus, and is operated in partnership with SSTL

## Objectives

Vision-1 is designed to capture multiple targets in one pass, utilising spot, strip and mosaic imaging modes and 45 degree off-pointing agility for a range of applications

Vision-1



revisit time

1-8 days

depending on latitude and roll

## Coverage

0.87 m  
panchromatic band

3.48 m  
multispectral bands

20.8 km

Vision-1 hosts a very high-resolution imager that provides 0.87 m resolution imagery in the panchromatic band and 3.48 m resolution imagery in the multispectral bands (blue, green, red and near-infrared) with a 20.8 km swath width and global revisit time of 1-8 days depending on latitude and roll

## Applications

Vision-1 delivers imagery to support several applications, including:



- Urban planning
- Agricultural monitoring
- Land classification
- Natural resource management
- Disaster monitoring

## Data and Users

Through ESA's Third Party Missions programme, Vision-1 data products are delivered on a free basis to a range of stakeholders, supporting application development and enabling cutting-edge scientific research. Vision-1 is also an active satellite in the International Disasters Charter, collaborating with other data providers and enabling users on the ground to access vital data in times of need

capture



sub-metric imagery

45°  
off-pointing agility

Data Access: [earth.esa.int/eogateway/catalog/vision-1-full-archive-and-tasking](https://earth.esa.int/eogateway/catalog/vision-1-full-archive-and-tasking)

# Twin satellites TerraSAR-X and TanDEM-X

## What

TerraSAR-X and TanDEM-X are **Synthetic Aperture Radar (SAR)** satellites from DLR (the German Aerospace Centre). Imagery from the twin satellites feature a **unique geometric accuracy** that is unmatched by any other spaceborne sensor

## When

Launched on



TerraSAR-X TanDEM-X

Both launched from the Baikonur Cosmodrome

## Built By

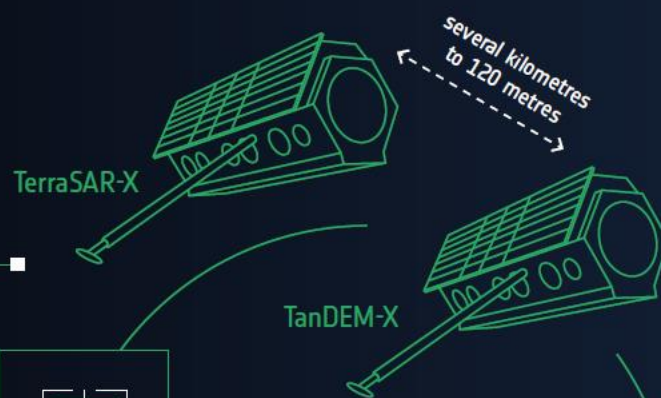
Built by Airbus for DLR, who also own the data distribution rights for the radar constellation. ESA's contract is with Airbus (Germany) for the distribution of the data

## Instruments

The payload is an X-band radar sensor. This instrument allows the satellites to acquire images with different swath widths, resolutions and polarisations. The instrument is an active phased array antenna system, with operational modes of 'stripmap', 'spotlight' and 'scanSAR', permitting the **acquisition of both high-resolution imagery and wide-swath imagery**

## Constellation

The satellites operate in the same orbit of PAZ (carrying the same on board sensor), and the **three work together as a high-resolution radar constellation**, based upon a commercial agreement between Hisdesat Servicios Estratégicos S.A. and Airbus Defence and Space GmbH. The three almost identical spacecraft also feature identical ground swaths and imaging modes



unique  
geometric  
accuracy

active phased array  
antenna system

high-resolution  
imagery and  
wide-swath imagery



PAZ

## Applications

Both satellites perform a wide range of EO applications, including:

- Staring SpotLight mode mainly for image intelligence applications;
- Wide ScanSAR, particularly suitable for maritime applications;
- support of intelligence and security;
- disaster response and mapping;
- generation of digital elevation models, using interferometry and radargrammetry

## Data and Users

Through ESA's TPM programme, the data from both missions are available to a range of stakeholders, such as researchers, businesses, regulators and governments. The data have supported over 100 scientific projects

## Curiosity

The distance between the satellites varies between several kilometres and sometimes only 120 metres. This enables the radar sensors to obtain a 3D view of Earth

## Objectives

Flying in close formation, the objective of both satellites is to simultaneously image Earth's terrain from different angles with unprecedented accuracy for research and development purposes, as well as scientific and commercial applications. The innovation of the mission is the generation of WorldDEM, a consistent global Digital Elevation Model (DEM) with an unprecedented accuracy better than Digital Terrain Elevation Data (DTED) Level 2 specifications.

Data Access: [earth.esa.int/eogateway/missions/terrasar-x-and-tandem-x](http://earth.esa.int/eogateway/missions/terrasar-x-and-tandem-x)



# Third Party Mission Success Stories



EARTHNET

## Planetwide Dataset

UK (London)

SPOT 6 and 7

Commercial high resolution imagery combined with machine learning methods to develop a new worldwide open source dataset

[New worldwide dataset captures the planet in fine detail](#)

## Monitoring Rock Glaciers

Scotland, UK (St. Andrews)

Pléiades

Very high resolution Pléiades data reveal long-term creep of rock glaciers in the Poiqu River Basin of central Himalaya

[Pléiades unlocks information about rock glaciers in central Himalaya](#)

## Tracking Mountain Glaciers

Germany (Nuremberg)

TanDEM-X and SRTM

Volume and mass changes of mountain glaciers are derived from interferometric synthetic aperture radar (InSAR) data

[Tracking mountainous glaciers using TanDEM-X](#)

## Savannah Biodiversity Loss

Denmark (Aarhus)

WorldView-3

High resolution WorldView-3 imagery maps vegetation cover in the Greater Maasai Mara savannah, a global hotspot for biodiversity

[Remote sensing scientists raise alarm for African savannah](#)

## Geothermal Surveying

México (Querétaro)  
Italy

GeoEye-1

High resolution optical data help geological mapping of the geothermal volcanic area of Cerro Domuyo, the highest mountain in Patagonia

[High-resolution optical images improve geological mapping in remote geothermal areas](#)

## Predicting Crop Yields

UK (Southampton)  
Malawi, Kenya and Ghana

PlanetScope

High resolution data help improve crop productivity in the drylands of sub-Saharan Africa

[Predicting crop yield using Planet data](#)

## Detecting Methane Plumes

Spain (Valencia)  
Netherlands

Landsat 8, WorldView-3

Earth observation data map industrial methane plumes from offshore platforms in the Gulf of Mexico

[WorldView-3 helps to track offshore methane plumes from oil and gas](#)

## Maritime Surveillance

Italy (Naples)

COSMO-SkyMed,  
SAOCOM, Sentinel-1

Multi-frequency synthetic aperture radar data from different missions help identify marine vessels

[SAR synergy data for maritime surveillance](#)

## Navigation Safety

Italy (Venice)  
Netherlands

COSMO-SkyMed, ICEYE,  
TerraSAR-X

Optical and synthetic aperture radar data aid navigation risk modelling and provide near real-time updates on shipping routes

[Earth Observation data to improve navigation risk modelling and shipping routes](#)

## Uncovering Waste Landfills

Hungary (Budapest)  
Netherlands

GeoEye-1, WorldView

Very high resolution imagery is combined with advanced deep learning techniques to automate the detection of waste landfills

[Meet a young researcher who combines remote sensing with deep learning techniques](#)

# HOW TO ACCESS EARTH OBSERVATION DATA DISTRIBUTED BY ESA – FAST REGISTRATION



EARTHNET

Researchers can quickly obtain datasets from ESA's Third Party Missions and Heritage Missions on a free basis by using the Fast Registration mechanism

The mechanism includes **Fast Registration with Immediate Access (Open)** for unrestrained datasets and **Fast Registration with Approval (Restrained)** for data subject to geographical restrictions or verification of user identity

Open datasets can be obtained following submission of a simple form and restrained datasets can normally be obtained within two days, following evaluation of a data access request by ESA

- 1 BROWSE AND SELECT**  
Begin by browsing datasets covered by **Fast Registration with Immediate Access** or **Fast Registration with Approval**, to find a collection that meets your requirements
- 2 SIGN IN**  
After choosing your collection, a Data Access form must be completed to obtain the data. To access the form, you should log into or register for an **ESA EO Sign In** account
- 3 PREPARE AND SUBMIT**

<b>OPEN DATASETS</b> The form retrieves your account details and no further information is required before submission to ESA	<b>RESTRAINED DATASETS</b> The form retrieves your account details but you must also fill in information related to the project's domain. After submission, the request will be reviewed by ESA within two working days, after which you will be notified of the outcome by email
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- 4 DOWNLOAD**  
After submission of the Data Access form for open data or approval of the request for restrained data, you will receive two emails with details of how to download your dataset
- 5 PROMOTE**  
After completion of the project, users are encouraged to contact the Earth Online editorial team to discuss the possibility of preparing a Success Story about the research. The editors can be reached at: [contentmatters4earthonline@ejr-quartz.com](mailto:contentmatters4earthonline@ejr-quartz.com)

Read the full guide on [how to complete the Fast Registration process](https://earth.esa.int/eogateway/news/how-to-access-earth-observation-data-distributed-by-esa-fast-registration):  
[earth.esa.int/eogateway/news/how-to-access-earth-observation-data-distributed-by-esa-fast-registration](https://earth.esa.int/eogateway/news/how-to-access-earth-observation-data-distributed-by-esa-fast-registration)



# HOW TO COMPLETE A PROJECT PROPOSAL

Through its Third Party Missions (TPM) programme, ESA distributes high-quality Earth observation data from international missions on a free basis to support research and development activities

esa



EARTHNET

## SELECT

1

You can search for data products for use in your projects by [browsing the available collections](#).

## REGISTER

2

Once you have selected your mission and data collection, a Project Proposal must be completed. To complete the proposal, you must [log in or register an ESA EO Sign-In account](#).

## PREPARE

3

Create and fill-out the proposal, which includes outlining the objectives, methods and deliverables of the project, the composition of the team of researchers and the region of interest. You may optionally add further data collections from different missions to the proposal.

## SUBMIT

4

Once the proposal is complete, [submit it to ESA for evaluation](#). This process may take up to six weeks, after which the user is notified as to the outcome of the assessment and, if approved, provided with instructions on how to order the products from the data provider.

## PROMOTE

5

When the project closes, a final report should be submitted. Users are then encouraged to [contact the Earth Online editorial team](#) so a success story about the project can be prepared for the website. The editors can be reached at: [contentmatters4earthonline@ejr-quartz.com](mailto:contentmatters4earthonline@ejr-quartz.com).

A comprehensive, step-by-step guide on [how to complete a Project Proposal](#) can be found here: [earth.esa.int/eogateway/news/how-to-guide-for-submitting-project-proposals](http://earth.esa.int/eogateway/news/how-to-guide-for-submitting-project-proposals)

# HOW TO ACCESS DATA VIA AN ESA ANNOUNCEMENT OF OPPORTUNITY



In special circumstances, ESA uses an **Announcement of Opportunity (AO)** to advertise the availability of data from ESA Earth Explorers, Third Party Missions, or Heritage Missions.

AOs are published to satisfy a scientific requirement identified by ESA, or in response to an agreement reached between ESA and a partner organisation to distribute data from an external mission

**1**

## BROWSE AND SELECT

You can **browse ESA's current AOs online**. After selecting your preferred AO, a Project Proposal must be completed to request access

**2**

## LOG IN OR REGISTER

In order to submit a Project Proposal, you must **login to your EO Sign-In account**, or **register for an account** if you don't already have one

**3**

## PREPARE

After logging in, you should fill in the **online Project Proposals form** to provide a detailed outline of your project

**4**

## SUBMIT

Once the proposal is complete, you can submit it to ESA for evaluation. This process may take several weeks, after which you will be notified as to the outcome of the assessment and, if approved, provided instructions on how to order the products

**5**

## INFORM

After completion of the project, you are required to provide a report to ESA and are encouraged to contact the Earth Online editorial team so a success story can be prepared for ESA's Earth Online website: [contentmatters4earthonline@ejr-quartz.com](mailto:contentmatters4earthonline@ejr-quartz.com)

The full guide on **how to access data via an AO** can be found here:  
[earth.esa.int/eogateway/news/how-to-access-data-advertised-by-an-esa-announcement-of-opportunity](https://earth.esa.int/eogateway/news/how-to-access-data-advertised-by-an-esa-announcement-of-opportunity)



# Insights you can act on

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**Kosmické  
technologie**



**Dálkový  
průzkum Země**

The CGI logo, consisting of the letters 'CGI' in a bold, red, sans-serif font. To the right of the main text area, there is a large, L-shaped graphic with a vertical gradient from light orange at the top to dark red at the bottom.