



# Free Commercial Cloud and EO Services: the OCRE Project Opens the Gates to the Research Community

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# OCRE Project Partners





Will stimulate the adoption of commercial cloud and Earth Observation (EO) services by the European research community.

As part of the European Open Science Cloud.

Through a tender resulting in framework agreements with suppliers, which research institutions can use to buy resources.

By making available **9.5 million EURO in adoption funds** from the EC, for the research community to use.

# European Open Science Cloud

- Europe is the largest producer of research data in the world.
- The EC wants to increase the use of this data and interconnect research IT infrastructures through the European Open Science Cloud.
- OCRE is part of the European Open Science Cloud and receives funding from the EC under grant agreement no. 824079.



# Why OCRE?

- Cloud and Earth Observation (EO) based services offer the European Research community a wealth of powerful tools.
- But for many researchers, these are currently out of reach.
  - It is difficult to find and select suitable services.
  - Establishing agreements with providers and ensuring legal and technical compliance requires specialist skills and takes an inordinate amount of time.
- Equally, service providers have difficulty reaching and meeting the needs of the research community in
  - technical,
  - financial and legal areas.



OCRE will drive adoption of digital services  
and close the gap between the supply and demand sides

# Scope

Stimulate the adoption of:



**Type A:** IaaS, PaaS and SaaS commercial cloud offerings.



**Type B:** Earth Observation commercial services, which leverage EU DIAS platforms (Data and Information Access Services), where the Copernicus Sentinel data is stored.



# OCRE USER CATEGORIES



INDIVIDUAL  
RESEARCHERS









INDIVIDUAL  
INSTITUTIONS



GROUP OF  
INSTITUTIONS  
(BUYER GROUPS)

# Funding waves

		EC adpt funds Type A services	EC adpt funds Type B services	Total for each wave	
WAVE 1	INDIVIDUAL RESEARCHERS	1.475M	0.975M	2.45M	
					
WAVE 2	INDIVIDUAL INSTITUTIONS	1M	1.5M	2.5M	
	BROAD RANGE BUYER GROUPS 				
WAVE 3	COMMITTED BUYER GROUPS	2.25M	2.25M	4.5M	
					

EO Requirements gathering  
from the research community  
and input from suppliers

- Dedicated Webinars
- Participating in conferences and user consultations.
- Online surveys and dedicated interviews
- EARSC community:  
European Association of  
Remote Sensing Companies



# Conference participation and workshops

**OCRE F2F meeting**, Utrecht, Nederland, 12 March

**EGU**, Wien, Austria, 1-5 April – Oral presentation and User Workshop

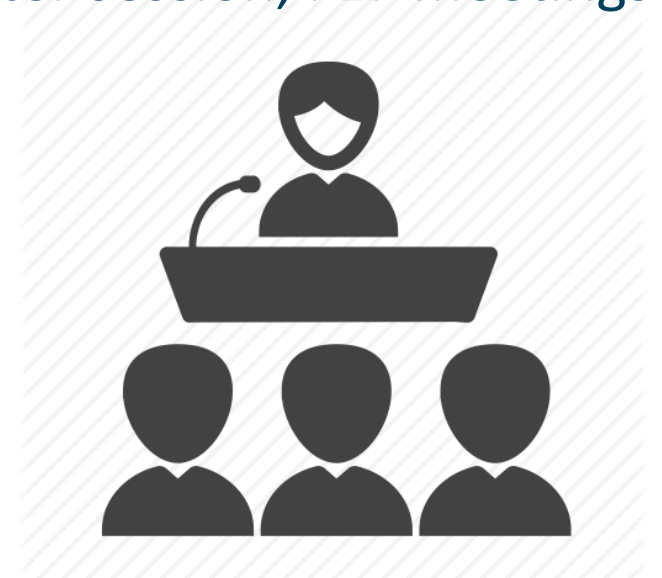
**Living Planet Symposium 19**, Milan, Italy, 13-17 May – Agora and poster session, F2F meetings

**EXPANDEO**, Bruxelles, Belgium, 20 June

**EARSeL**, Salzburg, Austria, 1-4 July

**Phi Week**, Frascati, Italy, 9-13 September

**ISDE 11**, Florence, Italy 24-27 September



# Online Surveys – Questionnaires

<https://www.ocre-project.eu/surveys>

Researcher

Raffle

Service  
Provider

**Deadline tomorrow 12<sup>th</sup> September**  
**Take it online or at the EARSC booth**



OCRE | Open Clouds  
for Research  
Environments

## EARTH OBSERVATION USER SURVEY

Help source the EOSC's future  
EO services for researchers and  
commercial providers



PROVIDE INPUT

OCRE | Open Clouds  
for Research  
Environments

## EARTH OBSERVATION SUPPLIER SURVEY

Give your services more visibility and  
have the chance to be included in the  
European Open Science Cloud



PROVIDE INPUT

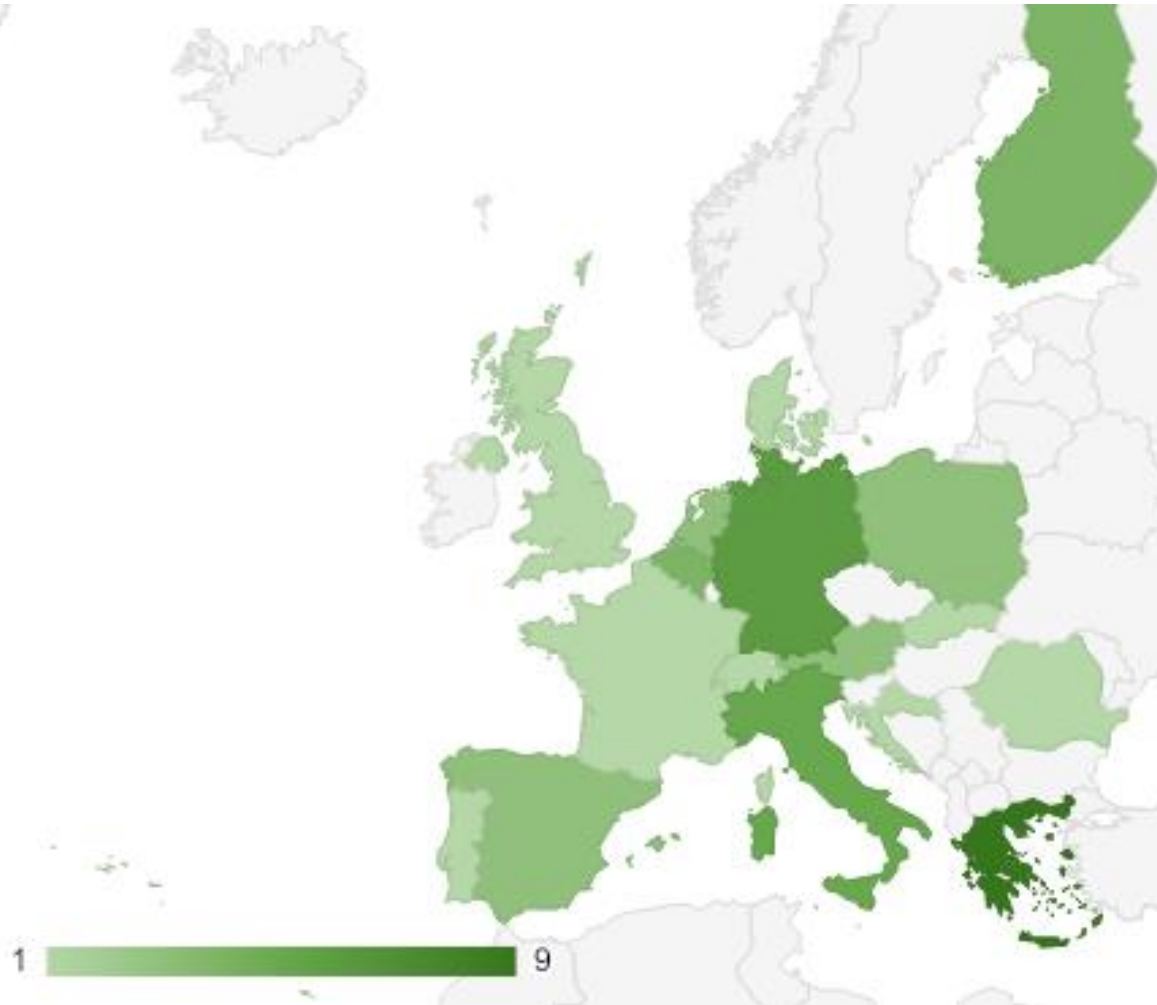
<https://www.ocre-project.eu/researchers>

11 questions

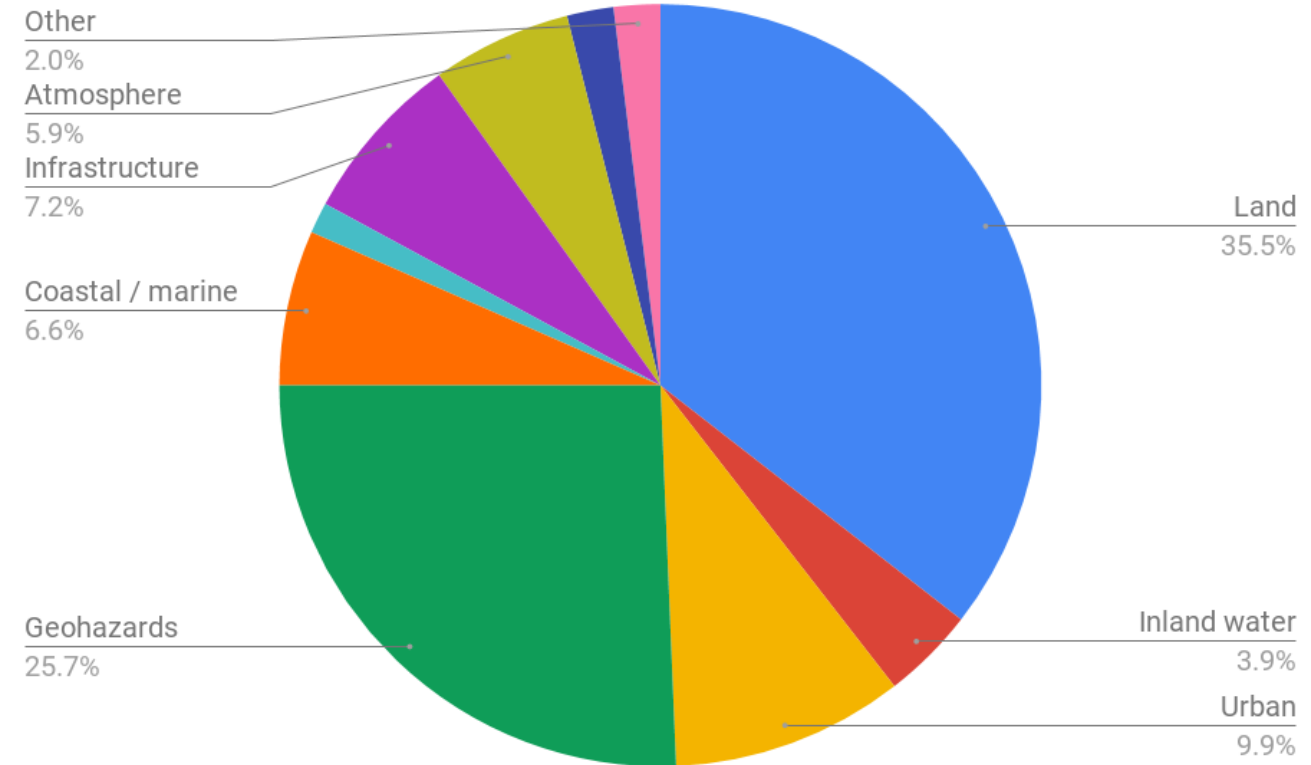
<https://www.ocre-project.eu/suppliers>

15 questions

# EO requirements gathering participation



## EO domain



## Data Sharing / Publishing

The screenshot displays the Delta II Project interface. On the left, a sidebar lists various services with their status and ratings. The main area shows a map of the Sacramento-San Joaquin River Delta, with a yellow box highlighting a specific area. Below the map, there are sections for 'INPUTS', 'OUTPUTS', and 'FTEP VEGETATION MODELS FOR 2015/2014 INCREASING'. The 'Vegetation' section shows a green bar indicating 'Increased' status. The 'FTEP VEGETATION MODELS' section shows a green bar indicating 'Increased' status. The 'Vegetation' section also includes a table with columns for 'Vegetation' and 'Status', showing 'Joh ID: 110' and 'Joh ID: 111' with 'Increased' status.

Service	Status	Rating
Producers	Increased	5/5
LandCover/10	Increased	5/5
LandCover/20	Increased	5/5
511Produce	Increased	5/5
Vegetation/10	Increased	5/5
Vegetation/20	Increased	5/5
GIS Applications	Increased	5/5
Marine/10/10	Increased	5/5
Marine/20/10	Increased	5/5
QGIS	Increased	5/5
Service/Status/7	Increased	5/5

Service Role: **ForestChange** | Service Type: **Processor** | Name: **Change mapping using Sentinel-2 data**

Version: **1.0** | Description: **Forest change mapped by difference in red band below**

**FILES** | INPUT DEFINITIONS | OUTPUT DEFINITIONS

**Files**

File Name	File Language	Executable
01_Download.sh	Bash	<input type="checkbox"/>
02_changeMap.sh	*	
03_preprocess.sh	*	
04_extractCloudWatch.sh	*	
05_mainBatch.sh	+	

**Output Definitions**

File Name	File Language	Executable
01_HRUB_vburlint10-04	Bash	<input type="checkbox"/>
02_MAINTAINER_Forestry_TEP	*	
03_Dependencies	*	
04_RMT_apl_get update && apt-get install y	*	
05_bc	*	
06_cm11	*	
07_l1hfreecryp66	*	
08_gdal-rain	*	
09_python	*	
10_python-drv	*	
11_python_gdal	*	
12_&& apt-get clean && rm -rf /var/lib/apt/lists/*	*	
13	*	

The following code is used to load the audio file and plot the waveform and spectrogram:

```
In [3]: from scipy.io import wavfile
rate, x = wavfile.read('test_mono.wav')

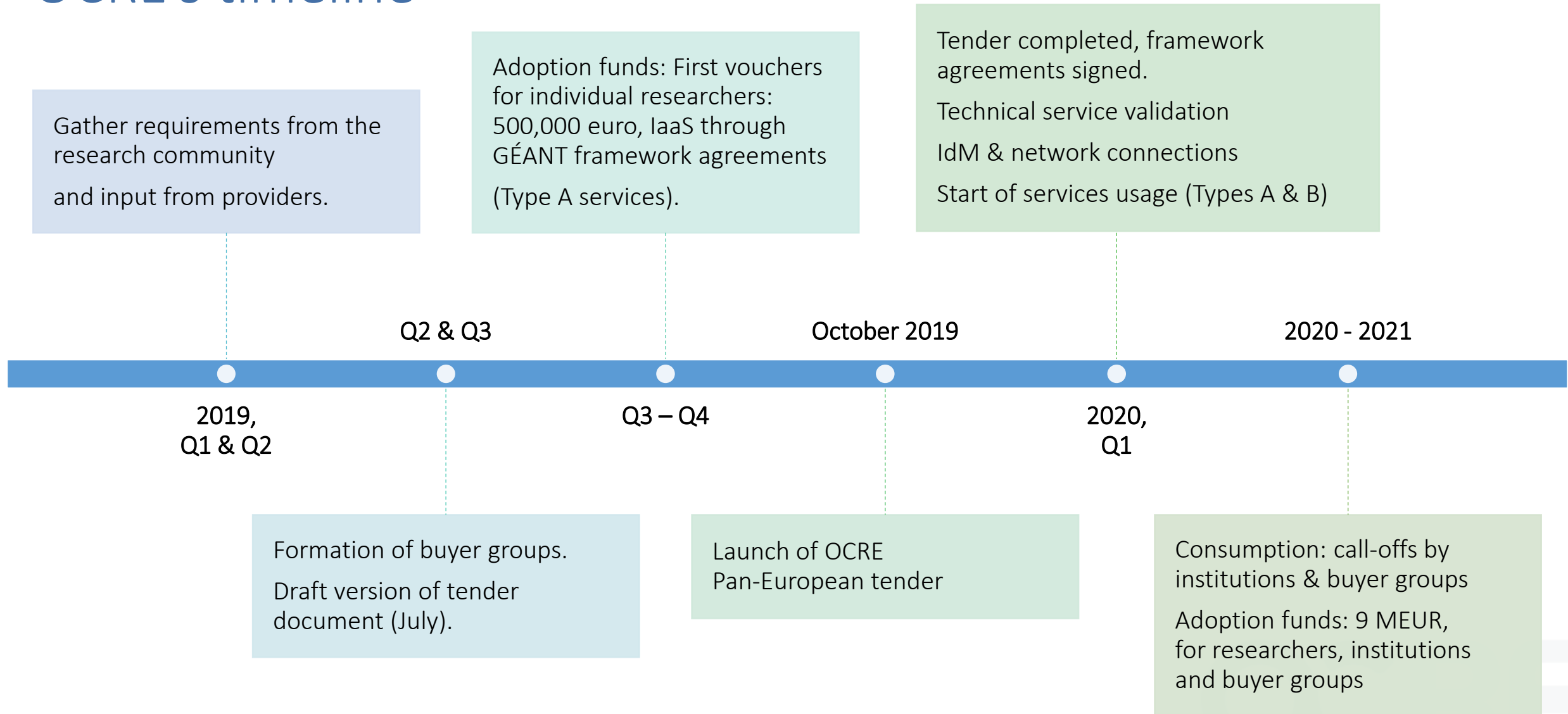
In [2]: import matplotlib.pyplot as plt
fig, (ax1, ax2) = plt.subplots(2, 2, figsize=(12, 4))
ax1.plot(x); ax1.set_title('Raw audio signal')
ax2.logspecgram(x); ax2.set_title('Spectrogram')
plt.show()
```

The figure displays two plots side-by-side. The left plot, titled 'Raw audio signal', shows the waveform of the audio signal. The y-axis ranges from -4000 to 4000, and the x-axis represents time. The right plot, titled 'Spectrogram', shows the frequency spectrum of the audio signal. The y-axis represents frequency in Hz on a logarithmic scale, ranging from 10 to 10,000. The x-axis represents time, corresponding to the waveform plot. The spectrogram shows a dense pattern of energy across the frequency spectrum, with a prominent horizontal band of energy around 1000 Hz.




**Powered by a scalable collocated processing environment - DIAS**

# OCRE's timeline



# OCRE news: NRENs on-boarding OCRE





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News

## Strong Demand Seen for Commercial Digital Research Services: 39 Countries Represented in OCRE Tender

29 Aug 2019


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  Twitter
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## Strong Demand Seen for Commercial Digital Research Services: 40 Countries Represented in OCRE Tender

Events



**EARTH OBSERVATION WEEK**  
9-13 SEPT | ESA - ESRIN | Frascati (Rome)

PhiWeek 2019 - Free commercial Cloud and EO services: OCRE opens the gates to the research community


09 September 2019 - 09:00 to 13 September 2019 - 18:00

Frascati (Rome), Italy

News

**01.** Strong Demand Seen for Commercial Digital Research Services: 39 Countries Represented in OCRE Tender

<https://www.ocre-project.eu/sign-tender>



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# Sign up to the tender

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## The OCRE Tender

*Join other institutions in procuring IaaS, PaaS, and SaaS solutions and EO data services via the OCRE Tender: Sign up now!*


European research and education organisations are invited to participate in the Open Clouds for Research Environments (OCRE) tender. The OCRE tender targets two different service types:

<h3>Cloud Services</h3> <p>IaaS solutions (storage and compute) and any cloud-delivered solution (such as PaaS and SaaS) that originates from the same IP owner/licensor that provides the IaaS element.</p>	<h3>Earth Observation Data Services</h3> <p>Services which incorporate Copernicus Earth Observation data stored in one or more of the Data Information and Access Services platforms (DIAS).</p>
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## Events



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**Thank you**

**See you at the EARSC booth**

