

# Summer of Weather Code: Innovative developments at ECMWF

UEF 2021

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# IV Edition of ECMWF's Summer of Weather Code 2021



The banner features a teal background with a blurred image of people working at computers. At the top, logos for ECMWF, European Weather Cloud, WEKEO, Copernicus, and the European Commission are displayed. The main text reads 'ESoWC Summer of Weather Code' with a small icon of a person sitting at a desk. Below this, it says 'Team up with meteorology, climate, atmosphere, machine-learning and cloud computing experts to develop innovative open-source software'. At the bottom, there are three teal boxes: 'FROM FEB 1ST 2021', '#ESoWC2021' with a trophy icon and '£5,000 STIPEND', and 'TO SEP 29TH 2021'. The URL 'https://esowc.ecmwf.int' is centered at the bottom.

ECMWF

EUROPEAN WEATHER CLOUD  
CLOUD COMPUTING-BASED INFRASTRUCTURE FOCUSED  
ON THE NEEDS OF THE METEOROLOGICAL COMMUNITY

WEKEO

Copernicus  
Europe's eyes on Earth

European Commission

## ESoWC

### Summer of Weather Code

Team up with meteorology, climate, atmosphere, machine-learning and cloud computing experts to develop innovative open-source software

FROM FEB 1ST 2021

#ESoWC2021

£5,000 STIPEND

TO SEP 29TH 2021

<https://esowc.ecmwf.int>

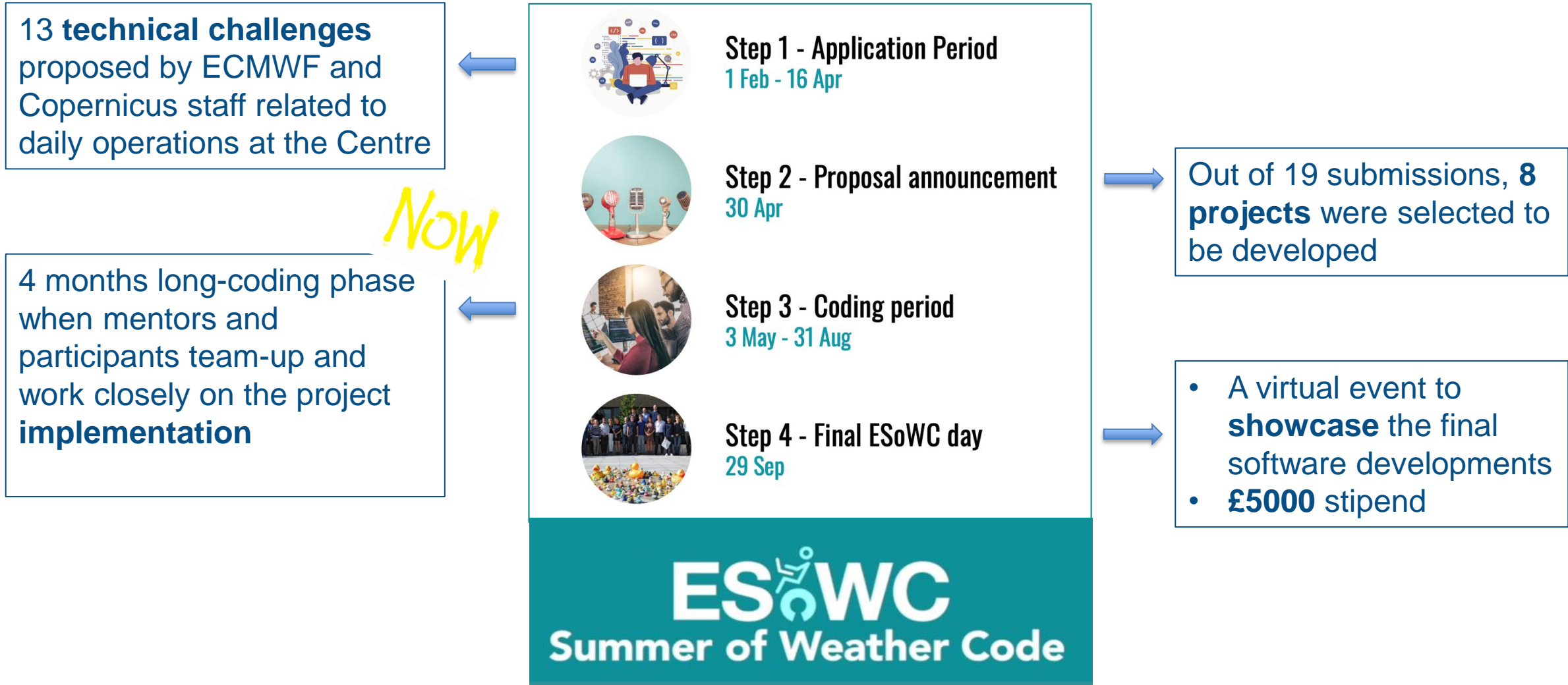
Online programme to promote **opensource** and **innovative** related- **software**

Organized by  ECMWF and supported by  Copernicus

Cloud computing resources provided by  WEKEO and



# How ESoWC 2021 works



# What are ESoWC 2021 projects about?

## 1 Machine Learning



**ML4Land:** Using Earth's observation data, climate reanalysis and ML to detect Earth's heating patterns.



**MaLePom:** ML model to estimate emissions.



**CliMetLab:** Extend the new Python ML package to simplify access to weather and climate datasets.



**AQ-Bias Correction:** Bias correction of CAMS model forecast for air quality by using in-situ observations.

## 2 Data visualization



Extend existing visualization software to support ECMWF forecast data.



Build animated visualizations in KML.

## 3 Software development and big data



**ECMWF User Dashboard:** Providing users with a dashboard to showcase their relationship with ECMWF.



**Elefridge.jl:** Compressing atmospheric data into its real information content.

# Learn about #ESoWC2021

ALL CHALLENGES ARE LISTED AND DESCRIBED ON  
GITHUB



[github.com/esowc/challenges\\_2021](https://github.com/esowc/challenges_2021)

YOU CAN FIND ALL INFORMATION ABOUT ESOWC  
ON OUR WEBSITE



[esowc.ecmwf.int](https://esowc.ecmwf.int)



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#ESoWC2021