

**Use Cases for the Architecture for Climate Monitoring from Space**

**Background**

The World Meteorological Organization (WMO) and the joint CEOS/CGMS Working Group on Climate are collecting Use Cases to support the [Architecture for climate monitoring from space](https://ceos.org/document_management/Working_Groups/WGClimate/Documents/ARCH_strategy-climate-architecture-space.pdf). These Use Cases will be reviewed by subject matter experts before publishing [online](https://climatemonitoring.info/use-cases/). Examples of Use Cases are available at https://climatemonitoring.info/use-cases/.

You are kindly invited to submit use cases using this template. Please prepare your case by answering all applicable questions and send your contributions to Dr. Wenying Su (Wenying.Su-1@nasa.gov) and Dr. Zoya Andreeva (zandreeva@wmo.int).

**Submission of Use Case**

1. **Organization/entity proposing the Use Case:**
2. **Name and email contact details of focal point for the Use Case:**

Name:

Country:

Email Address:

1. **Title of the Use Case:**
2. **Key points (up to three) of the Use Case:**
3. **Please indicate the Service/Thematic Area(s) of the Use Case (double click on the boxes to check them):**

|  |  |  |
| --- | --- | --- |
| **[ ]** Adaptation | **[ ]** Fisheries | **[ ]** Mitigation |
| **[ ]** Agriculture | **[ ]** Flood management | **[ ]** Protocol monitoring |
| **[ ]** Coastal management | **[ ]** Food security | **[ ]** Tourism |
| **[ ]** Disaster risk reduction (DRR) | **[ ]** Health | **[ ]** Urban |
| **[ ]** Energy | **[ ]** Marine ecosystems |  |
| **[ ]** Other (specify below)  |  |  |

**Other:**

1. **Please indicate the end user(s) category of the Use Case. Select “Other (describe)” if none of the listed categories is applicable (double click on the boxes to check them):**

|  |  |  |
| --- | --- | --- |
| **[ ]** General Public  | **[ ]** Local communities | **[ ]** Researchers |
| **[ ]** Government agencies | **[ ]** Policymakers |  |
| **[ ]** Industry | **[ ]** Reef managers |  |
| **[ ]** Other (describe below) |  |  |

**Other:**

**6. Please list the intermediate user(s) (specify):**

**7. Please briefly describe the Use Case application(s) (specify):**

**8. Please indicate the GCOS Essential Climate Variables used in your Use Case:**

**(A detailed description of the GCOS**[**Essential Climate Variables**](https://gcos.wmo.int/en/essential-climate-variables/table)**can be found here.)**

**8a. Essential Climate Variables---Atmosphere (double click on the boxes to check them)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **[ ]**  | Aerosols | **[ ]**  | Ozone | **[ ]**  | Temperature |
| **[ ]**  | Carbon dioxide, methane and other greenhouse gases | **[ ]**  | Precipitation | **[ ]**  | Water vapour  |
| **[ ]**  | Clouds | **[ ]**  | Precursors for aerosols and ozone  | **[ ]**  | Wind speed and direction |
| **[ ]**  | Earth radiation budget | **[ ]**  | Pressure |  |  |
| **[ ]**  | Lightning | **[ ]**  | Radiation budget |  |  |

**8b. Essential Climate Variables---Land (double click on the boxes to check them)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **[ ]**  | Above-ground biomass  | **[ ]**  | Fraction of absorbed photo-synthetically active radiation (FAPAR) | **[ ]**  | Land surface temperature |
| **[ ]**  | Albedo | **[ ]**  | Glaciers  | **[ ]**  | Leaf area index |
| **[ ]**  | Anthropogenic greenhouse gas fluxes | **[ ]**  | Groundwater | **[ ]**  | River discharge |
| **[ ]**  | Anthropogenic water use | **[ ]**  | Ice sheets and ice shelves  | **[ ]**  | Snow |
| **[ ]**  | Evaporation from land | **[ ]**  | Lakes | **[ ]**  | Soil carbon |
| **[ ]**  | Fire | **[ ]**  | Land cover | **[ ]**  | Soil moisture |

**8c. Essential Climate Variables---Ocean (double click on the boxes to check them)**

|  |  |  |
| --- | --- | --- |
| **[ ]** Inorganic carbon | **[ ]**  Plankton | **[ ]** Sea surface temperature |
| **[ ]** Marine habitats | **[ ]** Sea ice | **[ ]** Subsurface currents |
| **[ ]** Nitrous oxide | **[ ]** Sea level | **[ ]** Subsurface salinity |
| **[ ]** Nutrients | **[ ]** Sea state | **[ ]** Subsurface temperature |
| **[ ]** Ocean colour | **[ ]** Sea surface currents | **[ ]** Transient tracers |
| **[ ]** Ocean surface heat flux | **[ ]** Sea surface salinity |  |
| **[ ]** Oxygen | **[ ]** Sea surface stress |  |

**9. Please briefly list the models used in your Use Case. Provide references and links as may be applicable:**

**10a. Are the climate data records used in your Use Case already listed in the**[**ECV Inventory**](https://climatemonitoring.info/ecvinventory/)**?**

|  |
| --- |
| **[ ]** Yes |
| **[ ]** No |

**10b. Please list the climate data records used in your Use Case. Provide RecordID in the ECV Inventory where applicable:**

**11. Please indicate the agencies/organizations that produce the relevant Essential Climate Data records used in your Use Case:**

**12. Please list the satellite observations (e.g. NOAA AVHRR, Sentinel 1..) used in your Use Case：**

**13. Please briefly comment on the sustainability of your service/Use Case (demonstration, operational, …):**

**14. Please copy below the full description of your Use Case (600-1500 words and up to four figures) (for examples see https://climatemonitoring.info/use-cases/)**

**15. Each Use Case will be described using a graphical depiction of the Information Flow in line with** [**the Architecture for Climate Monitoring from Space**](https://ceos.org/document_management/Working_Groups/WGClimate/Documents/ARCH_strategy-climate-architecture-space.pdf)**, please provide text for the four boxes in accordance with the graphical examples depicted below (please provide succinct inputs for the graphical depiction in bullet forms) :**



**Example:**



**15a. Sensing - describe the sensing component (Pillar I): (up to 5 bullets)**

**15b. Climate Data Records- describe the climate data records used (Pillar II): (up to 5 bullets)**

**15c. Application - describe the application/products (Pillar III): (up to 5 bullets)**

**15d. Decision making - describe the decisions that can be taken based on the application (Pillar IV): (up to 5 bullets)**

**16. Indicate how the Use Case could be improved and what data/tools could help in this regard:**

**17. Provide 1-4 high quality images (vector files such as .ps and .eps are preferred, for .png or .jpg files 300 dpi resolution is preferred) supporting the Use Case description (see 14):**

 **Attach Figure 1**

**Figure 1 caption:**

**Attach Figure 2**

**Figure 2 caption:**

**Attach Figure 3**

**Figure 3 caption:**

**Attach Figure 4**

**Figure 4 caption:**