

# Earth System Documentation (ES-DOC) Preparations for CMIP6

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The Earth System Documentation (ES-DOC) is a multi-national, multi-institutional collaboration that supplies services in support of earth system documentation creation, analysis & dissemination. The ES-DOC project has been preparing for CMIP6 by enhancing existing documentation standards & tools, and by ensuring that a rich eco-system is in place so as to streamline document creation. Users will in due course be able to access CMIP6 documentation via the ES-DOC search, view & compare online tools.

## 1. WGCM Requirements

High-level requirements expressed at WGCM meeting

- Standardisation of model forcings
- Simplification of model components
- Streamlining of model documentation
- Automation of simulation documentation
- Closer coordination with modelling groups
- Adopting a narrative based approach

## 4. New Documentation Creation Tools

Spreadsheets and a new online questionnaire are available

## 2. Documentation Standard Upgraded (CIM v2)

Enhancement of model forcings & process definitions

```
def activity():  
    """An abstract class used as the parent of MeasurementCampaigns, Projects, Experiments, and Numeric  
    """  
    return {  
        'type': 'class',  
        'base': None,  
        'is_abstract': True,  
        'properties': [  
            ('funding_sources', 'str', '0.N'),  
            ('projects', 'activity.project_type', '0.N'),  
            ('rationales', 'str', '0.N'),  
            ('responsible_parties', 'shared.responsible_party', '0.N'),  
        ],  
        'doc_strings': {  
            'funding_sources': 'The entities that funded this activity.',  
            'projects': 'The project(s) that this activity is associated with (ie: CMIP5, AMIP, etc).',  
            'rationales': 'For what purpose is this activity being performed?',  
            'responsible_parties': 'The point of contact(s) for this activity. This includes, among othe  
        },  
        'encodings': [  
            ('funding_sources', 'child:cim:fundingSource'),  
            ('projects', 'child:cim:project@value'),  
            ('rationales', 'child:cim:rationale'),  
            ('responsible_parties', 'child:cim:responsibleParty'),  
        ],  
    }
```

## 5. Powerful Scripting Library = pyesdoc

Python library simplifies document lifecycle management

- Low level documentation management library
- Integrated into all ES-DOC tools & services
- Supports both CIM v1 & v2 ontologies
- Supports documentation creation, I/O, archival, validation, publishing, search.
- Integrated with controlled vocabularies
- Unit tested, open source & pip installable
- IPSL & MOHC committed to using it internally


## 3. Controlled Vocabularies Upgraded

Realm based model process documentation

|                      |                        |
|----------------------|------------------------|
| Atmosphere           | Atmospheric Chemistry  |
| Atmospheric Aerosols | Land                   |
| Land Ice             | Sea Ice                |
| Ocean                | Ocean Bio-Geochemistry |

## 6. Experimental Definitions Published

Draft CMIP6 experimental definitions are already published



es-doc

Earth System Documentation

Documentation Viewer v0.9.3.1

Support

CMIP6-DRAFT Experiment : Pre-Industrial Control

Overview

Project

CMIP6-DRAFT

Name

piControl

Long Name

Pre-Industrial Control

Description

What: A pre-industrial control simulation with non-evolving pre-industrial conditions. Why: Control experiment against which perturbations are compared.

Keywords

pre-industrial | control | climate | ipcc | deck

Related Experiments

1pctCO2 | abrupt4XCO2 | historical

Temporal Constraints

1850/01/01-2349/12/31

Start Date

1850-01-01

Required Duration

500 years

Description

500 years of simulation beginning in 1850

Conformance Requested ?

False

Keywords

Historical | Idealised | Pre-Industrial Start Date