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INFRASTRUCTURE FOR THE EUROPEAN NETWORK FOR EARTH SYSTEM MODELLING

Overview of IS-ENES3

Sylvie Joussaume & Bryan Lawrence

The IS-ENES3 project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824084

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January 2019 – December 2022
22 partners from 11 countries
01/2019-06/2020: First Reporting Period

3 main objectives:

- Pursue the integration of the climate modelling community & prepare the sustainability of the research infrastructure
- Foster common development of models and tools and efficient use of HPC
- Support exploitation of model data by the Earth system science, the climate change impact and the climate service communities

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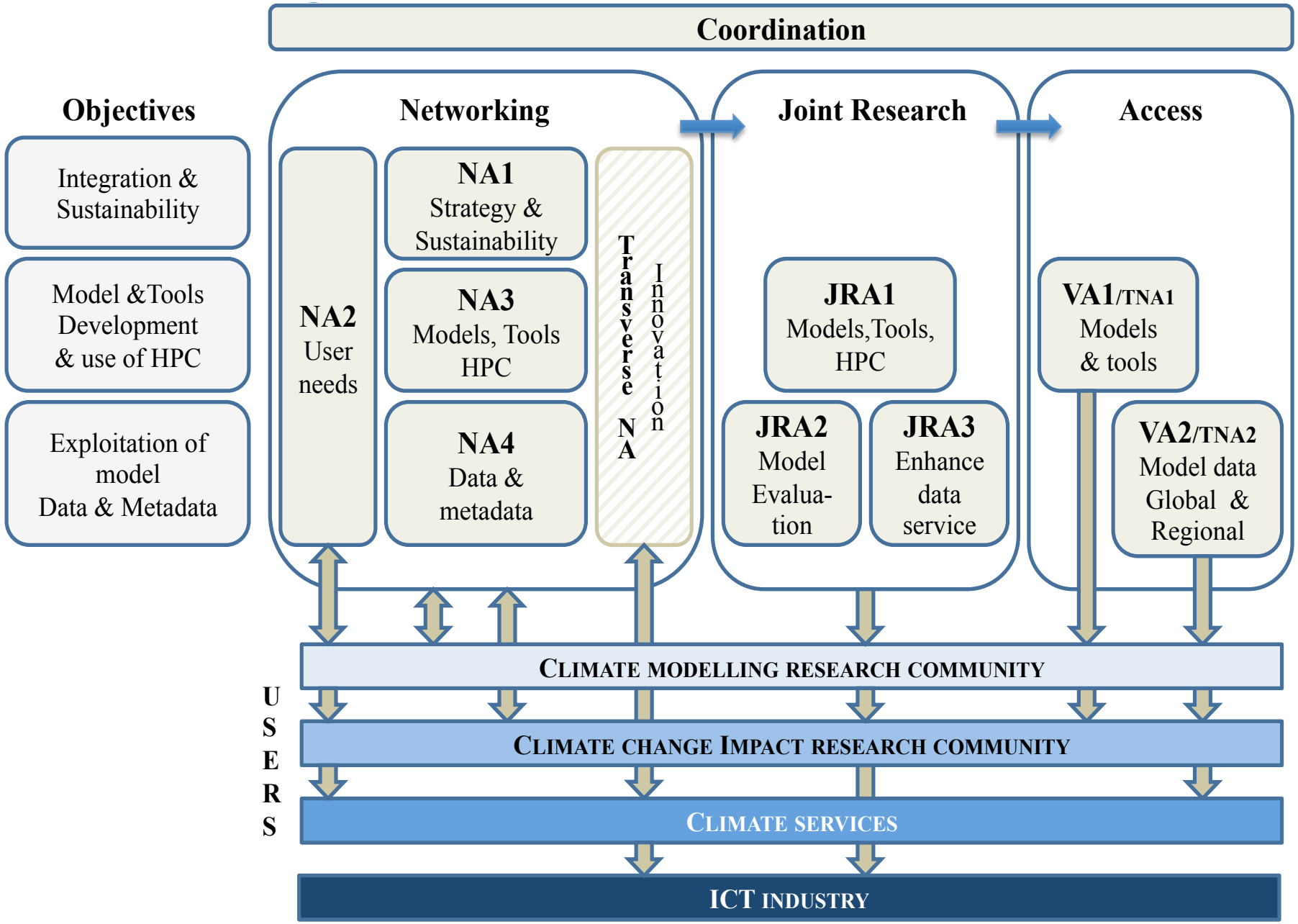

WP1/ Mgt

WP2/NA1-sustain
WP3/NA2-users
WP4/NA3-hpc
WP5/NA4-data

WP6/VA1-hpc
WP7/VA2-data

WP8/JRA1-hpc
WP9/JRA2-eval
WP10/JRA3-data

WP11/ Ethics

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Objective 1: Integration & sustainability

Networking activities

RP1

NA1-sustain

Governance: Task Forces (data and HPC) & ENES scientific officer

Prepare for sustainability: scoping, designing & possibly implementing

Innovation cross-WP activity: Technology and Societal innovation

Revise infrastructure strategy for 2022-2032

NA2-users

Engage with users: workshops & training

Widen the user community: VIA, Climate services

Nurture the existing community

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Objective 2: Models, tools and HPC activities

RP1

Networking Activities

NA3-hpc

Community models
QA for NEMO
New platform for sea ice

HPC performance
CMIP6 Metrics
Machine Learning & Tech tracking
Coupling workshop, HPC WS

Innovation
Tools & HPC

Engage with Users
School on big data
Requirements
Prepare for sustainability

NA2-users

NA1-sustain

Models and tools access services

Level 1 services:
Model information
CMIP5 & CMIP6 models

Level 2 services:
Access to codes
HADGEM/EC-Earth /NorESM
NEMO

European tools
OASIS, CDO
XIOS, Cylc/Rose
ESMValTool

VA1-hpc

Joint Research Activities

Community models
Improve NEMO
HPC performance
Develop new sea ice platform

Community tools
Develop
OASIS
XIOS
Cylc/Rose

JRA1-hpc

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Objective 3: Data infrastructure

RP1

Networking Activities

NA4-data

Data & metadata

Needs, priorities, standards, future architectures for ESGF and ES-DOC

Evaluation

Standards for diagn. Tools

Standard on evaluation scientific provenance

Engage with Users

Trainings, school

Requirements

NA2-users

Innovation

Climate services & C3S

NA1-sustain

Prepare for sustainability

Data access services

ESGF data access and publication

Long-term archival, PI, WDCC

Climate4impact portal

Compute services

For large data pools and evaluation diagnostics

Service on Data and metadata standards

CF & Data Request

Model documentation

ES-DOC

VA2-data

Joint Research Activities

Data infrastructure development

Improve:

Software stack

Computing layer

Data standards

ES-DOC

Climate4impact portal

JRA3-data

ESM evaluation developments

Based on ESMValTool

Improve

Extend functionalities

Adapt to standard interfaces

Couple to ESGF

JRA2-eval

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Project Leadership Team (Executive Body)

Coordination Team: Sylvie Joussaume, Bryan Lawrence, Sophie Morellon,
Fanny Adloff as ENES SO

WP number	WP Leader Participant short name	WP Leader	WP Co-Leader Participant Short name	WP Co-Leader
1	CNRS-IPSL	Sylvie Joussaume (F)	UREAD-NCAS	Bryan Lawrence (M)
2	UREAD-NCAS	Bryan Lawrence (M)	DKRZ	Michael Lautenschlager (M)
3	CNRS-IPSL	Eric Guilyardi (M)	KNMI	Janette Bessembinder (F)
4	Met Office	Jean Christophe Rioual	BSC	Mario Acosta (M)
5	UKRI	Phil Kershaw	SMHI	Klaus Zimmermann (M)
6	SMHI	Uwe Fladrich (M)	CERFACS	Eric Maisonnave (M)
7	DKRZ	Stephan Kindermann (M)	KNMI	Wim Som de Cerff (M)
8	CERFACS	Sophie Valcke (F)	CMCC	Italo Epicoco (M)
9	DLR	Veronika Eyring (F)	BSC	Kim Serradell (M)
10	CMCC	Sandro Fiore (M)	CERFACS	Christian Pagé (M)

Virtual WP: UKRI. Martin Juckes.

IS-ENES3 Scientific Advisory Board
Ben Evans (NCI, AU), Peter Gleckler (PCMDI, USA),
Mariana Vertenstein (NCAR, USA), Gunilla Svensson (Bert Bolin Centre, SE),
Gabriella Zsebehazi (Hungary Met service), Claas Teichmann (GERICS, DE)

European & International context

International

- **Operational phase of CMIP6 & support to IPCC:** ESGF, ESDOC, compute services, evaluation …
- **Future organisation of CMIP :** Working group to prepare recommandations to WMO
- **After CMIP6:** future ESGF architecture, standards (CF, DR …)

European

- **Data policy**: open access, EOSC
- **EuroHPC:** plans for HPC pre-exascale (2021) and exascale (2023) – in link with ESIWACE2
- **Climate services** : Copernicus C3S

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Main structure of agenda

General session : ALL

Overview

General issues: sustainability / users / innovation

Preparing RP1 report

Introduce “Around Coffee” parallel sessions (Data school, carbon footprint, Copernicus)

Topic session: one at least

For each sub-domain: Data and medata / Models, tools, hpc / model evaluation

Status, Highlights, Cross-WP issues

Introduce “Around Coffee” parallel sessions

Friday: Cross-WP issues, Around Coffee parallel sessions

Although a virtual GA: facilitate discussion !!

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THE CONSORTIUM

Coordinated by **CNRS-IPSL**, the IS-ENES3 project gathers **22 partners** in **11 countries**

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Our website
https://is.enes.org/

Follow us on Twitter !
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Contact us at
is-enes@ipsl.fr

Join the community on ZENODO !