



NORDUGRID: EOSC NORDIC ?



Outline

- EOSC-Nordic
- Early initiatives outside HEP/LHC communities: Tryggve, NICEST and EISCAT_3D
- Discussion



EOSC-Nordic

Call: INFRAEOSC-05-2018-2019

Partners: 24

Budget: 5.9M€

Coordinator: Gudmund Høst, NeIC Director

Project period: Sep, 2019 – Aug, 2022

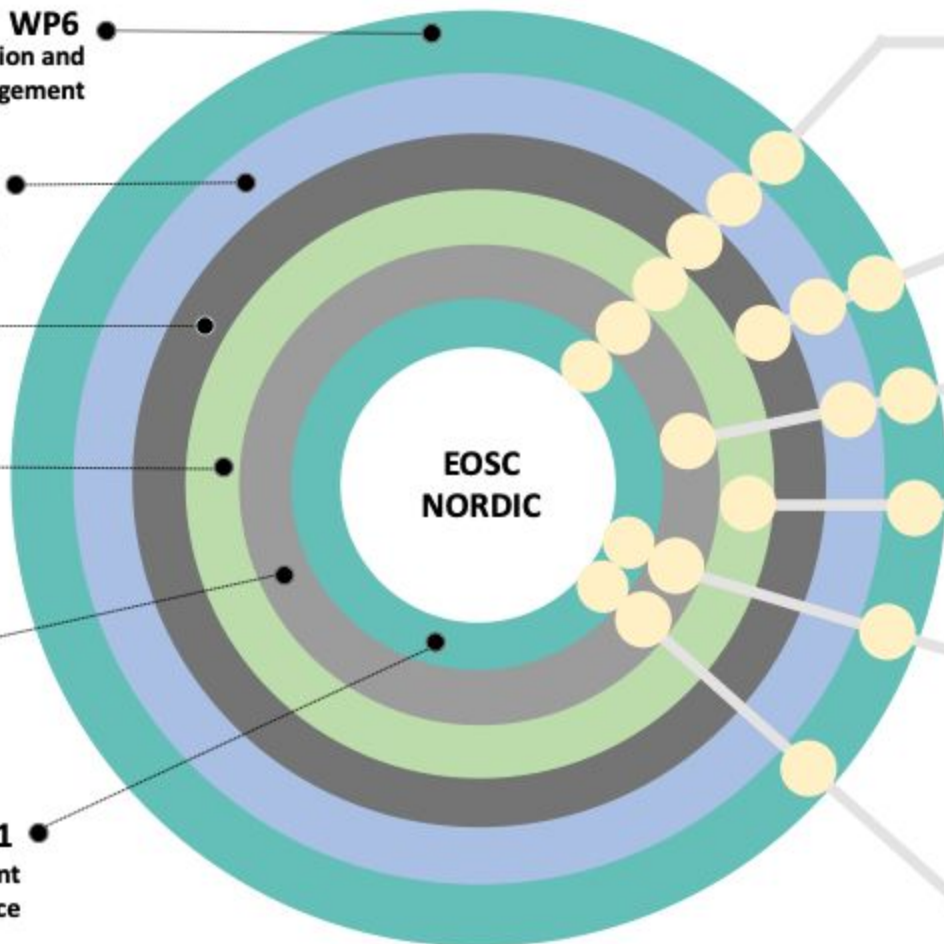
Kick off mtg: Sep 2-3, 2019 (CSC, FI)

See Lene Krøl Andersen's talk at NEIC 2019:

https://indico.neic.no/event/18/contributions/155/attachments/70/117/EOSC-Nordic_NeIC2019_LKA.pptx

WORK PACKAGES

- WP6**
Communication and Engagement
- WP5**
Open Research Demonstrators
- WP4**
FAIR Data
- WP3**
Support to EOSC Service providers
- WP2**
Policies, legal issues and sustainability
- WP1**
Project management adm. & Finance

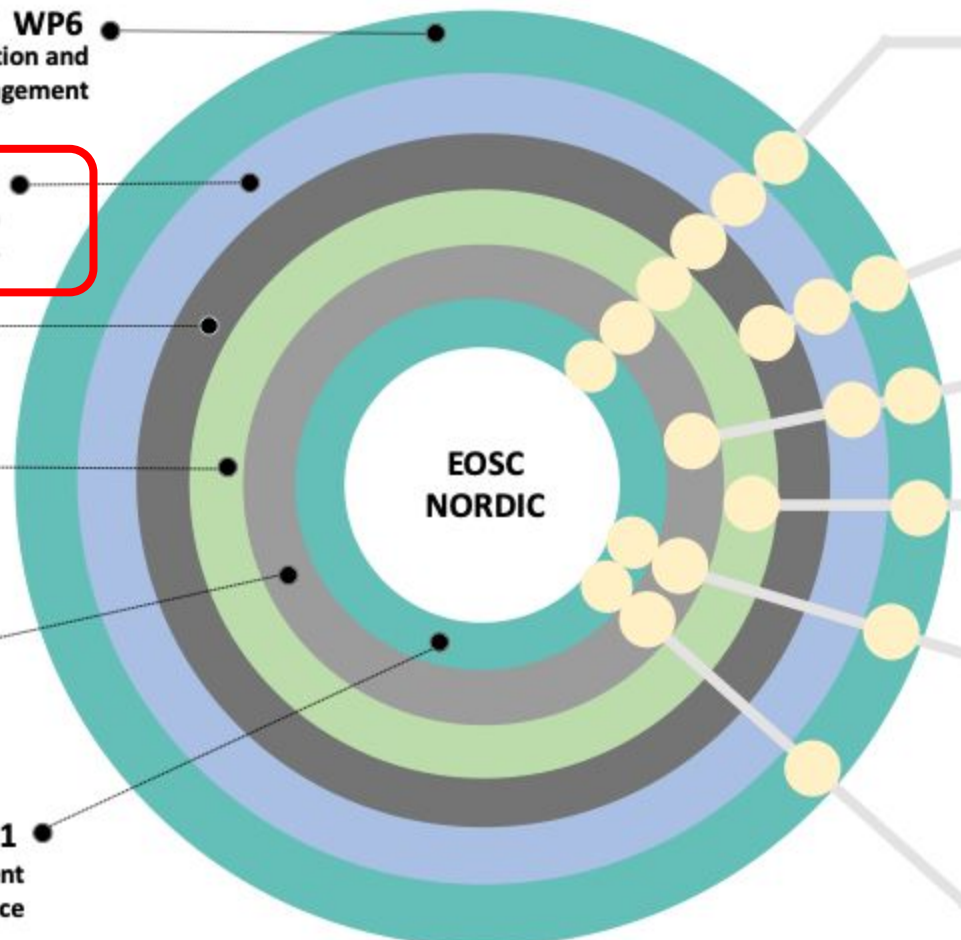


STAKEHOLDERS INVOLVEMENT

-  e-Infrastructure- and service providers
-  Data repositories
-  Research communities and institutions
-  Universities & Libraries
-  Research Councils and Funding Agencies
-  Governmental agencies and Ministries

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EOSC-NORDIC & NORDUGRID ?

Few communities discussed with us:

- We are dealing with lot of data
 - We do run millions of jobs per day
 - We know how to run production services
- ⇒ Discussion on use cases
- ⇒ Incubators / Prototypes to identify the working and missing functionalities



Tryggve: Nordic Sensitive Data Infrastructure

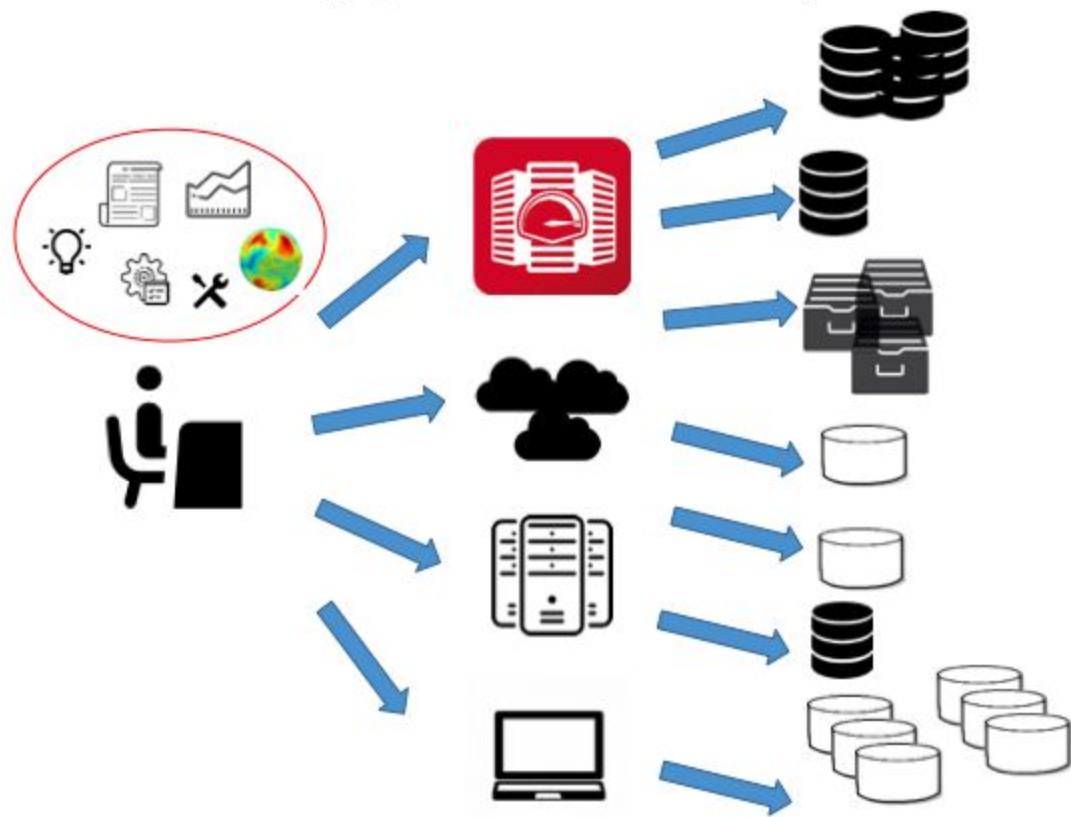
- ARC, ARCCT and data management (dCache) talks at the 1st Nordic Sensitive Data Infrastructure Workshop (June 11th – 12th 2019):
 - <https://docs.google.com/document/d/1RavBuZ6XEfkz22YBgsx4PI3IWz9JLck0hod8hnSddfo>
- Use cases: Need to schedule jobs where the data is, aggregate the output, federate several sites, two factor authentication on each site, etc.
- Next meeting will be in October

NICEST – Nordic Climate community in a Nutshell

A community focused on understanding, quantifying and reducing uncertainty in projected northern latitude climate change and in particular rapid Arctic warming.

- Two main Earth System Models (EC-EARTH and NorESM)
- International participation to *World Climate Research Programme* Coupled **Model Intercomparison Project Phase 6**
- Aware of the importance of sharing, comparing and analyzing the outcomes of global climate models
 - Earth System Grid Federation (ESGF) to handle large-scale data management for worldwide distribution
 - Conda package, docker/singularity containers for running complex workflow in a reproducible way

Our approach today



→ No «colocated» view of our computing **AND** storage allocations

→ Lot of time wasted moving data (especially when collaborating) or waiting for available compute resources

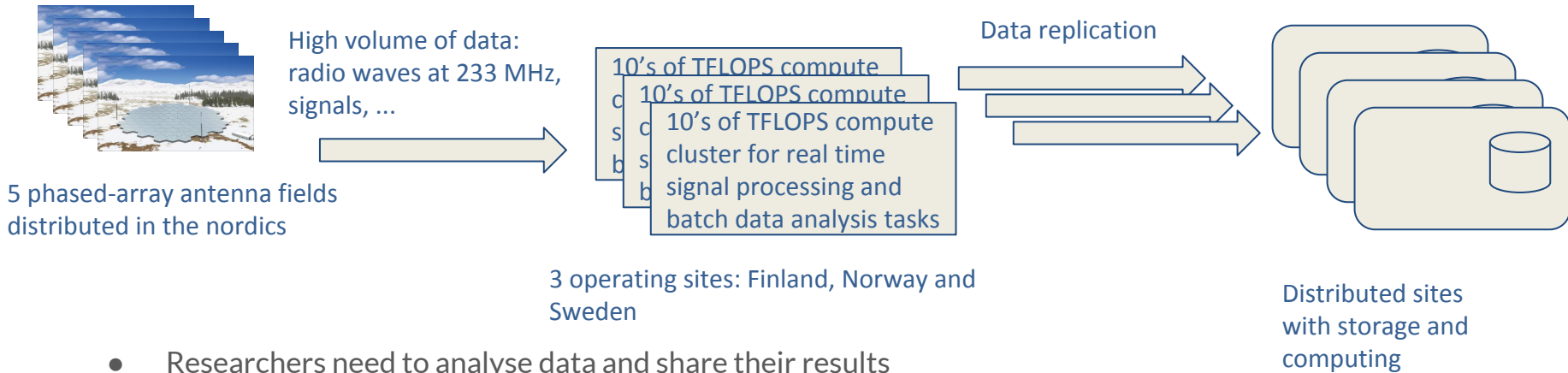
**Various Computing resources
depending on the use case**

**Different
Storage solutions**

Our needs

- Support the deployment of ESM tools & workflows on EOSC for running ESM models, processing and visualizing model outputs
- Facilitate the sharing of data and compute across Nordic countries
 - Identify gaps for uptake of FAIR data practices across the climate community in the Nordic countries
 - Orchestration of our workflows on available and best suited computing resources
 - Unified view of our data and workflows whatever the storage location
 - Take over security, authentication and other administrative tasks

EISCAT_3D Use case: Next generation radar for 3D monitoring of the atmosphere and ionosphere



- Researchers need to analyse data and share their results
- Service to automate data replication and cataloguing provided by NT1

Data management services for EISCAT_3D

Service portfolio for full data management:

Storage	NDGF: srm.ndgf.org, pools: nsc.liu.se, 1 PB NDGF-PREPROD: preprod-srm.ndgf.org, pools: uio.no, 1TB SNIC: gsiftp.swestore.se, pools: snic, 1 PB
Transfer service	FTS - https://rizzo.ndgf.org:8449/fts3/ftsmon/#/
Data orchestration	Rucio - https://beauregard.ndgf.org:443 Clients - https://hub.docker.com/r/vingar/rucio-clients-eiscat3d
Monitoring	Kibana - https://chaperon.ndgf.org/kibana/



Automatic replication exercise

Data upload

/eiscat3d/upload/

dCache@NDGF preprod



Data replication

/eiscat3d/

dCache@NDGF



Storage events:
New files

Panoptes Service

Detect new files and register them into Rucio for replication and data sharing

Rucio, FTS

Data orchestration, transfers

Data replication

/eiscat3d/

dCache@SNIC



Event	Destination	WF	Subjob	Start	Stop	Size	File Size	File Count	File Size
gpcftp/panoptes-ndgf.org	gpcftp/panoptes-ndgf.org	yes	-	-	-	3	310	1	317.5 K
gpcftp/panoptes-ndgf.org	gpcftp/panoptes-ndgf.org	yes	-	-	-	2	115	1	115.0 K





Discussion ?