

# Proposal for DOMA Phase 2

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**DOMA General**

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<https://indico.cern.ch/event/1050565/>

# DOMA overview

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## New team of co-coordinators

Two-year mandate with some overlap to ensure continuity

Christoph Wissing (DESY CMS), Mario Lassnig (CERN ATLAS), Maria Girone (CERN IT)

## Looking at the evolution of the structure of the DOMA R&D for Phase 2

**Phase 1** Forum to discuss and foster ideas, define prototypes and explore

**Phase 2** Realizing promising prototypes into actual services

Commission the services in the production infrastructure during Run-3

## Timescale for a proposed structure for Phase 2 is end of June 2021

We already collected immense amount of feedback

Community engagement has been key (experiments, facilities, software projects)

Nothing you see here is cast in stone

# Current state

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Currently we have three DOMA working groups: Access, TPC, and QoS

- DOMA Access wrapped up main activities with a proposal for next steps

- Many diverse topics have been folded into the TPC working group

- QoS working on several demonstrators

TPC and QoS held bi-weekly interleaved, with DOMA General once monthly

A few extra thoughts and feedbacks we got

- We see DOMA-related activities in the experiments and facilities

  - which are not present in DOMA meetings

  - where we could benefit from bringing them under the same umbrella

- We do not want to change things just for the sake of changing

- We observe that the TPC WG works well with a big list of diverse topics

- Combining and optimising our use of facilities will be key

# Reorganisation proposal

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This leads us to the point that we need to come up with an idea how Phase 2 could look like

## General idea

Based on the received feedback, identify the topics people *should / can / want to* work on

Set up a structured approach towards both Run-3 and Run-4

- Break working group boundaries, be more flexible and dynamic

- Bring relevant people together

- Define and follow measurable objectives, their key results, and their milestones

# DOMA Topics

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## Wide area networking, transfers and throughput

Demonstrate that we can move data and utilize networks at the scale required for HL-LHC

### Natural continuation of present TPC group activities

There are ongoing technical activities from phase 1 with milestones by the end of 2021

Xroot remains central to a number of common things

Transfer challenges

Include network developments (SDNs and interfaces to them) and liaise to NET-WG

Dynamic network provisioning

Common software activities

RUCIO (ATLAS+CMS+beyond)

FTS (ATLAS+CMS+LHCb+beyond)

Complete WebDAV migration (almost done!)

TAPE interface via HTTP

gsiftp/SRM decommissioning

# DOMA Topics

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## Commissioning of a data delivery infrastructure

Leveraging activities of Phase 1 QoS and Access groups, plus experiments & facilities work

Setup testing infrastructures

Cache layer deployment

Assess operations effort and performance

Liaise to the AAI WLCG WG and token transition

### **Production challenges with prototype setups**

Storage performance (including archive/tape, disk) incl. QoS classes

"Analysis facility"-style access incl. liaison with HSF WGs

Asses files/filesize challenge (10 billion files vs 100GB files)

Cost modelling and storage accounting

# DOMA Topics

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## Integration with heterogeneous data resources

**Align existing experiment-specific data solutions towards a common strategy**

Data management aspects

- Including HPCs and clouds with experiment DM systems

- Cache layer deployment for heterogeneous resources integration

- Related performance assessment

- Define/execute data challenges

- Identify testbed sites

Liaise with ongoing coordination efforts (HPC, Commercial Clouds)

- Cybersecurity and AAI

- ASCR/EuroHPC/PRACE/ HPC Collaboration, ...

- Amazon, Google, Cloudbank, ...

Define WLCG-wide QoS classes (advertise, costs, accounting, pledges, ...)

"Self-organising" storage (MAS/BNL + Rucio)

# Next steps

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Refine the draft organisation proposal so we can put it in effect during summer

All feedback is welcome!

Activity survey of all ongoing efforts across the facilities and experiments

Will happen in parallel

Identify the most pressing objectives from each topical area

In concertation with the experiment's needs, available FTEs, and remaining time

Define the quantifiable results to be reached for Run-3 commissioning

Based on this, draft the long-term Run-4 plan as far as possible