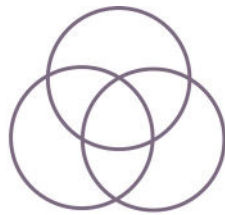**DIGITAL-EUROHPC-JU-2022-NCC-01**
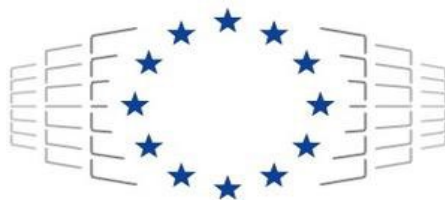

**CASTIEL 2 – Coordination & Support
for National Competence Centres on a European Level
Phase 2**

Project Number: 101102047

D5.2

Design strategy of the C2ISS and the evolved
EuroCC Access Portal

Work Package:	5	Awareness Creation, Impact and Outreach	
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2023-08-31	Miriam Koch, WP5 Members	PMT approved Version	V1.0	Final

List of abbreviations

AI	Artificial Intelligence
API	Application Programming Interfaces
C2ISS	CASTIEL 2 Information Sharing System
CD	Corporate Design
CoE	Centre of Excellence
CSA	Coordination and Support Action
DoA	Description of Action
GA	Grant Agreement
Hx	Half year x
HPC	High-Performance Computing
HPDA	High-Performance Data Analytics
JU	Joint Undertaking
MVP	Minimum Viable Product
NCC	National Competence Centre
PMT	Project Management Team
WP	Work Package

Executive Summary

The document "D5.2 Design Strategy of the C2ISS and the evolved EuroCC ACCESS Portal" is the second deliverable of CASTIEL 2's Work Package 5 (WP5): Awareness, Impact and Outreach. This document gives an overview about the concept for the C2ISS, short for Castiel 2 information sharing system. It will be updated and reported on in D5.4 and D5.6 (M15 and M30).

The ultimate goal for the C2ISS is to become the central point of access to information on the EU-funded HPC actors, which will greatly improve visibility and accessibility of the projects. Until now, information and websites were very fragmented. In a first step, the platform will be set up and populated with content from and about the NCCs and CoEs. In a second step (after year two), other interested projects and entities from the EU-funded HPC ecosystem will be invited to join.

In this document, the context with other platforms and solutions within and outside the project is described, the design process is explained and the first concept is delivered.

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1. Introduction

CASTIEL 2 will continue the mission of the CASTIEL H2020 project to coordinate and support the National Competence Centres of EuroCC 2. In addition, it will coordinate and support the Centres of Excellence in HPC. In the scope of Work Package 5, dealing with Awareness, Dissemination and Outreach, the creation of a central database (Working Title: C2ISS – CASTIEL 2 Information Sharing System) is foreseen as outlined in the Grant Agreement:

"This project starts off with a system of websites (euroccaccess.eu, hpccoe.eu), which will need to be integrated to one platform solution. This task will

- *develop a strategy for the new platform (frontend and the backend CASTIEL 2 information sharing system –C2ISS).*
- *not only include information about training offers, but also about actors from the HPC system, their services & offerings and more.*
- *coordinate with the other work packages on their needs and requests. This task will also organise regular meetings with all work packages and get all inputs*
- *create a clear solution, easily usable by the users.*
- *perform an analysis on how the portal and the C2ISS can be come sustainable and keep operational after the end of the project."*

The ultimate goal for the C2ISS is to become the central point of access to information on the EU funded HPC+ landscape, which will greatly improve visibility as well as accessibility of the projects, since now information and websites are very fragmented. In a first step, the platform will be set up and populated with content from and about the NCCs and CoEs. In a second step, other interested projects and entities from the EU-funded HPC landscape will be invited to join. The platform will target possible and existing HPC+ users as well as interested individuals from all sectors.

In this deliverable, an overview will be given about the delimitations and connections to other platforms and initiatives (Sec. 2), the planned design process (Sec. 3), the technical boundary conditions as well as a first draft of the platform (Sec. 4).
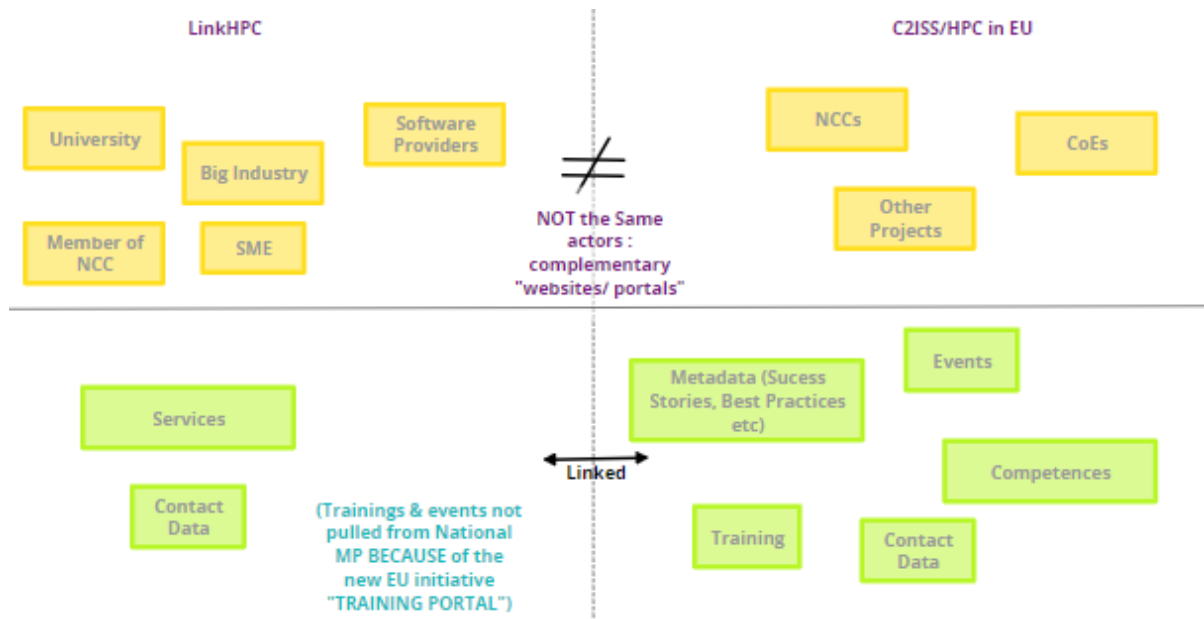
2. Context and Delimitations

It is important to understand the C2ISS's role in the context of the other project-internal platforms and external initiatives in the European HPC ecosystem:

2.1 Internal: Platforms in the Projects

In phase one of the EuroCC and CASTIEL projects, the EuroCC ACCESS[i] was created as a platform collecting information about and offerings of all NCCs as well as offering functionalities for the project participants. For the CoEs, hpccoe.eu[ii] was implemented by their former CSA FocusCoE with the same purpose. The C2ISS will consolidate these efforts and thus make the old platforms redundant. To make sure none of the valuable work that went into these platforms is lost, the C2ISS will run in parallel for the first months. Then, useful parts from the old platforms will be migrated to C2ISS. Once this process is completed, the old platforms will be shut down.

Furthermore, CASTIEL 2 will build a "LinkHPC Platform" (formerly known as "Marketplace") that is focused on industrial offerings of NCCs, CoEs and different private

actors. Work Packages 4 and 5 have decided that due to the complexity of both topics and the different sets of actors, the C2ISS and LinkHPC will be two different platforms. A clear distinction of functionality and content is given in Fig 1 that was conceptualised commonly by the two Work Packages. In summary, the LinkHPC Platform will feature Services and Contact Data in a format which is easily comprehensible for possible industry users. The C2ISS will feature other content for all target groups. Furthermore, while the LinkHPC Platform will also be open to industry and software providers, C2ISS will be limited to NCCs, CoEs and other projects.

Figure 1: Delimitation of C2ISS and the LinkHPC Platform

2.2 External: Other Initiatives

As the goal is to have other entities (e.g. other EU-funded projects) on the C2ISS in the long run, alignment within the European HPC ecosystem is crucial. For most content (Events, Contact Data, Competences, Training, Metadata), this is uncritical since other projects would just have to fill in some basic data and link to their own websites. The most critical topic is training. Within the European HPC landscape, two solutions are already used by a majority of the actors.

This is on the one hand the event calendar on the HPC in Europe Portal[iii] that has been uptaken through a harmonization effort between PRACE, FocusCoE, and CASTIEL 1. Since this portal was chosen as the base for the C2ISS, the already existing users do not have to change their workflows and the already large user group is expected to grow further. On the other hand, a third-party system called indico, until now maintained by PRACE, is used as an event calendar which also offers a registration and survey functionality.

The challenge will be to identify ways to integrate the indico functionalities and users in the C2ISS which will require lots of resources on alignment. Additionally, two new projects (calls still ongoing) will be funded by the EuroHPC Joint Undertaking that are also expected to work on a common platform for training. Once these projects have started, this Work Package will start a working group on harmonizing the efforts so the outcome is one common event platform with calendar, registration and survey functionalities, ideally within the C2ISS. Since this work

can only start in the future, the training aspect is only preliminary considered in the rest of this deliverable.

3. Design Process and MVP

The design process was kicked off with a one-day workshop with all Work Package leaders and members of Work Package 5 in M2 of the project. The following contents were defined as a minimum viable product:

- Database (per entity (NCC, CoE, project)):
  - Basic Information
  - Competences
  - Events
  - Material
    - Training Material (presentations, guides etc.)
    - Success Stories (user stories with positive outcomes)
    - Best Practices (either in application or surrounding processes)
    - Dissemination Material (targeted presentations, videos, etc.)
  - Codes (tagged, linked)
- Training Database with further functionalities: Registration for Trainings & Events, Reminders, Surveys etc.
- Frontend to enter data
- Frontend for users to access data
- APIs to enable embedding of data in or fetching data from other platforms

Furthermore, the goal was to define an iterative design process, which can be seen in Table 1:

Project Month	Date	Action	Status
M3	Mar 23	Preparation of Procurement Processes	In Progress
M4	Apr 23	Input from WPs	Done
		Stakeholder Round: Questionnaire NCCs	Done
		Stakeholder Round: Questionnaire CoEs	
M6	Jun 23	First Concept	Done
		Provider Round: First Contacts with external agencies	Done
M9	Sep 23	**Design Deliverable**	Done
		Start Procurement	
M10	Oct 23	*Stakeholder Round:* JU	
		Agency Start Implementation	
M12	Dez 23	Version 1 C2ISS	
M13	Jan 24	Feedback to Agency	

M14	Feb 24	Version 2 C2ISS	
M15	Mar 24	**Deliverable First Deployed Version C2ISS**	
M15-30	Mar 24 - May 25	Feedback loops, Bugfixes, User Tests, Performance Data Analytics	
M30	Jun 25	**Deliverable Last Deployed Version C2ISS**	

Table 1: Iterative Design Process for C2ISS

The process is moving forward, with regular meetings with all Work Package leaders from CASTIEL 2 as well as the finished questionnaire from the CoEs and NCCs. Results will be described in Sec. 4. As mentioned before, the HPC in Europe Portal has been chosen as a base for the C2ISS since it contains work that has been already done and is implemented in a database-based content management system.

4. The C2ISS Concept

4.1 Description of the C2ISS Concept

As mentioned in the introduction, the goal of C2ISS is to provide a central point of access to information on the EU funded HPC+ landscape. The second requirement is to appropriately represent NCCs and CoEs towards all stakeholders. This leads to a two-fold approach when designing the portal:
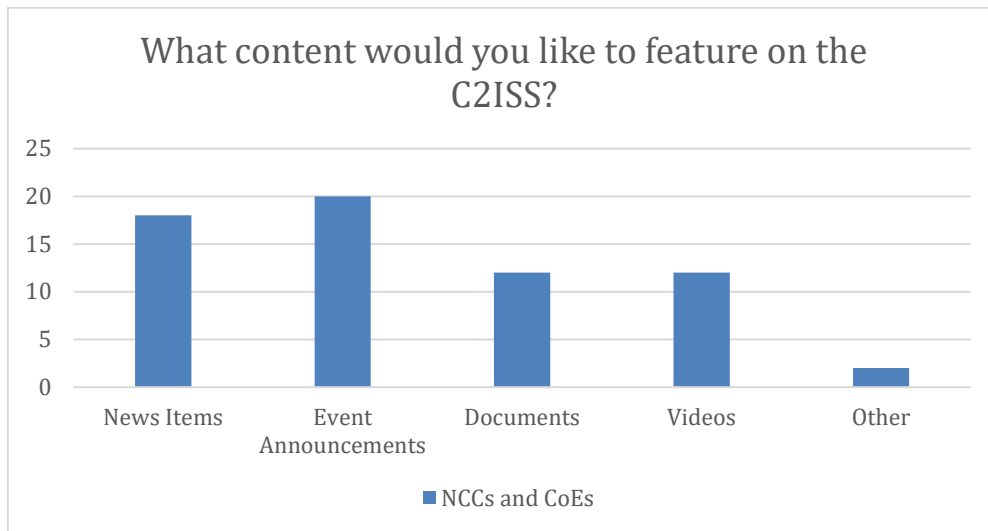
1) <u>User Perspective:</u> Possible HPC users from all sectors, interested individuals, funding agencies etc. should find all needed information for accessing the EU funded- European HPC Ecosystem in an easily navigable page.
2) <u>NCC/CoE/Project Perspective:</u> The NCCs and CoEs (and in the next step, further projects) should be able to add and regularly update the relevant information about their projects.

In order to get the NCC/CoE perspective on the platforms, a survey was conducted that received 21 replies. The results of the survey will have an impact on the concept on different levels. They will be explained throughout this section.

The starting point for this concept is to understand which kind of content the NCCs and CoEs would like to share on the C2ISS and thus what can be provided on the platform. The working group examined what content is already available on other platforms. The assessment resulted in the following types of content available:

- Basic information
- Competences
- Services (to be covered by the LinkHPC Platform situated in WP4, hence disregarded in the following section)
- Training courses
- Events
- Use cases
- Success stories
- Codes
- Other dissemination material

To get clarification on the point of other dissemination material, this work package asked the NCCs and CoEs what content they would like to feature on the page:

Figure 2: Contents on C2ISS

All this results in the database needed per NCC/CoE. Each entity should have a user profile where they can add the following information:
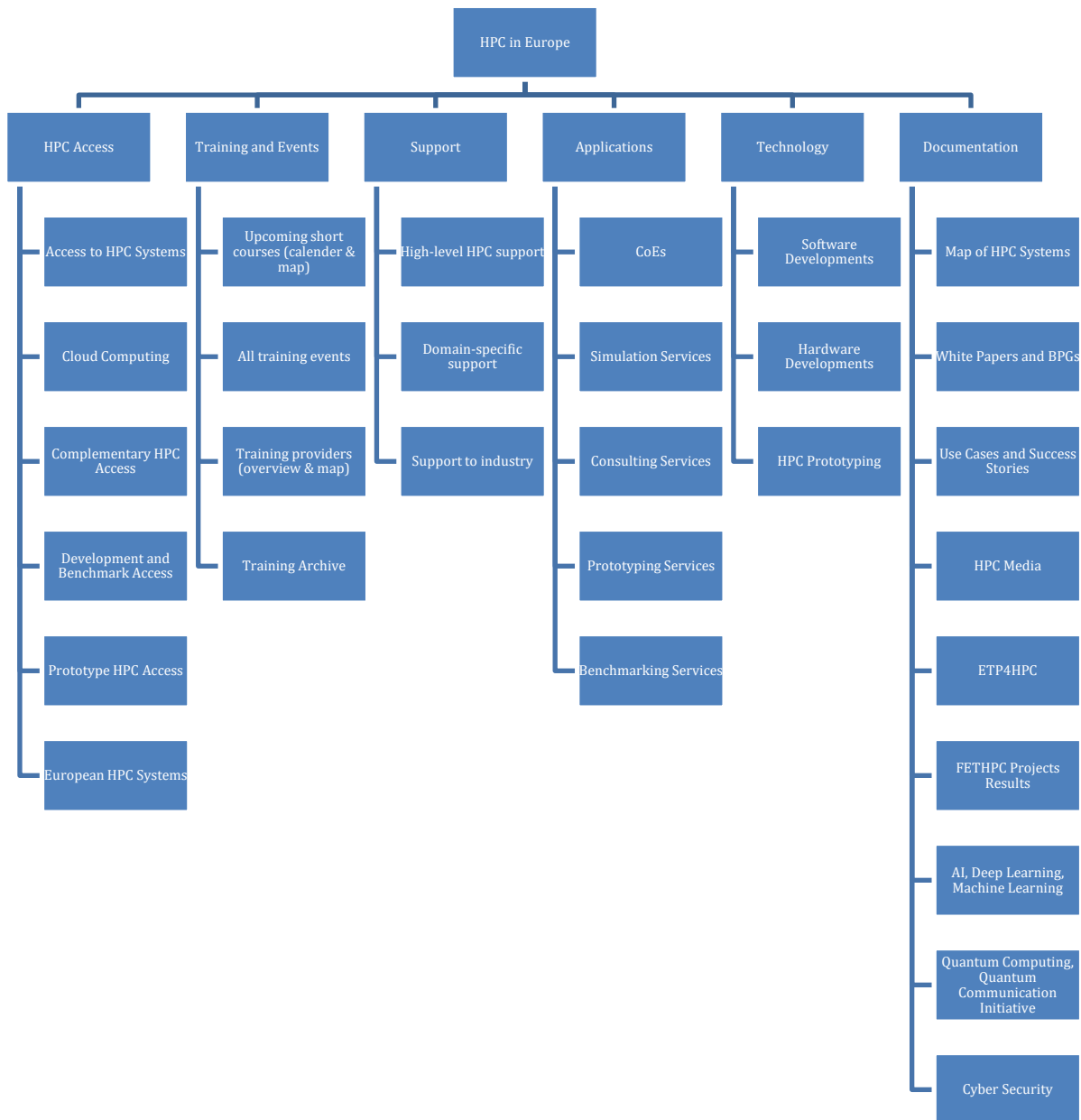
1) Basic Information: Name, links to own website and social media profiles, contact details
2) Competences*
3) Codes*
4) Events
5) Trainings**
6) Dissemination Material: Success Stories, Use Cases, White Papers, Best Practice Guides, Documents, Videos

To be developed in collaboration with WP2, and in accordance to feedback gathered via the questionnaire on this topic

*** To be developed in collaboration with WP3 and the aforementioned other projects as well as in accordance to feedback gathered via the questionnaire on this topic*
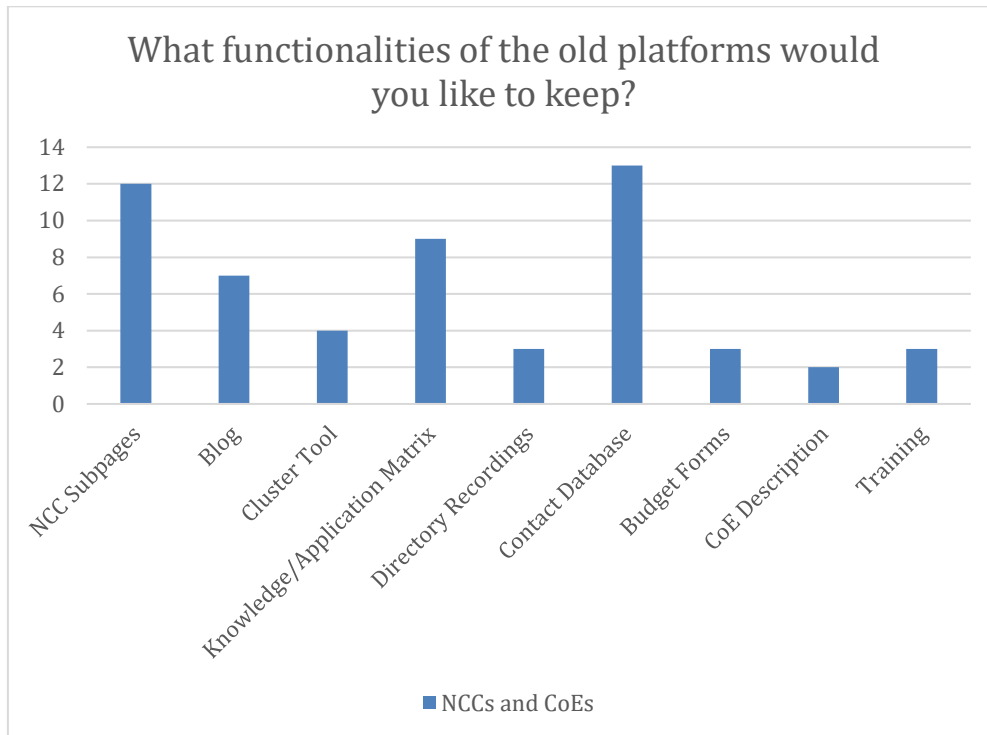
Furthermore, it is important to note that all content in the database should be tagged with keywords with the aim to enable search functionalities for the end users.

Now that the contents as a base are set, the next step is to define the functionalities and structure of the page. For this, the first step is to analyse the already existing menu structure on the HPC in Europe platform:

Figure 3: Current Menu Structure of HPC in Europe Portal

The menu structure already corresponds to the type of contents defined above in many points. In order to prioritize the different sections, the NCCs and CoEs were asked about functionalities they deemed useful on the old platforms as well as new functionalities which they would like to see on C2ISS:
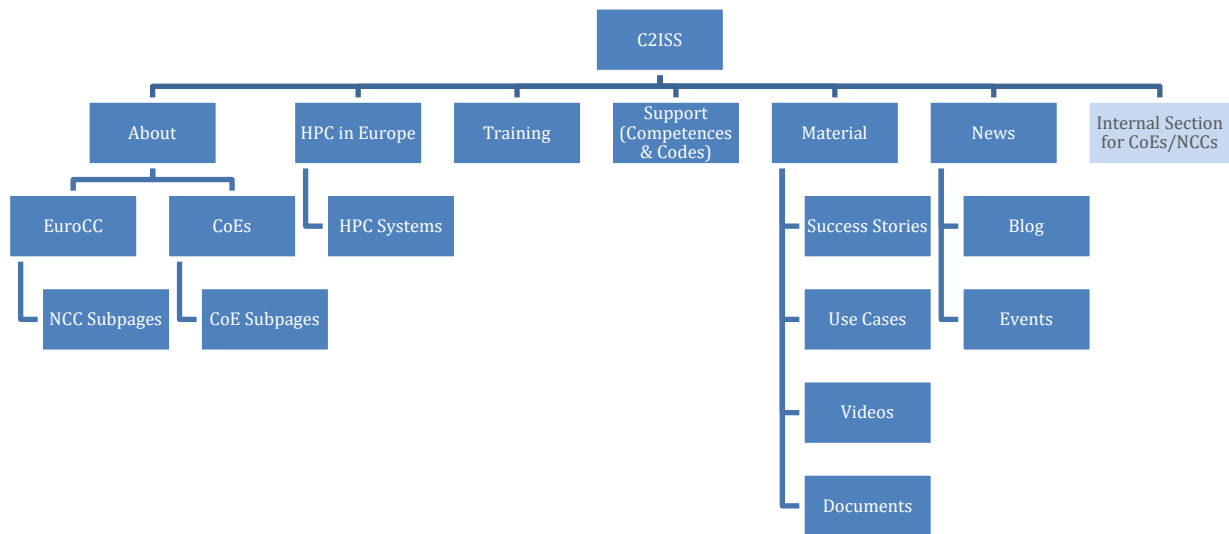
Figure 4: Features on old Platforms that should be kept

Furthermore, the NCCs and CoEs were asked which functionalities are missing on the existing platforms that they would like to see on the C2ISS. The results were:

- Visual map of competencies and training material
- When entering the portal, topics related with your country should be put first
- Regulations and guidance
- Expert database
- Overview of all HPC centres and machines in Europe, with information on accessibility to different target groups
- Explanation how everything is connected (projects)
- Social Media Feeds pulled to page
- Mechanisms for interactive interactions

Derived from the datasets defined, the requirements for functionalities and the feedbacks from the NCCs and CoEs, a first menu structure for the C2ISS was defined:

Figure 5: Initial Menu Structure of C2ISS

The 'About'-page will be the start page of the website. On this page, a map of all entities as well as information about the purpose of the pages is given. On the EuroCC and CoEs pages, more detailed information on the projects is shown. Each NCC and CoE will have their own subpage to present themselves. This section will also feature information about each new project or initiative that joins the platform.

C2ISS will contain a general introduction to HPC as well as an overview of use cases. The subpage HPC Systems will feature a map of EuroHPC JU and national HPC clusters, with information on accessibility and technical specifications.

The sections 'Training', 'Support' and 'Material' will display the contents of the NCC and CoE profiles, searchable for the users. The 'News'-section will feature a news blog and an event calendar.

Through their user profiles, NCCs and CoEs will have access to their own database which is processed in the maps and the sections 'Training', 'Support' and 'Material'. Furthermore, they will be able to edit content on their subpages and add articles to the blog. Also, there will be a section on the HPC systems (e.g. EU resources like LUMI or Vega, but also national systems) where they will be able to contribute as well.

This structure has been checked regarding technical feasibility in first discussions with web design agencies. Also, the graphic design of the platform will be re-worked to achieve a more modern look.

4.2 Risk Analysis

The working group has conducted a risk analysis for this concept:

Risk	Description	Possible Mitigation	Impact	Proba-bility
No uptake	The platform is not used by NCCs, CoEs or users	Strong Dissemination in the form of workshops, mails etc.	High	Low

No data input	The NCCs and CoEs do not provide data (not available or not willing to)	Consulting with NCCs/ CoEs who don't provide data	High	Mid
Low data quality	The data provided lacks quality or recentness	Structure of the data will ensure minimal quality standards	Medium	Medium
Communication Issues	Conflicting ideas for the platform	Iterative design process with all stakeholders	Medium	Medium
Drupal (Content Management System)	Drupal is an open source third party solution, thus a certain dependence exists.	Monitoring news about Drupal to be able to react early, if needed.	High	Very low

Table 2: Overview of risks identified.

These risks will be continuously monitored. Updates will be given in the next reports.

5. Conclusion & Next Steps

To summarise, this working group will build a central point of contact towards the EU-funded HPC+ landscape, based on the existing HPC in Europe portal, featuring various information types per entity. All is easily accessible through a common frontend. The next steps are:

1) Phase 1 of implementation (until M15):
   a. Get final feedbacks from the NCCs and CoEs for the concept
   b. Implement the concept on the HPC in Europe Portal (except the internal section for NCCs and CoEs), decide on final name
   c. Start the workflow with NCCs and CoEs
2) Phase 2 of implementation (after Phase 1, until end of project):
   a. Coordinate on the Training functionality with all stakeholders
   b. Implement the internal section and shut down previous platforms
   c. Invite other EU-funded projects and initiatives to join the platform

This document will be updated in the deliverables D5.4 and D5.6. The upcoming deliverables are shown in Table 3:

Number	Title	Due	Status
D5.2	Design strategy of the C2ISS and the evolved EuroCC Access Portal	M9	Submitted
D5.4	Explanatory report on initial launch of the C2ISS and the evolved EuroCC Access Portal	M15	To be submitted
D5.6	Explanatory report in the final version of the C2ISS and the evolved EuroCC Access Portal	M30	To be submitted

Table 3: Overview C2ISS Deliverables.

The overview of relevant milestones can be found in Table 4.

Number	Title	Due	Status
MS3	Design Strategy for the evolved EuroCC Access portal and the C2ISS are ready	M9	Completed
MS5	Evolved EuroCC Access portal is launched	M15	To come
MS7	Final implementation of the evolved EuroCC Access portal and the C2ISS	M30	To come

Table 4: Overview CASTIEL WP5 Milestones.

Lastly, as an outlook, first discussions about the sustainability of the C2ISS have started within the project. Several aspects, such as hosting and maintenance, have to be considered. This discussion will be ongoing and first results will be presented in the next reports.

6. References

i https://www.eurocc-access.eu/

ii https://www.hpccoe.eu/

iii https://hpc-portal.eu/