SPECTRUM

D1.2 Dissemination, Communications and Exploitation Plan

Status: UNDER EC REVIEW

Dissemination Level: Public

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Abstract	
Key Words	Dissemination, communication, exploitation, high energy physics, radio astronomy, key exploitable results
The document describes how project results and branding will be communicated, how the engagement with the targeted audiences will be organised, and a clear dissemination and exploitation plan to maximise the project benefits.	

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Terminology / Acronyms	
Terminology / Acronym	**Definition**
AI	Artificial Intelligence
AMB	Activity Management Board
CoP	Community of Practice
CM	Communications Manager
DB	Database
DoA	Description of Action
DocDB	EGI Document Database
DOI	Digital Object Identifier
EAB	External Advisory Board
EM	Exploitation Manager
GA	General Assembly
GDPR	General Data Protection Regulation
HEP	High Energy Physics
HTC	High-Throughput Computing
HPC	High-Performance Computing
KER	Key Exploitable Result
KPI	Key Performance Indicator
MS	Milestone
PD	Project Director
PM	Project Manager
PMO	Project Management Office
PO	Project Objective
QRM	Quality and Risk Manager
RA	Radio Astronomy
RI	Research Infrastructure

SRIDA	Strategic Research, Innovation and Deployment Agenda
SSO	Single Sign On
WG	Working Group
WP	Work Package
WPL	Work Package Leader

Terminology / Definitions	
Terminology/ Definitions	**Description**
(Project) Result	Any tangible or intangible output of the project, such as data, knowledge or information, that is generated in the project, whatever its form or nature, whether or not it can be protected, as well as any rights attached to it, including intellectual property rights.
Key Exploitable Result	(KER) The most relevant results of the project. A KER can be an aggregate of several project results, however a project result can also be linked to several KERs
Communication	Communication activities aim to raise awareness, share knowledge, and promote the impact of the project.
Dissemination	The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium
Exploitation	The use of results: in further research activities other than those covered by the action concerned; in developing/creating/marketing a product/process, in creating and providing a service, in standardisation activities
Catalogue of KERs	List of all public SPECTRUM project key exploitable results and related information.
Results Register	List of all results with the internal information for the Continuous Reporting and Results Ownership List
Exploitation Manager	The person that is responsible for curating information related to project results and KERs
KER Contact Person	Contact person from the WP/Task where the KER is outputted. With the support of the exploitation manager, they align with all necessary persons in the WP/Tasks contributing to the KER to ensure all the results & joint results encompassing the KER have a proper IPR, exploitation and dissemination plan
Result Contact Person	Contact person from the Institution owning the result

Terminology / Definitions	
Communication Manager	Contact person from the Task dealing with Communication and Dissemination.

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Executive summary

This first Communication, Dissemination and Exploitation plan (D1.2) outlines the specific dissemination, communication and exploitation measures that will be conducted by the project among the project stakeholders and the concrete actions and activities envisioned by the project to effectively and efficiently ensure maximum impact, during and after the project ends.

It includes an overview of the objectives of the Communication, Dissemination and Exploitation Tasks (1.3 and 2.3) in relation with the SPECTRUM main expected outcomes. To this end, a stakeholder analysis is presented, against which a set of communication and dissemination is mapped.

The document gives an overview of the available communication channels and tools that will be used by the project, including the website and social media, branding, planned publications and events, and potential collaborations. A set of KPIs will be proposed that will allow monitoring of the impact and success of the plan.

An update of the exploitation plan, as originally presented in the project proposal, is included. Finally, we'll take a look at the practical work plan outlining the activities and partner responsibilities during M5-18 of the project.

1. Introduction

1.1. Purpose and scope of the document

In the context of Work Packages 1 and 2, tasks 1.3 and 2.3 focus on Communication, Dissemination, Stakeholder Engagement, and Exploitation management activities. The initial Deliverable outlines a comprehensive plan for these tasks, aligning them with target audiences and stakeholders, establishing a timeline where feasible, and identifying key success indicators.

The plan detailed in this Deliverable aims to effectively communicate project actions and outcomes to primary stakeholders. It emphasises broad dissemination of project results to enhance accessibility and encourage reuse, thereby promoting project success. Additionally, it highlights strategies to engage stakeholders proactively and outlines mechanisms for capturing, monitoring, and leveraging Key Exploitable Results (KER).

This plan is dynamic and subject to updates throughout the project lifespan, with adjustments made based on project progress. Drawing from the project proposal and insights gathered during Months 1-6, this plan collaborates closely with T1.2 and T2.2 to identify and categorise prospective stakeholder groups in alignment with KERs and other project activities. Tailored outreach initiatives and engagement approaches will be devised for each stakeholder group, considering their specific needs, work package activities, and expected levels of engagement.

This plan will receive an update in the interim Dissemination, Communication and Exploitation report in M15 (D1.5).

1.2. Project overview

The project's overall objective, to 'Deliver a Strategic Research, Innovation and Deployment Agenda (SRIDA) which defines the vision, overall goals, main technical and non-technical priorities, investment areas and a research, innovation and deployment roadmap for data-intensive science and infrastructures', is addressed through 5 specific Project Objectives (POs) and 6 related Key Exploitable Results (KERs).

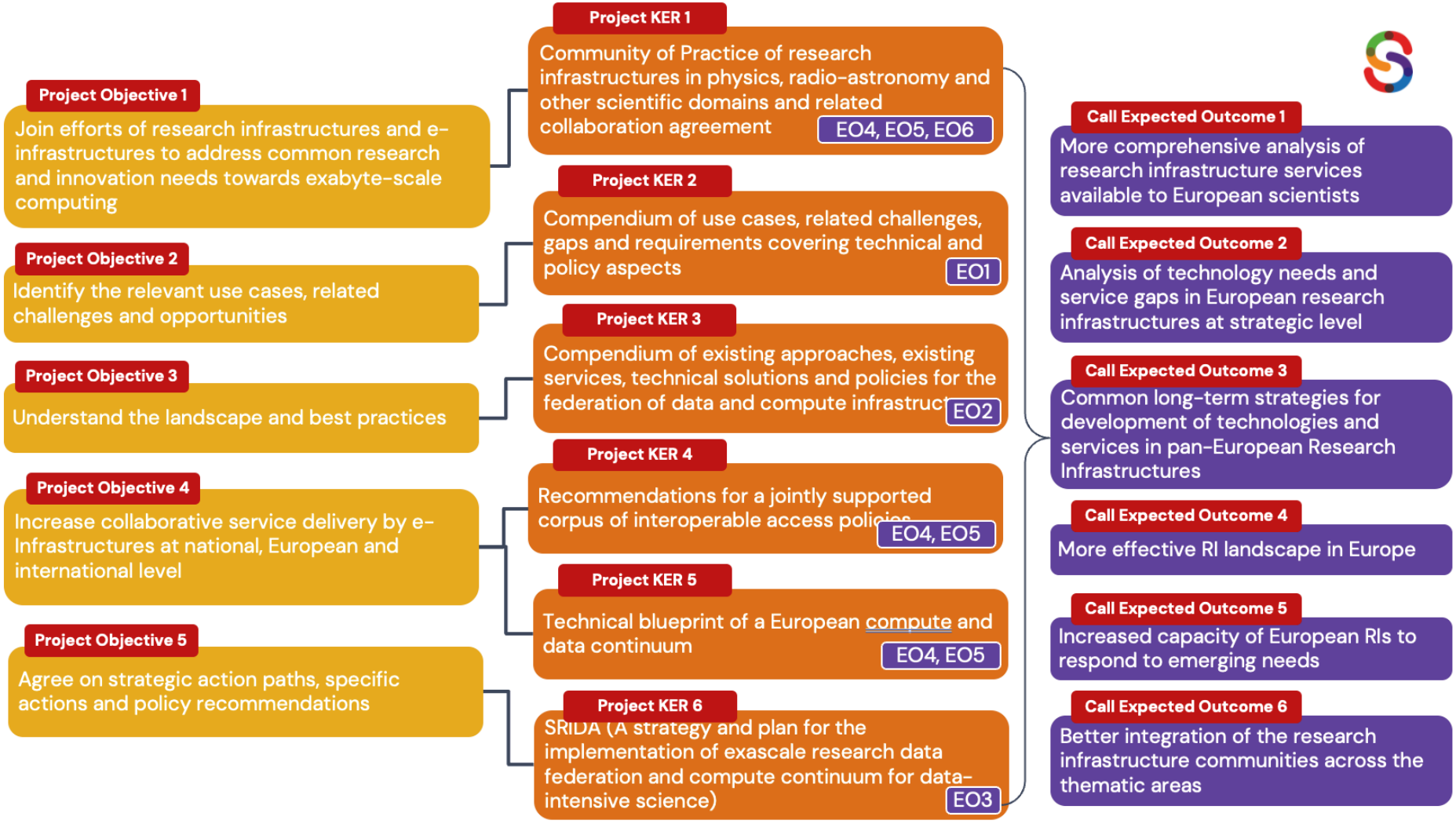


Figure 1: Project Objectives - KERs - Call Expected Outcomes

1.2.1. Project Objectives (POs) and related Key Exploitable Results (KERs)

Table 1: Project Objectives and Key Exploitable Results

Project Objective	Description	Related KER
PO1: Join efforts of research infrastructures and e-infrastructures to address common research and innovation needs towards exabyte-scale computing	Bring together the computing infrastructure efforts across the EU to support the next generation of RA and HEP experiments, as well as other relevant scientific domains. By collaborating on shared challenges, the project aims to eliminate the fragmentation caused by independent work streams and promote a more integrated approach to Exabyte-scale computing.	**KER1:** Community of Practice of research infrastructures in HEP, RA and other relevant scientific domains
PO2: Identify the relevant use cases, related challenges and opportunities	Many initiatives have worked to define and deploy federated systems for HPC and/or scientific data management in the last 25 years. Success was achieved for specific technology nodes and/or scientific user communities, yet all attempts to develop a common system spanning multiple scientific communities and resource providers, did not result in sustainable solutions. SPECTRUM is committed to engage the scientific and technical communities to identify general use cases across domains and related challenges, and to develop opportunities for common solutions.	**KER2:** Compendium of use cases, related challenges, gaps and requirements covering technical and policy aspects
PO3: Understand the landscape and best practices	A landscape analysis of existing infrastructure and services is essential to help identify areas for improvement, and to define effective strategies for their implementation.	**KER3:** Compendium of existing approaches, existing services, technical solutions and policies to novel data and compute federation architecture
PO4: Increase collaborative service delivery by e-Infrastructures at national, European and international level	The various HPC and data centres across Europe all implement their own policies and mechanisms for authentication and authorization of users, for submission of workflows and tasks to compute resources, and for identification of and access to data. Such policies and mechanisms guarantee local security and safety requirements, interact with effective system management and allow efficient system operation. For the sake of pan-European RIs, it will be imperative to define higher-level interoperable access policies and facilitate uptake.	**KER4:** Recommendations for a jointly supported corpus of interoperable access policies **KER5:** Technical Blueprint of a European compute and data continuum
PO5: Agree on strategic action paths, specific actions and policy recommendations	The objective PO5 ensures that the identified use cases, challenges, service gaps, and Technical Blueprint for the compute and data continuum, will translate into an agreed long-term strategy with identified actions and policy recommendations for	**KER6:** SRIDA (A strategy and plan for the implementation of Exascale research data federation and compute

	all relevant stakeholders.	continuum for data-intensive science)

1.2.2. SPECTRUM Expected Outcomes and Impacts

1.2.2.1. Outcomes

- Establishment of **SPECTRUM Community of Practice** (SPECTRUMCoP) enables a better integration of the RI communities across RA and HEP.
- **Emerging use cases** in data-intensive science from the RA and HEP communities drive future infrastructure development
- **Recommendations** for interoperability access policies simplify access to the compute and data continuum
- Technical **Blueprint** aligns technical innovation efforts across communities and infrastructures
- The **SRIDA** is adopted by policy makers, funders and research managers, helping them to shape future policy and funding

1.2.2.2. Expected Impacts

- **Scientific**:
  - Next generation of scientific discovery powered by high-end computing and data infrastructure;
  - Consolidation of digital services and infrastructure needs for data-intensive science
- **Economic**:
  - New innovations arising from targeted R&I funding for data-intensive science;
  - Increased investment efficiency thanks to agreed joint strategies leading to the consolidation of European advanced computing sector
- **Societal**:
  - Mitigating the carbon footprint of the HPC systems thanks to agreed joint green computing policies associated to investment plans

1.3. Objectives of the Communication, Dissemination and Exploitation activities

Below the specific Communication, Dissemination and Exploitation activities are summarised, linking them to the expected outcomes and impacts as listed in section 1.2.2.

1.3.1. Communication Activities

- **Creation of a visual identity and branding**: Create a recognisable style to improve brand recognition
- **Ensuring online presence**: all online channels, including website and social media, have a clear and logical information structure and unambiguous pathway for visitors to find news and updates, project details and event information.
- **Provide information about project progress and outputs:** Stakeholders are informed on how to access and use project outputs - they are openly available, easily accessible and can be reused where needed

- **Raising awareness**: set the scene through enhanced brand recognition to ensure maximum uptake of final project results and outputs.

1.3.2. Dissemination Activities

- **Ensure awareness** about SPECTRUM and its findings through a diverse array of channels (including website, social media, document repositories, and event presence). Enhance the dissemination of project information by forming partnerships with relevant international organisations and networks to broaden the project's reach.
- **Input & Collaboration**: Tailor dissemination efforts to maximise the input and collaboration opportunities for the various stakeholders
- **Uptake & Implementation:** Tailor dissemination efforts to maximise uptake of project results and outputs, among the project key stakeholders and beyond.

1.3.3. Exploitation Activities

- **Identification of project results and KERs**: Liaise with WPL and project partners to identify project outputs and key exploitable results.
- **IP Management:** Monitor for each of project results Ownership status, IP Rights and Access (e.g., License or Copyright attribution)
- **Manages exploitation** aspects to ensure the uptake of Project outputs by the relevant identified stakeholders

2. Stakeholder analysis

2.1. Stakeholders identification and level of interaction

The project divides its main stakeholders into three different Target Groups (TGs), each with their own approach. Three secondary TGs are briefly discussed in section 2.4

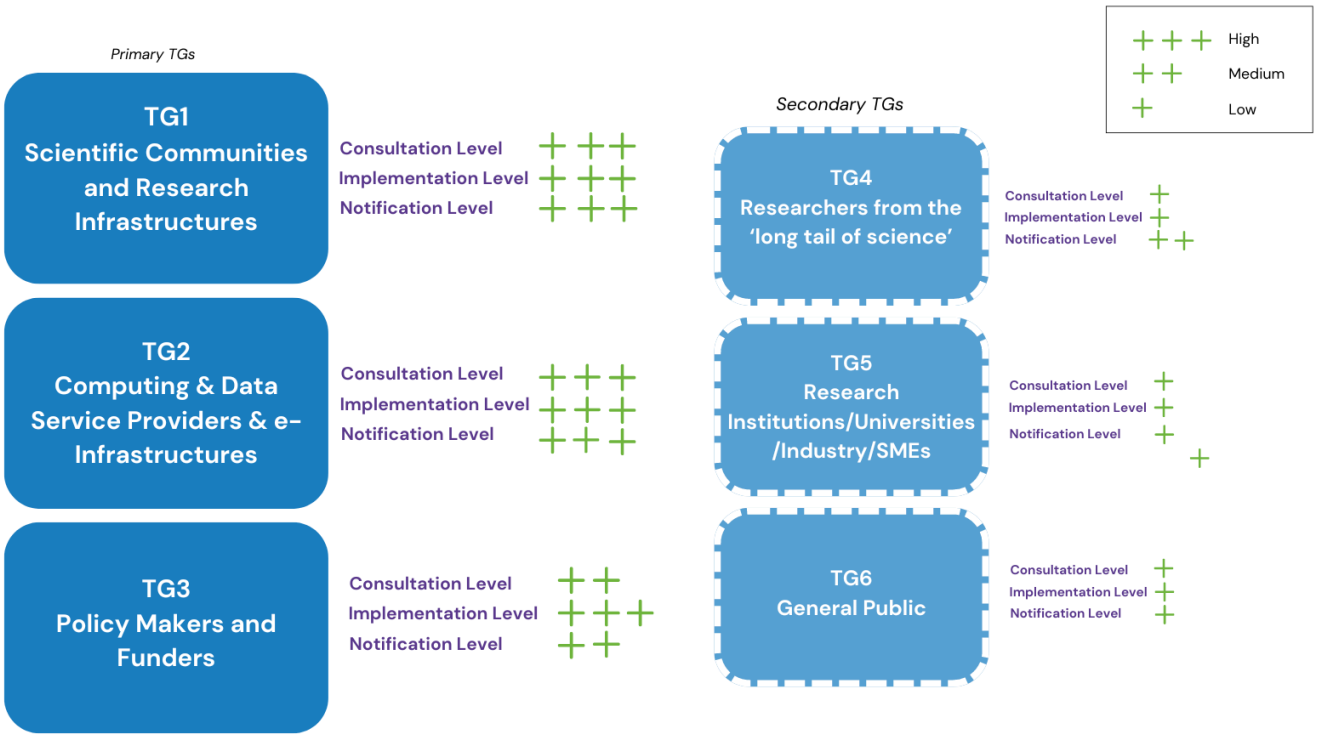


Figure 2: Target Groups Interaction Level

Three forms of interaction with these Target Groups will be considered:

- **Consultation**: actively seeking the opinions of interested and affected stakeholders. It is a two-way flow of information, which may occur at any stage of the project development. It can be a one-stage process or a continued dialogue.
- **Implementation**: leads to uptake and implementation of the project outputs
- **Notification**: communication of information to stakeholders, so they are aware of the project. This can lead to engagement, but can also remain limited to informing about the project as future users of project outcomes (directly or indirectly)

Each interaction form comes with several levels of engagement:

- **High**: active engagement of all identified stakeholders in all stages of the project (including post-project follow-up) is required to ensure the project success
- **Medium**: active engagement in some stages of the project (including post-project follow-up) is desirable
- **Low**: engagement is mainly expected to take place in the late stages of the project

Despite the proposed classifications and approaches, not all stakeholder groups are homogenous: they consist of different, sometimes overlapping profiles, each with their own engagement level, and communication and dissemination approach:

- **Decision makers and leadership**: High engagement level required at consultation and implementation level

- **Technical profiles such as IT staff:** Medium engagement level expected at consultation level, high engagement level at implementation level
- **Administrative staff:** Medium engagement expected at consultation and implementation level
- **Researchers**: medium engagement level at consultation and notification level

2.2. Stakeholder management and engagement activities

The project has assembled a list of almost 30 specific interest groups and projects that are linked to the different target groups. For each of them the specific engagement activities have been identified. See Annex 1 for the full overview of key stakeholders initiatives where targeted engagement activities have been initiated.

Engagement activities

- Promote SPECTRUM project among interest groups and members.
- Invite interest groups and project members to become SPECTRUM CoP Members
- Gather input from the Communities to feed the different project outcomes (e.g. use cases, landscape analysis, access policies, gaps, etc)
- Organise joint dissemination activities and workshops
- Share SPECTRUM outcomes
- Discuss about cross-project organisation best practices

This will happen via direct contact to their key members, at internal and external meetings at events or by providing direct input to SPECTRUM Project. Some specific key contact persons have been proposed to become External Advisory Board members of SPECTRUM

2.3. Target Groups

2.3.1. Target Group 1 (TG1): Scientific Communities and Research Infrastructures

In High Energy Physics, Radio Astronomy and adjacent domains (such as HPC). This group includes SPECTRUM project partners, their ecosystems. They need to be **aware** of the project, and are expected to **take up** and **implement** project outputs. Representatives actively **engage** with the project via membership of SPECTRUMCoP and its Working Groups.

Consultation level	Implementation level	Notification level
High	**High**	**High**

Targeted as project partners, SPECTRUMCoP members
Directly targeted in all phases of the project through social media and events

Table 2: Examples of TG1 Stakeholders:

Stakeholder	Short Description
JENA	JENA (Joint ECFA, NuPECC and APPEC) is a joint committee between HEP, Nuclear and Astroparticle physics.
WLCG	The Worldwide LHC Computing Grid (WLCG) project handles Computing for the LHC experiments primarily, but has as observers DuNE, Virgo, Belle-2 and SKA.
RadioNet	RadioNet – the European Radio Astronomy Consortium – consists of 22 key radio astronomy institutes and infrastructures from Europe and beyond.

SKAO	The SKA Observatory is an intergovernmental international radio telescope project expected to come into operations by the end of the decade
SKA Regional Centers	Distributed network to find, assess, manipulate and visualise SKA Data products to make them available to a global user community on shared computational resources.
LOFAR ERIC (ASTRON)	LOFAR is the largest and most sensitive radio telescope operating at low radio frequencies.
JIV-ERIC	JIVE's mission is to promote and implement the use of Very Long Baseline Interferometry (VLBI) and other radio astronomical techniques.
European ALMA Regional Center	The European ALMA Regional Centre (ARC) provides the interface between the ALMA project ((Atacama Large Millimeter/submillimeter Array)and the European science community.
HEP Software Foundation	The HEP Software Foundation facilitates cooperation and common efforts in High Energy Physics software and computing internationally.
IRAM	IRAM is an international research institute and Europe's leading center for radio astronomy at millimeter wavelengths.
Belle-2	Belle II has been designed to make precise measurements of weak interaction parameters, study exotic hadrons, and search for new phenomena beyond the Standard Model of particle physics. Belle II is an international collaboration of 125 institutions
ESCAPE	The European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures (ESCAPE) aiming to address the Open Science challenges shared by ESFRI facilities (SKA, CTA, KM3Net, EST, ELT, HL-LHC, FAIR) as well as other pan-European research infrastructures (CERN, ESO, JIVE) in astronomy and particle physics.
Punch4NFDI	PUNCH4NFDI is the NFDI consortium of particle, astro-, astroparticle, hadron and nuclear physics, representing about 9.000 scientists with a Ph.D. in Germany, from universities, the Max Planck society, the Leibniz Association, and the Helmholtz Association.

2.3.2. Target Group 2 (TG2): Computing & Data Service Providers & e-Infrastructures

Consultation level	Implementation level	Notification level
High	**High**	**High**

Existing Data, HPC, HTC, Cloud, Quantum and other Compute service providers, infrastructures and facilities at national and EU level. This group includes SPECTRUM project partners. They need to be **aware** of the project, and are expected to **take up** and **implement** project outputs. Representatives actively **engage** with the project via membership of SPECTRUMCoP and its Working Groups.

Targeted as project partners, SPECTRUMCoP members
Directly targeted in all phases of the project through social media and events

Table 3: Examples of TG2 Stakeholders:

Stakeholder	Short Description
WLCG	The Worldwide LHC Computing Grid (WLCG) project handles Computing for the LHC experiments primarily, but has as observers DuNE, Virgo, Belle-2 and SKA.
HEP Software Foundation	The HEP Software Foundation facilitates cooperation and common efforts in High Energy Physics software and computing internationally.
EVERSE	The EVERSE project aims to create a framework for research software and code excellence.
OSCARS	OSCARS brings together world-class European Research Infrastructures (RIs) in the ESFRI roadmap and beyond to foster the uptake of Open Science in Europe including those in Astronomy, Nuclear and Particle Physics domains.
EuroHPC Hosting Sites	EuroHPC JU has procured nine supercomputers, located across Europe.
ETP4HPC	ETP4HPC – the European Technology Platform (ETP) for High-Performance Computing (HPC) - is a private, industry-led and non-profit association. Its main objective is to guide the development of the European advanced computing ecosystem
HIPEAC	HiPEAC (High Performance, Edge And Cloud computing) is the premier focal point for networking, dissemination, training, and collaboration activities in Europe for researchers, industry, and policy related to advanced computing systems.
EuroCC / Castiel	EuroCC aims to build a European network of 33 national HPC competence centres to bridge the existing HPC skills gaps while promoting cooperation across Europe.
PRACE	PRACE (Partnership for Advanced Computing in Europe) provides access to HPC user community
EuroHyPerCon	The main scope of the EuroHyPerCon project is to identify and analyse the connectivity requirements of European and national High Performance Computing (HPC) systems and data centres in Europe, and subsequently specify a future-proof connectivity service, along with its implementation roadmap.
interTwin	interTwin aims at designing and building a prototype of an interdisciplinary Digital Twin Engine (DTE), based on a co-designed Blueprint Architecture. 2 of main use case development areas are Radio Astronomy and High Energy Physics
InPex	The International Post-Exascale Project (InPEx) brings together researchers, engineers, companies, funding bodies and policy organisations to contribute to the implementation of an international, shared, high-quality computing environment based on the principles and practices of co-design

2.3.3. Target Group 3 (TG3): Policy Makers and Funders

Consultation level	Implementation level	Notification level
Medium	**Medium**	**Medium**

This group includes, but is not limited to, stakeholders such as the European Commission, EuroHPC, EOSC, National Authorities and ESFRIs. They need to be **aware** of the project, and are one of the target groups of the SPECTRUM SRIDA. They need to be closely **engaged** with the project to provide input and align policies, and to **take up** its outputs.

Directly targeted in phase 2 of the project through social media and events

Table 4: Examples of TG3 Stakeholders:

Stakeholder	Short Description
EOSC	The ambition of the European Open Science Cloud (EOSC) is to provide European researchers, innovators, companies and citizens with a federated and open multi-disciplinary environment where they can publish, find and reuse data, tools and services for research, innovation and educational purposes.
EVERSE	The EVERSE project aims to create a framework for research software and code excellence.
OSCARS	OSCARS brings together world-class European Research Infrastructures (RIs) in the ESFRI roadmap and beyond to foster the uptake of Open Science in Europe including those in Astronomy, Nuclear and Particle Physics domains.
EuroHPC	EuroHPC JU is the joint initiative between the EU, European countries and private partners to develop a World Class Supercomputing Ecosystem in Europe.

2.4. Other Target Groups

In the original project proposal three additional target groups were identified as being the potential recipient of project Communication, Dissemination and Exploitation actions: Researchers from the 'long tail of science', research Institutions/Universities/Industry/SMEs, and the general public. As these three groups score low on consultation, implementation and notification level, they are not discussed in detail in this plan. However, (post-project) outreach towards these groups will be part of the mid- and final project Communication, Dissemination and Exploitation deliverables.

Moreover, a new group has been identified to capture sister EU-funded projects funded within the same call INFRA-DEV-01-05. They represent other Research Infrastructures that are not represented at SPECTRUM project and as such they would fit very transversally into TG1 and TG2, but they are very relevant to share project experiences and assess potential collaborations.

Table 5: Examples of Other Target Groups Stakeholders:

ENVRINNOV project	The EU-funded ENVRINNOV project aims to co-design, test, and validate a common innovation roadmap for Environmental and Earth System Research Infrastructures.
FHERITALE project	The EU-funded FHERITALE project aims to transform how European research infrastructures address the difficulties posed by synthetic materials in Food, Health and Environmental Research Infrastructures. To that end, it will systematically address the development, provision, and integration of services across the European research infrastructures landscape, enabling the scientific community to research the effects of these materials..
AARC TREE project	The AARC Technical Revision to Enhance Effectiveness (AARC TREE) project takes the successful and globally recognised "Authentication and Authorisation for Research Collaboration" (AARC) model and its flagship outcome, the AARC Blueprint Architecture (BPA), as the basis to drive the next phase of integration for research infrastructures: expand federated access management to integrate user-centring technologies, expand access to federated data and services (authorisation), consolidating existing capacities and avoiding fragmentation and unnecessary duplication.

2.4.1. Target Group 4 (TG4) Researchers from the 'long tail of science' and Target Group 5 (TG5) Research Institutions/Universities/Industry/SMEs

Consultation level	Implementation level	Notification level
Low	**Low**	**Medium**

Individual researchers: as part of scientific communities and research infrastructures they engage with SPECTRUM, in particular for the use cases and SPECTRUMCoP. They are expected to **make use** of the final outputs.

Research Institutions, Universities, Industry, and SMEs are the organisations employing the researchers within scientific communities, backing the computing & data service providers. They are considered as interested parties to l**earn about** the results of the project as future technology/service adopters, vendors, or customers.

Directly targeted in phase 2 of the project through social media and events

2.4.2. Target Group (TG6) General Public

The general public (in particular citizen scientists) **have an interest** in the very high-level directions and evolution of data-intensive science and the future societal and economical Impacts.

Consultation level	Implementation level	Notification level
Low	**Low**	**Low**

No specific measures are foreseen aimed at the general public.

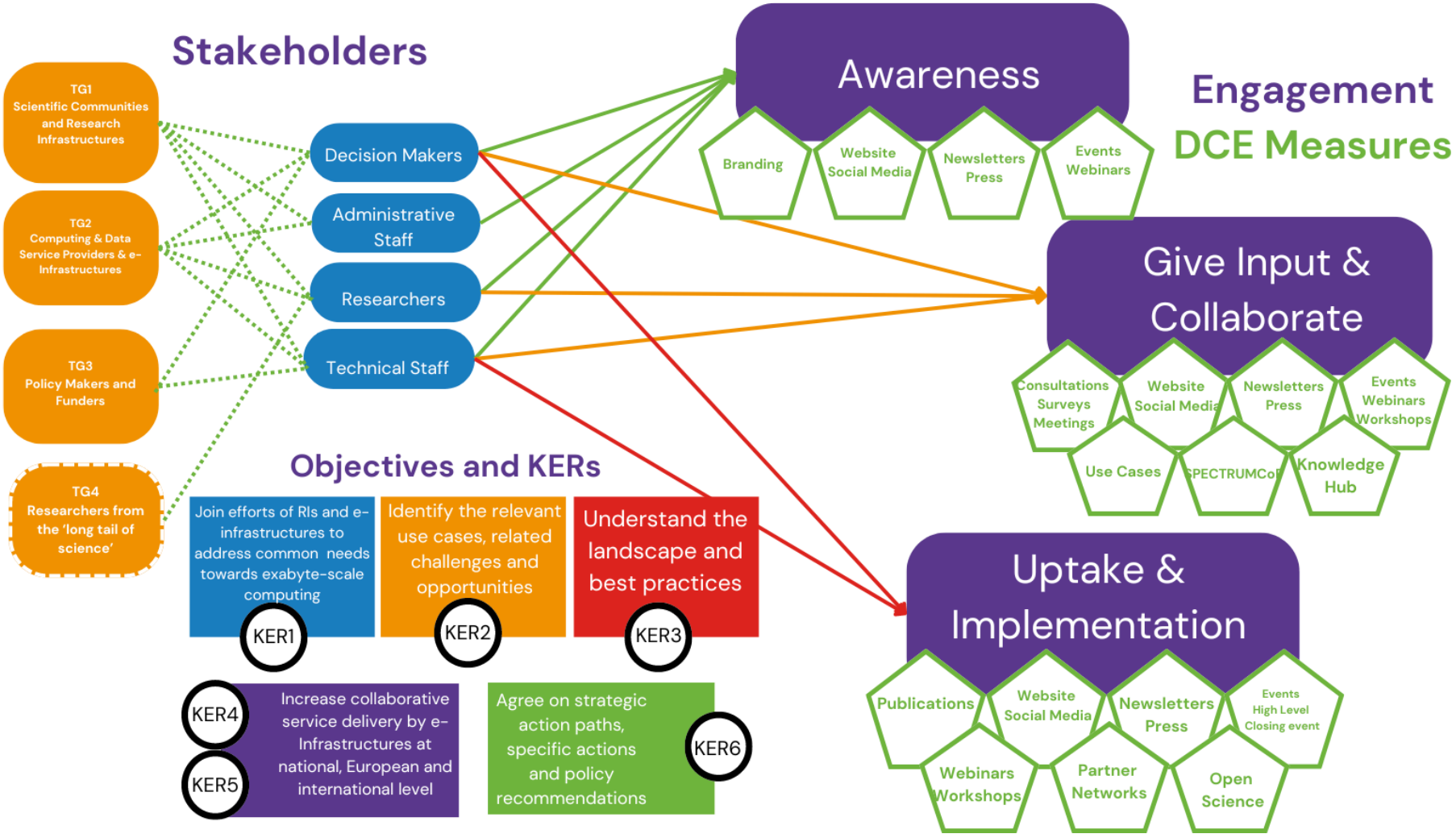


Figure 3: Engagement types per stakeholder, Communication, Dissemination and Exploitation measures, their associated goals and the expected outcomes of the project

3. Dissemination Plan

To support the exploitation and dissemination of the project results, this part specifies an initial set of strategic and targeted activities and tools to inform the project target groups (TGs) about the project activities and its findings. These activities will be regularly monitored and reviewed, to assess the quality of the message, appropriateness of the channels and their visibility amongst the foreseen target groups.

An updated plan D1.5 will be delivered in M15, reflecting changes and new developments that might occur in the first reporting half of the project. This update will also include any changes to be made when communication targets are not met (changing the material, channel and/or message). Plans for follow up communication activities after the project ending will be included in these deliverables as well, to be made concrete in the final Communications, Dissemination and Exploitation report (D2.3) due at the end of the project (M30).

SPECTRUM relies heavily on the ambassadorship of the partners, who are experts in the fields of RA and HEP, who will be encouraged throughout the project to disseminate the project outputs amongst their peers, who are our stakeholders.

Therefore, a number of measures are taken at project level to ensure they have solid ground to stand on. A first measure is to have quickly in place the website, including partner profiles, and social media. In a second phase, a 'personal' linking of project partners to the project will be intensified for example by providing business cards and profiles on the website.

Initial Resources (M1-6):

- **Project Website**: Serves as the central hub for project information, user stories, and access to results.
- **LinkedIn account:** Regularly updated channels to promote project updates and engage audiences.
- Communication Toolkit on Confluence & Branding Kit (only accessible for project partners): A collection of resources to guide project partners on effective communication strategies.
- Branding guide (see Annex 5): Provides guidance on how to correctly use the resources in the Branding kit to ensure consistency.
- Presentation and Document Templates: Provides a unified format for project presentations and documents.
- Dissemination activity tracking (Google form and Confluence): Allows tracking of all dissemination activities

3.1. Communication Tools

3.1.1. Project Branding

By the end of M02, the project branding is complete. The communication toolkit contains details about the project colour scheme, font, logos and information about EC acknowledgement. All this information is bundled in a brand guide (see Annex 5).

Additionally, a separate branding for SPECTRUMCoP has been created - in line with the main project, but with a variation on the logo.

Figure 4: SPECTRUM CoP Logo

3.1.1.1. Designs

The project will provide basic designs for a flyer, poster, moo card, roll up - all in editable formats. In agreement with the partners and in alignment of the specific purpose of the design, changes and edits can be made in the designs available in the toolkit, but partners can also edit and reuse the design themselves as they are all available in an editable format.

The toolkit also contains several QR codes for referral to the website and newsletter set up, a set of zoom backgrounds, the official links to social media accounts and the project hashtag. There are also links to generic language about the project such as a press release, blurb, and a generic abstract (all to be adapted according to the partners' needs).

3.1.1.2. Templates

The communication toolkit contains links to a slide deck, including some generic slides with project information and graphics that can be reused. Project partners can make their own copy and adapt it for their project presentations. There are various design options available to adapt the slide deck according to the presenters' needs.

A document template is available in docx format, as well as a template for deliverables.

3.1.1.3. Materials and hand-outs

As of M6, the project has created the following materials: flyer, clip, notebook (gadget) and a sticker (see annex 3).

3.1.2. Channels

3.1.2.1. Project website

A project website, www.spectrumproject.eu has been launched at the end of M01.
With more than 1000 visits and more than 2000 page views, the website is performing as expected given its limited number of pages content.

The project plans to produce more 'news' items (by T1.3 and by partners) to increase traffic.

PAGE URLS	UNIQUE PAGEVIEWS
/index	+707
spectrumcop	+409
article	+121
partners	+106
project-structure	+79
PAGE TITLES	**UNIQUE PAGEVIEWS**
Spectrum project - Home	+703
Spectrum project - SPECTRUMCoP	+424
Spectrum project - Partners	+106
SPECTRUM kicks off! - Spectrum project	+99
Spectrum project - Project Structure	+80

Figure 5: Website visits since the start (February 6 2024)

3.1.2.2. Social Media

The primary social media channel for SPECTRUM is LinkedIn: https://www.linkedin.com/company/spectrum-project-eu

The project has chosen not to go forward with an account on X given the uncertain status of the network in general. The project is keeping an eye on other potential channels that could be useful (e.g. Mastodon), but for now no needs have been identified.

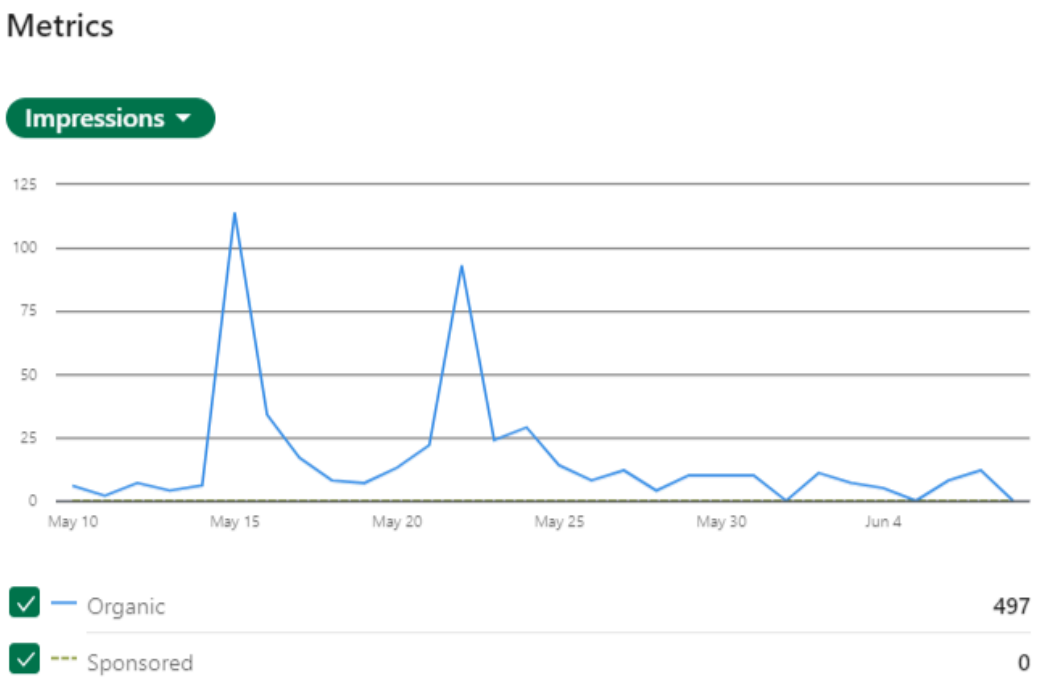


Figure 6: LinkedIn Impressions May 10- June 10 2024

SPECTRUM will have a playlist on the EGI YouTube channel. This will ensure a default audience of the subscribers to the EGI YouTube channel (ca. 250). If the need is expressed to set up a separate channel, this can be done quickly.

3.1.2.3. Press

A Press Release has been released among the partners at the start of the project (see annex 2)

There will be a public press release, which also serves as a communication package for partners, presenting each of the major project outcomes: SPECTRUMCoP Survey (M6), Technical Blueprint and SRIDA (M30).

3.1.2.4. Newsletters & Mailing Lists

Mailing list

At the very start of the project, a newsletter subscription page has been set up in order to capture early interest: https://www.subscribepage.com/spectrumproject . In the first phase of the project, this mailing list will serve as a way to collect addresses of interested parties (for example to join the SPECTRUMCoP). Once the project starts producing outputs and increasing its event presence, a newsletter will be sent out regularly to the subscribers of this mailing list. Next to this, SPECTRUMCoP is running its own mailing list which is already (run by WP3/WP4)

Internal newsletter

A regular digest of internal project updates will be sent out by WP1. The information is collected via, and permanently available on, Confluence[1].

[1] Restricted to the SPECTRUM consortium members.

3.2. Dissemination Tools

3.2.1. Events

All outreach activities need to be reported according to the following procedure: events are signalled during WP- and AMB-meetings, and further discussed during PMO if needed. All partners are encouraged to share their planned events in a dedicated table on Confluence. Reporting on past events will eventually also be streamlined via Confluence. To support the representation of SPECTRUM, T1.3 creates visual materials to support event presence (annex 3).

3.2.2. Workshops & Webinars

The project has not organised any public events yet. The first public event will take place during EGI2024, where the project is hosting the session Roadmapping for high energy physics and radio astronomy.

3.2.3. Kick-offs and Flagship Events, internal project meetings

A first in-person project meeting was the kick off, organised in Amsterdam on January 30th 2024. A first virtual all-hands meeting took place on June 11, 2024. A second in person all-hands meeting will take place during EGI2024 on September 30th, 2024.

In 2025, at least one virtual and one physical all-hands meeting will be organised (dates and locations TBD)

The public project end meeting will take place in June 2026: this is intended to be a stand-alone and high profile event attracting the stakeholders who need to be aware of the outcomes of the project and are expected to implement them.

3.2.4. Scientific Conferences, Industry, and Policy Events

During the first half of the project, SPECTRUM presence at events focused on building brand recognition: handing out flyers and being present at booths, leading up to awareness raising about SPECTRUMCoP launch (M5). Materials include stickers, a flyer, a basic clip to show on booth screens and some presentation slides. From M6 onwards, event presence will focus on trying to get talks/posters accepted at key events to present the work of SPECTRUMCoP (KER1), and to announce future project outputs.(KER2, KER3, KER4). In the last half of the project, event presence will focus on the presentation of the outputs (KER5, KER6) with the objective to gather feedback for their final versions and to foster their adoption. At a limited number of events, SPECTRUM will apply for a conference booth (hosted by EGI and in collaboration with other EGI projects such as interTwin).

Table 6: Events

Event Name	Start Date	KERs	Aim
ETP4HPC Conference - Sassenheim (near amsterdam)	13/02/2024	Mainly: KER1, Also KER3, KER5, KER6	Access to HPC community
EuroHPC Summit 2024	18/03/2024	Mainly: KER1, Also KER3, KER5, KER6	Access to HPC community Promotion SPECTRUMCoP
ISC 2024 - Hamburg	12/05/2024	Mainly: KER1, Also KER3, KER5, KER6	Major HPC event in Europe Promotion SPECTRUMCoP

Teratec Conference	29/05/2024	Mainly: KER1, Also: KER3, KER5,	Access to Advanced Computing Community in France Industry contacts Promotion SPECTRUMCoP
TNC2024	10/06/2024	Mainly: KER1, Also KER3, KER6	National and regional research and education networks, schools and universities, technology providers, and scientific projects Shared booth
punch4-NFDI GA	20/06/2024	Mainly: KER1. Also: KER2, KER3, KER4	Access to German Radio-Astronomy Community Promotion SPECTRUMCoP
InPEX2024 Workshop	17/06/2024	KER5, KER6	Policymakers - HPC community
EGI2024	30/09/2024	All KERs	Access to EGI Community Curating session, Booth
IBERGRID 2024	25/10/2024	KER5	Access to Advanced Computing in Spain and Portugal
CHEP2024	19/10/2024	Mainly: KER1, also KER2	Major HEP event in Europe: booth, talks
HIPEAC 2025	15/01/2025	KER2, KER3, KER4	Access to Advanced Computing Community in Spain Industry contacts Booth, Talk

3.2.5. Key Messages

SPECTRUM has formulated a couple of key messages that convey the essence of the project towards its main stakeholders. These messages will be diversified to reflect the different stakeholders' interest as the project progresses.

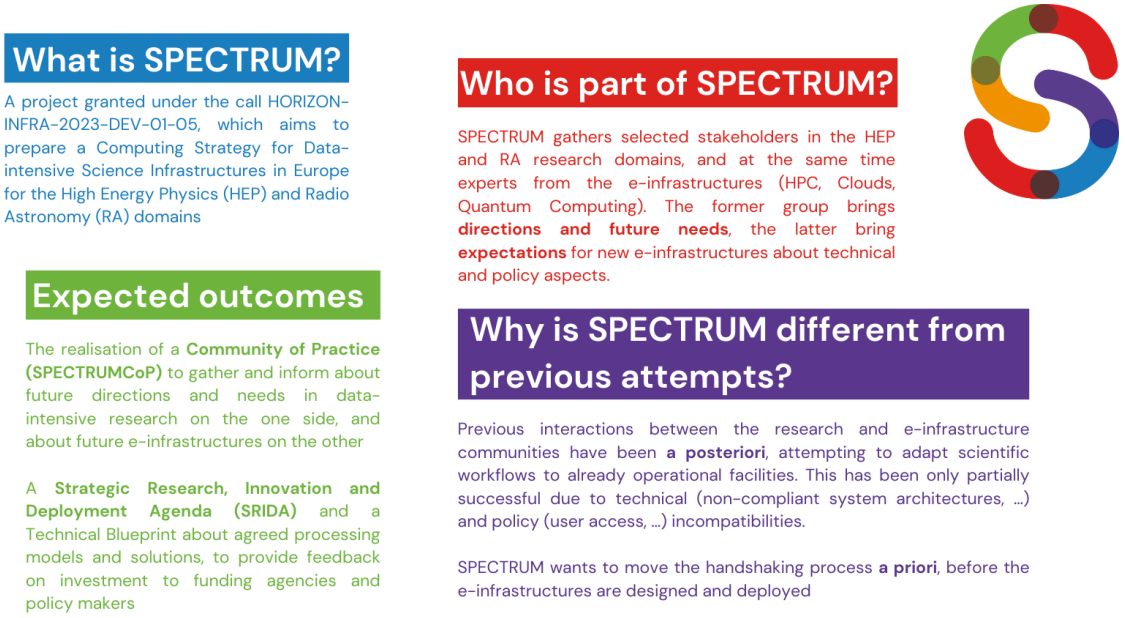


Figure 7: Key Messages

3.2.6. Project Partners and Boards

SPECTRUM relies heavily on the existing networks of the nine SPECTRUM project partners. In order to achieve maximum reach, partners are actively stimulated to share news and updates through their networks.

3.2.7. Platforms

For easy internal communications, the project has set up a Slack channel that all project partners can join. See Project handbook (D1.1)[2] for details about all internal and external platforms used by the project.

3.2.8. Repositories

The standard publication repository for SPECTRUM outputs (including deliverables, presentations, scientific publications, and posters) will be deposited in the Zenodo repository: https://zenodo.org/communities/spectrum. The Zenodo analytics tools will also be used to assess views and downloads for all publications.

3.2.9. External projects and Interest Groups

Contacts have been established with more than 30 key relevant interest groups and external projects in the call for experts for becoming part of SPECTRUM CoP. Key stakeholder groups in the scientific domains such as JENA working group or SKA regional centres representatives.

With regards to sister EU-funded projects funded within the same call, a joint meeting with the project coordinators was organised on May 24, 2024. The main goal was sharing a project overview and identifying commonalities and aspects for collaboration.

All the engaged projects and interest groups have been incorporated in the Stakeholders in Annex 1.

[2] https://documents.egi.eu/document/4061 Confidential - restricted to SPECTRUM consortium members

3.2.10. One-on-one meetings

Given the nature of the project, one-on-one meetings (formal and informal) are a relevant communication channel. Partners are encouraged to report these during AMB and through the Google Form.

3.2.11. Consultations and surveys

Although WP1-WP2 will not conduct its own consultations rounds and surveys, it plays a supporting role distributing consultations and surveys run by SPECTRUMCoP

3.3. Publications

3.3.1. Project Publications

All documents, presentations and other materials that form an official output of the project (not just milestones and deliverables) are placed in the document database to provide a managed central location for all materials.

In addition, public deliverables will be shared via the **Zenodo platform** to ensure the discoverability of the project outputs.

This follows the guidelines as set out in the Projects Handbook.

3.3.2. Scientific Publications

Scientific publications acknowledging the project are made available as open access via Zenodo. Publications by project partners within the project are expected to acknowledge SPECTRUM via its grand agreement number, both in the publication and in the metadata (see D1.1 Project handbook).

4. Exploitation Plan

4.1. Exploitation Strategy Update

As a Coordinated and Support Action, the Exploitation Plan is tailored to the consolidation of the community created around SPECTRUM and the uptake of the different documents, roadmaps and policy documents by the relevant stakeholders and decision makers.

An initial Exploitation plan was described in the DoA indicating the commitment of project partners towards the exploitation and future take up of SPECTRUM results.

- Scientific communities and RI (in particular, HEP - represented by CERN, INFN - and RA - represented by CNRS, OCA and ASTRON) are expecting new computing services to be deployed in order to tackle the needs from the experiments of the next decade.
- e-Infrastructures (represented by FZJ, SURF and CINECA) are already providing support to those communities and expect to integrate the requirements to enhance and adapt the next generation of advanced computing systems to be procured in the future.
- EGI in particular expects to upgrade the computing federation in order to adapt the service delivery to the needs of the scientific communities,
- In general, the establishment of the communities of practice supported by NEOVIA will create the appropriate framework to reduce the fragmentation and work together towards common needs.
- For policy makers, one of main targets for SPECTRUM exploitation is to support digital-infrastructures policy making. Project outputs and recommendations aim to help to define future work programmes and areas of investment.

Some of the key steps in order to with the exploitation objectives are:

- Identification of Key Stakeholders (including, interest groups, projects) as indicated in section 2.
- Incorporation of those to the relevant Working Groups of SPECTRUM Communities of Practice as updated in the public SPECTRUM CoP page https://www.spectrumproject.eu/spectrumcop
- Identification of key strategic documents, roadmaps, compendium of best practices, use cases
- Incorporation into the relevant project deliverables that will be promoted across the different decision making bodies and in the different events.

A successful take up, will help:

- To foster follow up research in the key topics addressed by the SRIDA
- To foster the future deployment of the necessary technologies, infrastructure and services available for research communities.
- To foster standardisation as most of the technical challenges require to ensure interoperability and harmonisation of data, software, infrastructures and related services.

4.2. IP Management Strategy Update

As explained in the DoA, SPECTRUM knowledge management and protection strategy aims to maximise the success for the main goal of the project, that is “to develop common strategies for future development of RI technologies and services within broad RI communities”. Hence, IP Management strategy is driven by the need to encourage uptake and minimise barriers to adoption by the key stakeholders.

Open science practices will be followed to keep project outputs “as open as possible, as closed as necessary”. As such, the project’s results will be licensed under a permissive open licence:

- Most results will be textual outputs (reports, papers, publications, etc), they will be considered the result of collective work of the contributing experts, jointly owned by the consortium partners,

- The main protection mechanism expected will be copyright (in any of the appropriate open permissive licences such as CC BY for texts or CC0 for the metadata).
- The EGI Foundation is the owner of the project visual identity generated including logos. This material is licensed under a Creative Commons BY-NC-ND 4.0 licence.

For the collaboration within the WGs, in the case there is any legitimate interest to keep confidentiality Non-Disclosure Agreements (NDAs) will be managed, for example for the External Advisory Board (EAB). In any case, final reports, project outputs and the necessary related information and data will be kept open.

4.3. Key Exploitable Results (KERs) Update

The project has decided upon the KERs described in. They have been described for each of the project objectives and are set to be the output of key tasks in the project. A specific procedure (PROC 5[3]) has been defined to collect and monitor the different activities related to the KERs and has been incorporated into D1.1 Project Handbook. It includes the steps for creating, updating and curating results in the results register and KERs in the KERs catalogue.

Key Exploitable Results as presented in **Section 1.2.1**, are the outputs of the different tasks and work packages as depicted in **figure 8**.

[3] https://confluence.egi.eu/display/SPECTRUM/PROC05+Exploitation+Monitoring - restricted to the SPECTRUM consortium

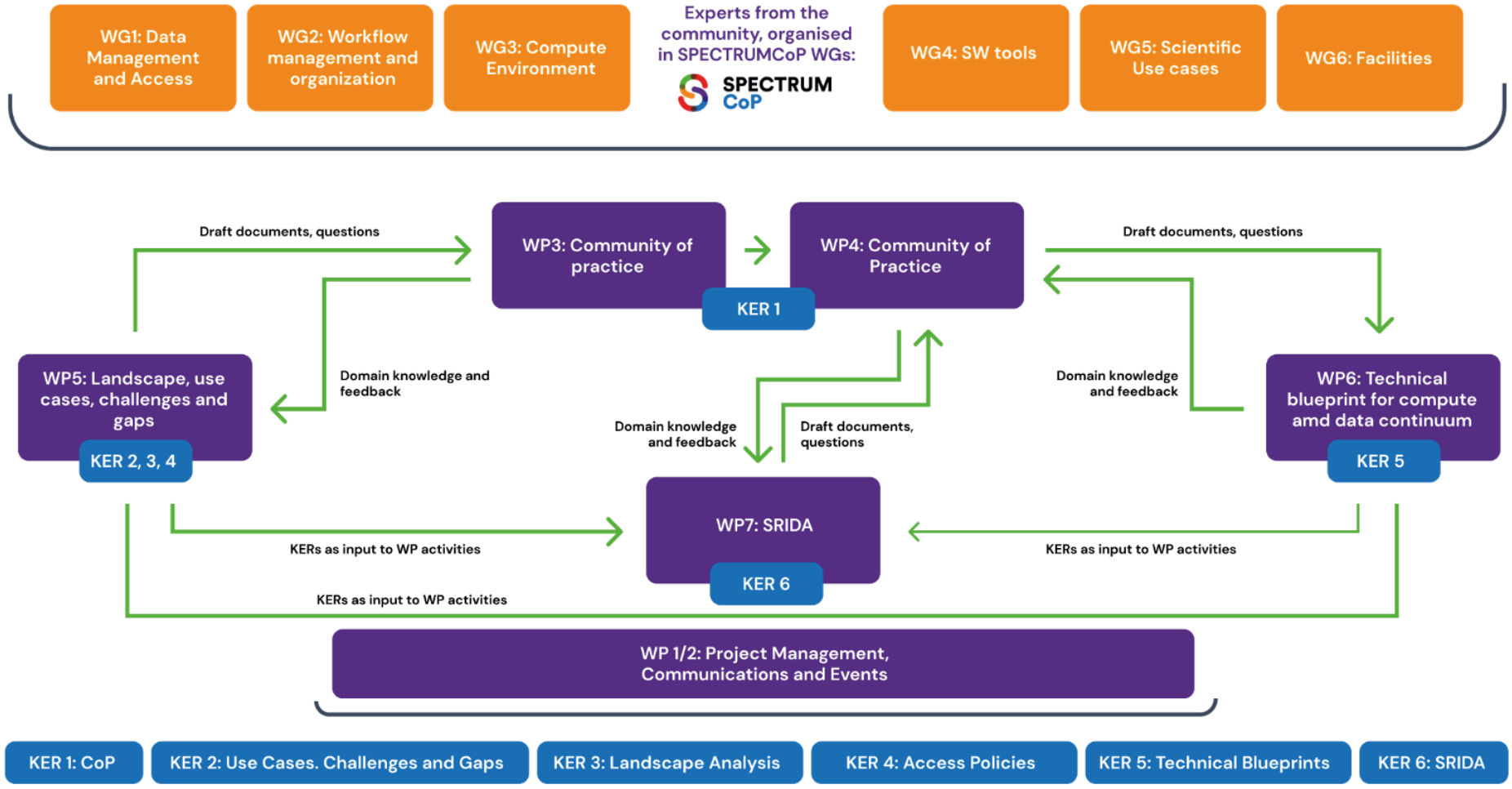


Figure 8: Outputs of the different tasks and work packages

From a timeline perspective it is expected that the KERs delivered during the first half of the project (KER1, KER2, KER3, KER4) will feed and incorporate the necessary content to the KER5 and KER6 during the second half of the project.

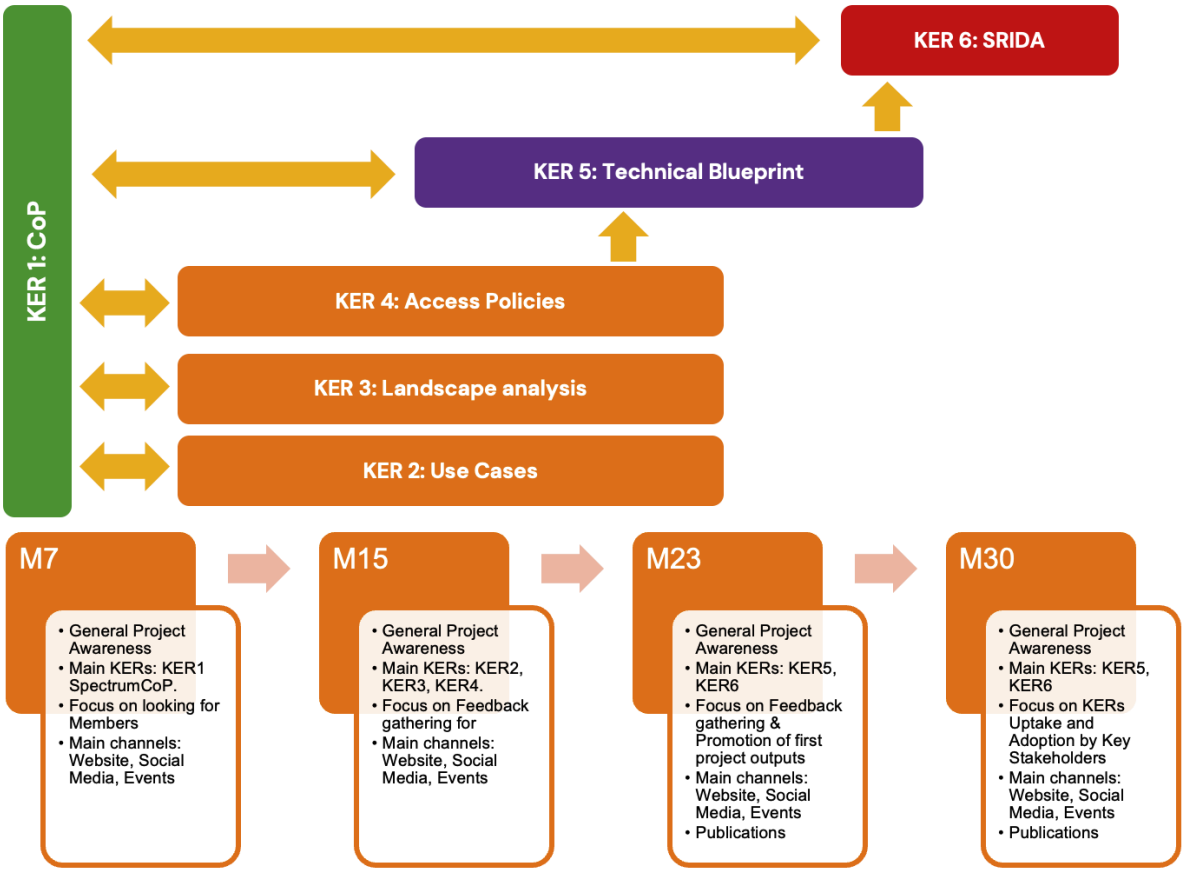


Figure 9: Timeline and Relationship between KERs and key dissemination focus

M1 -M7: At the beginning of the project main dissemination & exploitation focus is put at the creation of the SPECTRUM CoP (KER1) to ensure it is appropriately filled with the right expert members

M7-M15: The follow up, the focus is shifted to ensure the necessary feedback gathering to successfully complete the Use Cases, Landscape Analysis and Access Policies (KER2, KER3, KER4) , e.g. by supporting the launch of the survey.

M15-M23: The second part of the project main focus gets divided into, 1) the promotion of the first project outcomes (KER2, KER3, KER4 -deliverables generated at M15) and 2) the feedback gathering for the generation of the Blueprint Architecture and SRIDA (KER5 and KER6) which are the main documents that the project will output at the end of the project.

M23-M30: The final part of the project will concentrate on the promotion of the BluePrint Architecture and SRIDA (KER5 and KER6) to maximise its uptake across the relevant stakeholders.

The appropriate exploitation paths for each of the expected results were identified in the DoW in the specific KER tables that provide target groups, initial exploitation path and Ownership, IPR and access rights. To each of them, a KER Responsible has been assigned based on the WP and Task leadership where the KER is outputted. This deliverable expands on the specific exploitation and dissemination measures and progress for each of the KERs.

Table 7: Exploitation plan for SPECTRUM KERs including target groups, exploitation path and ownership/access rights

KER1: Community of Practice of research infrastructures in HEP, RA and other relevant scientific domains
KER Contact Person: Tomasso Boccali (WP3 Leader) and Chiara Ferrari (WP4 Leader **Target groups**: (TG1) Scientific Communities within RIs with data-intensive computing needs, with a focus on RA and HEP. **Exploitation plan:** Key experts in the community become primary members of the CoP and use it as a platform for discussion; before the end of the project, a community charter for the long-term operation of the CoP will be agreed. **Dissemination plan:** Promote SPECTRUMCoP at events, Formulate Key Messages, Activate Partner Network, External Projects and Interest Groups, Facilitate Consultations and Surveys, best practice repository (Knowledge Hub on Confluence) **Ownership and access rights**: Expert WG members from project partners will become starting members of the CoP; upon the definition of community charter, access to the community will be open to any external key experts. Outputs generated by the community generated during the project will be openly distributed under permissive licence. Bylaws will be defined in case it is needed. Before the end of the project, there will be the identification of an organisation to provide continued support to the online platform for the CoP. **Exploitation Plan Progress & Activities:** The community charter has been established early in the project to establish and regulate the collaboration https://cdn.spectrumproject.eu/app/uploads/2024/03/SPECTRUMCoP-final.pdf that includes the commitment to contribute and provide input to SPECTRUM project. Jena (Joint activity ECFA-NuPECC-APPEC) is an interest group that shares the same objectives as the SPECTRUM CoP in the HEP, Astrophysics and Nuclear Physics domains. They are launching several Working Groups including JENA-HPC in line with SPECTRUMCoP Working Groups. Key Experts from JENA have been invited to be part of SPECTRUM CoP and reports & information is expected to be shared across groups. They held a workshop last year JENA Computing Workshop (https://agenda.infn.it/event/34738/) and expect to organise a follow up event in 2025 where SPECTRUM can share insights. The final output of these activities will contribute to updating The European Strategy for Particle Physics (CERN). **Dissemination Plan Progress & Activities:** Most of the communications and disseminations efforts at the beginning of the project have been targeted to address the SPECTRUMCoP creation. As such, specific section in the SPECTRUM website has been created, as landing page explaining the objectives and to share the charter (https://www.spectrumproject.eu/spectrumcop) for Milestone 1 and to share the Working Group information and Members for the Milestone 3. Presence at the events at the beginning of the project has been also used for engaging event participants as SPECTRUMCoP members (such as ETP4HPC 2024, EuroHPC Summit 2024, ISC 2024 , Teratec 2024 and TNC 2024). Set of Key Messages have been generated to help in the promotion at the events.
KER2: Compendium of use cases, related challenges, gaps and requirements covering technical and policy aspects **KER3: Compendium of existing approaches, existing services, technical solutions and policies to novel data and compute federation architecture** **KER4: Recommendations for a jointly supported corpus of interoperable access policies**
KER 2 Contact Person: David Southwick (T5.1 Leader), John Swinbank (RA Representative) **KER 3 Contact Person:** Hans-CHristian Hoppe (T5.2 Leader), Luis Cifuentes (T5.2 Co-leader) **KER 4 Contact Person:** Hans-CHristian Hoppe (T5.3 Leader), Luis Cifuentes (T5.3 Co-leader) **Target groups**: (TG1) Scientific Communities within RIs with data-intensive computing needs, with a focus on RA and HEP; (TG2) Computing & Data Service Providers & e-Infrastructures. **Exploitation plan:** While these results are functional to develop both the Technical Blueprint (KER5) and the SRIDA (KER6), they will be of great interest for other research communities and computing providers;

they increase the level of understanding of data-intensive science and can be reused, and therefore, the use of existing solutions and services will be increased.
Dissemination Plan: Promote project and outputs at events, Formulate Key Messages, Activate Partner Network, External Projects and Interest Groups, Facilitate Consultations and Surveys, make Project Outputs publicly available on Zenodo and promote them via Social Media and Website
Ownership and access rights: Collective work of the contributing experts, jointly owned by consortium partners; and shared under a permissive licence following open science principles as described in Section 4.2.
Exploitation Plan Progress & Activities: Exploitation activities are initiating as KERs are not yet ready, it is expected that transferred knowledge contributes to JENA initiative, to The European Strategy for Particle Physics (CERN) and RadioAstronomy and to current EuroHPC consultations on how to address the needs from HPC users / Application providers.
Dissemination Plan Progress & Activities: Dissemination activities are also initiating, participation at some of the early events (such as ETP4HPC 2024, EuroHPC Summit 2024) also aimed to get awareness towards Key target groups and feedback about use cases, landscape and access policies. Participation at PUNCH4NFDI was an opportunity to raise interest among potential Use Cases providers.

KER5: Technical Blueprint of a European compute and data continuum

KER5 Contact Person: Maria Girone (WP6 Leader) - deputy Eric Wulff - D6.1 Leader. Jean Pierre Vilotte (WL6 co-leader) - deputy John Swinbank (RA Community)
Target groups: (TG1) Scientific Communities within RIs with data-intensive computing needs, with a focus on RA and HEP; (TG2) Computing & Data Service Providers & e-Infrastructures.
Exploitation plan: While this result is functional to develop the SRIDA (KER6), it will be of great interest for other research communities and computing providers, to be able to plan their roadmap for development of new technologies and services to cover the future needs of the scientific communities.
Dissemination plan: Promote project and outputs at events, Formulate Key Messages, Activate Partner Network, External Projects and Interest Groups, Facilitate Consultations and Surveys, make Project Outputs publicly available on Zenodo and promote them via Social Media and Website, High Level Closing event.
Ownership and access rights: Collective work of the contributing experts, jointly owned by consortium partners; and shared under a permissive licence following open science principles as described in Section 4.2.
Exploitation Plan Progress & Activities: Activity related to this KER has not been initiated yet. It is expected to incorporate feedback from KER1, KER2, KER3 and KER4. They share common exploitation objectives, paths and activities.
Dissemination Plan Progress & Activities: Activity related to this KER has not been initiated, and therefore no specific dissemination has been performed. Information on the KER and general awareness has been provided in the project website and promoted at the events that were attended.

KER6: SRIDA (A strategy and plan for the implementation of Exascale research data federation and compute continuum for data-intensive science)

KER6 Contact Person: Sergio Andreozzi (WP7 Leader), Xavier Salazar (WP7 Co-leader)
Target groups: (TG1) Scientific Communities and RIs with data-intensive computing needs, with a focus on RA and HEP; (TG2) Computing and Data Service Providers and e-Infrastructures; TG3: Policy Makers / Funding Bodies.
Exploitation plan: By the comprehensive analysis of all previously described KERs are feeding the SRIDA. Hence it is the most relevant result. It will need to be properly disseminated across all relevant stakeholders as described in the previous section, especially to the policy makers and funding bodies so that they can be duly addressed in the next work programmes. All partners from the consortium are fully committed to endorse the future take up of the technologies and services described in the roadmap and bring into their own implementation plans and access and use them for their future scientific needs. This will lead to the future integration of enhanced services to EOSC available for RIs.
Dissemination Plan: Promote project and outputs at events, Formulate Key Messages, Activate Partner Network, External Projects and Interest Groups, Facilitate Consultations and Surveys, make Project

Outputs publicly available on Zenodo and promote them via Social Media and Website, High Level Closing event

Ownership and access rights: Collective work of the contributing experts, jointly owned by consortium partners; and shared under a permissive licence following open science principles as described in Section 4.2.

Exploitation Plan Progress & Activities: Activity related to this KER has not been initiated yet. It is expected to incorporate feedback from KER1, KER2, KER3, KER4 and KER5. They share common exploitation objectives, paths and activities.

Dissemination Plan Progress & Activities: Activity related to this KER has not been initiated, and therefore no specific dissemination has been performed. Information on the KER and general awareness has been provided in the project website and promoted at the events that were attended.

5. Monitoring and Evaluation

Throughout the project, Communication, Dissemination and Exploitation activities will be monitored on a regular basis by T1.3. Website and social media analytics are conducted monthly by the EGI communications team. For events, the project relies on self-reporting by project partners: all project partners are required to fill in a post-event assessment table on confluence. Other project Communication, Dissemination and Exploitation activities (such as newsletters, scientific and non-scientific articles, materials produced, ...) are captured via a Google form. This form allows T1.3 to assess the impact of the activity (e.g. number of people reached).

Based on metrics for most of the dissemination and communication activities in M1-6, we propose the following target numbers for the entirety of the project:

Table 8: Dissemination and Communication Metrics and KPIs

	Channel	Metric	M30 target value	M6 value
Communication	Website	Pageviews	500 per month	337 per month
Communication	LinkedIn	Followers	300 at the end of the project	95
Communication	LinkedIn	Engagement per post	8%[4]	8%
Communication	Newsletter	Subscriptions	120	28
Dissemination	Events	Number of international events with project presence	30	8
Dissemination	Workshops and Webinars	Number (online and in person)	6	n.a.
Dissemination	Workshops and Webinars	Satisfaction score	4.5/5	n.a.
Dissemination	Publications	Downloads and views of project publications (Scientific publications, presentations, public deliverables)	50 views 15 downloads	n.a.

Regarding exploitation, DoA provides some achievement indicators related to each of the Key Exploitable Results to help to monitor its completion and impact. Hereby the progress at M6 is also provided

[4] Note that engagement % typically decreases when follower count increases

Table 9: Exploitation Achievement Indicators and KPIs

Key Exploitable Result	Achievements Indicators	Means of Verification	Target Value (DoA)	M6 Value
KER1	Number of established Working Groups	Published on the project website under SPECTRUM CoP section: https://www.spectrumproject.eu/spectrumcop/	5	6
KER1	Number of participants in the Community of Practice	Published on the project website under SPECTRUM CoP section: https://www.spectrumproject.eu/spectrumcop/	30	80
KER1	Number of entities that contributed inputs to the Technical Blueprint and SRIDA	The consolidated reports for each consultation cite the number of inputs received, qualified by type of contribution	No value provided in DoA. We can take 50 as baseline target	0 (SRIDA expected at M30)
KER1	Number of institutions that signed the community charter	Community charter published in the project website: https://cdn.spectrumproject.eu/app/uploads/2024/03/SPECTRUMCoP-final.pdf community charter is accepted by the participants (hence not signed, but participants and their affiliations are shortlisted in the web https://www.spectrumproject.eu/spectrumcop	No value provided in DoA. We can take 30 as baseline target	17
KER2	Number of data-intensive science use cases agreed and analysed	Described in project deliverable D5.1 Representative use cases: analysis and alignment (T5.1, KER2) (Expected - M15)	10	0 (Use Cases are expected in M15)
KER2	Technology time horizon considered (years)	Time horizon of forecast for technology evolution considered in the report D5.1 Representative use cases: analysis and alignment (T5.1, KER2) (Expected - M15)	Section in the report	Short and long-term being considered (2-3 and 5-10 years

KER3	Number of data-intensive science use cases agreed and analysed	Described in project deliverable D5.3 Landscape of RIs: technologies, services, gaps (T5.3, KER3)(Expected - M15)	10	0 (Landscape expected at M15)
KER3	Number of analysed large-scale European providers (HPC, Cloud, HTC, data) for the landscape analysis	Described in project deliverable D5.3 Landscape of RIs: technologies, services, gaps (T5.3, KER3)(Expected - M15)	15	0 (Landscape expected at M15)
KER3	Number of gaps identified	Described in project deliverable *D*5.3 Landscape of RIs: technologies, services, gaps (T5.3, KER3)(Expected - M15)	10	0 (Landscape expected at M15)
KER4	Number and extent of RIs and scientific communities taken into account	Document covering existing access policies and gaps. Described in project deliverable. D5.2 Interoperable access policies: analysis and recommendations. (T5.2, KER4) (Expected - M15)	No value provided in DoA. We can take 2 scientific communities as baseline target (RA and HEP), and 5 RIs	
KER4	Number and coverage of European providers/centres for HPC, Cloud, HTC, Quantum, or data	Availability of the recommendation document to the public. Described in project deliverable. D5.2 Interoperable access policies: analysis and recommendations. (T5.2, KER4) (Expected - M15) Deliverable to be publicly accessible from Zenodo (Expected - M15)	15	
KER5	Number of entities that contributed inputs to the Technical Blueprint (from the CoP or other channels)	Result from the consultation process for inputs and public draft D6.1 Technical Blueprint for Compute and Data Continuum (T6.2, KER5) (Expected - M30)	50	0 (Blueprint expected M30)
KER5	Number of capabilities aligned across communities	Described in project deliverable D6.1 Technical Blueprint for Compute and Data Continuum (T6.2, KER5) (Expected - M30)	10	0 (Blueprint expected M30)

KER5	Identification of cross-cutting research practices, technical and capital resource requirements for accelerating new insights and scientific discovery.	Described in project deliverable D6.1 Technical Blueprint for Compute and Data Continuum (T6.2, KER5) (Expected - M30)	10	0 (Blueprint expected M30
KER6	The SRIDA is agreed and supported by the CoP	Result from the consultation process for inputs and public draft D7.1 SPECTRUM Strategy Research Innovation and Deployment Agenda (T7.2, KER6) (Expected - M30)	No value provided in DoA. SRIDA endorsed by SPECTRUMCoP	0 (SRIDA expected M30)
KER6	Number of entities that contributed inputs to the SRIDA (from the CoP or other channels)	Result from the consultation process for inputs and public draft. D7.1 SPECTRUM Strategy Research Innovation and Deployment Agenda (T7.2, KER6) Expected - M30)	50	0 (SRIDA expected M30)

6. Annexes

Annex 1: Key Stakeholders

Table 10: Stakeholders List and Engagement actions performed

Stakeholder	Target Group	Engagement Actions Performed
JENA	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members • Preparation of joint survey
WLCG	TG1, TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
RadioNet	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
SKAO	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
SKA Regional Centers	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
LOFAR ERIC (ASTRON)	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
JIV-ERIC	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
European ALMA Regional Center	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
HEP Software Foundation	TG1, TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
IRAM	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
Belle-2	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
ESCAPE	TG1	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
EOSC	TG3	• Promotion of SPECTRUM project
EVERSE	TG2, TG3	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
OSCARS	TG2, TG3	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members • Invitation to become SPECTRUM EAB

EuroHPC	TG3	• Promotion of SPECTRUM project
EuroHPC Hosting Sites	TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
ETP4HPC	TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members • Invitation to become SPECTRUM EAB
HIPEAC	TG2	• Promotion of SPECTRUM project
EuroCC / Castiel	TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
PRACE	TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
EuroHyPerCon	TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
interTwin	TG1, TG2	• Promotion of SPECTRUM project • Invitation to become SPECTRUM CoP Members
InPex	TG2	• Promotion of SPECTRUM project • Community Feedback gathering
Punch4NFDI	TG1	• Promotion of SPECTRUM project • Community Feedback gathering
ENVRINNOV project	Other	• Discussion about cross-project organisation best practices
FHERITALE project	Other	• Discussion about cross-project organisation best practices
AARC TREE project	Other	• Discussion about cross-project organisation best practices

Annex 2: SPECTRUM Press Release

Elevating data-intensive science in Europe

SPECTRUM to create a strategy and technical blueprint for an Exabyte-scale research data federation and compute continuum for data-intensive research

New Horizon Europe project unites leading European science organisations in HEP and Radio Astronomy together with e-Infrastructure providers to formulate a Strategy for a European Compute and Data Continuum

XXX is proud to be a partner in the SPECTRUM project, which started on January 1st 2024 for a period of 30 months. SPECTRUM, coordinated by EGI Foundation, will deliver both a strategic agenda, and a technical blueprint for a European compute and data continuum.

[add if applicable] Within the project, XXX will be part of … with the purpose of …]

The amount of data gathered, shared and processed in frontier research is set to increase steeply in the coming decade, leading to unprecedented data processing, simulation and analysis needs. In particular, High Energy Physics and Radio Astronomy are gearing up for groundbreaking instruments, necessitating infrastructures many times larger than the current capabilities. SPECTRUM aims to facilitate the creation of an Exabyte-scale research data federation and compute continuum.

To achieve this, the project brings together European science organisations and e-Infrastructure providers to formulate a Strategic Research, Innovation, and Deployment Agenda (SRIDA), along with a Technical Blueprint for a European computer and data continuum. This will define the vision, overall goals, main technical and non-technical priorities, investment areas and a research, innovation and deployment roadmap for data-intensive science and infrastructures

The project kicks off in Amsterdam on January 30th, 2024.

- Project website: https://www.spectrumproject.eu
- Mailing list: https://go.egi.eu/SPECTRUM_newsletter
- Follow the project on LinkedIn: https://www.linkedin.com/company/spectrum-project-eu/
- Project publications will appear here: https://zenodo.org/communities/spectrum
- Project Partners: EGI Foundation (lead); CERN; CNRS; OCA; INFN; FZJ; NEOVIA; SURF; CINECA; ASTRON

Technical information:

- Start date: January 1 2024
- End date: June 30 2026
- CORDIS : https://cordis.europa.eu/project/id/101131550

- Funding Scheme: HORIZON-CSA - HORIZON Coordination and Support Actions
- Call: HORIZON-INFRA-2023-DEV-01
- Topic: HORIZON-INFRA-2023-DEV-01-05 - Preparation of common strategies for future development of RI technologies and services within broad RI communities

Key words:

Data-intensive science | federated cloud | HPC | Quantum computing | compute continuum | data federation | High Energy Physics | Radio Astronomy | Research infrastructures | e-Infrastructures | Strategy

Annex 3: Visual materials

Key Messages

What is SPECTRUM?

A project granted under the call HORIZON-INFRA-2023-DEV-01-05, which aims to prepare a Computing Strategy for Data-intensive Science Infrastructures in Europe for the High Energy Physics (HEP) and Radio Astronomy (RA) domains

Expected outcomes

The realisation of a **Community of Practice (SPECTRUMCoP)** to gather and inform about future directions and needs in data-intensive research on the one side, and about future e-infrastructures on the other

A **Strategic Research, Innovation and Deployment Agenda (SRIDA)** and a Technical Blueprint about agreed processing models and solutions, to provide feedback on investment to funding agencies and policy makers

Who is part of SPECTRUM?

SPECTRUM gathers selected stakeholders in the HEP and RA research domains, and at the same time experts from the e-infrastructures (HPC, Clouds, Quantum Computing). The former group brings **directions and future needs**, the latter bring **expectations** for new e-infrastructures about technical and policy aspects.

Why is SPECTRUM different from previous attempts?

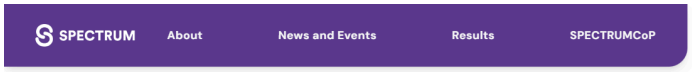
Previous interactions between the research and e-infrastructure communities have been **a posteriori**, attempting to adapt scientific workflows to already operational facilities. This has been only partially successful due to technical (non-compliant system architectures, ...) and policy (user access, ...) incompatibilities.

SPECTRUM wants to move the handshaking process **a priori**, before the e-infrastructures are designed and deployed

Flyer

Booth Materials (clip, flyer, sticker, notebook)

Annex 4: Website

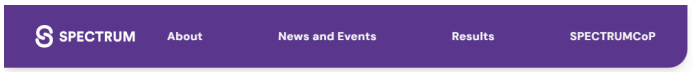


Elevating data-intensive science in Europe

SPECTRUM

SPECTRUM aims to deliver a Strategic Research, Innovation and Deployment Agenda (SRIDA) and a Technical Blueprint for a European compute and data continuum.

Subscribe to SPECTRUM newsletter | Follow us on LinkedIn



SPECTRUM CoP

SPECTRUM Community of Practice launched

Creating a connected community of scientists and infrastructure managers to work towards a mutual understanding...

Read more

Tommaso Boccali
April 24, 2024

SPECTRUM kicks off!

SPECTRUM kicks off in Amsterdam Jan 30th – Feb 1st 2024

...

Read more

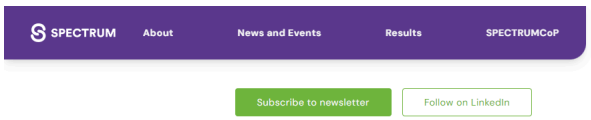
Gwen Franck
February 02, 2024

SPECTRUM: Elevating data-intensive science in Europe

SPECTRUM unites leading European science organisations in HEP and Radio Astronomy together with e-Infrastructure providers...

Read more

Gwen Franck
January 23, 2024



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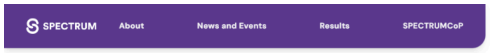
SPECTRUM

About the Project

The amount of data gathered, shared and processed in frontier research is set to increase steeply in the coming decade, leading to unprecedented data processing, simulation and analysis needs. In particular, High Energy Physics and Radio Astronomy are gearing up for groundbreaking instruments, necessitating infrastructures many times larger than the current capabilities. In this context, the EU-funded SPECTRUM project brings together leading European science organisations and e-Infrastructure providers to formulate a Strategic Research, Innovation, and Deployment Agenda (SRIDA) along with a Technical Blueprint for a European computer and data continuum. This collaborative effort is set to create an Exabyte-scale research data federation and compute continuum, fostering data-intensive scientific collaborations across Europe.

START	01/01/2024
END	30/06/2026
FUNDING SOURCE	Horizon Europe
PROJECT BUDGET	€ 2.499.542,50
CONTRACT NO.	101131550
TYPE OF PROJECT	Coordination and Support Action

View on Cordis



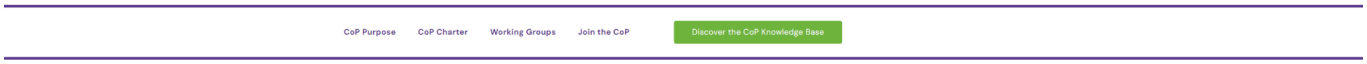
SPECTRUM Community of Practice

SPECTRUM Community of Practice (SPECTRUMCoP)

Creating a connected community of scientists and infrastructure managers to work towards a mutual understanding of future needs, associated challenges and their possible solutions

Send email to join SPECTRUMCoP

SPECTRUM CoP



The Challenge

The amount of data gathered, shared and processed in frontier research is set to increase steeply in the coming decade, leading to unprecedented data processing, simulation and analysis needs. In particular, High Energy Physics and Radio Astronomy are gearing up for groundbreaking instruments, necessitating infrastructures many times larger than the current capabilities. In this context, the EU-funded SPECTRUM project brings together leading European science organisations and e-Infrastructure providers to formulate a Strategic Research, Innovation, and Deployment Agenda (SRIDA) along with a Technical Blueprint for a European computer and data continuum. This collaborative effort is set to create an Exabyte-scale research data federation and compute continuum, fostering data-intensive scientific collaborations across Europe.

Annex 5 : Brand guide

Styleguide

Spectrum Global Styleguide 2024

Contents

1. Intro

Welcome to the SPECTRUM brandguide. This guide contains a detailed overview of all parts that make up the SPECTRUM visual identity. You'll have a basic understanding what the building blocks are, what define them and how to use them in a coherent, uniform and structured way.

This way we protect the already built branding and can strive forward to keep improving on our visual language. Therefore, this guide is meant to be an inspiration, not so much a list of restrictions. There are some basic rules, but they should not be complicated and are not at all restrictive of creativity.

This guide is structured in a way so you can find desired assets easily. In the top left of each page you will find a link to files (for example logo's or font files) and/or a link to the applicable website pages (for example more information about a certain subject).

Since this guide is quite detailed, we put a lot of thought in the in-guide-navigation. You are able to click on titles on the contents page to instantly jump to the specific page. On every page you are able to instantly go back to the content overview page by clicking on "Back to contents" in the top left. At any time, you are also able to skip ahead to the next chapter by clicking "Next chapter" in the top right. Each chapter page also has all the contents contained in that chapter listed and are clickable here as well.

1.1 Intro to this guide

SPECTRUM's design language has been updated to be modern, sophisticated and approachable. The main pillars of our visual identity are a strong uniformity in typography, color, rounded shapes and curated photography or video.

Throughout our brand we use round shapes to represent the approachability and easy of use of our services. This could be rounded corners for squares, or using our other already created brand elements.

Primarily to create a strong SPECTRUM look & feel you should set your typography first. Then, using our brand colors in these fonts. Next, use a lot of white and spacing around your elements. We will go into detail on how to get, install and use our fonts and colors in upcoming chapters.

1.2 Design language

The location of our assets are structured in a coherent overview. Desired assets can be found by clicking on the “View files” link in the top left of each page. If there is no link visible, then there are no files applicable on that specific page.
If you cannot find your desired asset, please contact eric.graventein@egi.eu.

1.3 File locations

2. Logos

SPECTRUM Main Logo – Full color

The SPECTRUM main logo is the core of all of our internal and external communications. It contains the DNA of our way of graphic communication in the form of colors and shapes. Largely consisting of SPECTRUM's primary black, and it's secondary color SPECTRUM. Using round and circular shapes to convey a modern and professional- yet approachable look & feel. This version is to be used primarily when ever possible on a white background.

SPECTRUM Main Logo – White

When the full color variant of the SPECTRUM logo is not readable, for example on a busy or non-contrasted background, we use the white variation displayed here on the right. The same values and rules apply to this variant.

2.1 Primary logo

SPECTRUM Logo Type – Black

In some cases, it might be more practical to only apply the SPECTRUM Logo Type. This could be when the logo can only be placed very small, where the icon gets unreadable. This will damage the overall look & feel of our branding. Therefore, we choose to remove the icon and put the Logo Type as large as possible relative to the design.

SPECTRUM

SPECTRUM Logo Type – White

The same applies for the white variant, when the black Logo Type variant is not readable because of a busy background or such, we apply the white variant to maximize readability and maintain our strong recognizable logo.

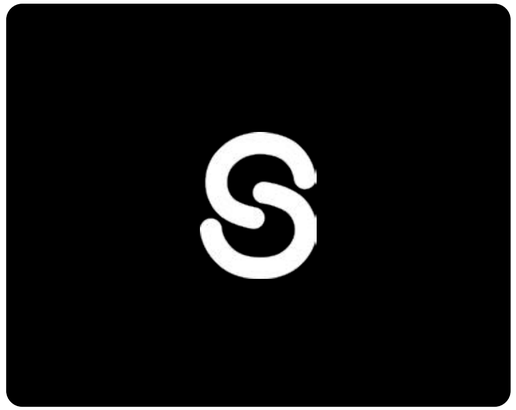
2.2 Secondary logo

SPECTRUM Icon – Full color

The Icon left to the logo can also be used as a separate element for when the full logo cannot be used. It is a simple yet strong icon that should always be used in the color scheme presented on the right.

SPECTRUM Icon – White

When the full color version of the icon is not a practical option, you can go for the white icon to maintain optimal readability and recognision.



2.3 Icon

SPECTRUM Logo – Spacing and alignment

The shape of the SPECTRUM logo requires close consideration regarding the amount of whitespace. All tough the correct alignment does not differentiate much compared to the wrong alignment, the difference can be massive. This is relative to it's surrounding box. In some cases, the difference is much more obvious.

It is up to the designer to optically align the logo, generally taking an even amount of spacing from the top and left side and adding the difference to the right and bottom side produces the required spacing.

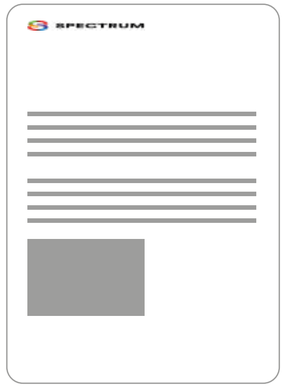
Besides the optical-alignment of the logo in combination with the surrounding whitespace, the actual whitespace itself needs to be sufficient for the logo to breath. Placing elements too close to the logo will cause the design to look busy. Besides that, it will negatively impact the overall look & feel of the SPECTRUM brand.

Please review the example on the right to get an idea of the minimum necessary amount of whitespace around the SPECTRUM logo. This is a general rule, going for all logos in the SPECTRUM visual identity.

2.4 Logo Whitespace

Wrong size & dimensions

Besides using enough white space around all logos in the SPECTRUM brand, it is crucial to use correct sizing and dimensions. This means we do not stretch the logo or place it too big or small relative to other elements in the design. Like in the example on the right, the logo is stretched and too large. Resulting in an unprofessional, out of balance design and no visual hierarchy.



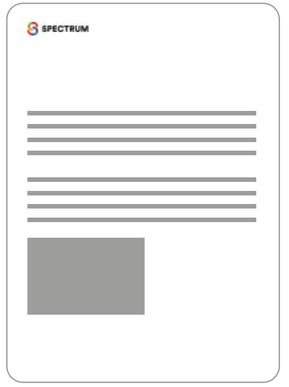
Wrong

Stretched and wrong relative sizing

Compared to the content on the page, the logo is not sized accordingly. On top of that, the aspect ratio is incorrect- or in other words, the logo is ‘stretched’.

Correct size & dimensions

Using an appropriate size for the logo has many benefits; such as a more clean, professional, modern look. Often, designers get requests to make the logo bigger, resulting in a design that is out of balance and without the correct hierarchy. The difference between sizing and dimensions is that sizing refers to the scale of the logo on the page (relative to other elements). Where as the dimensions in this context is used to refer to the width and height needing to be correct. So we will not get stretched logos like in the example in the top right.



Correct

Correct ratio and size

The logo has the correct size relative to the other elements on the page. The logo is not stretched, maintaining our strong and recognizable SPECTRUM brand identity.

2.5 Logo Size

3. Main colors

Primary Colors

The following are the main colors that characterize the SPECTRUM brand and consequently its website graphic interface. In particular, black is used for headings and highlighted texted contents, while the other colors are used for highlights, accents and elements of interaction (buttons, texted buttons, arrows etc.).

Black

CMYK:	C0 M0 Y0 K100
HEX:	#000000

Red

CMYK:	C3 M95 Y93 K0
HEX:	#e0221f

Green

CMYK:	C62 M0 Y92 K0
HEX:	#6eb63f

Orange

CMYK:	C0 M50 Y97 K0
HEX:	#f39200

Purple

CMYK:	C78 M86 Y0 K0
HEX:	#5b3c90

Blue

CMYK:	C82 M42 Y0 K0
HEX:	#1b7dc1

3.1 Primary Colors

Background colors

The following colors are those used for the small and larger user interface backgrounds.

In particular, the main background is white, while the most part of the highlighted areas backgrounds are Light Gray. Dark Black is used for other relevant areas. Dark Gray is used for the footer background. Cards (both interactive and non-interactive) are white with a medium gray border.

White

CMYK:	C0 M0 Y0 K0
HEX:	#FFFFFF

Light gray

CMYK:	C0 M0 Y0 K6
HEX:	#F7F6F7

Border gray

CMYK:	C90 M60 Y0 K0
HEX:	#E4E4E4

Dark gray

CMYK:	C0 M0 Y0 K50
HEX:	#999999

Black

CMYK:	C0 M0 Y0 K100
HEX:	#000000

3.2 Background Colors

4. Typography

Typography colors

For coloring our typography, we primarily use black for headings and dark gray for paragraphs. When you are placing text on a background (colored or photograph), we recommend making all your text white, so it remains readable. For more info, please review the backgrounds section in the photography chapter.

Black

CMYK:	C0 M0 Y0 K100
HEX:	#000000

Dark gray

CMYK:	C49 M38 Y38 K19
HEX:	#828282

4.1 Colors

1. DM Sans

DM Sans is SPECTRUM's primary typeface, and it should be used in every design and / or outing. Because SPECTRUM maintains a professional look & feel, it relies strongly on its typographic styling.

Closely consider the size and color guides when setting your type in your design. This way we can maintain our uniform global look.

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSs
TtUuVvWwXxYyZz0123456789(”€%&=;,:._?!*)

2. Open Sans

If for what ever reason you cannot use our primary typeface, please use Open Sans instead. Open Sans should be widely available on most platforms such as Canva, Webflow or other in-browser design software used by our teams.

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSs
TtUuVvWwXxYyZz0123456789(”€%&=;,:._?!*)

3. Arial

Arial is used as a last resort to maintain a uniform look & feel. It is pre-installed on most computers and supported by all software programs such as the Microsoft Office suite and in-browser design software.

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSs
TtUuVvWwXxYyZz0123456789(”€%&=;,:._?!*)

4.2 Typefaces

Header

Page header for front covers and such

Font:	DM Sans Bold
Letter size:	110pt
Line height:	120pt
Letter spacing:	-40pt

Outline

Outlined header for some variety

Font:	DM Sans Bold
Letter size:	110pt
Line height:	120pt
Letter spacing:	-40pt

Sub-header

Sub-headers for title pages and such

Font:	DM Sans Bold
Letter size:	60pt
Line height:	60pt
Letter spacing:	-30pt

Medium headers

Medium headers for above small headers

Font:	DM Sans Bold
Letter size:	40pt
Line height:	40pt
Letter spacing:	-30pt

Small headers

Small headers for in between paragraphs

Font:	DM Sans Bold
Letter size:	28pt
Line height:	31pt
Letter spacing:	0pt

Paragraphs

Paragraphs texts

Font:	DM Sans Bold
Letter size:	9pt
Line height:	14pt
Letter spacing:	0pt

4.3 Offline style

5. Outro

Thank you for reviewing our brandguide and making an effort of keeping our visual language uniform. If you have any questions regarding this guide or designing SPECTRUM work, please contact eric.graventein@egi.eu.

5.1 Outro


SPECTRUM