Towards EXtreme scale Technologies and Accelerators for euROhpc hw/Sw Supercomputing Applications for exascale

WP7 Dissemination, Communication and Exploitation

D7.6 Collaboration plan with definition of common objectives and activities including milestones

http://textarossa.eu

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TEXTAROSSA

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Coordinator: *AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE - ENEA, Italy.*

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Please see http://textarossa.eu for more information on the TEXTAROSSA project.

The partners in the project are AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE (ENEA), FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V. (FHG), CONSORZIO INTERUNIVERSITARIO NAZIONALE PER L'INFORMATICA (CINI), INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE (INRIA), BULL SAS (BULL), E4 COMPUTER ENGINEERING SPA (E4), BARCELONA SUPERCOMPUTING CENTER-CENTRO NACIONAL DE SUPERCOMPUTACION (BSC), INSTYTUT CHEMII BIOORGANICZNEJ POLSKIEJ AKADEMII NAUK (PSNC), ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN), CONSIGLIO NAZIONALE DELLE RICERCHE (CNR), IN QUATTRO SRL (in4). Linked third parties of CINI are POLITECNICO DI MILANO (CINI-POLIMI), Università di Torino (CINI-UNITO) and Università di Pisa (CINI-UNIPI); linked third party of INRIA is Université de Bordeaux; in-kind third party of ENEA is Consorzio CINECA (CINECA); in-kind third party of BSC is Universitat Politècnica de Catalunya (UPC).

The content of this document is the result of extensive discussions within the TEXTAROSSA © Consortium as a whole.

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List of Acronyms

Acronym	Definition
GA	Grant Agreement
CGP	Complementary Grants Project
PTC	Program Technical Comittee
DEC	Dissemination and Exploitation Committee
PMB	Project Management Board
ASIC	Application Specific Integrated Circuit
FPGA	Field Programmable Gate Array
CAGR	Compound Annual Growth Rate
HPC	High-Performance-Computing
DM	Dissemination Manager
NoC	Network on Chip
PTM	Project Technical Manager
RTRM	Run-Time Resource Manager

Executive Summary

This deliverable reports on identifying objectives to build an effective collaboration network with other EU research projects and the main HPC European competence centers and related actions that are the fundamental steps to reach this goal. The result of this study is a Collaboration Plan that defines a comprehensive collaboration strategy where specific actions to implement the plan are specified together with related milestones. The plan concerns activities in Task7.3: “Networking with EU HPC landscape and Centres of Excellence” and Task7.5: “Common task for complementary grants”, as they are strictly related in some respects. It must be noticed that this is an internal TEXTAROSSA Collaboration Plan that includes but is not limited to the Collaboration Plan that will be defined together with the complementary grants.

1 Introduction

Establishing an effective collaboration between TEXTAROSSA and companion EuroHPC initiatives is crucial for paving the way toward a European ecosystem of research and innovation in the HPC area. Building and managing a collaboration network in the European HPC landscape is a step forward. Networking activities will enable the consortium to reach early adopters and other key stakeholders and to facilitate TEXTAROSSA's impacts and large-scale uptake.

We selected three main aims for establishing an effective collaboration activity.

- **A1: Collaboration with complementary grants,** actively participating in the collaboration activity implemented in the context of complementary grants projects.
- **A2: External Networking**, establishing contacts, and implementing specific actions for collaborating with the main actors of the European HPC landscape, such as Centres of Excellence, innovation, and technology transfer bodies such as industry associations, competency centers, and the forthcoming European Digital Innovation Hubs; this task is also related to the exploitation activity in selecting the appropriate industrial venue to improve the TEXTAROSSA results in uptake
- **A3: Internal Activity**, focused on preparing material tailored to the specific objectives and selecting roles for implementing and monitoring networking activity; this task is strictly related to dissemination activity in producing presentations, flyers, and organizing events.

A joint collaboration plan requires that the partners of the ecosystems agree on a few but concrete objectives. We advocate a strategy aiming at iteratively refining objectives by way of a periodic exchange with representatives of complementary grants (A1), aiming at disseminating and exploiting results in the external network (A2) by way of materials produced by the internal activity (A3).

The Collaboration Plan, which will be thoroughly explained in the following sections is sketched in Figure 1.

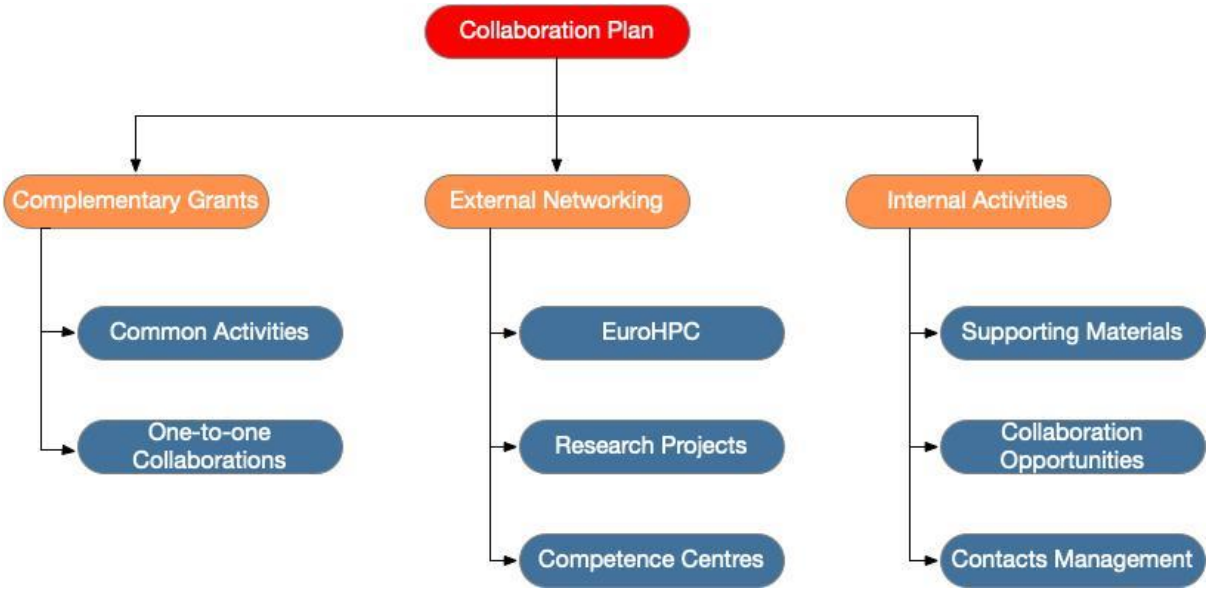

Figure 1. Collaboration Plan

2 Collaboration with Complementary Beneficiaries

A specific task (Task 7.5: Common task for complementary grants) has been introduced in the TEXTAROSSA DoW to organize all efforts to establish synergies and collaboration with complementary grants projects (see Table 1) listed under Article 2 of the Grant Agreement (GA)[1]. All the complementary grants projects (CGP) must identify common objectives and define a shared collaboration strategy to implement them. To this aim, the discussion among the coordinators of the involved projects has already started, basically sharing information about the main topics addressed in the projects, selecting technical contact points in the activity between more similar projects, and collecting suggestions on general collaboration actions, such as newsletters, joint meetings and so on. Also, the general framework of this activity will be formally regulated by a Collaboration Agreement (CA) that will have to be signed by all the participants by the end of December 2021 and whose draft proposal is already in an advanced state. Other milestones concerning this part of the Collaboration Plan will be agreed upon among all the partners.

Table 1. List of Complementary Grant project

Complementary Grants projects	Specific Connections Identified So Far
956213 (SPARCITY)	Coordinator to be contacted
955776 (RED-SEA)	Common beneficiaries (INFN)
955701 (TIME-X)	Coordinator to be contacted
956748 (ADMIRE)	Common beneficiaries (CINI)
955606 (DEEP-SEA)	Common beneficiaries (CINI)
956702 (eProcessor)	via BSC, UNIBO, La Sapienza
956201 (DComEX)	Common beneficiaries (CINI)
955811 (IO-SEA)	Common beneficiaries (CINI)
955513 (MAELSTROM)	Common beneficiaries (E4)

2.1 Objectives and plan

The main objective of the collaborations among the CGPs is to implement an effective strategy to improve the quality of each project's results and enhance the impact and awareness of the projects in the European research and industry community. In practice, the collaboration will be aimed at:

- **A1-Obj1**: Jointly addressing cross-cutting issues
- **A1-Obj2**: Sharing results and best practices as relevant
- **A1-Obj3**: Participating in benchmarking exercises of products across projects
- **A1-Obj4**: Working towards joint publication, dissemination, and exploitation of results

[1] Grant Agreement Number 956831 - TEXTAROSSA - H2020-JTI-EuroHPC-2019-1

- **A1-Obj5**: Actively contributing to the definition of the overall EuroHPC-JU strategy and road mapping, following common objectives

From the operational perspective, this requires implementing efforts and procedures for:

- Participating in regular meetings to plan, implement and monitor collaborations and to synchronize research and development activities, possibly defining common approaches towards standardization (technical and management training)
- Fostering the organization of joint events, also addressing SME involvement, links with regulatory and policy activities, and commonly shared dissemination and awareness-raising activities. (dissemination and exploitation activity)

The project collaboration is undoubtedly facilitated by joint infrastructure and procedures. So, the first milestones set and already achieved as first collaboration steps have been the following:

- **A1-Milestone 1:** Defining an official communication channel among all the projects.

An email list has been established between the coordinators of projects[2].

- **A1-Milestone 2:** Presenting each other projects as a starting point for further collaboration.

The MAELSTROM project organized a mini workshop on 25th May 2021 and all projects, including TEXTAROSSA, presented themselves. A recording of the workshop has been shared between projects[3]

- **A1-Milestone 3:** Identify point-to-point collaborations between projects' specific technical topics.

The project coordinators have elaborated a collaboration matrix between projects (Figure 2). The matrix presents the existing and foreseen collaborations between the projects and a list of technical topics that could be addressed to define more punctual collaboration actions. TEXTAROSSA already identified strong connections with eProcessor and MAELSTROM. The matrix will be used for further discussion and could be updated according to a more detailed understanding of each other activity.

[2] eurohpc19_coord@fz-juelich.dev
[3] https://bluejeans.com/s/ibtx_rLeKXn

	ADMIRE	SparCity	DcoMEX	DEEP-SEA	eProcessor	IO-SEA	MAELSTROM	RED-SEA	Time-X	TEXTAROSSA
ADMIRE				X		X	X			
SparCity			X		X					
DcoMEX		X			X					
DEEP-SEA					X	X	X	X		
eProcessor		X	X							X
IO-SEA	X			X			X	X		
MAELSTROM	X			X		X			X	X
RED-SEA				X	X?	X				
Time-X							X			
TEXTAROSSA					X		X			

Figure 1: Initial Collaboration Matrix between CPGs

- **A1-Milestone 4:** Establish a collaborative workspace to share information, presentations, documents, and other useful material for collaborating.

A "EUROHPC-2019-1-Projects" share point has been established and shared by ATOS to facilitate the exchange of files and documents[4].

Thanks to the collaborative infrastructure just described, the next step is discussing the Collaboration Agreement that will be signed by the end of December 2021. Article 2 of the TEXTAROSSA GA "*the beneficiaries must conclude a written 'collaboration agreement' with the complementary beneficiaries to coordinate the work under the Agreement and the complementary grant agreement(s). The collaboration agreement must cover topics such as the decision-making processes and the settlement of disputes….*". A complete document draft is already circulating between the CGPs and is currently under investigation in each consortium.

- **A1-Milestone 5:** Prepare and agree on a Collaboration Agreement to be signed by the end of December 2021.

As soon as the CA is finalized, some other potential milestones could arise, such as:

- **A1-Potential Milestone 6:** "*Create (and participate) in common boards and advisory structures to decide on collaboration and synchronization of activities, including on management of outcomes, common approaches towards standardization, SME involvement, links with regulatory and policy activities, and commonly shared dissemination and awareness raising activities*" as stated in the GA.

[4] https://atos365.sharepoint.com/sites/300000906

The discussion between project coordinators on further collaboration actions has already produced several proposals that still need to be discussed, finalized, and agreed upon. Here, they are listed as ***potential*** milestones:

- **A1-Potential Milestone 7:** Invite other project representatives inside each project advisory board.
- **A1-Potential Milestone 8:** Provide guest presentations at the General Assemblies of the different projects.

Milestones 7 and 8 are strictly related to Milestone 6 and depend on the collaboration discussion finalized in the CA.

- **A1-Potential Milestone 9:** Prepare a joint newsletter to update on the progress of the different projects

The newsletter could be released on a semi-annual basis and distributed between projects and external communities.

- **A1-Potential Milestone 10:** Organize joint sessions in specific events, for example, a Birds of a Feather Session at the Supercomputing conference, HiPEAC, ISC.
- **A1-Potential Milestone 11:** Organize joint workshops between the CGPs.

This could be annual virtual mini-conferences with one talk for each project to update on the progress as a continuation of the Mini-Workshop in Milestone2.

- **A1-Potential Milestone 12:** Include references to the other CGPs in each project website or create a joint website with regards to the project and everyday events and dissemination material.

Based on the common topic addressed in the project, collaboration with a local group of projects is also foreseen. It will be included in the External Networking activities concerning cooperation with European research projects.

3 External Networking

The External Networking activities in the TEXTAROSSA projects aim to enable the consortium to reach early adopters and engage critical stakeholders to facilitate impact and large-scale uptake. They are the focus of "Task 7.3: Networking with EU HPC landscape and Centres of Excellence". Partners will attend and present TEXTAROSSA at critical events throughout the project to broaden the visibility of the solutions developed in the project and to establish links with external stakeholders. Partners will also establish contacts with the leading EU organization in the context of HPC and HPDA/AI. The TEXTAROSSA partners, and more importantly, the people directly involved in TEXTAROSSA have already several links with the most important and influential networks in Europe, and therefore, network activity has already begun with the following objectives:

- **A2-Obj1**: Align with EuroHPC initiatives and the open architecture European strategy by participating in main European HPC networking events, such as EuroHPC Summit week, Teratec forum, and HiPEAC.
- **A2-Obj2**: Establish solid links with the European Centre of Excellence to discuss with a wide range of application domain users and improve the co-design approach,
- **A2-Obj3:** Enlarge the network with industries starting with the already established links, in the context and collaboration with the project exploitation activity.
- **A2-Obj4:** Participate in events organized by public administration sponsoring research in either Energy or HPC-related domains or organize side events to large networking conferences: to lobby for the adoption of state-of-the-art HW and SW solutions to increase productivity and adopt cleaner energy solutions (e.g., Supercomputing conference, International Supercomputing conference, EU Sustainable Energy Week, PRACEdays).
- **A2-Obj5:** Standardization Bodies: Investigate the possibility of participating and collaborating in standardization bodies and working groups close to TEXTAROSSA's technological development core.

To reach these goals, collaboration activities will be strictly connected with the dissemination and exploitation roadmap, focusing specifically on collaboration opportunities, and will be supported by internal activities. The corresponding milestones are easily related to the objectives.

- **A2- Milestone 1**: Establish links with the European Centre of Excellence, starting with, but not limited to, The European Centres of Excellence (CoEs) for High-Performance Computing (HPC)[5].
- **A2- Milestone 2:** Enforce and enlarge the network with industries already established by the consortium partners.
- **A2- Milestone 3**: Participate in public administration and networking events to sponsor TEXTAROSSA objectives.
- **A2- Milestone 4**: Participate in standardization bodies and technology working groups.

[5] https://www.hpccoe.eu/eu-hpc-centres-of-excellence2/

4 Internal Activity

To collaborate with complementary beneficiaries and external networking, we selected several internal activities to be included as supporting actions in the Collaboration Plan. The main objectives that guide this activity are:

- **A3-Obj1**: Provide support for an effective networking activity in the general context of main EU stakeholders (e.g., projects, organizations, industry).
- **A3-Obj2**: Finding collaboration opportunities regarding events, standardization involvement, and exploitation actions (i.e., dissemination and exploitation actions in the collaboration context).
- **A3-Obj3**: Involve all the partners of the TEXTAROSSA consortium in the Networking activities, considering their specific roles in the project and their competencies.

These goals can only be achieved by working inside the Dissemination and Exploitation activity of the projects (WP7), tailoring the available supporting material for the external collaboration context, and handling the external contacts with the aim of collaboration opportunities. As already discussed, actions to reach these goals cannot be defined by setting a single deadline but are ruled by an iterative process where the action results are continuously monitored and updated starting from an initial milestone.

- **A3-Milestone 1**: Reserve a dedicated folder in the TEXTAROSSA SharePoint to collect all the valuable material for collaboration issues.

A dedicated subdirectory could be created in the WP7 folder. It is worth noticing that usual dissemination and exploitation material can also be used in the collaboration context but to avoid replication, it will be maintained in the respective dedicated space.

- **A3-Milestone 2:** When needed, and depending on the specific needs, prepare material (presentation, documents, etc.) for enabling internal and external collaboration actions.
- **A3-Milestone 3:** Define a Collaboration Task table where each partner in the consortium provides information on the collaboration opportunities and actions undertaken in the context of TEXTAROSSA, ranging from technical collaboration with other research projects to the organization of joint workshops and participation in standardization bodies.

The table is being prepared and shared in the consortium to allow each partner to provide needed information. The table is built both considering CGPs activity and external networking. The table will be continuously updated during the projects. As the movement evolves, the table could also include a short report of the results and any reference that could be useful to gain insight into the ongoing collaboration task. A representative will be selected for each specific collaboration activity listed in the table.

5 Conclusion

Most networking efforts were used to investigate collaboration opportunities in the project's first period. Most of the technical collaborations will likely happen in the second half of the project lifetime when it will be possible to exchange the technical solutions that are maturing.