NCC CROATIA – CROATIAN COMPETENCE CENTRE IN HIGH PERFOMANCE COMPUTING (HPC)

MARKETING AND COMMUNICATION PLAN

– SUMMARY –

EuroCC – National Competence Centres in the framework of EuroHPC

Created by University of Zagreb University Computing Centre SRCE

INTRODUCTION

About the EuroCC Project

The aim of the EuroCC project is the establishment and operation of National HPC Competence Centres (NCCs) in the EuroHPC JU Participating States. The NCCs shall connect to a network of hubs to provide access to leading-edge HPC technology and knowledge, tailored to the stakeholders' specific needs and in line with every individual country's current level of maturity in HPC. The assessment of these varying levels and the resulting prioritisation of requirements of all stakeholders (academia, public administration and industry) are the key drivers of the setup of the NCC. Central goal of the established NCCs is to represent national focal points providing HPC related support in training, technical expertise, access to HPC resources, consulting services and coordination at the national level and in the context of European initiatives.

Ministry of Science and Education has undertaken on behalf of the Republic of Croatia the obligation towards EuroHPC JU and participates in its work. In state budget there are financial resources secured for participation of Croatian institutions in EuroCC project and it will finance 50% of acceptable costs of the EuroCC project, while other 50% of acceptable costs will be funded by European Commission through H2020.

Through the establishment of national competence centres, users from EU countries will gain access to a portfolio of services adapted to the national needs of the science and academic community, public administration and industry. Competence centres will become central places for the coordination of national initiatives and will facilitate national users' access to European HPC competences and opportunities in different industrial sectors and branches.

ABOUT the NCC Croatia – Croatian Competence Centre in High Performance Computing (HPC)

Croatian Competence Centre in High Performance Computing, as a part of European network of Competence Centres, will provide Croatian users from academia, industry, including SMEs and public administrations, with the latest High Performance Computing technologies, tools, applications and services, and offer expertise, skills, training, networking and outreach.

During the project, a following consortium of Croatian institutions will establish a Croatian Competence Centre in HPC:

SRCE – [University of Zagreb, University Computing Centre](#) leads the consortium of Croatian institutions and is responsible for the overall coordination of the NCC Croatia, in accordance to the mandate given by Ministry of Science and Education.

SRCE is a major national infrastructural ICT institution in the area of research and higher education in Croatia, providing a modern, sustainable and reliable e–infrastructure for research and education community all over Croatia.

Other members (linked third parties) of Croatian consortium are:

RBI – [Ruđer Bošković Institute](#) is the largest and most renowned scientific institution in Croatia regarding the fields of natural and technical sciences. Two RBI's units, Centre for Informatics and Computing (CIR) and Division of Electronics (DEL) are mainly focused in distributed computing, High Performance Computing, High Throughput Computing, Virtual Laboratory, Parallel Data Flow Computing and Machine Learning.

FERIT – [J.J. Strossmayer University of Osijek, Faculty of Electrical Engineering, Computer Science and Information Technology Osijek](#) is one of the three technical faculties of Josip Juraj Strossmayer University of Osijek. There are over 20 laboratories, as well as two accredited labs.

UNIZG-FER – [University of Zagreb, Faculty of Electrical Engineering and Computing](#) is the leading Croatian academic and R&D institution in the field of electrical engineering and ICT. HPC Architecture and Application Research Centre of UNIZG-FER is a research group focused on the design of high-performance, energy-efficient, application-specific computing systems.

RITEH – [University of Rijeka, Faculty of Electrical Engineering and Computing](#) is the largest STEM faculty within the University of Rijeka. RITEH has significant experience in Parallel Computing and Cluster Management, application of HPC resources in academia, industry and SMEs. RITEH is the leading academic institution in western Croatia in building business relationships with industry and SMEs.

FESB – [University of split, Faculty of Electrical Engineering, mechanical Engineering and Naval Architecture](#) is modern higher education and scientific research institution focused on the development and application of the latest technology, with the strategic focus of achieving the highest international standards in scientific research, higher education and professional activities.

UNIRI – [University of Rijeka](#) is the fundamental educational and research institution in the western part of Croatia. Having the largest HPC resource in Croatia and wider region – supercomputer BURA, the UNIRI has significant experience in supercomputer management, application of HPC resources in academia, industry and SMEs. UNIRI has gained the know-how in building business relationships with Croatian industry and SMEs with academia based on the HPC use, it has been establishing collaboration network among universities and research institutes in Croatia and internationally.

CURRENT STATUS

According to the information available in created deliverable: *NCC Croatia Roadmap*, currently several parties individually participate in HPC landscape in Croatia which results in overlaps and gaps in resources, services, training and expertise provided to users.

Various HPC resources are offered to researchers and industry in Croatia, some available to everyone, some only to individual communities. Project HR–ZOO will build HPC resource for the purpose of the national research activities.

Training and education are key for on boarding new and keeping old HPC users. Currently, various tutorials, workshops and other educational activities are organised and maintained by individual partners.

HPC infrastructure consists of complex systems and it requires a set of skills in order to be properly utilised. Users, on the other hand, often lack sufficient IT knowledge on how to efficiently utilise various HPC resources and technologies that are available to them.

Currently, only limited collaboration with public sector (public administration) and industry (private sector) in area of HPC exists and majority of users still come from academia and research institutes.

Current situation on Croatian HPC scene:

- Fragmentation of funding streams and continuation in funding and building a private institutions or project based HPC resources;
- Low level of knowledge about HPC infrastructure and its benefits for new users from academia or industry;
- Insufficient HPC technical skills and competences – Problems with attracting IT experts to work in public institution due to less attractive working conditions and financial prospects.

CURRENT STATUS OF HPC COMPETENCES/ECOSYSTEM IN THE COUNTRY

Two partners of the Croatian consortium – SRCE and UNIRI are providing production HPC resources to researchers. SRCE provides a service of scientific computing to all Croatian researchers through a computational HPC cluster Isabella that was developed in 2002. Isabella is a heterogeneous environment consisting of compute working nodes connected with Infiniband FDR, fat node implemented by using single system image virtualisation technology ScaleMP vSMP and general purpose graphical processors (GPGPUs). UNIRI provides the largest HPC resource in Croatia named BURA, which consists of a multi-computer cluster system, GPGPU accelerated nodes and shared memory nodes. BURA has two front-end nodes used for logging, jobs submission and data pre-processing. There are also other smaller HPC resources at universities and institutes, but access is limited only to specific projects and local research groups.

The national, ESIF funded, project *"Croatian scientific and educational cloud"* (HR-ZOO) is a strategic e-infrastructure project led by SRCE and with partner consortia which includes: University of Zagreb, University of Split, University of Rijeka, University of Osijek, RBI and Croatian Academic and Research Network (CARNET). HR-ZOO will build a Tier-2 national HPC infrastructure, with targeted performance of 1 PFLOPS.

NCC Croatia partners have experience and know-how in contemporary HPC topics such as heterogeneous distributed and scalable computing systems, resource management in computer systems, parallel application development and adoption, data science analytics, big data processing, image processing, machine learning, artificial intelligence and application, tools and algorithm optimisation for GPU-accelerated hybrid computing systems.

In addition, SRCE provides advanced user support in the form of application tuning and optimisation as well as training for all researchers using the HPC cluster Isabella. UNIRI and RBI, in collaboration with Algebra University College, initiated the HPC Academy initiative with special focus on organising training events for SME and industry in the domain of using HPC technologies for industrial problem solving and new product development. UNIZG-FER is a technology partner with deep knowledge and experience in HPC architectures, heterogeneous computing, performance optimisations and business uses of HPC. As one of the members of European Processor Initiative project, a cornerstone of the EuroHPC Exascale strategy, UNIZG-FER will also be able to provide competencies in usage of novel European HPC processor families and ecosystems when they become commercially available, thus providing cutting-edge knowledge to wider scientific and industrial community.

ENVISAGED STATUS OF THE COMPETENCE CENTRE AFTER TWO YEARS

Croatian Competence Centre in HPC will:

- Establish a governance structure and policies which will clearly define roles, responsibilities and capabilities of all involved stakeholders;
- Provide a consistent portfolio of HPC-related education activities and reduce the existing fragmentation of resources;
- Establish a network of skilled engineers that will provide end-users advanced support in use of HPC resources;
- Would enable inclusion of Croatian HPC R&I activities with those in other EU countries through direct collaboration with core technology providers and access to future European Processor Initiative processor based HPC systems, and with that inclusion increase competitiveness and collaboration;
- Establish a platform for collaboration with relevant industries, facilitating access to HPC resources and know-how. The platform will be open to other relevant stakeholders and public bodies (e.g. Ministry of Economy, Croatian Chamber of Commerce, Croatian Employer's Association etc.);
- Work toward establishing collaborations with other HPC Competence Centres. The collaborations may include, among other things, exchange of staff, study visits, peer learning and mutual learning activities and joint awareness raising activities.

COMMUNICATION GOALS AND MESSAGES

COMMUNICATION GOALS

- To promote the importance of HPC in economic progress and development of the country;
- To increase the level of awareness about HPC (High Performance Computing) as well as HPDA (High Performance Data Analytics) and AI (Artificial Intelligence);
- To position NCC Croatia as the focal point for those interested in or in need for HPC resources;
- To position NCC Croatia as the central point for those who offer HPC (as well as HPDA and AI in specific aspects) resources;
- To position NCC Croatia as a central point for getting the complete information about available trainings on HPC resources usage and experience and knowledge exchange centre.

MESSAGES

- NCC Croatia will represent national focal point providing HPC related support in training, technical expertise, access to HPC resources, consulting services and coordination at the national level and in the context of European initiatives;
- NCC Croatia is the main access point for entities seeking for HPC competences and those offering them;
- Having all information about HPC competences available on one site positively effects the development of research and scientific work;
- NCC Croatia is the central place where scientists, researchers, small and medium enterprises, companies from public sector can get information on trainings on how to use HPC competences and which of these competences are most suitable for solving their problems/research;
- Having one place where all users can get the right information about the HPC competences and how to access them positively effects the development of the academia and industry;
- HPC/HPDA/AI competences are the foundation of dynamic and competitive economy;
- NCC Croatia is connected with other European competence centres and offers direct link to other HPC competences around Europe;
- NCC Croatia is connected with other European national competence centres for high performance computing and secures integration with European HPC ecosystem.
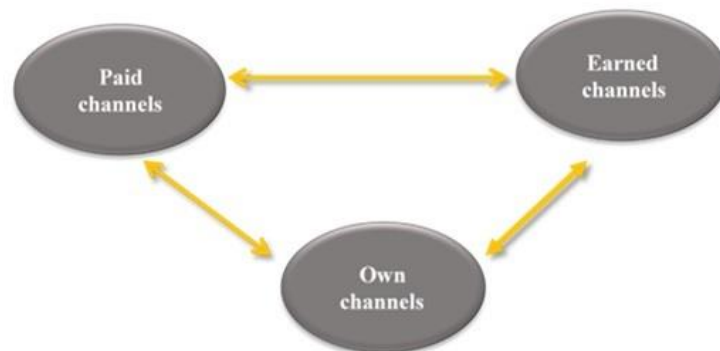
COMMUNICATION ACTIVITIES

In order to achieve the set communication goals and communicate defined communication messages to identified target audiences stakeholders, Croatian Competence Centre in HPC will use a mix of own, paid and earned media channels. Own media channels are NCC Croatia web site, SRCE website as well as websites of all partners included in the project as linked third parties. Profiles on social media of all institutions involved in this project are also considered as own media channels. Furthermore, direct contact via telephone or e-mail, produced promotional and dissemination materials as well as organisation of trainings, workshops or conferences are also considered to be own media.

Paid media channels consist of advertisements in traditional and digital media, published advertorials – case studies about NCC Croatia or the importance of HPC (and HPDA and AI) competences for the development of the science, economy and overall society. In addition to these, paid participation in conferences organised by other association or institutions in order to promote the importance of HPC or the work of NCC Croatia are form of paid media channels.

Earned media are published announcements in media about the NCC Croatia, comments and recommendations from end users, shared case studies – use cases, invitations to participate in conferences organised by other associations or institutions.

As time goes by, the aim is to decrease the share of paid media channels to minimum level and to increase share of earned media channels as much as possible.

Communication activities:

1. Development of NCC Croatia's visual identity (Logo and website design);
2. Web site / web portal https://www.hpc-cc.hr/;
3. Promotion of NCC Croatia and EuroCC project via existing communication channels of SRCE and partner institutions;
4. Production of promotional/dissemination materials;
5. Activities providing support for various set of events;
6. Advertising activities.

1. Development of NCC Croatia's visual identity (Logo and website design)

In order to have a unified visual communication in connection to NCC Croatia, a logo of NCC Croatia has to be developed. This will enable unified visual communication regardless of the fact which partner in the project is developing or using communication material.

With the development of the visual identity and logo, a set of recommendations on how to use logo will be provided with the aim of establishing a unified system of communicating and dissemination materials.

Planned workshops and trainings would have the same identity regardless of which institution within consortium is organising them.

Visual identity of NCC Croatia would be aligned to the visual identity of the whole EuroCC project.

2. Web site / web portal https://www.hpc-cc.hr/

Website https://www.hpc-cc.hr represents a central point – place where Croatian Competence Centre in HPC is alive. It is the access point for those who are in need for HPC resources and also an outreach point for all those who offer HPC (as well as HPDA and AI in specific aspects) resources to end users.

NCC Croatia (Croatian Competence Centre in High Performance Computing (HPC)) is a single reference and contact point for academia, industry/private sector and public sector.

It is the place where all relevant information about the project EuroCC can be found. It is the place where case studies are being exchanged. It is the place at which potential or existing users are connected with the right and appropriate HPC resources.

The content on this website/portal will be regularly updated with the newest information about HPC (as well as about HPDA and AI in specific aspects) competences and resources available to end users from academia, public sector, private sector. News about the progress of EuroCC project will be published here as well as news about available trainings, workshops and seminars and case studies/use cases. News about similar or connected European projects will also be shared/published here.

3. Promotion of NCC Croatia and EuroCC project via existing communication channels of SRCE and partner institutions UNIRI, RITEH, FER, IRB, FESB and FERIT
Promotion of the importance of HPC/HPDA/AI competences in general on institutions' channels

SRCE, as a leader of Croatian consortium in EuroCC project and other partner institutions, will proactively promote and communicate about the progress of the overall EuroCC project as well as the establishment and functioning of the NCC Croatia, using all their existing communication channels. In addition to this, all institutions (members of Croatian consortium) will actively work in order to increase the level of the awareness about the benefits of High Performance Computing (HPC), as well as High Performance Data Analytics (HPDA) and Artificial Intelligence (AI).

4. Production of promotional/dissemination materials

In order to increase the level of awareness about the EuroCC project and the NCC Croatia, creation or localisation of promotional and dissemination materials is needed. NCC Croatia will provide the created or localised promotional materials to educate future users of HPC competences. Furthermore, to increase the promotion of the NCC Croatia, creation of animated video and testimonial videos is planned.

5. Activities providing support for various set of events

Promotion of the EuroCC project and the NCC Croatia will also be carried out through various set of events. During the implementation of the project in accordance to partners' plans, the participation in relevant related events of partners (scientific conferences, workshops, trainings) is planned, as well as organisation of special EuroCC events, such as specialised workshops, trainings and briefings with media representatives.

6. Advertising activities

Continuously throughout the implementation of the project, online advertising and coordination of online campaigns are planned.