



## Lessons learned on legal aspects White Paper

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29 September 2020

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### Abstract

Under the PPI4HPC project, funded by the European Commission (call EINFRA-21-2017), a group of leading European supercomputing centres (BSC in Spain, CINECA in Italy, Forschungszentrum Juelich-JSC in Germany and GENCI/CEA in France) formed a buyer's group to execute a joint Public Procurement of Innovative Solutions (PPI) for the first time in the area of High-Performance Computing (HPC).

The process was divided into several steps: the project setup, the preparation of the procurement and the execution of the procurement. During the project setup, it was decided to organise the procurement as a single procurement (competitive dialogue) with four lots, one per public procurer. As such, the procurement was conducted under a single national law while the contract signature and execution took place under the law of the country of each public procurer. The French law was identified as a law that was suitable in this respect and the French public procurer, GENCI, was chosen as lead procurer. During the preparation of the procurement a wide and fair market consultation was organised: in addition to informing possible suppliers about the planned procurement, it was the opportunity to get input in order to fine tune the tendering package.

Based on the experience of this procurement, recommendations derived from lessons learned that may be helpful for future joint European procurements include:

- Building early in the project motivated and available teams (technical/legal experts with some experts with double competency) is key to success.
- Legal consultancy with knowledge about the relevant legal aspects in the countries of all the public procurers involved is very important.
- Clear definition of the role and liability of the different partners during the whole procurement procedure is necessary and needs to be formalised before the start of the procurement.
- Strategies to reduce the likelihood or at least the impact of conflicts between the law of the country of the lead procurer and the law of the countries of the local procurers need to be devised
- Wide and fair information to the market should be organised.
- Awareness among all relevant stakeholders involved at the procuring sites about the legal procedures and continues exchange of information during the execution of the local procurement procedures was found to be important.

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*The PPI4HPC project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 754271*



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## 1. Introduction

Under the PPI4HPC project<sup>1</sup>, funded by the European Commission (call EINFRA-21-2017), a group of leading European supercomputing centres (BSC<sup>2</sup>, CINECA<sup>3</sup>, JSC<sup>4</sup> and GENCI<sup>5</sup>/CEA<sup>6</sup>) formed a buyer's group to execute a joint Public Procurement of Innovative Solutions (PPI) for the first time in the area of High-Performance Computing (HPC). This project is also seen as a testbed to evaluate the usability of PPI for future bigger joint pan-European operations to be launched in the field of the EuroHPC initiative.

The partners worked together on coordinated roadmaps and on a joint procurement for providing HPC resources optimised to the needs of European scientists and engineers. The purpose of this procurement was, for each public procurer, to buy an innovative high-performance supercomputer and/or an innovative high-performance storage system to be integrated in their computing centre.

The purpose of this white paper is to explain, with a special focus on legal lessons learned, how the public procurers involved in the project prepared and successfully conducted a joint procurement of innovative high performance HPC equipment. Further information on the PPI4HPC project can be found on the project web site (<https://www.ppi4hpc.eu/>).

It is expected that the reader has some knowledge of the competitive dialogue procedure, as defined in the Directive 2014/24/EU of 26 February 2014 (Article 30) and of the occasional joint procurement as defined in the same Directive (Article 38), as these were the basis of the procurement procedure used by PPI4HPC.

## 2. Overview of the process

The process can be divided into five main phases among which the three phases from phase two to phase four, are the most important for the purpose of this document and, as such, are described in more details in the following chapters:

1. Preliminary work (May 2014 - March 2017) with the objective of:
  - Drafting of an answer to the call for proposals launched by the EC (call EINFRA-21-2017)
  - Conducting early work in anticipation of the project start
2. Project set-up (April 2017 - July 2017) with the objective of:
  - Clarifying and formalizing the organization of the project (teams, consortium agreement, joint procurement agreement)
  - Preparing a market consultation
3. Preparation of the procurement (July 2017 - May 2018) with the objective of:
  - Preparing the tendering package
  - Publishing the contract notice
4. Execution of the procurement (May 2018 – May 2020) with the objective of:
  - Awarding the contracts for the four high performance innovative systems

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<sup>1</sup> Public Procurement of Innovative solutions for High-Performance Computing, see <https://www.ppi4hpc.eu/>

<sup>2</sup> Barcelona Supercomputing Center, see <https://www.bsc.es/>

<sup>3</sup> Consorzio Interuniversitario del Nord est Italiano Per il Calcolo Automatico, see <https://www.cineca.it/en>

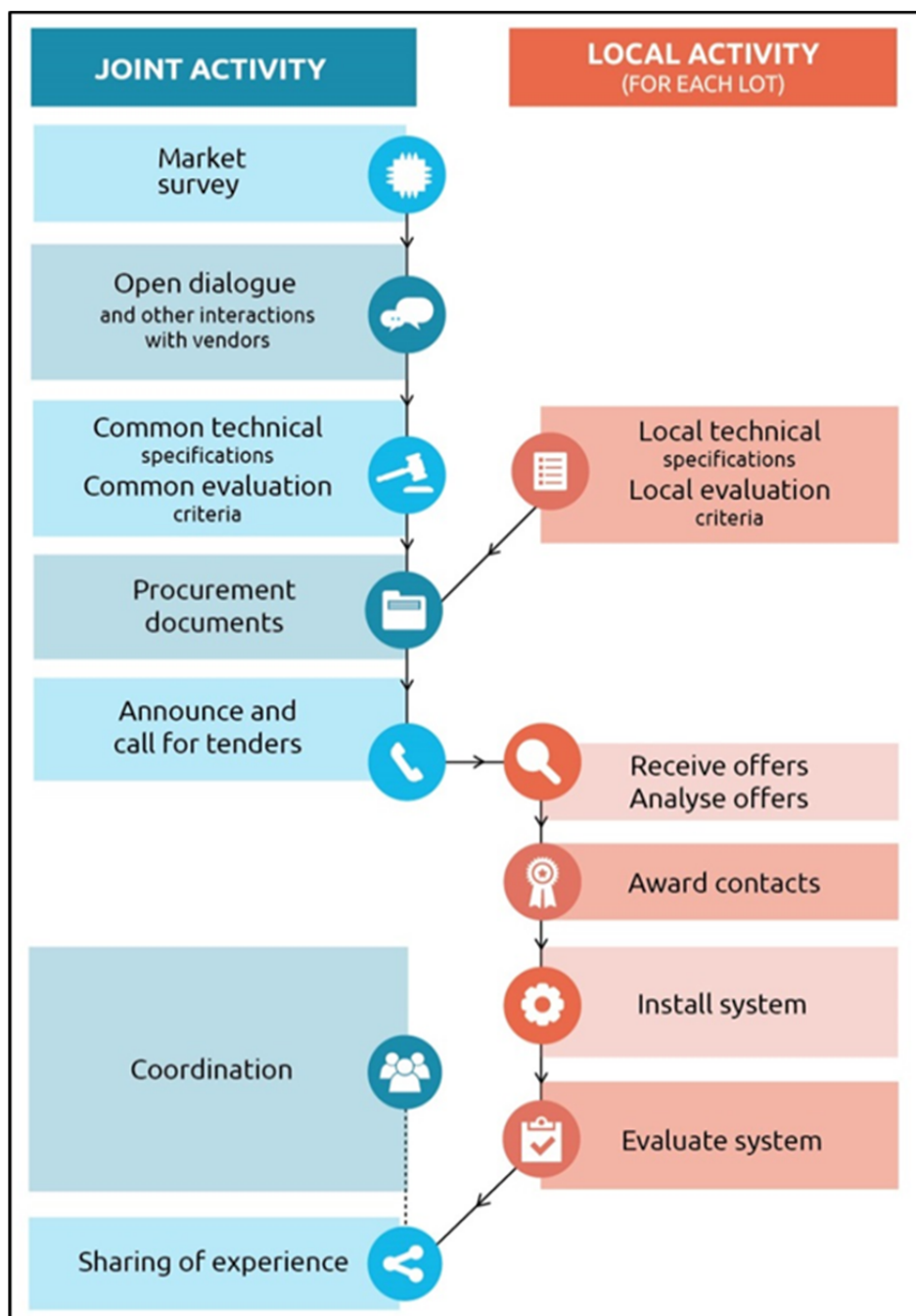
<sup>4</sup> Forschungszentrum Juelich - Jülich Supercomputing Centre, see [https://www.fz-juelich.de/ias/jsc/EN/Home/home\\_node.html](https://www.fz-juelich.de/ias/jsc/EN/Home/home_node.html)

<sup>5</sup> Grand Equipement National de Calcul Intensif, see <https://www.genci.fr>

<sup>6</sup> Commissariat à l'Énergie Atomique et aux Énergies Alternatives, see <http://www-hpc.cea.fr/>

- Closing the procurement procedure (contract award notice)
- 5. Deployment and operation (started in December 2019 for the first system deployed) with the objective of:
  - Providing access to new high-performance innovative system to scientists
  - Assessing the innovation deployed in real production environment

The procurement itself was organized as a single competitive dialogue with four lots, one per system (one per public procurer). In order to deal with the local context of each public procurer, the specifications were organized with a common part and a lot specific part. Accordingly, the procurement was organized with a common part (until the qualification of candidates) and a lot specific part. More details can be found in the figure below – more precise breakdown of common part steps in blue, lot specific parts in orange.



The table below lists the main events that occurred during these different phases. More details on items of specific interest for the purpose of this white paper can be found in the following section.

Event	Date	Comment
<b>Preliminary work</b>		
Signature of a MOU	May 2014	
Answer to the EINFRA-21-2017 call	Sept. 2016	
First technical and legal meeting	Jan. 2017	
<b>Project set-up</b>		
Set-up of technical and legal team	April 2017	
Confirmation of the procurement procedure	April 2017	Competitive dialogue
Selection of the lead procurer (GENCI)	June 2017	After agreeing on the use of French law for the procurement
Consortium Agreement	April 2017	Management Board set-up
Joint Procurement Agreement	May 2017	Group of Procurer Committee set-up
<b>Preparation of the procurement</b>		
Market consultation	May 2017 to Oct. 2017	
<ul style="list-style-type: none"> <li>• Prior information notice</li> </ul>	July 2017	Published on TED
<ul style="list-style-type: none"> <li>• Official press release</li> </ul>	July 2017	See project website
<ul style="list-style-type: none"> <li>• Open dialogue event</li> </ul>	Sept. 2017	Held in Brussels
<ul style="list-style-type: none"> <li>• One to one technical meetings (between the project team and one system suppliers or one technology providers)</li> </ul>	Sept. 2017 Oct. 2017	9 meetings with system suppliers 5 meetings with technology providers
<ul style="list-style-type: none"> <li>• Collective legal teleconference (between the legal team and all the interested suppliers)</li> </ul>	Oct. 2017	In order to discuss and answer questions raised by suppliers
Preparation of the tender documentation	Oct. 2017 to May 2018	7 technical meetings 3 legal meetings 10 legal and technical meetings
<ul style="list-style-type: none"> <li>• Approval by the GOP committee</li> </ul>	April 2018	First version approved Jan. 2018
<ul style="list-style-type: none"> <li>• Approval by the Project Officer</li> </ul>	May 2018	
<b>Execution of the procurement</b>		
Contract notice	May 2018	Published on TED and on the project website
Joint part	May 2018 to Aug. 2018	
<ul style="list-style-type: none"> <li>• Meeting of the opening committee</li> </ul>	August 2018	Joint selection of qualified candidates
<ul style="list-style-type: none"> <li>• Dispatch of the invitations to participate</li> </ul>	August 2018	
Lot specific part	Aug. 2018 to May 2020	
<ul style="list-style-type: none"> <li>• Award of GENCI/CEA lot</li> </ul>	March 2019	To ATOS-Bull
<ul style="list-style-type: none"> <li>• Award of BSC lot</li> </ul>	Sept. 2019	To IBM
<ul style="list-style-type: none"> <li>• Award of CINECA lot</li> </ul>	Dec. 2019	To IBM
<ul style="list-style-type: none"> <li>• Award of JSC lot</li> </ul>	Feb. 2020	To ATOS-Bull
<ul style="list-style-type: none"> <li>• Contract award notice</li> </ul>	May 2020	

Event	Date	Comment
<b>Deployment/Operation</b>		
Start of production	From Dec. 2019	
• GENCI/CEA lot	Dec. 2019	
• CINECA lot	May 2020	
• BSC	Sept. 2020	
• JSC	Dec. 2020	(Expected)

### 3. Project setup

#### 3.1 Organization of the project

##### *Working groups*

From the start, it was clear that this kind of project requires two kinds of skills: technical competencies on the one hand, legal competencies on the other hand. Therefore, it was decided, even before the start of the project, to establish two working groups, one dealing with technical issues, one with legal issues. Joint meetings of the working groups were organized on a regular basis to enforce the coordination between the groups. The working group that focussed on legal issues comprised for each of the local procurer a lawyer as well as procurement experts. In addition, it is worth mentioning that a few experts with a good experience of procuring large HPC systems were part of both groups and, as such, were able to establish a strong link between the two activities.

Establishing the team that worked on legal issues was important for multiple reasons. Running a joint procurement to acquire systems which are important for the future of the involved HPC centres and involve significant financial resources from each of the partners requires strong trust relations. Furthermore, it was critical to ensure early identification of possible conflicts between local law (Spanish, Italian, German and French law) and the law applied by the lead procurer (see also section 3.2). All partners did have a long track record in procuring innovative HPC systems and thus know what to do (or not to do) when running procurements in their own name and on their own behalf. It required open communication to identify differences and possible conflicts. Finally, during different phases of the joint procurement swift and collaborative actions need to be taken. This includes, e.g., responding to questions from interested suppliers during the market consultation phase or the qualification phase. Early team building turned out to be valuable in this context.

It is worth noting that the work did progress well thanks to a large number of meetings, including a number of face-to-face meetings (around 20 meetings in total, out of which 6 were in-person meetings, for preparing the tendering package between October 2017 and May 2018). The face-to-face meetings were especially useful for the progress of the work.

## *Legal consultancy*

Within the framework of the project, the partners decided to rely on a law firm with strong expertise in legal aspects. A call for tenders was launched on 24 April 2017 with the aim of providing legal assistance in the procurement procedure for several innovative supercomputers.

The law firm's mission was to assist GENCI during all the phases of the tendering procedure, including, but not limited to, the following:

- Drafting/co-drafting of the main documents of the procedure (pre-information notice, contract notice, consultation rules).
- Drafting of the joint agreement.
- Providing answers to all questions concerning the procedure coming either from the partners or from the tenderers.

The contract was awarded to the tenderer according to the criteria defined below:

- Criterion 1: technical value - 70%.
  - Sub-criterion 1: Relevance of the proposed organization: 20 points
  - Sub-criterion 2: relevance of the working method: 15 points
  - Sub-criterion 3: qualification and experience of the team assigned to carry out the work: 35 points.
- Criterion 2: price - 30%.

Three law firms submitted bids and the law firm Bird & Bird LLP (B&B) was ranked first. The contract was signed on 15 May 2017 for a maximum amount of EUR 100,000.

Sub-criterion 3 of criterion 1 was a decisive criterion in view of the complexity of the project and the major implications in the various European laws. The fact that B&B has offices in most European countries and that it is used to working in complex international law environments were strong reasons for our choice.

This proved to be very useful: the law firm did have offices in each of the countries where local procurers were located. The law firm could therefore leverage in-house expertise when providing advice on solving conflicts between the law of the country of the lead procurer and the law of the countries of the local procurers.

## *Use of EC documents for guidance*

In the preparation for the project and the definition of the processes related to legal aspects, documents from the European Commission (EC) were a major source of information. This includes both legal documents like EC regulations and general guidelines, and various slide decks prepared by DG Connect. This included, in particular, the following documents:

- Abby Semple et al., "Guidance for public authorities on Public Procurement of Innovation, 1st Edition", 2014<sup>7</sup>,
- Regulation (EU) No. 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)",
- General annexes to the different H2020 work programmes, e.g. for 2018-2020<sup>8</sup>.

While some of these documents focus on providing the broader context and ambitions of stimulating innovations utilising public procurement, the regulations and work programme

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<sup>7</sup> <https://ec.europa.eu/docsroom/documents/25724/attachments/1/translations/en/renditions/native>

<sup>8</sup> [https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf)

annexes contain very specific requirements that had to be taken into account. This includes, e.g., the requirement to conduct an open market consultation as well as details on the timing of publication of prior information notices for informing the market.

### *Legal framework of the project - Establishment of the project's governance structure*

Communication channels between the project partners were already established before the start of the project using mailing lists, a shared working space, and regular meetings via phone as well as face-to-face, involving all project partners.

The formal establishment of the governance structure encompassed the following steps:

- Preparation of a Consortium Agreement completed on 28 April 2017 and signed by all members of the consortium by June 2017.
- Establishment of a Management Board, which convened for an inaugural meeting via phone on 28 April 2017 and since then has met on average every two months. The Management Board is responsible for keeping the project compliant with the description of work and to coordinate dependencies between the different work packages. It has performed all decisions that do not require approval by the Group of Procurers Committee.
- Establishment of a Group of Procurers Committee, which convened for an inaugural meeting in person on 21 June 2017. The Group of Procurers (GOP) Committee comprises one representative per participant, but only participants that act as procurers have voting rights. It is the decision-making body for all major aspects concerning implementation of the procurement (see below).

In addition, the governance structure includes the Coordinator, the legal entity acting as the intermediary between the Parties and the Funding Authority. The Coordinator, in addition to its responsibilities as a Party, performs the tasks it is assigned as described in the Grant Agreement and the Consortium Agreement.

### *Legal framework of the procurement procedure*

In parallel with the setup of the legal framework of the project, the partners worked on a Joint Procurement Agreement in order to define the roles and liabilities of each partner within the framework of the competitive tendering procedure.

Considering the legal complexity of the project, it seemed important to clearly set out the legal rules that would govern the partners' relations over several years.

The consortium agreement defines the operating rules of the consortium.

This complex stage required several meetings in collaboration with the law firm.

The drafting of the consortium agreement was key to establish not only the practical organization of the tender process but also the repartition of the liabilities between the members of the consortium and the lead procurer at the different stages of the tender process.

Consequently, the consortium agreement had to cover at least the following elements:

- Object and duration of the agreement
- Nomination of the lead procurer or coordinator
- Governance structure to ensure a smooth implementation and efficient decision-making process (see below)
- Applicable law for the execution of the procurement
- Repartition of liabilities between the members of the consortium and the coordinator (see below)



- Rules regarding the public procedure
- Rules regarding joining and leaving the consortium, notably the financial consequences in case of anticipated withdrawal from the consortium

Concerning the Governance, the partners have set up a Group of Procurers Committee to be responsible for steering matters relating to this Joint Procurement Agreement, including:

- Decisions on the type of services in the field of high-performance computing to be procured under this Joint Procurement Agreement
- Determination of the requirements and qualification criteria to take part in the tender
- Determination of the common evaluation criteria
- Any legal proceedings under the joint procurement procedure which concerns the Parties
- The process necessary to address any lack of compliance with this Joint Procurement Agreement by a Party
- Amendments to this Joint Procurement Agreement, in accordance with Article 34.

Concerning the repartition of liabilities between the members of the consortium and the coordinator, a specific effort was made by the partners to identify precisely the different liabilities and to describe them in the joint procurement agreement.

- Firstly, liability of the parties toward third parties had to be distinguished depending on the part of the procurement procedure concerned. As a consequence:
  - the parties were jointly and severally liable towards third parties only for the operations of the procurement procedure which were carried out jointly
  - and each party was solely liable for the fulfilment of its obligations under the joint procurement agreement for the operations it carried out in its own name and on its own behalf (per lot), if that such liability was attributable to that party alone.
- Secondly, a mechanism related to the liability of the parties towards each other was included in the joint procurement agreement, providing for a possible exclusion of the defaulting party by the Group of Procurers Committee.

### **3.2 Choice of applicable law for the joint procurement**

#### *Analysis of the different national laws – choice of French law*

During the preparation phase of the procurement procedures, the partners carried out an analysis of the different national rules. This analysis had to take into account that the procurement procedure would be governed by the law of the country of the lead procurer, while the execution of the awarded contract would be governed by the law of the country of the local procurer. More generally, any cross-border joint procurement is very likely to face challenges related to conflicts between the different laws (see below for specific examples).

Such an analysis was performed prior to the drafting and negotiation of the Joint Procurement Agreement, so that the outcomes of the legal analysis and the complex articulation between the different national laws could be reflected in the joint procurement agreement as well as in the tender documentation.

One strategy to reduce the probability or impact of such conflicts was to identify a national law that is less prescriptive and provides the procurer with more flexibility on how to organise the procedures. French law was identified as a law that was suitable in this respect. In particular, the possibility to submit entirely the procurement procedure to French law but to have the execution of each four contracts subject to a different national law was decisive. Indeed, pursuant to article 28 of French ordinance n° 15-899 dated 23 July 2015 related to public procurements, which was applicable at that time, the law applicable to the execution of each lot could be chosen freely by the members of the

consortium, provided that it was the national law of one of the members of the consortium and it was not in conflict with any international treaty between the countries involved in the procurement.

This is why the tendering rules made it clear that there were both common tendering rules and specific tendering rules per lot, and a clear reference was given to the different articles of the national laws applicable.

### *Identification of possible conflicts between French and other national laws – solution implemented*

Several legal matters required particular attention since it could create a conflict of law between the French rules applicable during the procurement procedure and the various national laws applicable during the execution of each lot.

First of all, under French law, a public buyer is allowed, during the execution of its contract, to enter into an additional contract, without publicity and competition procedure, for “similar services”, provided that it is mentioned in the tender documentation that it may resort to this possibility (article 30-I 7° of decree n° 2016-360 dated 25 March 2016, applicable at the time of the procedure). Since it required that the same provision existed in the national law of each partner to be applicable in this cross-border procurement, it was decided that this possibility would not be used in the PPI4HPC tender documentation.

Secondly, the question of subcontracting was identified as a potential conflict of law. Under French law, subcontractors may be approved, as well as their conditions of payment, during the procurement phase. In some cases, the approval of these subcontractors during the procurement procedure would make them eligible to direct payment by the public buyer during the execution of the contract. However, since the execution of the contract was subject to each national law, the rules would have been different during the performance of the contract. In addition, Italian Legislative Decree 50/16 “Code of public contracts” provides that the maximum amount of a public contract which can be subcontracted is 30% of the global value of the contract to be performed. Such a limitation does not exist in French, Spanish or German law.

In order to overcome this issue, it was decided to mention explicitly in the tender documentation this limitation on subcontracting for the Italian lot, without applying this limit to the three other lots.

Finally, the rules applicable to participation as a consortium had to be harmonized since such topic is related to both the procurement procedure and the execution of each lot. As a consequence, it was specifically indicated to the candidates in the tender documentation that, regarding the Spanish lot, if different economic operators were to apply together as a consortium, according to Spanish regulation, the proposed consortium would have to become a legal registered entity in order to be able to sign the contract and perform it.

Several questions were asked during the procedure by companies having subsidiaries in more than one European country. The candidates were therefore informed that there was no requirement for a company to be registered in a specific country to be awarded a specific lot, therefore it was the decision of the company to identify its preferred subsidiary for the contract with regards to the requirements of the tender. Candidates were also reminded that pursuant to French law, a candidate is always able to request the capacities of other subsidiaries to be taken into account for assessing its financial, technical and professional capacities.

### *Integration of national schemes in local competitive dialogues*

The legal analysis performed allowed the partners to identify the rules from their own national legal background that were mandatory during the procurement procedure, specifically during the competitive dialogue. Such mandatory rules, once identified, were mentioned in the tender documentation with their legal basis so that each tenderer could be aware of it from the beginning of the procedure.

It should be underlined that these specific elements of local law from the partners had to be applied in addition to the French procedure. This is why the tendering rules made it clear that there were both common tendering rules and specific tendering rules per lot and a clear reference was given to the different articles of the national laws applicable.

The candidates were informed that, in addition to French law, which was applicable for the entire procurement procedure, the following provisions, deriving from respective national laws, were applicable:

- Lot 3 (CINECA – Italy): as an example, Italian law, were applicable: the evaluation committee during the competitive dialogue had to be composed of 5 members in compliance with the Italian Decree 50/16 “Code of the public contracts” and the economic operators were required to pay a fee to the ANAC amounting to EUR 500 (Art. 1, par. 67, law no. 266/2005 and ANAC Resolution no. 1377/2016).
- Lot 1 (BSC – Spain): if different economic operators apply together as a consortium, according to the Spanish regulation, the proposed consortium must become a legal registered entity to be able to sign the contract and perform it.

In this context we would like to highlight another aspect related to the relation of the law of the country of the lead procurer with the law of the country of the local procurer. The supplier is impacted by the fact that the contracts will be executed according to the law of the country of the local procurer. For suppliers it may therefore be desirable to have the freedom of selecting a local branch or another partner organisation that is located in the country of the local procurer to be the owner of the contract. In case of French law this requires this local organisation to qualify as tenderer for the procurement. As a consequence, one supplier may participate with different local organisations for different lots of the procurement.<sup>9</sup>

### **3.3 Choice of the French public procurement framework: competitive dialogue procurement**

In order for the project to be supported by a Horizon 2020 grant, the two following requirements have to be met: firstly, an open market consultation and, secondly, a prior information notice published in the Official Journal of the European Union. These two different steps, that are required under the Horizon 2020 programme, have to be implemented pursuant to the French legal framework.

It was decided that the competitive dialogue would be the most appropriate procedure regarding the requirements of the Horizon 2020 programme.

The competitive dialogue is a type of tender process in which the buyer dialogues with the tenderers admitted to take part in the procedure, in order to define or develop the solutions likely to meet its needs, and on the basis of which such tenderers have been invited to submit an offer.

The competitive dialogue procedure under French law was considered to be the procedure offering also the most flexibility for the following reasons:

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<sup>9</sup> We became aware of this aspect thanks to feedback received during the market consultation (see section 4.1). It is a good example for how market consultations can help to improve also legal aspects of a procurement.

- A common procedure including for each of the partners' lot specificities of local law
- The possibility of having French law for the procurement procedure and local law for the execution of the contract to coexist.

It was decided to do a joint public procurement, under French law, with part of the procedure where GENCI, as lead procurer, was acting on behalf of the group of procurers, and part of the procedure where each procurer was acting in its own name.

Consequently, it was necessary to articulate the phases of the procedure done jointly and the phases done independently by the partners, within the framework of the procurement.

## 4. Preparation of the public procurement

### 4.1 Market consultation

#### *Confirmation of the procurement procedure – detailed organisation of the procurement*

After the competitive dialogue was considered as the most appropriate procedure, the structure of the procurement process was finalised as follows:

- The Prior Information Notice (PIN) was published on 5 July 2017.
- Launch of an official press release on 5 July 2017
- Market consultation (September-October 2017), including a market survey, the Open Dialogue Event (ODE), one-to-one meetings with system suppliers and technology providers (between the project team and one system suppliers or one technology providers), and the collective legal teleconference (between the legal team and all interested suppliers).
- Identification of the common technical specifications and evaluation criteria and preparation of the tender documentation by the working groups (until May 2018)
- Publication of the contract notice on 12 May 2018 on the official EC website and project website.
- Execution of the procurement
  - Joint part – from the publication of the contract notice until the dispatch of invitation to participate (August 2018)
  - Lot specific part – until the selection of winners
- Contract award notice (7 May 2020)
- Signature (under local national law)
- Deployment/operation (under local national law)

These steps were also defined in an infographic on the project website for clearer visualisation purposes (see above).

#### *Agreement on preliminary technical specifications*

The technical working group, composed of technical experts representing each of the sites, started to work on a definition of common and specific technical specifications. Technical discussions inside the group helped to improve and enrich those specifications which were initially prepared to be provided during the market consultation phase.

#### *Preparation: Market survey and Prior Information Notice*

The open market consultation with potential tenderers and end-users aimed at “inform[ing] the market well in advance of the upcoming PPI and broach the views of the market about the intended scope of the PPI”. It included a market survey and preparation of the Prior Information Notice (PIN).

Based on their knowledge of the market and taking advantage of deliverables<sup>10</sup> produced by the PRACE project (especially in PRACE-4IP/WP5), the technical experts involved in the project identified the following challenges, which were taken into account when identifying the market consultation process and market ecosystem:

- Energy efficiency and Power management
- Data storage and management
- Programming environment and productivity
- Datacenter integration
- Maintenance and support
- System and application monitoring
- Security
- Total Cost of Ownership

Preparation of the market consultation also required the publication of a prior information notice in the Official Journal of the European Union two months before the date of the open market consultation. Additionally, the market had to be informed well in advance of the target date by when the PPI was expected to be launched.

The drafting of the prior information notice took place between April 2017 and June 2017. Several phone conferences and physical meetings were organised. The final review of the document was organized on 9 June 2017 and the PIN was validated by the Group of Procurers Committee on 21 June 2017, in accordance with the Consortium Agreement signed between the partners. The PIN<sup>11</sup> was sent for publication to the Official Journal of the European Union on 30 June 2017 and was effectively published on 5 July 2017.

The project then organised various meetings and preparations tasks with regard to the market consultation needed before the procurement process started.

### *Open Dialogue Event*

After the publication of the PIN in the Official Journal of the European Union on 5 July 2017, the Open Dialogue Event took place on 6 September 2017 in Brussels. The dissemination team took care of the event's logistics and promotion. There were 43 participants, out of whom 17 were from the PPI4HPC project and one was from the European Commission. The event offered to 16 different companies the opportunity to learn more about the objectives and process of PPI, as well as about the particular needs of each partner. The topics included the procurement process, the technical requirements (with detailed requirements for each single lot) and future steps.

All participants had the opportunity to ask questions and provide feedback about the process. Presentations from this event were made available on the project webpage<sup>12</sup>. Several questions were asked and feedback was provided by the suppliers both during the event and afterwards by email. After the one-to-one meetings and the legal collective telephone conference, a full series of questions and answers (validated by all partners) were published on the website<sup>13</sup>. These questions and answers were sorted in four different categories: Procedure organization, Tender documentation, Application form and Technical.

### *One-to-one technical meetings*

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<sup>10</sup> [http://www.prace-ri.eu/IMG/pdf/D5.2\\_4ip.pdf](http://www.prace-ri.eu/IMG/pdf/D5.2_4ip.pdf)

<sup>11</sup> See the PPI4HPC project web site (<https://ppi4hpc.eu/news/leading-european-supercomputing-centres-join-forces-procurement-process-innovative-hpc-systems>)

<sup>12</sup> <https://ppi4hpc.eu/events/open-dialogue-event-2017>

<sup>13</sup> <https://ppi4hpc.eu/call-for-tender/questions-and-answers>

The goal of the one-to-one technical meetings<sup>14</sup> was to conduct in-depth technical discussions and provide another opportunity to ask questions and give feedback. The meetings were open to any interested supplier providing HPC solutions or technologies. In those meetings, one supplier met all PPI4HPC partners. For suppliers of HPC solutions (systems) the duration was 3 hours while for technology providers the duration was 1 hour and a half. While we otherwise treated suppliers strictly in an equal manner, we considered making a distinction in this case to be fair since the suppliers of HPC solutions are potential tenderers while the technology providers are not, because they do not offer full solutions.

Before the one-to-one technical meetings a unilateral Non-Disclosure Agreement (NDA) was signed between, on the one hand, GENCI as lead procurer and representing all the partners of the PPI4HPC project and, on the other hand, each supplier interested to participate in the one-to-one meetings. The purpose of the NDA was to establish the rules relating to the exchange, to the limited use and to the protection of the confidential information disclosed by the supplier to GENCI and its partners.

The NDA was specific in so far as it laid out the following rules:

- The supplier, to the extent of its rights to do so, would disclose to GENCI and/or partners but in presence of the GENCI any confidential information.
- Moreover, the supplier undertook to never disclose Confidential Information to Partners without GENCI's presence.

The Co-contractor further agreed that GENCI was expressly authorized to communicate confidential information received from the supplier to its Partners' employees, whose names were mentioned in appendix of the NDA, solely on a "need to know" basis and provided that the partners were themselves bound by confidentiality obligations.

The one-to-one technical meetings were organized in two locations and lasted five days in total due to high demand by HPC suppliers:

- 28-29 September 2017 at CINECA in Milan, Italy
- 4-6 October 2017 at Barcelona Supercomputing Center (BSC) in Barcelona, Spain

These meetings were private and, for confidentiality purposes, suppliers waited in a separate room until the previous meeting drew to a close, and measures were taken so that attendees did not come across each other. The project partners held 15 one-to-one meetings with major HPC companies including various small/medium enterprises (SMEs). Following the event, a relevant piece of news was published on the project website<sup>15</sup>.

The main legal characteristics of the procedure were presented, based on the slideshow used during the ODE. During the two sessions, approximately 50 legal questions were asked by the suppliers. Whenever possible, especially about the explanation of the French regulation on public contracts, answers were provided during each one-to-one technical meeting. The answers to most of the questions were however postponed for different reasons:

- Some legal topics were related to information to be provided in the contract notice or in the tender documentation;
- Some legal topics were not already identified and discussed between the partners.

These answers were all published on the project page<sup>16</sup>, once agreed upon by all partners.

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<sup>14</sup> <https://ppi4hpc.eu/news/fifteen-hpc-companies-and-smes-join-ppi4hpc-one-one-meetings>

<sup>15</sup> <https://ppi4hpc.eu/call-for-tender/questions-and-answers>

<sup>16</sup> <https://ppi4hpc.eu/call-for-tender/questions-and-answers>

### *Collective legal teleconference*

Following the one-to-one technical meetings, a specific legal teleconference<sup>17</sup> was organised on 9 October 2017 with the lawyers and/or the legal experts of the suppliers, in order to explain once more the procedure and let them express questions. This collective teleconference was not planned at the start; it was organised because of the long discussions on legal aspects during the ODE and because of the number of legal questions received afterwards. We decided for a teleconference involving all interested suppliers since we observe them to be willing to discuss legal topics while competing suppliers are present. (For technical questions one-to-one meetings were organised.) During this meeting, all legal points set out in the ODE and the one-to-one meetings were discussed. Legal teams of both the PPI4HPC partners and the suppliers were asked to be available. The purpose of this meeting was to summarise the planned procedure, share feedback on raised questions, discuss and conclude on the next steps. The agenda was posted on the project website.

For the same reasons as for the questions asked during the one-to-one technical meetings, some answers were provided in real time and some were postponed. Finally, the suppliers were allowed to ask their complementary questions by 15 November 2017. About 25 additional legal questions were transmitted to the PPI4HPC legal team and published on the project website<sup>18</sup>.

### *Impact of the market consultation*

The outcome of the market consultation was of great value for the project. Among the most important points, it is worth mentioning the impact of the market consultation on the following aspects:

- For technical aspects:
  - Helped to review common and lot-specific requirements
  - Identification on collaborative developments which, on top of existing products, can implement technology goals defined by the technology team
  - Improvement of definition and clarification of ambiguous requirements
  - Information on data centre cooling and integration solutions not considered by the technical team were later included on tender requirements
- For legal and procedure aspects:
  - The mean to organize the procurement procedure: dematerialized procedure or full paper procedure
  - Conflict of laws during the procurement procedure
  - Subcontracting
  - Clarification about the application form
  - Language
  - Analysis of the candidates' applications (qualification)

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<sup>17</sup> <https://ppi4hpc.eu/events/legal-teleconference>

<sup>18</sup> <https://ppi4hpc.eu/call-for-tender/questions-and-answers>

## 4.2 Preparation of the public procurement documents

### *Organisation*

The preparation of the procurement documents involved a large amount of work conducted by the legal team and by the technical team. Both teams, composed of experts from the different project partners, met in parallel and, on a regular basis, together in order to synchronise themselves on common issues.

### *Structure of the tender documentation*

The tendering documentation was composed of:

- The prior information notice (Call for participation to the market consultation) - Published on 5 July 2017 (ref: Supplies - 256030-2017)
- The contract notice (Call for participation to the competitive dialogue) - Planned to be published in April 2018. This document included the mostly common qualification criteria, acceptable forms of candidates and innovation mandatory criteria.
- The tendering package that would be provided to candidates selected to participate in the dialogue phase (selection per lot). This package was composed of:
  - The tendering rules divided into a common part and four lot specific parts. This document included the common award criteria.
  - The technical specifications divided into a common part and four lot specific parts.
  - A set of lot specific administrative documents, including local draft contracts (for each lot) and other documents (different between lots) such as license conditions for the benchmarks, NDA document, financial response framework.

While the four procurers agreed on common objectives and on (long term) goals the requirement differed for several reasons:

- Differences in the target usage, such as compute power versus data analysis/storage
- Differences in the computer centre context in terms of existing facility<sup>19</sup>, existing IT infrastructure<sup>20</sup>, and security.
- Differences in the decision in terms of trade-offs between specific requirements and their associated costs
- Priorities fixed by national funding entities – as only part of the costs is funded by the European Commission.

### *Handling of bidder questions*

The contract notice was published by the lead procurer (GENCI) on 12 May 2018 under the number 2018/S 090-202138.

The joint qualification of the candidates for each lot was performed on 7-8 August 2018 by the Opening Committee under the coordination of the lead procurer (GENCI).

The invitations to participate to the dialogue were sent to the qualified candidates by the lead procurer (GENCI) on 20 August 2018. 14 invitations were sent in total.

During all this period, question from bidders were answered and the answered published once agreed by the partners. In total, 10 answers were published on the PPI4HPC website<sup>21</sup>.

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<sup>19</sup> Including electrical distribution, PUE, cost of electricity, etc.

<sup>20</sup> Including other high performance IT equipments.

<sup>21</sup> <https://www.ppi4hpc.eu/call-for-tender/request-to-participate>



## 5. Execution of the joint procurement procedure

### *Organization of regular legal exchanges during the competitive dialogues*

After deciding jointly about the suppliers that qualified for each of the bids, each of the local procurers proceeded with a competitive dialogue for their lot. During this period a regular exchange of information, dealing mainly with legal issues, continued. The meetings took place about every two months. These exchanges were important for several reasons: Firstly, the project had to ensure that the group of procurers was providing a consistent feedback to suppliers since some of them participated in multiple lots. This was also important as the competitive dialogues were not executed at the same pace and as the time at which contracts were planned to be awarded differed by more than a year. Feedback provided in one lot was supposed not impact the other lots. The partners agreed to report about any questions that came up and could be considered to be of general interest. Secondly, while the local procurers were in the lead for running the competitive dialogues within their lot, the overall responsibility remained with the lead procurer. The lead procurer was in charge for handling formal steps like informing the qualified candidates about who was successful and not. It was, therefore, crucial to ensure that the lead procurer was continuously informed about the progress within the lot in order to act on behalf of the partner where necessary. Furthermore, we found it necessary to ensure that all involved stakeholders were aware of this to be a joint procurement where certain steps had to be performed by the lead procurer following the legal requirements of the selected place of law. In case this would be overlooked, there was a high risk of the joint procurement becoming target of legal actions initiated by any of the involved suppliers.

## 6. Conclusion and Recommendations

The four public procurers involved in the PPI4HPC projects were able to procure jointly high performance innovative HPC equipment that are currently deployed or being deployed in their HPC centres. The execution of the procurement went on very well and smoothly, with no complaints from suppliers. Even if more complex than a normal procurement, the joint procurement proved to be a good way to share the experience of running procurements and the HPC strategy between the involved procurers, which was very valuable for the procurement and more generally for the procurers, as well as to attract more interest from the suppliers.

Based on this experience, a set of recommendations derived from the lessons learned that may be helpful for future joint European procurements can be identified:

- Building motivated and available teams in early stages of the project is key to success. Having some members with double competency, organizing joint meetings of the teams is important in order to keep the work of the teams synchronised and to address issues that have technical and legal implications at the same time. Team building facilitates quick joint reactions whenever necessary, e.g. when responding to questions from suppliers.
- Legal consultancy is very important and it is recommended to engage a law firm that has knowledge about the relevant legal aspects, not only in the country of the lead procurer but also in the countries of the local procurers.
- Clear definition of the role and liability of the different partners during the whole procurement procedure (formalised in a Joint Procurement Agreement) is necessary for ensuring smooth relationship between the partners during the process. This takes some time but makes possible to avoid conflicts and time loss later on.
- Strategies to reduce the likelihood or at least the impact of conflicts between the law of the country of the lead procurer and the law of the countries of the local procurers needs

to be devised; the law of the lead procurer should be chosen so that it provides sufficient flexibility. For this point, as well as for the previous one, legal consultancy was very helpful.

- Wide and fair information to the market should be organised. Such market consultation results in improved organisation of the procurement and also on improved tendering package both from technical and legal point of view.
- Awareness among all relevant stakeholders involved at the procuring sites about the legal procedures and continues exchange of information during the execution of the local procurement procedures was found to be important. This included, e.g., raising awareness about crucial steps like contract awarding to be formally executed by the lead procurer in the name and on behalf of the local procurer.