**BSBF2020 Procurement Handbook**

**Getting started**

When getting started as a supplier to the Big Science market a number of steps can be taken to initiate contact with Big Science organisations, monitor calls for tenders and establish collaborative platforms for bidding. This document provides an easy-to-read introduction to Big Science organisations and their procurement procedures, as well as some tips for SMEs and a review of existing initiatives to foster technology transfer. However, businesses and organisations wishing to engage are encouraged to additionally study the rules of the specific Big Science organisation on the organisation’s website. This short introduction for existing or potential Big Science suppliers lists a number of important information on:

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (CERN).

EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL).

EUROPEAN SPACE AGENCY (ESA).

EUROPEAN SOUTHERN OBSERVATORY (ESO).

EUROPEAN SYNCHROTRON RADIATION FACILITY (ESRF).

EUROPEAN SPALLATION SOURCE (ESS).

EUROPEAN X-RAY FREE ELECTRON LASER (EUROPEAN XFEL).

FACILITY FOR ANTIPROTON AND ION RESEARCH IN EUROPE (FAIR).

FUSION FOR ENERGY (F4E).

INSTITUT LAUE-LANGEVIN (ILL)

SQUARE KILOMETRE ARRAY (SKA)

*Each organisation will include one picture and their logo, and the following information:*



1. **ABOUT**

**We are the Facility for Antiproton and Ion Research in Europe (FAIR)…**

… one of the largest research projects in the world, being built at GSI Hemholtzzentrum für Schwerionenforschung GmbH in Darmstadt, Germany. Constructor is the Facility for Antiproton and Ion Research in Europe GmbH (FAIR GmbH). Shareholders alongside Germany are Finland, France, India, Poland, Romania, Russia, Sweden, and Slovenia. The United Kingdom is an associate partner; the Czech Republic is an aspirant partner. The project cost is over 2 billion Euro.

In giant planets, stars, and during stellar explosions and collisions, matter is subject to extreme conditions such as very high temper­a­tures, pressures, and densities. FAIR will enable scientists to create such conditions in the laboratory. To do so, they will bombard small samples of matter with particles. These collisions will, for very short periods of time, create cosmic matter at the tiny impact points. The FAIR research is subdivided into the four experiment pillars: NUSTAR, CBM, PANDA, APPA.

FAIR will generate particle beams of a previously unparalleled intensity and quality. The variety of these particles will be unique: ions of all the natural elements in the periodic table, as well as antiprotons, can be accelerated. A key component of FAIR is a ring accelerator with a circumference of 1,100 meters. Connected to this is a complex system of storage rings and experimental stations. The existing GSI accelerators will serve as the first acceleration stage.

The FAIR particle accelerator facility in Darmstadt is one of the world’s biggest and most complex construction projects for international cutting-edge research. On a site of approximately 20 hectares, unique buildings are being constructed in order to house and operate newly developed high-tech research facilities. This multinational and highly complex mega construction project has entailed the development of integrated construction workflow planning that closely coordinates building, civil and construction engineering, accelerator development and construction, and scientific experiments.

The FAIR project is being realised in international collaboration. International scientific and technical institutes of the shareholder countries and many more partner countries are cooperating.

Cutting-edge technologies and extremely innovative measuring methods and techniques are being developed for the unique FAIR particle accelerator facility. In order to create the facilities for acceleration and experiments, high-level scientists, engineers, and other experts are working in international partnership to advance new technological developments in many areas such as information and superconductor technology.

1. **PROCUREMENT**

Because FAIR is a German limited liability company (GmbH) all our tenders are published according to German procurement and state-aid law, which is commensurate with EU procurement law. Calls for tender are published on the German or European tender sites (depending on their estimated economic value). In other words, any bidder anywhere in the world can make a bid to supply FAIR.

Our procurement has three pillars:

1. **Site and buildings,** with a total value of more than 1 billion Euro (price point 2020).
2. **Accelerator,** with a total value of over 300 million Euro (price point 2020),
3. **Experiment**, of which most will be supplied via collaborations and not by FAIR.

Our in-kind partners have their own procurement profile, which is totally independent of GSI/FAIR and follows the national procurement rules of the relevant country.

Below, we give the total in-kind commitment of each country. Some of this commitment will be tendered on the open market according to national rules, some produced by partners or shareholders in-house, without tendering.

* 1. **Total procurement budget in the period 2020-2024**

We are procuring over half of our accelerator components in kind from our shareholders. Our largest shareholder is GSI (Germany), whose calls for tender are openly published on the German or European tender sites (depending on their estimated economic value).

The rest of our procurements are made on the open market by FAIR, again on the German or European tender sites (depending on their estimated economic value).

This means that more than **300 million Euro** of accelerator procurement runs on the open market in the next five years.

* 1. **Market survey strategy and industrial policy.**

FAIR does not have a dedicated market intelligence unit. Instead, we rely on the following avenues, as well as our extensive market know how within the organisation:

**Systematic market review prior to the launch of a tender**

by means such as market research in the internet, exhibitions and scientific publications as well as meetings with potential bidders actively approaching the GSI procurement department.

**Industry days at GSI**

In order to strengthen interaction between FAIR and industry the technology transfer staff unit organizes regularly in house industrial exhibitions called ‘Roadshow’ on the FAIR campus.

The latest developments and technical solutions are brought to FAIR by companies of different branches and presented to the employees on site. The latest technologies and most innovative measuring methods and techniques are developed for our unique particle accelerator facility FAIR. For the realisation of the accelerator and experimental facilities, the supply of highly specialised components, some of which have been developed specifically for FAIR together with the manufacturers, is indispensable.

The Roadshow offers companies an exhibition space to present their latest developments and products at GSI. The presentation of the product portfolio will take place in form of an exhibition stand on the campus area.

Contact: roadshow@gsi.de

**Market knowledge and contacts of GSI scientific experts and GSI/FAIR buyers.**

FAIR draws on the 50 years of experience of our German shareholder and host institute, GSI Helmholtz GmbH (Gesellschaft für Schwerionenforschung; Society for Heavy Ion Research). Our scientists and technicians each have their own professional network which they are careful to curate.

**Market knowledge of FAIR shareholders.** Our ten shareholders (see above) each cultivate their own network of potential suppliers, paying particular attention to the market in their own countries. In the case of a fractured or emerging market, our shareholders have facilitated the formation of consortia.

**FAIR ILOs (Industry Liaison officers).** At the time of going to press, FAIR’s ILO network is undergoing a reorganisation. Please check our website for the current ILO database: <https://fair-center.eu/fair-gmbh/in-kind-procurement/industry-liaison-officers.html>

* 1. **Industrial database**

GSI and FAIR do not maintain a centralised industrial database, however within the Purchasing department a master bid list is maintained for major accelerator components.

* 1. **Procurement portal**

All calls for tender above 30,000 € total purchasing value by FAIR and GSI are published here: <https://www.gsi.de/en/start/business_industry.htm>

National German calls for tender above 30,000 € are additionally published on the Deutsches Vergabeportal: <https://www.dtvp.de/>

European calls for tender (over 214,000 € total purchasing value) are additionally published in the Supplement to the Official Journal of the European Union TED (Tenders Electronic Daily): <https://ted.europa.eu/TED/main/HomePage.do>

* 1. **Procurement modalities**

FAIR and GSI use the tender procedures defined within German (national) and European Law. Which tender procedure is used for which procurement activities depends mainly on the procurement value.

As basis for the call for tender, we publish either publish functional specifications or built-to-print depending on the magnitude of development support needed from the supply base.

We perform the majority of tenders for complex components as “negotiation tenders,” allowing preselection of capable bidders as well as technical reviews as well as intense negotiations during the purchasing process.

If the subject of the procurement activity is fully described and no technical or commercial reviews are needed, we will use the “open tendering procedure.” In this case, we award based on capability and the submitted offers.

* 1. **Procurement process**

**FAIR procurement process**

FAIR is subject to [Directive 2014/24/EU on public procurement](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014L0024-20180101&locale=en).

**National calls for tender.**

Where our shareholders contribute in kind, they will often launch their own call for tender, according to their national procurement laws. Each country has its own modalities. Please check the procurement pages of the FAIR shareholder in your country: you are likely to find calls for FAIR technologies that are not immediately obviously such.

|  |  |  |
| --- | --- | --- |
| **Country** | **Shareholder** | **Where to check for calls** |
| Finland (in consortium with Sweden) | Vetenskapsrådet (Swedish Research Council) | [www.vr.se/english.html](http://www.vr.se/english.html)  |
| France | CEA and CNRS | [www.marches-publics.gouv.fr](http://www.marches-publics.gouv.fr)  |
| Germany | GSI GmbH | <https://www.dtvp.de/> |
| India | Bose Institute | [www.thetenders.com/All-India-Tenders/Agency/Tenders-Of-Bose-Institute/](http://www.thetenders.com/All-India-Tenders/Agency/Tenders-Of-Bose-Institute/)  |
| Poland | Jagiellonian University | <https://opentender.eu/pl/search/tender>  |
| Romania | Ministry of Research and Innovation | <http://anap.gov.ro/web/>  |
| Russian Federation | Rosatom | <http://zakupki.rosatom.ru/en/>  |
| Slovenia | Ministry of Education, Science and Sport | <https://opentender.eu/si/search/tender>  |
| Sweden (in consortium with Finland) | Vetenskapsrådet (Swedish Research Council) | [www.vr.se/english.html](http://www.vr.se/english.html)  |

* 1. **Funding modalities**

FAIR is funded by our shareholder countries with the following commitment:

|  |  |
| --- | --- |
| Country | Commitment (%) |
| Finland | 1.47 (together with Sweden) |
| France | 2.65 |
| Germany | 69.07 |
| India | 3.53 |
| Poland | 2.33 |
| Romania | 1.16 |
| Russia | 17.45 |
| Slovenia | 1.18 |
| Sweden | 1.47 (together with Finland) |
| United Kingdom | Fixed sum in Euro + >0.5% |

70 % to 80 % of accelerator components are contributed in kind; 40% by GSI as the host laboratory (Germany).

Counting GSI together with FAIR direct tender, over € 300 M worth of accelerator technology will be tendered on the open market between 2020 and 2024.

* 1. **Eligibility criteria**

As a German limited liability company, FAIR procurement is oriented according to the principles cited in the EU Treaty:

1. Competition
2. Transparency
3. Economically
4. Equal treatment
5. Non-discrimination
6. Proportionality
7. Mutual recognition
8. Fair play.

As such, there is no policy of geo-return.

Depending on the procurement volume and the risk associated with the procurement package, FAIR and GSI may demand certain eligibility criteria such as:

* Minimum annual turnover
* “European single procurement document (ESPD)” self-declaration form
* Proof of experience in the relevant market field by self declaration
* Proof of availability of dedicated manufacturing equipment by self declaration
* Proof of certificates, either related to quality, personnel or equipment by self declaration

Where appropriate, we design or procurement packages in lots to allow better access for SMEs. We also encourage bids from consortia of SMEs.

* 1. **Evaluation criteria**

Application, bidding and award criteria are published along with the call for tenders. The specification of award criteria, their weighting (price vs. performance) and our method of evaluation are clearly documented in the initial tender documentation.

Price weighting varies between 30% to 100%.

Typical performance criteria might include:

* Technical concept (e.g. technical solution, highlight of critical features incl. suggestions to solve, resource availability, qualification design & development)
* Manufacturing (e.g. availability of capacity, process flow, description of equipment and measurement devices, …)
* Lead-time
* Quality assurance
* Serviceability
	1. **IPR policy and rules**

The FAIR intellectual property policy in a nutshell:

* We ask for rights to a supplier’s background only if and only as far as necessary for the project.
* Rights are shared between FAIR and the supplier for foreground generated within the procurement cooperation.
* Any exploitation FAIR makes of background and foreground is solely for non-commercial research.
	1. **Role of Industry Liaison Officers (ILOs)**

At the time of going to press, FAIR’s ILO network is undergoing a reorganisation. Please check our website for the current ILO database: <https://fair-center.eu/fair-gmbh/in-kind-procurement/industry-liaison-officers.html>

For us, an ILO is the person who is responsible for establishing and maintaining contact between FAIR/GSI and the businesses and institutions in their country/area. In FAIR/GSI context, this person is a single point of contact with respect to In-Kind, Technology Transfer and communication with regard to industry in their respective partner country.

**What do FAIR’s ILOs do?**

* Disseminate information about FAIR’s needs
* Identify key businesses in their area
* Perform market analyses in their area
* Engage industry to become involved in FAIR
* Assist communication between industry and FAIR
* Disseminate information about the scientific possibilities of collaboration with FAIR
* Identify the potential for spin-off, spin-out and licensing in their area
* Promote the industry of their area in the scientific world

**ILOs important to FAIR and GSI because they**

* Identify potential bidders and consortia that could supply FAIR. More bidders mean a healthier market and better prices.
* Act as a communication channel between FAIR and industry in their country, and vice-versa.
* Play a key role in technology transfer of all kinds.
* Present FAIR in a positive light in their area of businesses.
1. **MAIN AREAS OF PROCUREMENT IN THE PERIOD 2020-2024**

Cutting-edge technologies and extremely innovative measuring methods and techniques are being developed for the unique FAIR particle accelerator facility. In order to create the facilities for acceleration and experiments, high-level scientists, engineers, and other experts are working in international partnership to advance new technological developments in many areas such as information and superconductor technology.

The table below gives the estimated German expenditure for the next four years, by technology branch (€M, rounded to the nearest €M).

|  |  |
| --- | --- |
| Technology | Estimated expenditure (€M) |
| Complex building construction and its safety related systems | TBC |
| Cryogenics, vacuum and leak detection technologies  | 79 |
| Diagnostics and detectors, sensors, optics and instruments | 64 |
| Electrical, power electronics, electromechanical and RF systems | 101 |
| High precision and large mechanical components | TBC |
| Instrumentation, control and CODAC | 31 |
| Superconductivity and superconducting magnets | 9 |
| Normally conducting magnets | 48 |

1. **SME INVOLVEMENT**

FAIR and GSI are always interested in close cooperation with SMEs especially for joint development projects. Currently FAIR/GSI has numerous cooperations with SMEs in different fields of expertise as well as **four ongoing national third-party funded innovation projects** in the area of accelerator physics, detector development and biophysics. Contact: transfer@gsi.de

1. **TECHNOLOGY TRANSFER INITIATIVES**

**Partnering with GSI and FAIR.**

We are adaptable and flexible in our partnerships with the economy:

* ***Cooperations:*** In many ways, new high-tech solutions are developed in collaboration with business partners.
* ***Contract Research:*** Scientific and technical expertise can be used in working on a company's particular problem formulation.
* ***Commissioned Work:*** Technical infrastructure can be used for industrial applications in accordance with a client's specific requirements.
* ***Provision of Components / Electronics:*** GSI is able to manufacture components, membranes and electronics with special features.
* ***Beamtime:*** GSI offers measurements for industrial projects.
* ***IP Utilization Agreements:*** GSI has a versatile IP portfolio in its fields of innovation.

**Creation of value by GSI Intellectual Property.** GSI makes its inventions and developments ("Intellectual Property", IP) also available for the use in industry:

* ***IP License and Transfer Agreements:*** The aim of every IP utilization agreement between GSI and a business partner is intended to be a win-win situation that enables every involved party to generate and extract sustainable values for itself.
* ***Validation Projects:*** The GSI Technology Transfer Department supports and coordinates funding applications for the validation of GSI developments in cooperation with businesses.

**Industry Liaison Officers and Similar**

An easy way to approach the Big Science organisations and obtain information about upcoming procurements is via Big Science Industry Liaison Officers (ILO) or similar (e.g. purchasing advisers). These are available in many countries and work with communicating the calls and procurement procedures on behalf of the Big Science organisations based on country membership.

* CERN: <http://procurement.web.cern.ch/en/who-to-contact-in-your-country>
* ESO: <https://www.eso.org/public/industry/cp/docs/ILO_Contact_details.html>
* ESS: <https://europeanspallationsource.se/ilo-partner-countries>
* F4E: <http://fusionforenergy.europa.eu/procurementsgrants/ilos.aspx>
* European XFEL: <http://www.xfel.eu/organization/staff/bonucci_antonio/>
* FAIR: <https://fair-center.eu/fair-gmbh/in-kind-procurement/industry-liaison-officers.html>
* SKA: <https://www.skatelescope.org/ska-industry/>

*Update if there are any more available links with ILO contacts from any organisation.*

Please note that the following list is compiled of publicly available information on Industry Liaison Officers (ILO) and similar for BSBF2020 Big Science organisations, from the organisation’s websites on xx-x-2019, or by written consent from the Big Science organisation or the respective ILOs. The BSBF2020 organisers cannot guarantee that this list fully covers all ILOs. Businesses and organisations are encouraged to, at all time to stay updated on the Big Science organisations websites or via contact with the Big Science organisations.