**MARKET SURVEY**

**TECHNICAL QUESTIONNAIRE**

**REF. IO/MSY/21/EOF/PMT**

**DESIGN AND SUPPLY OF ELECTRICAL AND OPTICAL FEEDTHROUGHS FOR THE ITER CRYOSTAT**

***Firms interested in participating to this market survey shall return a completed questionnaire to the following email address*** [***philippe.mousset@iter.org***](mailto:philippe.mousset@iter.org) ***, no later than Friday 01 October 2021.***

***Please note that this is not a Call for Nomination request. At this moment the ITER Organization (IO) is preparing a contract and procurement strategy for this project.***

***For all questions in the document, please refer to the ITER Market Survey Technical Requirements ref. ITER\_D\_5RYCFS version v1.0 dated 17 September 2021.***

# *General information about the Company / Institute compiling the questionnaire*

**Company Name**: …………………….

## *Persons to be contacted:*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Contact person*** | ***Name + Title*** | ***Email address*** | ***Telephone*** |
| ***Commercial Matters:*** |  |  | + |
|  |  |  |  |
| ***Technical Matters:*** |  |  | + |
|  |  |  |  |

***Main activities***

|  |  |
| --- | --- |
| ***Main activities*** | ***Description*** |
|  |  |
|  |  |
|  |  |
| ……………………. |  |

***Turnover***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Contact person*** | ***Turnover***  ***2018*** | ***Turnover***  ***2019*** | ***Turnover***  ***2020*** | ***Number of employees*** |
| **All activities** |  |  |  |  |
| ***In the field of*** *Electrical Feedthroughs* |  |  |  |  |
| ***In the field of*** *Optical Feedthroughs* |  |  |  |  |

# *Technical Competence and Experience*

# *ELECTRICAL FEEDTHROUGHS*

* 1. ***PIN Technology Availability.***

***Do you have type N thermocouple in your catalogue?***

**YES**  **NO**

If YES, please provide overview:

If NO, should you be interested to develop such technology:

* 1. ***PIN Technology Availability.***

***Do you have pins compatible with current up to 5A for AC current?***

**YES**  **NO**

If YES, please provide overview:

If NO, should you be interested to develop such technology:

* 1. ***PIN Technology Availability.***

***Do you have standard crimping technology in your catalogue?***

**YES**  **NO**

If YES, is it recommended / qualified with vibrating environment. Please provide overview:

***Do you have soldering technology in your catalogue?***

**YES**  **NO**

If YES, please provide overview:

* 1. ***Cable Segregation Technology.***

***Do you have standard technologies for cable segregation for power cable and instrumentation cable within the same feedthrough?***

**YES**  **NO**

If YES, please provide overview:

If NO, should you be interested to develop such technology:

* 1. ***Vacuum Boundary.***

***As detailed in the Market Survey Summary Specifications, feedthroughs acts as vacuum boundary. Do you have vacuum standard sealing technology compatible with Ultra High Vacuum?***

**YES**  **NO**

If YES, please provide overview:

If NO, should you be interested to develop such technology:

* 1. ***Vacuum Boundary.***

***Does this technology for vacuum boundary have demonstrated performances under radiation (connectors, GTMS, Cer TMS…)?***

**YES**  **NO**

If YES, until which level of dose:

* 1. ***Vacuum Boundary.***

***Does your sealing technology for vacuum boundary have demonstrated performances under high temperature (connectors, GTMS, Cer TMS…)?***

**YES**  **NO**

If YES, until which level of temperature:

* 1. ***Electromagnetic Environment.***

***Have you already designed electrical feedthrough to be used in magnetic environment (DC and AC magnetic field)?***

**YES**  **NO**

If YES, how is the connection between the cable metal shield and the feedthrough performed considering EMC environment:

* 1. ***Electromagnetic Environment.***

***Do you have standard technology to limit crosstalk between signal cables at the level of the pins / connectors?***

**YES**  **NO**

If YES, please detail technology and applicability to sub-D and circular connectors:

* 1. ***Challenges and Capabilities.***

***Do you see technical difficulties in the scope of this supply = design, qualification…?***

**YES**  **NO**

If YES, please identify the main challenges:

If YES, are these difficulties a showstopper for your company to participate to the development of the feedthroughs:

* 1. ***Challenges and Capabilities.***

***Does your company have capabilities to manufacture optical feedthroughs?***

**YES**  **NO**

If YES, please clarify if these capabilities are “in house” in your own premises or with sub-contracting:

# *Technical Competence and Experience*

# *OPTICAL FEEDTHROUGHS*

* 1. ***Single Mode Fiber Technology.***

***Have you already developed feedthrough for single mode fiber?***

* ***With insertion loss below 1dB?***

**YES**  **NO**

If YES, please could you provide an overview of the technology:

If NO, should you be interested to develop such technology:

* 1. ***Multi-Mode Fiber Technology.***

***Have you already developed feedthrough for multi-mode fiber?***

* ***With insertion loss below 1dB?***

**YES**  **NO**

If YES, please could you provide an overview of the technology:

If NO, should you be interested to develop such technology:

* 1. ***Vacuum Boundary.***

***What type of sealing technique for vacuum boundary do you use?***

* ***Use of vacuum compatible connectors, brazed tubes, glass/ceramic sealing?***

**YES**  **NO**

* ***Use of another technique?***

**YES**  **NO**

If YES, please could you provide an overview of the technology:

* 1. ***Vacuum Boundary.***

***Does your sealing material/connector have demonstrated performances under radiation?***

* ***Under which level of dose?***

**YES**  **NO**

* ***Under high temperature?***

**YES**  **NO**

If YES, please could you provide the level of dose and the level of temperature:

# *Project Schedule*

* 1. ***How many months do you need to develop a prototype of Feedthrough considering all requirements listed in the Market Survey Summary Specifications?***

Please could you provide us with development duration for Electrical and for Optical Feedthroughs:

# *General Questions*

* 1. ***Do you have any concerns related to the Electro-Magnetic environment?***

**YES**  **NO**

If YES, please could you give us your concerns:

* 1. ***Do you have any concerns related to Cable segregation?***

**YES**  **NO**

If YES, please could you give us your concerns:

* 1. ***Please indicate any other information that may be relevant for this Market Survey.***

# *Quality Assurance*

***Are you certified ISO 9001 or equivalent?***

**YES**  **NO**

***Please specify your certifications.***

|  |  |  |
| --- | --- | --- |
| ***QA Certifications*** | ***Comments*** | ***Validity Period*** |
|  |  |  |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| Signature: | COMPANY STAMP |
| Name: |
| Position: |
| Tel: |
| Date: |