**Expression of Interest (EOI)**

**Questionnaire**

*(Use this template for your document. The document can be at most 10 pages long, in this style, font and font size, but you can have appendices and do not have to include the tables in the page count. There is no prescribed format of the document, but you are asked to address the questions below. It is understood that maybe not all questions can be answered precisely, everybody is asked to fill the questions as good as currently possible. All submitted public Questionnaires will be viewable here (https://indico.bnl.gov/event/8552/). You can also submit a separate document with certain information you would only like to be viewable by the EIC Project. DEADLINE FOR SUBMISSION: NOVEMBER 1.)*

**Please indicate the name of the contact person for this submission:**

*(we ask for one main contact person per submission. You can as needed provide further contacts, but there should be one primary contact)*

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**Please indicate all institutions collectively involved in this submission of interest:**

*(even if institutions can submit on their own, it is highly encouraged to form groups to work together within their country, their geographical region, or as a general consortium)*

* Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV)
* Universidad Autónoma de Sinaloa (UAS)

**Please indicate the items of interest for potential equipment cooperation:**

*(indicate experimental equipment components, including those integrated in the interaction regions, each separately)*

* Silicon detectors
* Scintillator detectors
* DAQ

**Please indicate what the level of potential contributions are for each item of interest:**

*(e.g. indicate if contributions are for full in-kind experimental equipment components – we have provided a rough direct cost estimate for many components in an appendix (see slide 10 & 11 at*

*https://indico.bnl.gov/event/7449/contributions/35863/attachments/27277/41597/EIC.Comp.Det.032020.eca.pptx, if contributions are for partial in-kind experimental equipment components, if contributions are for in-kind labor contributions, etc.).*

We can contribute in the Beam monitor detectors and in the electronics for DAQ.

It is not possible to provide numbers of specific contributions.

**Please indicate what, if any, assumptions you made as coming from the EIC Project or the labs for your items of interest:**

*(e.g., indicate if you include engineering and design activities or assume those to come from the EIC Project, if you assume certain material costs to be covered by the EIC Project, if you rely on existing capabilities at the labs, etc. Try to be as inclusive as you can be.).*

The plan is to participate in the design, construction and installation of detectors. We have experience designing devices for beam monitoring as well as trigger detectors to study physical processes in heavy ion collisions, proton-proton

**Please indicate the labor contribution for the EIC experimental equipment activities:**

*(e.g., for each cooperation and/or institution list the number of senior staff, the number of postdocs, and the number of graduate and undergraduate students that you plan to dedicate to the EIC experimental equipment activities. Similarly, please list the number of engineers, designers and technicians included in your potential cooperation).*

The time commitment of members of the group in the EIC efforts described in this EoI is anticipated to be as follows:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Institution Name | Professor | Research Professor | Staff Scientist | Postdoc | Graduate Student | Undergrad. student | Engineer | Designer | Technician | Total Sum |
| Universidad Autonoma de Sinaloa | 0.1 | 0.25 |  | 0.5 | 0.2 | 0.1 | 0.1 |  |  |  |
| 0.1 |  |  |  | 0.2 | 0.1 |  |  |  |  |
|  |  |  |  | 0.2 | 0.1 |  |  |  |  |
|  |  |  |  | 0.2 | 0.1 |  |  |  | 3.15 |
| Centro de Investigacion y de Estudios Avanzados del IPN | 0.25 |  |  | 1 | 0.3 |  |  |  |  |  |
|  |  |  |  | 0.3 |  |  |  |  |  |
|  |  |  |  | 0.5 |  |  |  |  | 2.35 |
| **Valid for 4 years.** |  |  |  |  |  |  |  |  |  |  |

NOTE: FTE in the above table represents the annual fractional full time equivalent (FTE).

NOTE: for a professor, full-time equivalent research time may be limited to 25% max, for a research professor (or a sabbatical) or a staff scientist limited to 50% max, for a postdoc maybe 100%, and for a grad. student perhaps 50% (on average). For an undergraduate student research time (on average) is limited to 20% max.

*(Repeat this table for each institution, or include the information for the whole group/consortium together in one table as shown above.* ***This reflects an annual average FTE estimate.*** *Please state below for how many years you estimate this average cooperation level to be valid.)*

It is anticipated that the collaborative effort of <INSTITUTION A> to cooperate on the EIC Project is to include (at an annual basis) 0.2 full-time equivalent FTEs of a professor, 0.3 FTE of a research professor, 1.0 FTE of a postdoctoral researcher, and 0.9 FTEs of Ph.D. students. The technical collaborative effort contributed is to include up to 0.8 FTE of a (mechanical or electronics) engineer, 0.5 FTE of a designer, and 1.0 FTE of a technician. We anticipate the duration of this collaborative effort to cooperate on the EIC Project to start at the <DESIGN/CONSTRUCTION> phase and to be for a period of <TWO/THREE/FOUR/FIVE> years.

**Please indicate if there are timing constraints to your submission:**

*(e.g., indicate any known or anticipated timing profile assumed in your EOI. This can include anticipated time frames folding in constraints due to ongoing commitments, due to ongoing R&D and its anticipated completion date, etc.)*

**Please indicate any other information you feel will be helpful:**

*(e.g., this could be things like assembly and storage space at your institute, clean rooms and class, special skills or machine shops, or perhaps some pointers to past accomplishments – you can expand on those in an appendix. If you could make existing engineering, design or technician labor available to the EIC experimental equipment but would rely on funds coming from the EIC Project you can also list those here).*

Our group has access to small workshops for machining detector materials.

We designed and constructed the detectors: V0, AD and ACORDE for the ALICE collaboration at the LHC, CERN.