1.1 The Request for Proposal:

This Request for Proposal (RFP) is intended to outsource the development and operationalization of an information technology based tool called **PACTApp**, which will be central to the new strategic approach 2020-30 of Transparency International Bangladesh (TIB) titled, **Participatory Action against Corruption: Towards Transparency and Accountability (PACTA)** to be implemented subject to approvals of the relevant authorities in due course. The App is expected to facilitate deeper and wider engagement of people, especially young generation in the social movement against corruption and at the same time further enhance the credibility and granularity of data collection, analysis and knowledge-based advocacy.

Response and compliance to this call will be contracted to develop and operationalize the PACTApp by completing the stages and processes as detailed below, through a competitive process following national and TIB’s own procurement policies.

1.2 Background

Transparency International Bangladesh (TIB) was established in 1996. It is widely recognized as a strong and independent civil society institution, vital to the pluralism, democracy and good governance in Bangladesh.

The Participatory Action against Corruption: Towards Transparency and Accountability (PACTA) will focus on shifting TIB’s interventions from voice to action with a greater participation from beneficiaries. It will be a dynamic model that will build its activities and programs on data collected from TIB’s interventions, creating a feedback loop. The loop will ensure that TIB’s work is not stuck in a preconceived program of intervention but it is able to integrate lessons learned from its interventions’ metrics and adapt its programs in consequence, to increase its efficiency through a dynamic adjustment process. The use of **big data and machine learning** will be an additional base to support TIB’s advocacy with the authorities both at local and national levels. The data collected by a large network of public service beneficiaries should allow TIB to make more solid measurements of its actions and of public sector performance at the local level in the lens of SGDs achievements.

1.3 The project

Concept

With PACTApp, TIB’s objective is to use collective intelligence to help beneficiaries of public services solve the problems they are facing when accessing public services.
To do so PACTApp collect beneficiaries’ inputs about the problems they are facing when accessing public services and their experience when trying to solve those problems through a smartphone App.

The data collected are analysed using graph theory and big data treatment. This graph will evolve using machine-learning based on relevant policies, rules and regulations, TIB’s accumulated expertise and beneficiaries’ inputs to identify the best way forward to solve their problems. The beneficiaries are then informed on the best way to proceed to solve these problems through the App.

The number of active beneficiaries participating to PACTApp will reach 50000 in year 5 of the project PACTA. The thematic areas considered under the project are: health, education, land, environment and construction. However, PACTApp should allow for additional thematic to be covered by the generation of additional sets of questions.

Figure-1: Schematic presentation of various types of data to be generated under PACTA through use of PACTApp

The “Contextual Data” will constitute a baseline of institutions under community monitoring under PACTA as well as a set of randomly chosen non-intervention public service providing institutions. It should be possible to extract this data. The data are created mostly through the app, and app is connected to the machine learning results for problem resolution guidance.
The “data regarding service delivery” are a series of questions and actions that will help inform and track beneficiaries’ (the users) experience in trying to solve an identified problem. Time and steps will define a trajectory through the node of the graph. Machine learning will generate statistical data based on all the users’ input to orient new users through the best (fastest or most likely) possible path to resolve their initial problem(s). TIB’s research team will create the first initial basic graph. Users experience will provide new inputs to the initial graph and help enrich it continuously; while TIB research team will ensure that those inputs are standardized.

The user will be assisted on actions to be taken such as (call or write to specific persons, check if certain dispositions are existing, take pictures of the problem and send it to a specific office etc., etc.). A chat function will be integrated to the app to allow group of users to support each other.

The result will be a large number of path through the graph and nodes resulting in resolution patterns that will have to be analysed by the machine learning to deduct possible optimizations or to identify typical problem patterns.

Figure-2: Schematic presentation of PACTApp Structure

**PACTApp structure**

*This is an indicative structure 1) design and graphic; 2) Data creation, analysis management & machine learning; 3) Training modules*

*Alternative structure could be provided if there is a real gain in efficiency and cost.*

**2.1 The structure of the delivery:**
This RFP is divided in three parts:
1. Design and graphic interface
2. Data creation and storage, user and data management, analysis, machine learning
3. Training

2.1.1 Design and graphic interface
UX Design and User experience

Below we are proposing some elements of content to be included in the PACTApp tool. Their organization in the interface can be done differently but TIB is expecting those functions to be designed and later developed.

Indicative example of the app content, additional functions might appear as development progress

Figure-3: Indicative example of PACTApp contents
Indicative example of the website interface content. Additional function might appear as development progresses.

<table>
<thead>
<tr>
<th>General Parameter</th>
<th>User Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTEXTUAL MENU</td>
<td>User Filter</td>
</tr>
<tr>
<td></td>
<td>(active/ by district/ by upozilla/ by date of creation/ by thematic monitoring/ by ACG group...).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Parameter</th>
<th>Civic Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTEXTUAL MENU</td>
<td>Issue Filter</td>
</tr>
<tr>
<td></td>
<td>(active/ by district/ by upozilla/ by date of creation/ by thematic monitoring/ by ACG group...).</td>
</tr>
<tr>
<td></td>
<td>Service Provider Filter=&gt; Associations Service/ ACG (active/ by district/ by upozilla/ by date of creation/ by thematic monitoring/ by ACG group...).</td>
</tr>
<tr>
<td></td>
<td>Action plan management</td>
</tr>
<tr>
<td></td>
<td>Action history</td>
</tr>
<tr>
<td></td>
<td>Action prioritization</td>
</tr>
<tr>
<td></td>
<td>Letter follow up</td>
</tr>
<tr>
<td></td>
<td>Resolution step follow up</td>
</tr>
<tr>
<td></td>
<td>Export data</td>
</tr>
</tbody>
</table>

Statistics
Maps
Document visualization
<table>
<thead>
<tr>
<th>General Parameter</th>
<th>Outreach &amp; Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTEXTUAL MENU</strong></td>
<td></td>
</tr>
<tr>
<td>Issue Filter</td>
<td></td>
</tr>
<tr>
<td>(active/ by district/ by upozilla/ by date of creation/ by thematic monitoring/ by ACG group...)</td>
<td></td>
</tr>
<tr>
<td>Letter template format</td>
<td></td>
</tr>
<tr>
<td>Database of Government institutions</td>
<td></td>
</tr>
<tr>
<td>Government institutions employee/ Contact</td>
<td></td>
</tr>
<tr>
<td>Management of media content: TIB.ORG, FB, Tweeter, Insta...</td>
<td></td>
</tr>
<tr>
<td>Research data import</td>
<td></td>
</tr>
<tr>
<td>Letter management and visualization</td>
<td></td>
</tr>
<tr>
<td>Supporting document visualization &amp; download</td>
<td></td>
</tr>
<tr>
<td>GRAPH representation of ACG activity</td>
<td></td>
</tr>
</tbody>
</table>

Should add “data import”

<table>
<thead>
<tr>
<th>General Parameter</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTEXTUAL MENU</strong></td>
<td></td>
</tr>
<tr>
<td>Issue Filter</td>
<td></td>
</tr>
<tr>
<td>(active/ by district/ by upozilla/ by date of creation/ by thematic monitoring/ by ACG group...)</td>
<td></td>
</tr>
<tr>
<td>List of ISSUES management</td>
<td></td>
</tr>
<tr>
<td>Resolution step management</td>
<td></td>
</tr>
<tr>
<td>Tag and action data management</td>
<td></td>
</tr>
<tr>
<td>GRAPH map creation</td>
<td></td>
</tr>
<tr>
<td>Connection URL management (in/out)</td>
<td></td>
</tr>
<tr>
<td>Algorithm development and management</td>
<td></td>
</tr>
<tr>
<td>ACG data monitoring data set-up</td>
<td></td>
</tr>
<tr>
<td>Random monitoring data set-up</td>
<td></td>
</tr>
<tr>
<td>Baseline data set-up and analysis</td>
<td></td>
</tr>
<tr>
<td>Supporting document visualization &amp; download</td>
<td></td>
</tr>
<tr>
<td>GRAPH representation of ACG activity</td>
<td></td>
</tr>
</tbody>
</table>

Statistics
Maps
Document visualization
**Deliverable indications:**

Propose styles and screens for future users to test

Following the test results: provide sample screens and simulations

Finalize the screen and simulation of both the App and the website

Style guide and wireframes for App and website front-end and back-end

Zone of customization

Export of all the graphic elements for the developers

**2.1.2 Data creation and storage, user and data management, analysis, machine learning**

Data structure
Data management and web-services
Data analysis (Graph theory and machine learning)/ Node management)
Data extraction (Basic visualization (Map/Graph/Charts) and export
Data standardization
User management (users’ access right (site and app)/ user group
Users’ trouble tickets resolution)
Users’ statistics/ users’ input-output control/ message and chat
Admin and finance module (payments processing based on users’ mobilization, financial reporting, possible use of blockchain)
Data input design for the App (Questionnaires design and editing for the App, App modification distance)

**Deliverable indications:** for each indicate a cost that will be paid independently when delivered.

According to the graphic design agreed in the part (1)

- Native apps in iOS and Android
  Possible for the app to work off-line with continuous GPS location gathering
- Responsive Website

Required components of the solution provided

- Multi-language (English, Bengali, +)
- Content management system (CSM). Adaptability (tick box, dropdown menu for data standardization, analysis filtering and management)
- Customer/User management system (CRM)
- Issue/Trouble ticket management
- Feature and bug tracking
- Functional test automation
- Standard technology (example: NewSQL / NoSQL / Hadoop / Kafka / VoltDB...) and good performance for big data and Graph analysis
- Storage: Pure-cloud or Hybrid cost issue should be considered
- Agile Development process with Sprints with the production of scalable proof of concept (POC). For the initial phase, TIB will provide a set of artificial data to make simulation before the developed concept is deployed in the field first on a small sample and then progressively scaled-up.

Each deliverable will be done following development sprints. After each sprint there will be testing, review and quality insurance. **Payment will be done at the end of each successful sprint(s).** Sprints will happen at the end of each cycle, as a proof of concept for the data treatment and machine learning algorithm(s) will be required.

- Maintenance and support conditions (time-price)
- Additional development conditions (price)

**2.1.3 Training:**

The creation of the training will require a close collaboration between the developers and the training designers.

Digital training modules with evaluations for the app users:
- One training module should be developed using a learning management system (LMS) that would collect the training time, the tests responses and
identify if a trainee has abandoned a session. The module format should use a SCORM format, unless the applicant provides a better option.

This initial training should be imbedded in the app and should be taken by each new app user.

The training would cover 5 thematics: health, education, land, environment and construction.

The training should be designed for 50 000 trainees.

Possible structure of the training modules:

<table>
<thead>
<tr>
<th>Title</th>
<th>Objectives</th>
<th>Key notions</th>
<th>Video illustration</th>
<th>Examples</th>
<th>Exercises</th>
<th>Tests</th>
</tr>
</thead>
</table>

- This is composed of short and very simple orientations in the form of images, gif, and/or video to help the users to orient themselves in the app. Ideally these should be extracted from the above modules.

Digital training modules for TIB staff with evaluations

Contextual training/ problem solving modules incorporated in the website and in the App.

3.0 Delivery process

Indication of deliverable steps:

- (1) Design of App interface
- (1) Design of Web interface (for each sections)
- (1) / (2) Design of data analysis module
- (2) Graph module POC and machine learning theory and test
- (1)/ (2) Interface of data standardization and graph node control
- (2) App development Alpha and Beta version test
- (2) Reiteration of modules and development corrections according to field data test results
- (2) TIB admin support modules (user and group management, finance module (payments and users’ mobilization financial reporting, possible use of blockchain), training integration)
- (3) Training modules content design
• (3) Training modules developed and adapted for their integration into the app and website

This indicative steps and their content could be reviewed in function of companies’ inputs.
## Timeline for delivery:

### Section in charge

<table>
<thead>
<tr>
<th>(1) Design and graphic interface</th>
<th>(2) Data management and machine learning</th>
<th>(3) Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payment 1= 10%</td>
<td>Payment 2= 15%</td>
<td>Payment 3= 15%</td>
</tr>
<tr>
<td>01 May 2020</td>
<td>01 June 2020</td>
<td>01 July 2020</td>
</tr>
</tbody>
</table>

### Deliverable

- Interface design for App and for Software according to all functions required
- Functioning data management, graph system and machine learning structure based on data provided by TIB (Proof of concept)
- Interface design for App and Software adapted to all the functions (evolution from sprint 1 and tests)
- Functioning data management, graph system and machine learning structure based on extended data provided by TIB (evolution from Sprint 1 and tests)
- Interface design is improved based on field tests (evolution from sprint 2 and tests results)
- All modules are functioning and integrated (evolution from sprint 2 and tests results)
- Training module format produced and integrated in the App and Software
- All modules are functioning and tested on the field after sprint 3. During sprint 4 improvement are made based on field reviews
- Final Interface design for App and Software adapted to all the functions (evolution from sprint 4 and field tests)
- Final data management, machine learning and all module used for PACTApp are finalized based on filed test done (after sprint 4)
- Training modules are all completed, tested and integrated with the content of the final version of the Software and App

### Payment Stages

<table>
<thead>
<tr>
<th>Payment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>15%</td>
</tr>
<tr>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>5</td>
<td>25%</td>
</tr>
</tbody>
</table>

### Beta Version Date

- Beta version date + 3 months

### Dates

- 01 May 2020
- 01 June 2020
- 01 July 2020
- 01 August 2020
- 15 September 2020
3.1 Methodology and Technical Specifications

Interested IT and Software development companies should submit proposals clearly indicating

- Company’s past experience of at least 5 (five) years in development of similar products. At least three references to be checked.
- Draft sketch and workflow of the data
- Process and flow of information
- Present the input and output data
- Provide options of the software to be used for the database i.e. NewSQL, VoltDB..., cost for each option, limitation of each option and suggested solution by the company.
- After the proposal is accepted, the company is required to develop a prototype and upon approval from TIB, will develop the actual database.

3.2 Evaluation method:

Each company can apply to any or all of the 3 above parts. The evaluation of each part will be conducted independently. If one company has the highest score on each of the part, it will gain the contract. If a company scores highest on only one or two part, then TIB may decide collaborative contract involving more than one company.

Companies may join together to submit a collaborative proposal (copy of MoU must be attached with the proposal).

The evaluation of each proposal will be done according to the following parameter:

Company’s reputation, legal compliance => 20%
Technical proposition and specificity of the solutions proposed => 50%
Price => 30%

4.0 Submission Guideline

Please submit a brief proposal including but not limited to the following sections

- Past experience of the company in developing UX, machine learning programs and interfaces with similar technologies
- Proposed structure/sketched of the information flows
- Proposed methodology to provide the deliverables
- Proposed detailed action plan
- CVs of technical staff working on the project and their job description
- Cost (as mentioned above, based on the software used), the development and maintenance cost/year should be separate.
Proposals should be submitted no later than 02 April 2020 at 1:00pm Bangladesh time. In case of questions or clarifications, one open and inclusive Consultation Session will be organized at TIB’s office on the 25 February 2020 at 3:00pm Bangladesh time to fully understand the requirements before sending bids. Participation in this Consultation is on invitation basis via email subject to receipt of written request (also by email; pactappfrp@ti-bangladesh.org) on or before 24 February 2020 at 3:00pm Bangladesh time. International experts providing technical support to TIB in this process may take part in this session via Skype. There will be no further scope of questions or clarifications except this Consultation Session.

TIB ensures equal opportunity and level playing field for all interested parties through strict compliance in the due process. Any persuasion in any form leads to disqualification. Decisions of TIB will be deemed as final.

5.0 General Terms & Conditions:

1. Mandatory Documents: The following documents should be submitted with proposal
   a. Copy of updated Trade License or registration certificate to legally work in Bangladesh
   b. Copy of TIN Certificates
   c. Copy of VAT Registration Certificate
   d. Bank A/C Details and Bank Solvency Certificate
   e. Experience/performance certificate as software developer from reputed organizations, minimum three different organizations along with their contact persons’ telephone numbers & e-mail addresses.

2. Work Experience: Must have minimum 5 (five) years of proven experience (development, supply, installation and maintenance of software).

3. Eligibility: Legally registered companies/organizations are eligible.

4. Pre-bid conference: 25 February 2020 at 3:00 PM (Bangladesh time) at TIB office.

5. Payment Currency: Payment will be made in Bangladeshi Taka (BDT)

6. Last date and time of quotation submission: 02 April 2020 on or before 1:00 pm Bangladesh time.

7. Envelop submission method: Vendors are requested to submit the Technical and Financial proposal separately in a Single Envelope along with a soft version stored in a pen drive. Financial proposal will be opened if vendor qualifies in technical criteria.

8. Selection Process: Price and quality of technical proposal both are considered for selecting the final vendor.

9. VAT & Tax: VAT & Tax will be deducted from the bill as per Govt. rules & regulations.
10. Mode of Payment: as described above.

11. Termination:

If the vendor intends to terminate this contract before the completion of the service period, or in case of failure to submit the final product at the end of the agreement period, he/she will be under obligation to fully refund to TIB if any payment is received by the vendor.

12. Contact person:

Abdul Ahad FCMA, Director-Finance & Administration, or his designated person will be the contact person on behalf of Transparency International Bangladesh (TIB).

For any queries please contact: Tel: +88 02 9124788, 9124789, 9124792
Email: aahad@ti-bangladesh.org

13. Address of quotation submission: Please mention the subject at the top right side of the envelop and send to the following address:

Transparency International Bangladesh (TIB)
MIDAS Centre (Level-4) House # 05, Road # 16 (New) 27 (Old)
Dhanmondi, Dhaka -1209, Bangladesh
Tel: +88 02 9124788, 9124789, 9124792

14. Please drop your sealed quotation in the tender box which will be kept in the TIB front desk area between 9.30 am to 4.00 pm only on working days.

15. TIB management reserves the right to change, cancel or modify this tender as deemed appropriate.