TECHNICAL SPECIFICATIONS

(SOFTWARE TRACK) - v1.8

LAGOS SMART METER HACKATHON 2020

HACKATHON BACKGROUND

The **Lagos Smart Meter Hackathon 2020** is designed to address the huge metering deficit in Nigeria. Estimates from analysts indicate that 60% of Nigerian households are not metered. A key impediment is the price of the existing meters. Therefore, this huge market potential is driving the need for hackers, partners, sponsors, and manufacturing companies to join us in making meters more affordable, promoting smarter cities and overall, improving our livelihoods. The Lagos State Ministry of Energy and Mineral Resources is the title sponsor of the Hackathon.

PREREQUISITE

Use of this functional requirement document (FRD) assumes that you have successfully registered your software team on **www.lagossmartmeter.com**

SPECIFICATION OVERVIEW

This document provides a detailed scope of what is expected of your submission for the **Software Track** of the **Lagos Smart Meter Hackathon 2020.** Please pay detailed attention to all information as it may impact the viability of your submission as well as the judges appraisal should you be selected.

PROCESS TIMELINE

- **Team Registration:** July 30, 2020 - August 28, 2020
- **Prototype Build and Finalization:** July 30, 2020 - August 28, 2020
- **Prototype Submission Deadline:** August 28, 2020

SPECIFICATION SCOPE

You have chosen to participate in the Software Track and you are expected to build a software prototype of a Smart Meter for the Hackathon. You are to incorporate the below features, specifications & guidelines. Any features marked (bonus) are not compulsory but can be an added benefit for selection and appraisal.

- **Administrative Dashboard:** Specification for platform administrator. Software to have an administrative console to manage stakeholders and critical settings.
    - **Stakeholder Accounts:** Super Admin can create multiple user accounts for stakeholders such as Distribution Companies.
    - **Role Based Access:** Super Admin can create roles and assign them to stakeholders. Views & Access can be customized per role.
    - **Billing:** Ability to Manage Billings Settings such as kWh cost and more.
    - **Security:** Enterprise security and Web Application Firewall.
- **Stakeholder Dashboard:** Specification for stakeholders should include but not limited to:
    - **Subscriber Accounts:** Create and manage multiple user accounts for Subscribers
    - **Device Management:** Profile & Allocate Devices. Monitor Usage
    - **Billing:** Create & Manage billing/tariffs classes and apply them to subscriber accounts
- **Subscriber Dashboard:** Specification for meter users/subscribers should include but not limited to:
    - **Subscriber Web Application:**
        - Ability to view meter usage
        - View billing & make payment
        - Ability to remotely turn meter on/off
        - User to receive alert or notification when the units on meter have reached a certain level(such level to be determined by the user)
    - **Subscriber Mobile Application:** All of the above available on a mobile application which can be Android and/or IOS based.
- **System:** Core System Features
    - Record time of usage
    - Record monthly on hours.
    - Constant, live feedback and monitoring between meters and platform servers
    - Settings to auto-shut off subscriber meter if foul events (such as tamper or disconnection) is detected
- **Connectivity & Communication:** IOT Compatibility
    - **IAAS (Infrastructure as a Service) Provider:** prototype should be configured to read data from sample IAAS endpoints or any of the following services:
        - AWS (Amazon Web Services) https://aws.amazon.com/iot/
        - Microsoft Azure https://azure.microsoft.com/en-us/overview/iot/
        - GCP (Google Cloud Platform) https://cloud.google.com/solutions/iot
        - Alibaba Cloud https://www.alibabacloud.com/product/iot
        - Lenovo Cloud Solutions https://www.lenovoconnect.com/en/solution/industry
        - IBM Cloud https://www.ibm.com/cloud/internet-of-things

- **Billing:** Software should give user ability to top up meter virtually via integrated payment gateways.
- **Blockchain (BONUS):** Adopt and Integrate Blockchain technology in billing

SUBMISSION DETAILS (REQUIRED AS EVALUATION & SELECTION CRITERIA)

The Hackathon will accept working prototype web and applications that consume test data from test cloud sources.

- Thus applicant MUST submit:
  - 2 Dashboard URLs (Stakeholder and User application Portals)

    AND

  - 1 Mobile App download URL
- Prototype MUST include all Requirements listed above.
- Show of previous/similar work.

INTELLECTUAL PROPERTY & REWARD

The rights to the intellectual property of the winning prototype, design and/or applications will be owned by the Lagos State Government (the Title Sponsor) at the end of the competition. **A prize money will be awarded to the winning team or individual in addition to a percentage of the intellectual property royalties from the winning solution for 5 years from the go-to-market date.**

The samples, drafts sketches, prototypes, designs, presentation of the submission of software track of the Competition with registered patent shall remain the Intellectual Property of the participants until submission of the winning entry into this competition and transfer such Intellectual Property rights to the State Government.

DISCLAIMER

- By entering into the Lagos Smart Meter Hackathon 2020 competition, the Lagos State Government is exempted from any liability relating to the product, design, Intellectual Property rights, presentation amongst others or any other liability that may arise during or after the competition.
- The participant shall absolutely assume all risks and liabilities associated to the design, presentation, Intellectual Property rights including but not limited to third party claim and or litigation that may arise from the Competition.

- The non-winning applications of this competition shall not in any way sue or institute legal action against the State Government on any issue relating to Intellectual Property rights and or the Competition and shall be bound by outcome/result of the competition.
- Considerations shall not be given to any submission(s) made after the deadline irrespective of the commencement of registration by the individual or team.