



## **Request for Proposal**

### **Mobile & Web Application for Speed/Bitrate Test**

#### **Supplement 1**

#### **Functional Requirement**

**Version 1.1**

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## Document Control

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### Reviewers:

| Department | Name | Approval Date |
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### Change Forecast:

**This document will be kept under strict revision control**

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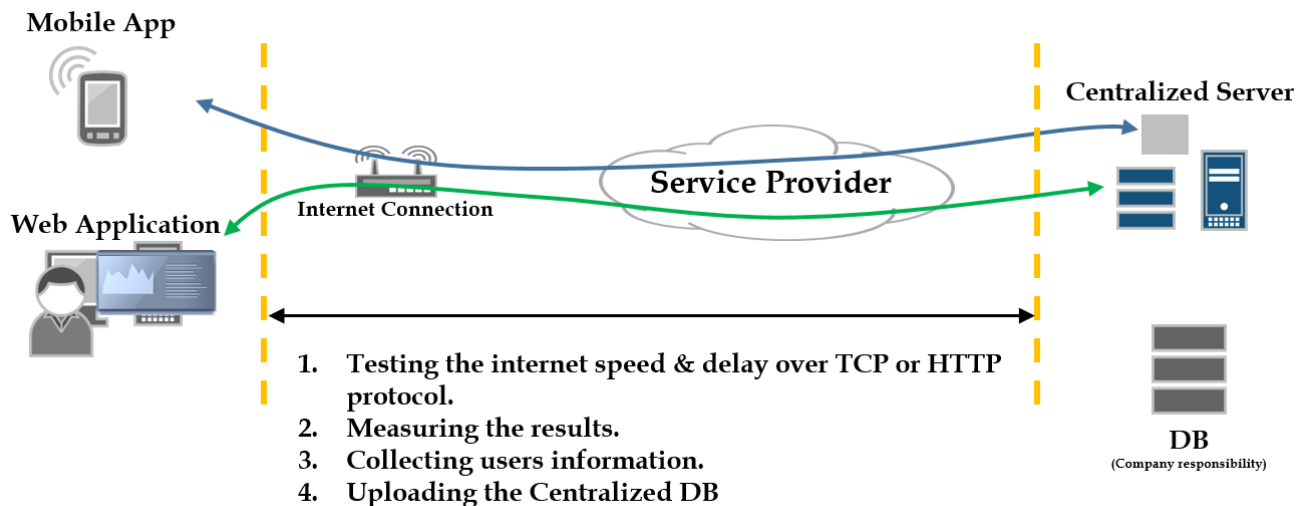
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# 1 INTRODUCTION

- 1.1 The Company aim to develop Mobile & Web Application to conduct speed (bitrate), latency/delay as a client server based relation. Application aims to help you measuring the quality of users Internet connection and will be showing the test results to customer, update test results & collected information from client device to central server. Therefore, Bidder is invited to include in his offer his concepts, practices and plans for the works required under this in a way that convinces the Company that the Bidder has fully understood the aims of this tender.
- 1.2 The expected solution should have 3 (three) component;
- 1.2.1 Software on Centralized Server that;
    - Accepts the Mobile & Web App connections
    - Hosts the files to be downloaded during the speed/bitrate test.
  - 1.2.2 Mobile Application that connects the Centralized server, conducts the test, collect & upload required information to centralized server.
  - 1.2.3 Web Application/page that allow users to do test over browser similar to mobile application from their PC/laptops, collect required information and upload to centralized server.



- 1.3 Bidder shall develop the Mobile Application to work on IOS & Android Mobile OS.
- 1.4 Bidder shall develop the Web application compatible on most well know browsers (Chrome, Internet Explorer, Microsoft Edge, Mozilla, Safari, Opera etc.)
- 1.5 Bidder shall provide bug fixes for a one year after acceptance for both Mobile & Web Application.
- 1.6 Bidder will provide all source code to company and all usage and copy rights shall be belonging to Company.

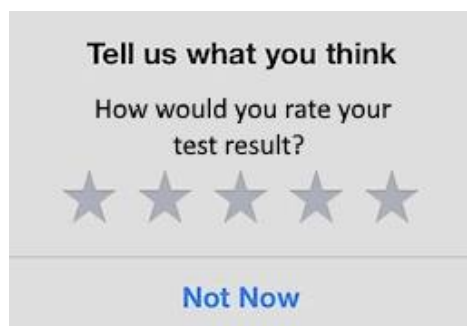
## 2 MOBILE APP FUNCTIONAL REQUIREMENTS

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The test model is requires two component. First, Software module on centralized server (will be provided by Company). Second, application (Developed by Bidder) on mobile devices that initiates & conducts the tests.

- 2.1 Application shall be working on IOS & Android mobile platforms.
- 2.2 Application shall run speedtest, bitrate test over TCP protocol. Company is providing mechanism, requested operating flow diagram & calculation mechanism on below documents.
  - 2.2.1 Appendix A – Delay\_Jitter\_Packet\_Loss\_Calculation and Measurement.pdf
  - 2.2.2 Appendix B – Upload & Download Speedtest Calculation (TCP).pdf
  - 2.2.3 Appendix C – Mobile App Flow Diagram V1.1 – TCP.pdf
- 2.3 Application shall run speedtest, bitrate test over HTTP protocol as fallback mechanism in case TCP Fails. Bidder is required to select and/or develop methodology and flow diagram for HTTP.
- 2.4 Information to be collected from mobile device;
  - 2.4.1 If the user doing the test over the WI-FI Network
    - Device Type
    - Operating System
    - Connection Type as (WI-FI)
    - WIFI signal quality level (getRssi)
    - WIFI Link Speed (getLinkSpeed)
    - Location information as coordinates (getLatitude, getLongitude)
    - Download Speed/bitrate test results as in Mbps
    - Upload Speed/bitrate test results as in Mbps
    - Latency/Delay (Ping) test results as in milliseconds
    - Packet Loss as in percentage of loss
    - Jitter as in milliseconds
    - Server IP Address used for the test
    - Device/Handset IP Address (getAddress)
    - User given score/rate for the test result. (Please see 2.6 for more detail)

- 2.4.2 If the user doing the test over the GSM/Mobile Network
- Device Type
  - Operating System
  - Connection Type as (GSM)
  - RF Signal Level as dBm (getDbm, getLevel)
  - Mobile Operator that are connected (getMcc, getMnc, getSpn)
  - Mobile Cell-Id, LAC-ID that handset connected on Mobile Network (getCid, getLac, getCi, getPci, getTac)
  - Mobile Communication Technology Type (Edge, GPRS, 3G, HSDPA, HSPA+, LTE) or (2G, 3G, 4G)
  - Location information as coordinates (Latitude, Longitude) (getLatitude, getLongitude)
  - Download Speed/bitrate test results as in Mbps
  - Upload Speed/bitrate test results as in Mbps
  - Latency/Delay (Ping) test results as in milliseconds
  - Packet Loss as in percentage of loss
  - Jitter as in milliseconds
  - Server IP Address used for the test
  - Device/Handset IP Address (getAddress)
  - User given score/rate for the test result (Please see 2.6 for more detail)
- 2.5 All this information should be uploaded to central server in CSV coded binary format as HTTP Put.
- 2.6 Application shall ask for a rate for results that he/she get from test. This will be asked user as pop-up after all results shown to customer as demonstrated on below example.



- The score should be rated as from 1 to 10.
  - Collected score/rate will be send to as part of test results.
- 2.7 Application shall support listing historical result of test he/she conducted.

- At least Last 20 test results shall be kept on customer device.
- It shall support sorting the results
- Below fields should be shown on the history as well as location information of the customer.

2.7.1 Connection Type (WiFi, 3G, 4G)

2.7.2 Latency

2.7.3 Upload Speed Results

2.7.4 Download Speed Results



### 3 WEB APP FUNCTIONAL REQUIREMENTS

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The Web page/server should be built by bidder that allowing users (PC/Laptop and/or users don't installed application) to speedtest, bitrate test over TCP protocol and/or HTTP protocol as a fallback mechanism similar to mobile application.

Web application/page expected to work in similar way that mobile application works.

#### 3.1 Information to be collected from device;

- Device Type
- Operating System
- Connection Type as (WI-FI)
- WIFI signal quality level
- WIFI Link Speed
- Location information as coordinates (getLatitude, getLongitude)
- Download Speed/bitrate test results as in Mbps
- Upload Speed/bitrate test results as in Mbps
- Latency/Delay (Ping) test results as in milliseconds
- Packet Loss as in percentage of loss
- Jitter as in milliseconds
- Server IP Address used for the test
- Device/Handset IP Address
- Device MAC Address
- User given score/rate for the test result. (Please see 2.6 for more detail)