सत्यमेव जयते

Information Note to the Press (Press Release No 16 /2018)

For Immediate Release

Telecom Regulatory Authority of India

New Delhi, the 5ᵗʰ February, 2018: Telecom Regulatory Authority of India (TRAI) has today released a White Paper on Wireless Data Speed Measurement.

Speed of Internet connection is considered to be most important and fundamental metric to measure broadband experience. While measuring broadband experience is important for consumers to make informed choice on one hand, it also helps regulators, policy makers to assess the accessibility to services dependent upon broadband on the other. Broadband experience across geographic locations and different networks also provides insight into the extent and level of achievement of goals set by the Government.

With the deployment of LTE networks broadband penetration in the country has increased and data consumption pattern of users has also undergone a massive change. It has brought more dependency of users on services through broadband. Expectation level of users about broadband experience has also risen justifiably. Consequently measurement of broadband speed provided by different Telecom Service Providers (TSPs) has become more critical. Notably, in case of mobile broadband networks, performance is dependent on both time and geography. It requires periodic assessment of mobile broadband networks. Empowerment of user to know typical speed available in her location of choice therefore becomes essential.

TRAI has taken various initiatives to bring transparency and empowerment to the consumers in this regard. One of the initiatives includes setting the benchmarks for wireless data networks and also assessing the network performance on a periodic basis. TRAI has also introduced mobile apps known as TRAI MySpeed App for the users to measure the broadband speed on their own and report it back to TRAI.

Since its launch, stakeholders have sought more details about the working methodology of the TRAI MySpeed app. Some of them have also raised queries relating to the test results of the mobile app and network level values being reported on the analytical portal of TRAI.
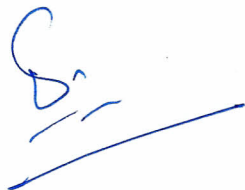
This paper provides more information about the test set up and methodologies behind the working of TRAI MySpeed app. It explains the approach used for processing of test logs collected from the app, like filtering and aggregation for reporting performances at network level. The paper elaborates on the methodology used for conducting individual tests and compares it with approaches followed by a few other speed testing app providers. Further, it also compares the approaches of filtering and aggregation followed by different app providers.

There are various ways in which speed test data may be analyzed and reported. To illustrate this, the paper analyzes data of three months (August- October, 2017) in detail and presents spatial and temporal distribution of download throughput. A variety of graphs are also presented for a deeper understanding of the data and interpretation of outcomes of speed measurements. The analysis is done at all India level presenting variations in throughput across the districts. Deeper analysis is done for nine districts of Delhi and presented variations with Box and Whisker plots.

Detailed analysis of the data, comparison with other apps and exploration of possibilities to present data in variety of ways provides leads to few initiatives which can be taken to make the wireless data speed measurement exercise more useful for mobile users and other stakeholders.
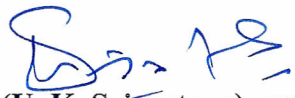
Key points of conclusion are:

- Measuring broadband speed is a complex process and the outcome depends upon both the test methodology and test conditions.
- Inferences and interpretation of results of test results are to be done keeping in mind the purpose for which these test process were designed and developed.
- Wide variations during the individual test of speed measurement may sometimes be observed because of network state and short time window of measurement. Individual user results in conjunction of results of network performance in area of concern with tests conducted at the moment may provide better picture about expected performance of broadband network.

- For comparing the results from various speed measurement app providers, all such providers need to make available complete details of their methodologies and data processing in public domain so that various stakeholders including users can better understand and interpret them.
- Speed measurement at all India level may need to be presented with spatial and temporal distributions across districts and across different times of the day instead of presenting by a single value.
- Download throughput distribution graphs are highly asymmetric, it may require to be presented by five point summary as depicted in a box plot instead of only single value like mean or median.

The paper also suggested way forward that requires initiatives and support from various stakeholders who can help in accomplishing the objectives of successful wireless data measurements.

(U. K. Srivastava)

Secretary I/C

TRAI