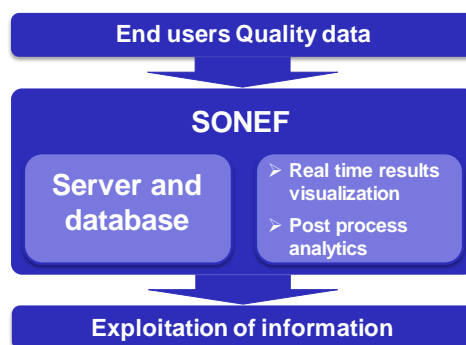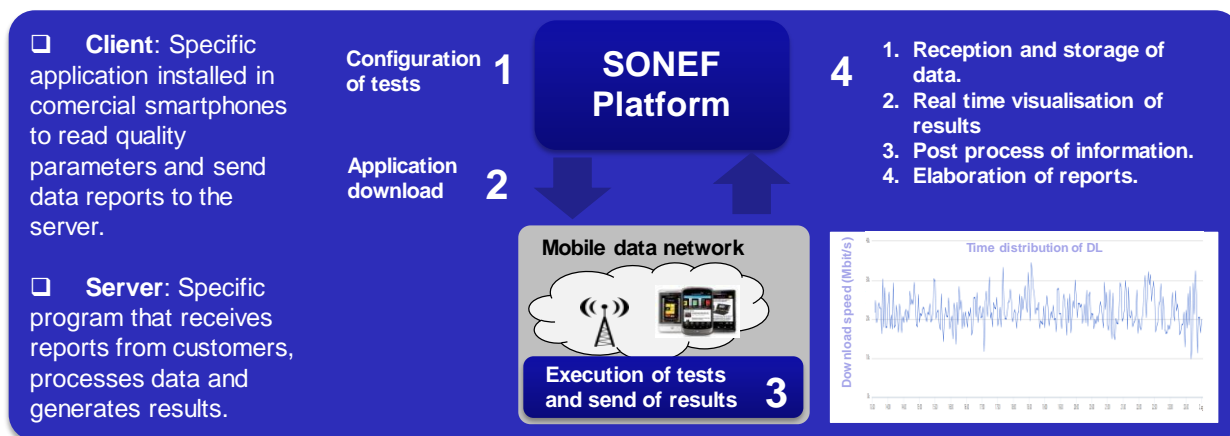# TELCONOMICS SONEF

Empirical and statistical determination of the objective quality of the services delivered by a mobile data network to its users.
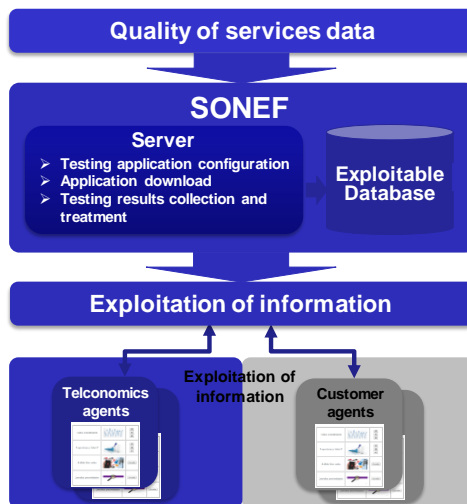
SONEF is a platform designed to empirically and statistically determine the objective quality of the services offered to the customers of a mobile data network. The actual quality of the services performed by a mobile data network is extremely variable. This is due to a number of network related factors (internal and external) and devices related factors (sensibility, operative system, etc.), making impossible an aprioristic model. But it is possible to empirically and statistically determine the quality following a number of technical objective parameters that affects the services.

End users Quality data

SONEF

Server and database

➤ **Real time results visualization**
➤ **Post process analytics**

Exploitation of information

SONEF is a data platform based on a client-server architecture feeding an exploitable database. The server allows for the definition of the tests, that is, what type of data are to be collected, for how long and with which iteration time. This definition configures a downloadable application that can be modified or adjusted to fit testing proposes or specific scenario analysis in real time. The application is downloaded on commercially available smartphones (active probes) free from any other application; that way, SONEF assures the results are the same that will be experienced by real devices without influence of external applications. That´s why we call it objective quality measure. The probes execute the application, consisting on a series of tests (such as ftp communication, browsing, streaming, etc…) and read a number of technical parameters identifying network, location and a number of technical parameters that are used to determine the quality (download speed, upload speed, delay times, access times, etc.). The probes send in real time every test results to the server, where they are properly processed and stored in a database. In case the connectivity fails, the probes store the results and send them as soon as connectivity is restored. There are no practical limits to the number of probes running tests, tests duration nor iterations.

❑ **Client**: Specific application installed in comercial smartphones to read quality parameters and send data reports to the server.

❑ **Server**: Specific program that receives reports from customers, processes data and generates results.

Configuration of tests 1

Application download 2

SONEF Platform

Mobile data network

Execution of tests and send of results 3

4
1. Reception and storage of data.
2. Real time visualisation of results
3. Post process of information.
4. Elaboration of reports.

Time distribution of DL

Download speed (Mbit/s)

All mobile technologies (2G, 3G, 4G and even Wifi) are covered. Therefore, SONEF allows to run Quality benchmarks on technologies, on Operators and even on devices. That way, SONEF allows to know not only what is the Quality of a given service in a given spot but to decide which is the best solution, based on empirical measures, to match specific applications. That makes SONEF a very useful platform for different players in the telecommunications sector, say Operators, corporations and big mobile services consumers, service resellers, application developers, and many others to whom the performance of the mobile networks in terms of the quality objectively delivered to the users is fundamental to their own activities and business.

SONEF counts on inbuilt capabilities to present results. It is possible to obtain real time graphs for any active probe, as well as to address queries to the database to get results based on historical data. Results can also be exported.

Agents can be Telconomics´ (exploitation as a service) or non-Telconomics (exploitation as a product) or a mix. Access to information and exportation capabilities are adequately managed and secured, allowing for different profiles of exploitation.

Once into SONEF, agents will make use of friendly menus. There is no practical limit to the number of agents.

There is an unlimited potential of exploiting SONEF, not only because of the usefulness of the available data but also because of the flexibility in defining queries and presenting results, which will be very much based on the targeted propose. From tracing the quality experienced by a single probe in a single spot to determine a global observatory of the quality of the services that end users are objectively and statistically obtaining.

✓ **Market available devices (active probes)**
✓ **Indoor and outdoor scenarios**
✓ **Static and on the move scenarios**
✓ **Benchmark of Operators**
✓ **Benchmark of Technologies**
✓ **Benchmark of Devices**
✓ **Services assurance**
✓ **Scalable**
✓ **Non intrusive**
✓ **Flexible exploitation**
✓ **Cost efficient**
✓ **Easy of use**

Specific ad-hoc reports can also be programmed so they are immediately presented on one click-button or even automatically. For example, early warnings to alert in real time of those probes experiencing below a defined criterion of Quality.

This can be implemented not only after Quality criterion but after service assurance as well, providing service performance results, monitoring and alerts on deviations.

An over the shelf version of Telconomics SONEF specially intended for short time to operation and very friendly use is available.

TELCONOMICS SONEF
Empirical and statistical determination of the objective quality of mobile data services

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