Frequently Asked Questions (FAQ)

Ofcom Mobile Broadband Performance Research

Contents

1. About the research

1.1 Why has Ofcom launched a mobile research app?

The app is part of Ofcom's on going work to monitor mobile network performance. It takes measurements from users' smartphones to help us better understand how mobile networks perform across the UK, as well as how people use their mobile data services.

Publication of this research will encourage mobile network operators to improve their networks and help consumers make purchasing decisions. The information will also allow us to make sure that there is enough radio spectrum to meet the growing demand for more services.

1.2 What does the app do?

This research app:

1. Works quietly in the background on your phone, gathering anonymous readings of signal quality, voice call success, mobile data performance and app use.
2. Regularly tests your mobile phone's internet connection by downloading a small amount of data every 15 minutes (totalling no more than 3MB per month).
3. Occasionally asks some 'pop up' survey questions so we can measure how your usage of particular apps is affected by the performance of your connection.

1.3 Can I be identified from any of the data that the app collects?

Ofcom and P3 – our research partner in the project – take data privacy very seriously. All data gathered is treated as confidential. The app does **NOT** collect any information, which could directly identify you. For example, your phone number, mobile subscriber number, equipment identifier and your IP address are not collected. Your residential postcode will only be stored to allow for statistical analysis and truncated to make it fully anonymous.

What it does collect is location information to measure the network performance in your specific area, as well as information about the apps you use, **but not what you use them for** (i.e. it can tell when the YouTube app is used, but not what is watched on it).

1.4 Why do I need to be 18+ to take part in this research?

The app is designed to collect and report data from adults aged 18+ only. For the purposes of this research project, please do not download the app if you are less than 18 years of age.

1.5 What is P3 and what is its role in the project?

Ofcom has commissioned P3 to provide the mobile research app, as well as to collect, store and process the test result data. If you want to know more about P3, visit its website (www.p3-group.com).

1.6 Will my data be sold on to third parties? Does Ofcom profit from this?

Your data will be used to create a standard measure of mobile performance, which will help the industry and Ofcom in planning implementation of future services and improving your current service. P3 has access to anonymised mobile network data collected from this research, which it can sell to third parties for commercial purposes, such as providing technical consultancy service to the mobile industry to help improve network performance. The anonymised data nor the research app will ever be used for advertising or marketing purposes. Ofcom does not make any profit from the data collected in this research.

2. About the mobile research app

2.1 Why is there no iPhone version of the app?
The operating system used on iPhones (iOS) has restrictions on apps running in the background and being able to access network performance data. This means an iOS app would require you to keep the app open for longer periods, which would reduce battery life and use more data. Therefore, we have decided not to release an iPhone version of the app.

2.2 Which permissions does the app require, and why?
In general, app permissions have to be granted during the installation of any app.
The following permissions are requested by the mobile research app, to enable it to collect the data required for the research. Your consent is given by clicking 'Accept' during the standard app installation process.

Permission	What is it used for?
Location - **approximate location(network-based) and** - **precise location (GPS and network-based)**	- Required to analyse rural vs. urban performance or attribute results to UK nations and cities - Allows us to compare actual mobile signal levels with mobile provider coverage maps
Phone - **read phone status and identity** - **read call log**	- Required for collecting data on dropped calls and call durations
Wi-Fi connection information - **view Wi-Fi connections**	- Required to collect performance data for Wi-Fi connections
Device ID and call information - **read phone status and identity**	- Required for collecting data on dropped calls and call durations
Other - **run at start-up**	- Required to re-start the data collection service after powering-on the phone
- **view network connections**	- Required to attribute connection technology (e.g. 2G, 3G, 4G, Wi-Fi) to the measured data and analyse accordingly
- **read battery statistics**	- Required to obtain battery level details and, for example, to stop connection testing once battery falls below a 15%-level
- **pair with Bluetooth devices**	- Required to understand whether a voice call was placed via a Bluetooth connection

Permission	What is it used for?
- **full network access**	- Required to read traffic statistics (e.g. data volumes transmitted/received), execute the connection test and offload collected data for analysis

Additional consent is required when opening the Research app for the first time. A pop-up will guide you straight into your smartphone setting, where you need to add the Ofcom Research App to the list of 'apps with usage access'. This additional type of permission is required to ensure proper and reliable working of the Research App.

2.3 Does the app drain battery and use data allowance?

The app is designed so that it won't affect your normal mobile use or use much battery. In order for it to properly work, your phone's power-saving mode should be disabled, although you should not experience any additional battery drain. If the power-saving mode is switched on, it can trigger a message. So that the app works best, it's advisable that you turn off power-saving mode. If power saving is on, the app will still be able to collect the data but you won't get reliable measurements when you check the app's dashboard.

The app will use a maximum of 3MB of data per month for its active connection test, and will only send the data collected overall over a mobile network if it cannot send it over Wi-Fi. The corresponding average data used depends on your overall smartphone use, but is typically no more than 1MB per day across mobile network and Wi-Fi.

2.4 Does the app transmit data while roaming?

Data is passively collected during roaming. Connection tests and offloading of collected data will take place according to your device settings (i.e. mobile data enabled/ disabled in roaming). Again, data offload is prioritised over Wi-Fi connection.

2.5 Why does the app ask me my age, gender, postcode and other details?

One of the aims of the research is to look at how different groups of people use their mobile phones. To do this, we need a cross section of people, which broadly reflects UK mobile users as a whole. These questions help us do this.

2.6 What survey pop-ups or notifications do I get, why and when?

An important part of the research is to compare mobile network performance with customer satisfaction levels. We therefore ask the following questions to measure how happy you are with your various mobile services:

1. After installing the app, a 'Welcome' pop-up is displayed, saying that the app will present pop-ups from time to time; those are described in 2. to 5. below.
2. At the beginning of the research and then every 30 days, the app asks for overall satisfaction with your mobile service provider.
3. At the beginning of the research, the app asks you to rate the importance of specific services on your mobile phone.
4. A set of app satisfaction pop-ups will appear on the research app on a regular basis. The frequency of this pop-up will depend upon the number of times you use these apps. App use needs to happen on the mobile network and no more than two pop-ups will appear per week.

5. On day 15 of the research and then every 30 days, a pop-up is displayed, reminding you that the app is still installed on the phone.

The prompts for 2 and 3 appear in the notification tray. Answering a pop-up survey (4) is as simple as clicking one button (your satisfaction corresponding to one of the three emoticons shown).

2.7 Which apps trigger satisfaction survey pop-ups?
Satisfaction survey pop-ups are triggered only for the following applications:

Phone call	WhatsApp	YouTube	eBay
Facebook	Facebook Messenger	Play Store	Gmail
Twitter	Viber	Chrome	Stock Android mail
Instagram			

2.8 Why might I receive a satisfaction survey pop-up while using another app?
Satisfaction survey pop-ups are triggered once you've ended an app session (e.g. by pressing the home button). The time it takes to present the pop-up may vary by device model, and it may be that when it is shown, you've already started using another app. While we appreciate this is not ideal, we ask you to answer these questions, if possible.

2.9 Can I opt out of the satisfaction questions?
Yes. You can choose not to receive any pop-up questions by un-ticking the checkbox in the menu tab. You may opt in again at any time. However, as this feedback is critical to Ofcom's mobile research project, we would encourage you to answer these questions.

2.10 What does it mean by 'Not enough data. Please check back later'?
This usually means that the app hasn't been on your phone long enough to collect meaningful data. Other metrics like 'data network availability' and 'network latency' may be affected by your phone's power settings, particularly if the device is in power-saving mode.

2.11 Why does the information on the home screen not reflect my actual experience?
Ofcom and P3 have tried to make the app as reliable and close to your actual experience as possible – but there are many other variables, like device type, browser and operating system, that can affect the data.

3. Metrics and data collected

3.1 Why are app usage details collected? How is this information used?

This research uses an innovative data collection approach, in that data is collected in the background which means that it better reflects the actual user experience. This is different to traditional performance testing, which requires the user to initiate a test/s themselves.

Some apps require more bandwidth than others, e.g. messaging apps require far less bandwidth than downloading/ streaming a YouTube video, and app usage details are therefore required to ensure that the testing produces reliable statistics.

In addition, one of Ofcom's responsibilities is to allocate the airwaves, or radio spectrum, used by mobile services. Understanding the apps people are using, and where and when they use them, will help us predict how much spectrum will be required in the future and plan accordingly.

3.2 What does the 'network status' section display?

The information here provides you with a real-time view of your current data network technology, and the signal strength your smartphone is receiving. The wireless access technologies recognised are 2G, 3G and 4G mobile, as well as Wi-Fi, and signal strength is ranked between bad, poor, fair, good or excellent.

3.3 What does the 'network share' section display?

Network share shows the proportion of time your phone has been connected to the different network types (Wi-Fi, 2G, 3G, 4G) when you have been using it, i.e. for periods you have been sending or receiving data. The values shown are averages during the previous seven days. This means that, from one day to the next, percentages could change significantly as older data drops out of the seven-day reporting period.

3.4 What does the 'dropped call ratio' section display?

Dropped call ratios show the proportion of your voice calls which have ended unintentionally due to coverage loss during the last seven days.

3.5 What does the 'data network availability' section display?

Data network availability shows the proportion of data connection tests, which have been successful during the previous seven days. That means from one day to the next, percentages could significantly change as older data drops out of the seven-day reporting period.

3.6 What does the 'download speed' section display?

This section shows the maximum download speed recorded over each wireless network type during the previous seven days. We measure the speed at which data is sent to your phone when you are using it. Many apps don't need data to be sent at high speed, so the speeds recorded will depend on what you are doing on your phone, and may not represent the highest speeds available over your network.

3.7 What does the 'network latency' section display?

Network latency shows how much time it takes for a piece of data to go from your phone to a destination on the internet and back again. Low network latency, or shorter response time, is

better. Network latency is measured from the data connection tests during the previous seven days. That means from one day to the next, values could significantly change as older data drops out of the seven-day reporting period.

3.8   What is a connection test?
A 'connection test' determines whether your device is able to connect to the internet by regularly downloading a tiny amount of data (no more than 3MB per month) in the background. It also measures how long it takes to transfer the content (network latency).

3.9   When is GPS triggered?
To ensure your battery is not affected, the app mostly relies on the last known location available from the Android OS. This might be a GPS-grade position, whenever another app has used GPS. The only time the app actively requests a GPS-grade position is when a voice call is made or received, to be able to locate the exact position of any dropped calls.

4. Misc

4.1 What happens to my statistics if backup/restore my Android device?

Given our concern on security and privacy protection, a backup would not contain your in-app statistics. Therefore, after backup/restore, your statistics would start building from scratch.

--- END OF DOCUMENT --