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## BD4QoL

**Big Data Models and Intelligent tools for Quality of life monitoring and participatory empowerment of head and neck cancer survivors**

### **Instructions and Troubleshooting Guide for the BD4QoL mobile apps**

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**Addressees of this document**

This document is addressed to the BD4QoL Consortium partners and linked third parties.



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## 1 SCOPE AND OBJECTIVES

### 1.1 Scope

The scope of this document is to empower the staff involved in the technical trial to validate that all trial participants are correctly using the mobile app and enable them to solve any issues encountered directly, in face-to-face visits.

### 1.2 Objectives

The objectives of this document is to assist staff involved in the clinical trial execution on the following two issues:

- Validate that all procedures have been followed correctly and data collection is performed correctly
- Validate that the users are using the application correctly (DO's and DON'T's )
- Assist in troubleshooting and “correcting” usage behaviors or other device technical issues that can be result in missing or messy personal data.

### 1.3 Structure and overview

The structure of the document is as follows:

- Section 2 is about validating that both mobile applications have been correctly installed. The section describes some basic checks that need to be done at user level, to derive information whether the apps have been correctly installed and the setup process is completed as expected. The result of this process is to note:
  - o SUCCESS in installing the mobile apps and following all setup procedures
  - o ERROR either at installation or the setup process
    - In this case, Section 4 will be followed
- Section 3 is about DO's and Don'ts in relation with instructions for appropriate use of the mobile apps
- Section 4 is about dealing with device or usage errors, as detected by:
  - o Following the steps in Section 2 but encountering some ERRORS, or
  - o Error Alerts raised at PoC
    - either because of full non-activity from use for at least 14 days
    - either because of significant missing data for a long time period.



## 2 VALIDATING SUCCESSFUL APP INSTALLATION

### 2.1 Scope

Validation of installation of the mobile apps can be performed in two significant times:

1. Immediately after completing the installation and setup process
2. One day after setup is completed and at least after local time 08:00 a.m. (provided that there is internet connection).

### 2.2 Immediate validation

The checklist that the staff involved in the installation and setup process of the mobile apps needs to follow is show in Table 1.

**Table 1: Check points for immediate validation of apps after installation and setup**

ID	Scope / domain	Checkpoint	Checkbox
1.	Mobile phone	“BD4QoL” icon app is visible (so called “Main app”)	<input type="checkbox"/>
2.	Mobile phone	“BD4QoL Foreground app” icon app is visible	<input type="checkbox"/>
3.	Mobile phone	“BD4QoL Foreground app” notification icon is visible	<input type="checkbox"/>
4.	Foreground app	Data collection is activated: <ol style="list-style-type: none"> <li>1. Open Foreground app</li> <li>2. Select Language</li> <li>3. Click on “OFFLINE DATA”</li> <li>4. A list of data should be visible according to the frequency of data collection process</li> </ol>	<input type="checkbox"/>
5.	Foreground app	Check the time of the offline data collected. Is it correct?	<input type="checkbox"/>
6.	Foreground app	Check the offset of the offline data collected. Is it correct? (both in time and in sum of seconds. For example: for users in Italy it should be +2 and 7.200 seconds)	<input type="checkbox"/>
7.	Foreground app	Check the Light (in LUX). Is there a value and it is non-Zero?	<input type="checkbox"/>
8.	Foreground app	Check the Accelerometer (three variables: “x”, “y” and “z”). Is there a non-zero value for each variable?	<input type="checkbox"/>
9.	Foreground app	Check the Screen sensor value. Is it ON or OFF?	<input type="checkbox"/>



10.	Foreground app	Check the WiFi data. Is there a value if the device is connected to a wifi?	<input type="checkbox"/>
11.	Foreground app	Check the GPS. Is there a non zero value?	<input type="checkbox"/>
12.	Foreground app	Check the Activity. Is there a value? It should be STILL if not moving (however the first time a value is collected, this should be "Unknown". Only after the user starts moving, will it change).	<input type="checkbox"/>
13.	Main app	Overall system check within the main application ( <i>under development</i> ). If the result is SUCCESS, then the apps have been correctly installed - else look at Troubleshooting section.	<input type="checkbox"/>
<b>COMMENTS</b>			

### 2.3 The day after validation

One day after the application is installed and setup, then synchronization of different types of data should occur. These involve:

- Steps (as collected from Google Fit app)
- Phone data

The checkpoints that need to be examined are shown in Table 2.

**Table 2: Check points for one day after installation for validating that the app is correctly installed and setup**



ID	Scope / domain	Checkpoint	Checkbox
1.	Main app - STEPS	There is a reasonable value for the total number of steps for "yesterday"	<input type="checkbox"/>
2.	Main app – My Day	"My Day" should normally some information for yesterday (Walking, Running, Cycling, or In Vehicle)	<input type="checkbox"/>
3.	Main app – Phone	Within "Calls", the number of phone calls shown in the app should be the same number of calls as in the device	<input type="checkbox"/>
4.	Main app – Phone	Within "SMS", the number of SMS's sent and received should be validated from the device itself	<input type="checkbox"/>
5.	Main app – Phone	Within "WiFi", the name of the Wifi one is connected should be correct	<input type="checkbox"/>
6.	Main app – Phone	Within "Screen", check that the screen time On / Off is shown	<input type="checkbox"/>
7.	Main app – Phone	Within "Social", the time one spends in Social Applications should sound reasonable (as long as relevant Permissions are ON)	<input type="checkbox"/>
8.	Main app – Chatbot	The user should be able to write and receive messages from the Bidi chatbot	<input type="checkbox"/>
9.	Main app – Chatbot	Chatbot notifications should be shown on top right corner of the Bidi chatbot screen and the user should be able to open these	<input type="checkbox"/>
<b>COMMENTS</b>			



### 3 DO'S AND DON'T'S

#### 3.1 Scope

The instructions below describe guidelines for the clinical trial users, to ensure that the expected clinical trial results can be achieved.

#### 3.2 DO's

The list below describes good practice activities for ensuring that the app will be used as expected.

**Table 3: What to do in order to enable achieving expected results**

ID	Actions to DO	Level of Severity
1	Keep the mobile phone Switched ON all day	HIGH
2	Charge the mobile phone frequently within the day, in order to keep a level of at least 20% battery throughout a day	MEDIUM
3	Keep the mobile phone with you, in a pocket or bag, even when at home	LOW
4	Have internet connection at 08:00 am so that reports on data collected can be generated	HIGH
5	Use your mobile phone mainly for phone calls or social media applications (instead of land phone or a tablet), when possible	LOW
6	Open the BD4QoL main application at least once every day and browse around the reports generated	LOW
7	Once a Notification is received in the application, open the notification within the "Chatbot" session and chat with the Bidi bot	MEDIUM
8	Try to chat with Bidi chatbot at least once a day	LOW
9	Keep the mobile phone switched ON at night, plugged for charging (internet / wifi can be off if this is preferred )	LOW
10	If you need to stop data collection for a short period of time, choose "Logout"	LOW
11	Keep the mobile data ON if possible throughout a full day	LOW
12	Inform the clinician if you wish to report any unfortunate incident (such as theft of phone)	HIGH



### 3.3 DON't's

The list below describes activities that should be avoided by users while using and interacting with the mobile apps suite.

**Table 4: What NOT to do**

ID	Actions NOT to DO	Level of Severity
1	Do not share the smartphone device with someone else	MEDIUM
2	Do not keep the phone Switched OFF for a significant time during a day, or even for more than one day	HIGH
3	Do not have internet connection in the morning, 08:00am, daily	HIGH
4	Do not have internet connection for a full day, or for a long time of period	HIGH
5	Do not delete the foreground application	HIGH
6	Do not delete the main application	HIGH
7	Do not delete the Google Fit application	HIGH
8	Do not change - disable- any of the Permissions allowed relevant to the foreground application	HIGH
9	Do not change - disable- any of the Permissions allowed relevant to the main application	HIGH
10	Do not install the BD4QoL applications in any other mobile device simultaneously	HIGH
11	Do not deactivate the Location permission for the mobile phone	HIGH



## 4 TROUBLESHOOTING

### 4.1 Scope

The objective of the instructions in this section is to empower staff involved in assisting the clinical trial users to overcome any troubles or issues encountered. If the assisting staff follows the instructions, we expect that all issues will be resolved. If not, then communication with the support team at DOTSOFT ([bd4qol-hub@dotsoft.gr](mailto:bd4qol-hub@dotsoft.gr)) should be done.

It is highly recommended that troubleshooting actions will be followed only for smartphone devices that are connected at INTERNET while the support takes place.

### 4.2 Mobile app suite Troubleshooting

#### 4.2.1 No Steps

The user does not see any number of Steps collected within the BD4QoL main mobile app (at Home page), for any or some days.

To check the source of NO Steps collected, please follow the steps below:

1 Has the user installed and set up the Google Fit application?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- If NO, then install and setup correctly the Google Fit app.
- If YES, continue.

2 Is “Track your activities” ON at Profile -> Settings at Google Fit application?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- If NO, then switch it ON.
- If YES, continue.

3 Has the user signed in the BD4QoL app with exactly the same Google account used for Google Fit?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- If NO, then login again at BD4QoL main app with the “correct” gmail account
- If YES, then if the problem remains, then contact [bd4qol-hub@dotsoft.gr](mailto:bd4qol-hub@dotsoft.gr).



### 4.2.2 No phone data

The user does not see any phone related data in the “Phone” section within the main BD4QoL app.

To check the source of NO phone data collected, please follow the steps below:

1 Check the “usage access” permission in the phone. Is it ON for the BD4QoL app?

YES	<input type="checkbox"/>		NO	<input type="checkbox"/>
-----	--------------------------	--	----	--------------------------

- If NO, then switch it ON
- If YES, then if the problem remains, then go to next step.

2 Check the Permissions on the phone for collecting data related with calls and Sms. Are these ON?

YES	<input type="checkbox"/>		NO	<input type="checkbox"/>
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- If NO, then switch these permissions to ON
- If YES, then if the problem remains, then contact [bd4qol-hub@dotsoft.gr](mailto:bd4qol-hub@dotsoft.gr).

### 4.2.3 Message about missing data

The user seems to keep having “NO Valid Days” (i.e. valid day variable =0) and thus reports show the message “The report is based on less data than usual). This scenario has major impact in the Alert Notifications.

To check the source of NO Valid Days, please follow the steps below:

1 Does the mobile phone have the foreground app installed?

YES	<input type="checkbox"/>		NO	<input type="checkbox"/>
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- If NO, then install the latest apk and setup the foreground app
- If YES, then if the problem remains, then contact [bd4qol-hub@dotsoft.gr](mailto:bd4qol-hub@dotsoft.gr).

### 4.2.4 No social data

The user does not see any report for the Social data within the “Phone” module in the app.

To check the source of no social data, please follow the steps below:

1 Has the user allowed permissions for Social applications?



YES	<input type="checkbox"/>		NO	<input type="checkbox"/>
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- If NO, then Permission for social application data should be turned ON
- If YES, then if the problem remains, go to next step.

2 Is data “access usage” permission ON for the application BD4QoL?

YES	<input type="checkbox"/>		NO	<input type="checkbox"/>
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- If NO, then turn the phone permission ON
- If YES, then if the problem remains, then contact [bd4qol-hub@dotsoft.gr](mailto:bd4qol-hub@dotsoft.gr).