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#### Abstract

This document presents the web and mobile software interactions with the wristband and the tracking of patient activities



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## Document History

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## 1 Introduction

The work on the physical activity monitoring is led by the team at RGU, while the app development is led by the partner TRX. As described in D2.1/2.2 and D3.5, we have developed the Physical Activity Recognition software components and integrated these in the CBR module. Users' steps count is recorded on the Mi Band 2 wristband and sent to the Mi Fit app on the users' phone. The Mi Fit app synchronises with the mobile phone OS's health platform as described in D4.5. In the following sections, we describe the integration and provide a video demonstrating the connection of the devices and interactions from a user's perspective.

As an attachment of this document, we provide a video the current version of the interaction between the mobile software and the connected wristband that monitors patient activities.

Video: [D4.9\\_DEMFIN\\_Deliverable\\_PU\\_300618\\_Connection.mp4](#)

## 2 Connecting devices

As mentioned in the introduction, users' steps count are recorded on the Mi Band 2 wristband and sent to the Mi Fit app on the users' phone. The Mi Fit app synchronises with the mobile phone OS's health platform. The SELFBACK app then reads the steps from the health platform. This process is illustrated in Figure 1.

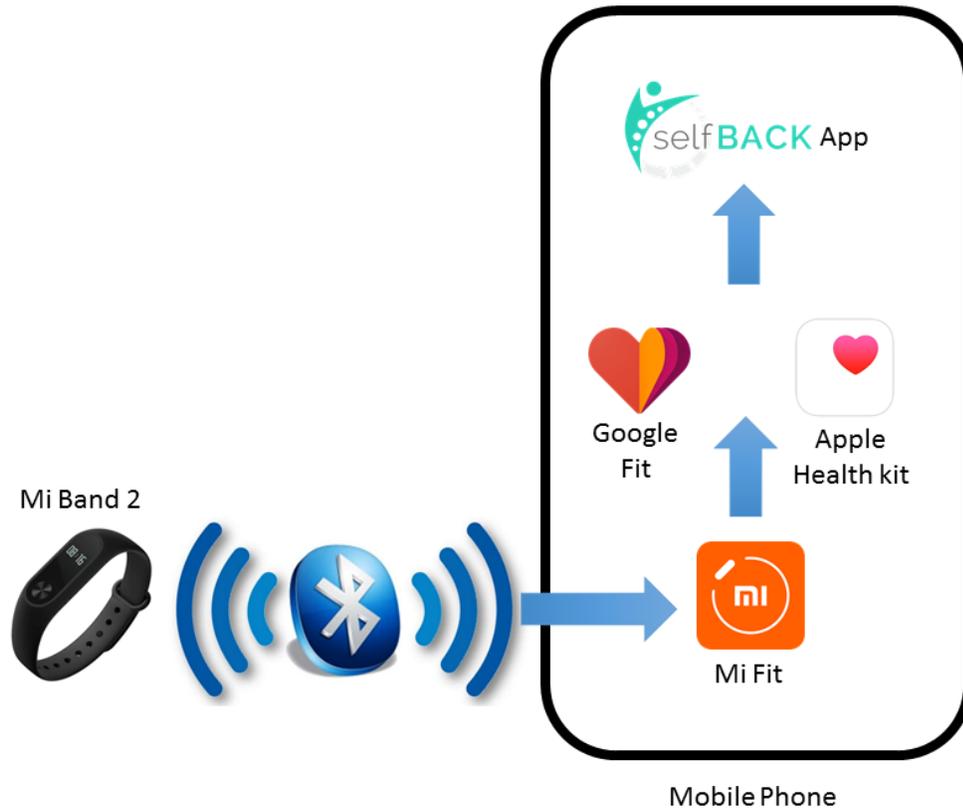


Figure 1 Illustration of connection between wrist band and mobile

Details of the individual components and connections are provided in the following subsection.

### 2.1 Mi Band 2 and Mi Fit

The SELFBACK app receives physical activity data from the Mi Band 2 wearable sensor and Mi Fit app. The Mi Band 2 records the user's step count and pairs with the Mi Fit app using the built-in Bluetooth on the wearable and the mobile device where the Mi Fit is installed. This connection requires Bluetooth version 4.0 or higher on the mobile device.

### 2.2 Mi fit and health platforms

Mi Fit app is synchronized with the health platform on the user's mobile device, i.e. Apple HealthKit (iOS users) or Google Fit (Android users). Both systems require the user to explicitly approve synchronization for data access. As part of the onboarding process of the

SELFBACK app, the user will be prompted for access to the health platform, where the user is informed about why the SELFBACK app needs access to their HealthKit or Google Fit data. This data exchange requires at least Android version 4.3 and at least iOS version 8.0.

### [2.3 Health platforms and the SELFBACK app](#)

Finally, the SELFBACK app synchronizes with the health platform in order to platforms retrieve and display the user's step count in the SELFBACK app. With subsequent visits to the app, the physical activity data are pulled from the health platforms and displayed to the user in the SELFBACK app. This is triggered each time the user opens the application.