AID Android App User's Guide

Version 1.4

January, 2021

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1 Introduction

The Automatic Injury Detection (AID) system recognizes when the sensor panel has been pierced by a bullet, knife, shrapnel, etc. and automatically sends an emergency alert via radio, telephone text and/or voice call. This alert will include the wearer's identification, GPS location and injury location.

The AID system consists of a set of front and back sensors, an emergency services radio and/or smartphone/tablet running the AID application.

2 About the AID Sensors

AID sensors are available in a variety of sizes to fit existing body armor. The AID sensor is split into upper and lower detection zones and oftentimes, the sensors selected for the front and back of the vest may be different sizes due to the shape of the vest. The AID sensor is made of a polyester film and a Bluetooth communications module. The AID sensor is designed to fit in the protective vest, in front of the ballistic panel, with the module facing outwards.

Each AID sensor has a unique AID identifier: AID_NNNN where NNNN is a four digit number. The AID identifier is printed on the label next to the module. This allows the user to pair their uniquely identifiable AID sensors. AID sensors are very flexible and waterproof – they only respond to a piercing event (not blunt impact).

The module includes a rechargeable battery that will last up to a year on a single charge. It also has a colored LED within the module. The LED will flash red when the battery is low (<10%), blue while charging and green when fully charged. The LED does not illuminate if the battery is dead and a full charge takes about 2 hours.

The micro-USB port located on the module is used for charging and for connecting to a PC for testing/demo. A common phone/device USB charger can be used (but is not included).

The AID sensor is always 'ON' provided the battery has a charge.

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Figure 1 AID System Diagram

3 Using the AID Android App

3.1 Installing the App

On an Android device that supports Bluetooth v4.0 (BLE) – Android O/S must be equal or greater than v4.4 - enter the Google Play store and search for the Automatic Injury Detection application by DataSoft. Install the app and open. The following screen will be displayed.

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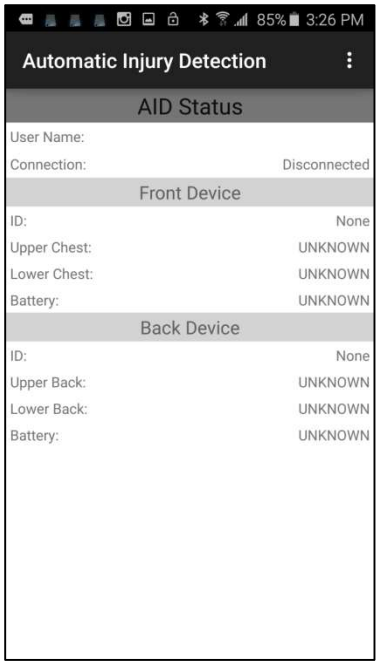
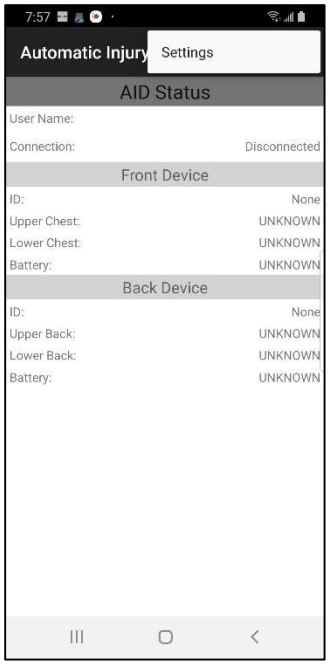


3.2 Configuring the AID and AID Panels

Select the 3-dot menu icon in the upper right and choose ‘Settings’.



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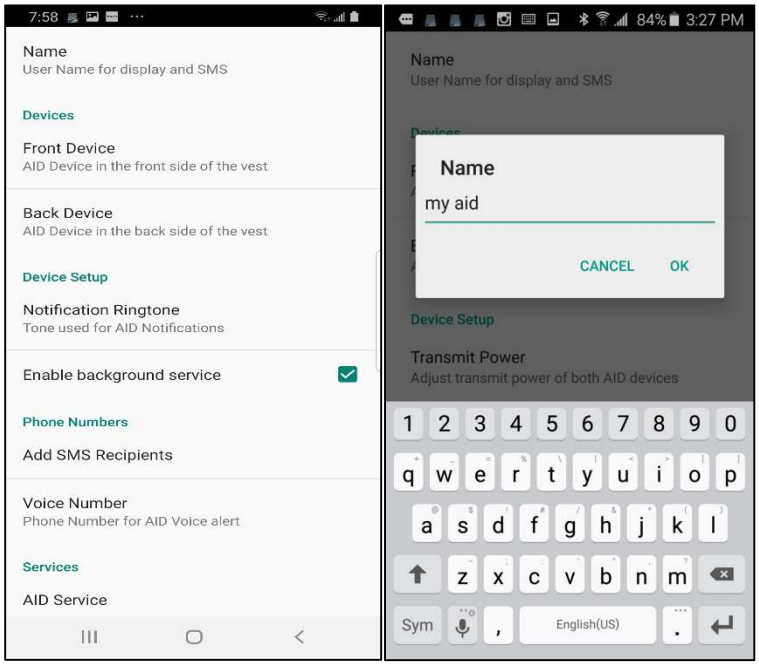
3.2.1 Setting the User Name

From the “Settings” menu shown below select ‘Name’ to add the name of the user.

Type in the user’s name and any personal information that you want sent with the emergency alert (e.g. badge number, allergies, blood type, etc.). Select “OK” and the app will return to the “Settings” menu.



3.2.2 Pairing the AID Application with the AID panels

The AID system includes two detection panels which need to be connected to the AID application.

In order to pair the AID front panel to the AID application select “Front Device” from the “Settings” menu. The list of devices available for pairing will have their AID serial numbers displayed. Compare the listed values with the serial number label on the panel to ensure the proper pairing. Select the matching serial number and then “SET”.

Select ‘Back Device’ to pair the back panel device with AID.

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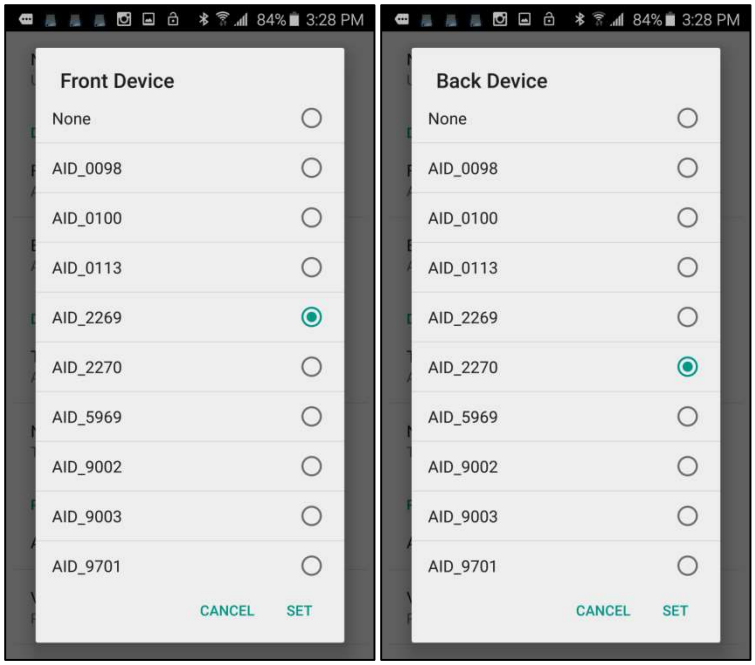
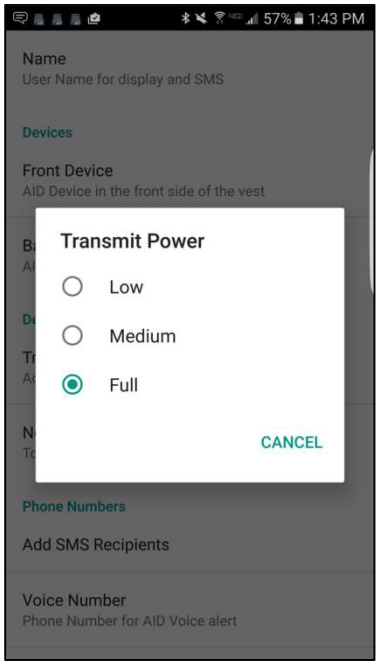


3.2.3 Setting Transmit Power

To set the AID Bluetooth transmit power, select "Transit Power" from the "Settings" menu. Then select either "Low", "Medium" or "Full" as shown below. The display will return to the "Settings" menu.



3.2.4 Notification Ringtone

To notification ringtone settings are currently inactive.

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3.2.5 Defining Phone Numbers for Text and Voice

In order to configure the AID application to send emergency alerts automatically via SMS text message, select 'SMS Number' from the "Settings" menu and then "Add Number". Enter the desired phone number and select "OK" to save.

A formatted SMS recipient list can be imported using the 'Import Numbers' selection. The import function will read in a file named 'aid_sms_list.txt' located under the Documents folder that exists on the Internal Storage of the phone. The numbers in that file list will append to any existing SMS Recipient numbers you have entered.

The aid_sms_list.txt file must contain just a simple text list of phone numbers like this:

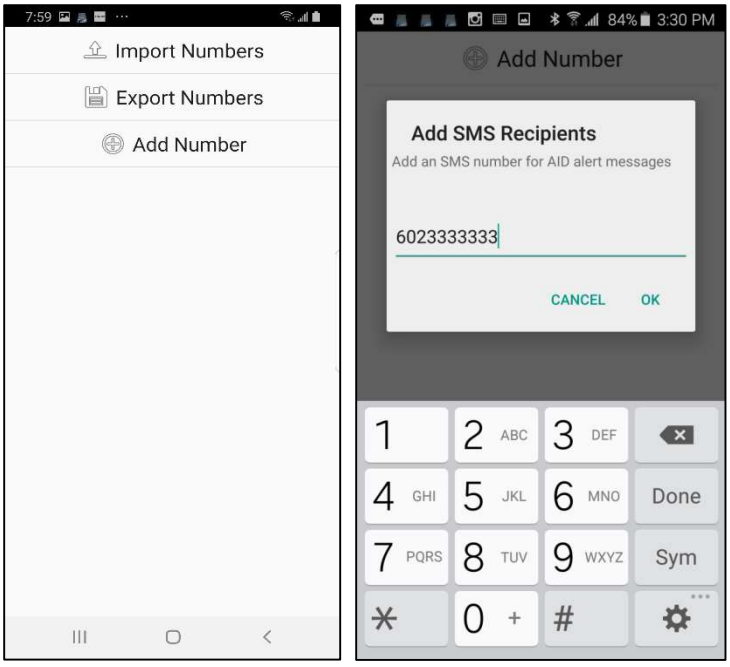
6023333333

6023333334

The existing SMS recipient list can be exported using the 'Export Numbers' selection. Selecting the Export function creates a file (aid_sms_list.txt) with the SMS Recipient phone numbers (located on the phone internal storage Documents folder) that were entered into the app. Note that exporting a list will overwrite an existing AID export file if one exists.

The file can be copied to a PC and to other phones for import. To use the file in a different phone, it must be copied to the Internal Storage, under the Documents folder.

Alternatively, the SMS recipients can be centrally managed for the department by an administrator. This option requires the department to use our Firebase web-portal and optionally, an SMS Text Messaging Service (e.g. Twilio). (See *AID Firebase Web Portal and Text Services User Guide* for more information)



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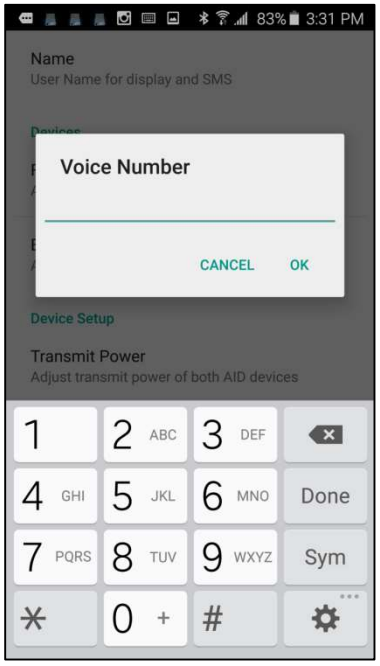
Continue to add numbers as desired. Note, some phone brands limit the number of recipients (typically 30) that a text message can be sent to. Use the smartphone/tablet "back" button to return to the "Settings" menu.

If you want AID to automatically make a phone call when the sensor panel has been pierced, select 'Voice Number' from the "Settings" menu, enter the desired phone number and select "OK".



3.2.6 Services Set-up

AID includes an option to use the Firebase web-portal and an optional SMS Text Messaging Service (e.g. Twilio).

The Firebase account allows an administrator to manage the AID users and settings. It simplifies set-up for each user as the admin can set the SMS recipient list, voice number and, if desired, the text service (Twilio) for all users. Firebase also offers the oversight feature that displays the current status (connected/disconnected/emergency and battery level) of all AID sensors. See the *AID Firebase Web Portal and Text Services User Guide* for more information. Note that if the administrator enters recipient phone numbers into the Firebase account, those numbers will be used – the user will not be able to enter numbers into their app.

To connect to your departments Firebase account, select the 'AID Service' option in the Settings menu. Select the 'Sign in/Create an AID Service Account' option to enter your email and password credentials. Select 'Join a Department' and enter the department name exactly as it was entered for the Firebase account. The Firebase administrator will receive an email message with a request to approve the new user. AID will not send emergency notifications until the administrator confirms the user.

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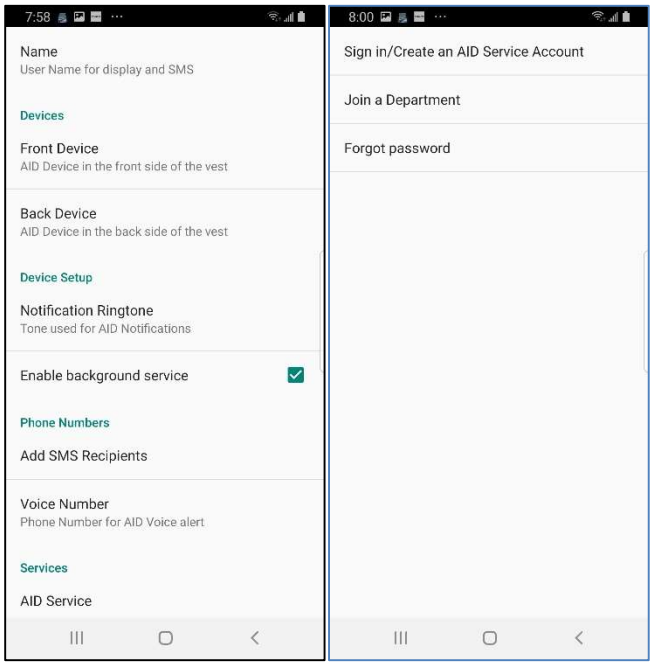
Use ‘Forgot password’ to reset your password.



3.3 AID Android Application Operation

From ‘Settings’, select the back button to view the connection status (main AID screen). Note the connection and panel section status (e.g. Upper/Lower Chest, Back) and battery level(s). Note: Battery level is not accurate if the AID module USB connection is plugged into a charging device.

You can swipe this screen to the left in order to view the version number for the app and AID sensors. Swipe the AID Information screen to the right to return to the main AID screen.

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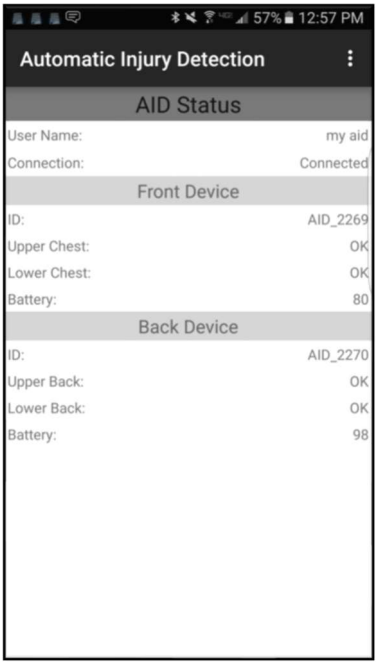
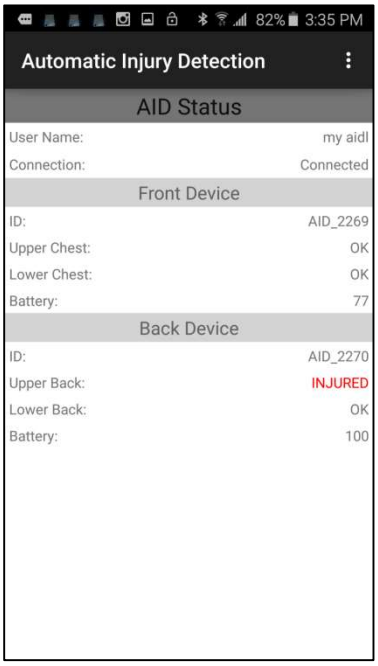


If a piercing event occurs (break in continuity) in the AID panel, An 'Injured' message will be displayed, the device will automatically send a text message to the 'SMS Number(s)' as entered and/or a phone call will be made to the 'Voice Number' as entered. Note, once triggered the AID panel module is no longer in the low power or "standby" mode and must be plugged into a PC or battery charger to be reset to low power mode.



An example of the text message sent from AID is pictured below. Note that the automated message includes a Google Map link with the location of the piercing event.

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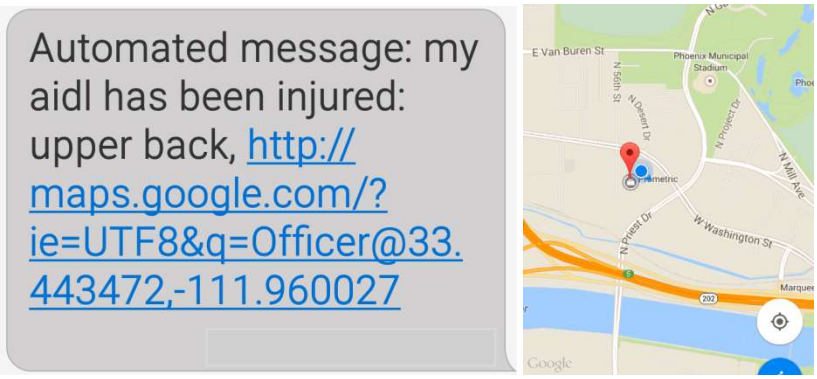
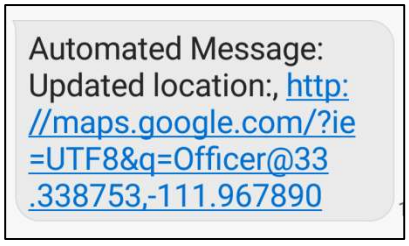


The AID app will send the phone location when an injury event occurs and turn on GPS (if it's not already on). The app will then send an updated position if the GPS location improves and every time the location changes by 10m (30 feet). Location updates are not sent if they have an accuracy of more than +/- 100m. Updated locations appear as: Automated Message: Updated position: http://maps.google.com/....



3.4 Shutting down the AID Android Application

The AID app runs as a background service and will automatically restart if the user closes the app, reboots the phone, etc. In order to disconnect the smartphone/tablet from the AID panels and shutdown the AID application, select the 'Settings' menu in the top right corner of the AID application display. Deselect the 'Enable background service' option (remove the checkmark) to stop the AID app from running as a background service. Now, when you close the app, it will remain closed and AID will not be active. To restart the AID app and make sure it stays active, open the app, select the 'Settings' menu and add the checkmark to 'Enable background service'.

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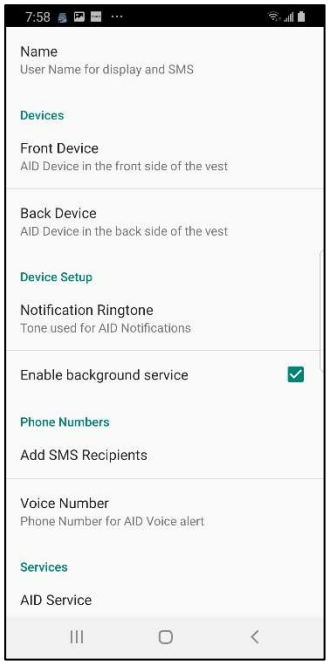

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