



Voice ID - UTK Trainer App User Guide

External Use

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This document provides instructions for using the Voice ID – UTK Trainer Android app to create a user voice print to demonstrate the Knowles UTK (User Trained Keyword) and Voice ID features for speaker-verified voice activation

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Chapter 1: Introduction

1.1 Overview

The Voice ID – UTK Trainer app is used to create model files for the Knowles **IA611 Reference Design for IoT** to demonstrate the Knowles UTK (User Trained Keyword) and Voice ID features. It provides the ability to train a user voiceprint model for speaker verified voice activation of the OEM keyword *Hello VoiceQ* and user-trained keyword (UTK) models. Once trained, either the OEM or the UTK keywords can be demonstrated to only work for the user who trained the app.

See the *IA611 Xplained Pro Software User Guide* for instructions using the model files with the provided IA611 sample project.

1.2 Installation

The VoiceQ Android app is designed to work on Android phones with version 6.0 (Marshmallow) and later versions of the Android operating system. Its APK file can be copied to a phone and then installed. As the app is not being downloaded from the Google Play Store, most phones will need a security setting change to install the application. The procedure which follows covers installation and changing the security setting.

1. If a previous version of the Knowles Trainer app is installed on the phone,
 - Use the phone's **Application Manager** to **FORCE STOP** and **UNINSTALL** the app.
 - Delete the **aVoiceQ** folder installed on the SD card by the VoiceQ app. While not required, this step will eliminate audio files from previous authentication tests.
2. Obtain the current version of VoiceQ Android app file. At the time of this document was written, the current version was Trainer.apk.
3. Connect the phone to your PC and use Windows Explorer to copy the file to the phone's **Downloads** folder.

Note *Not all Android phones ship with a file manager so some may require installing one from the Google Play store.*
4. Use the phone's file manager to locate and tap on the file copied to the download folder.

Note *Depending on the phone used, the display screens and procedure required may vary slightly in the steps that follow.*

5. If an **Install blocked** screen appears, tap on **SETTINGS** and then enable the **Unknown sources** option and then tap **OK**.

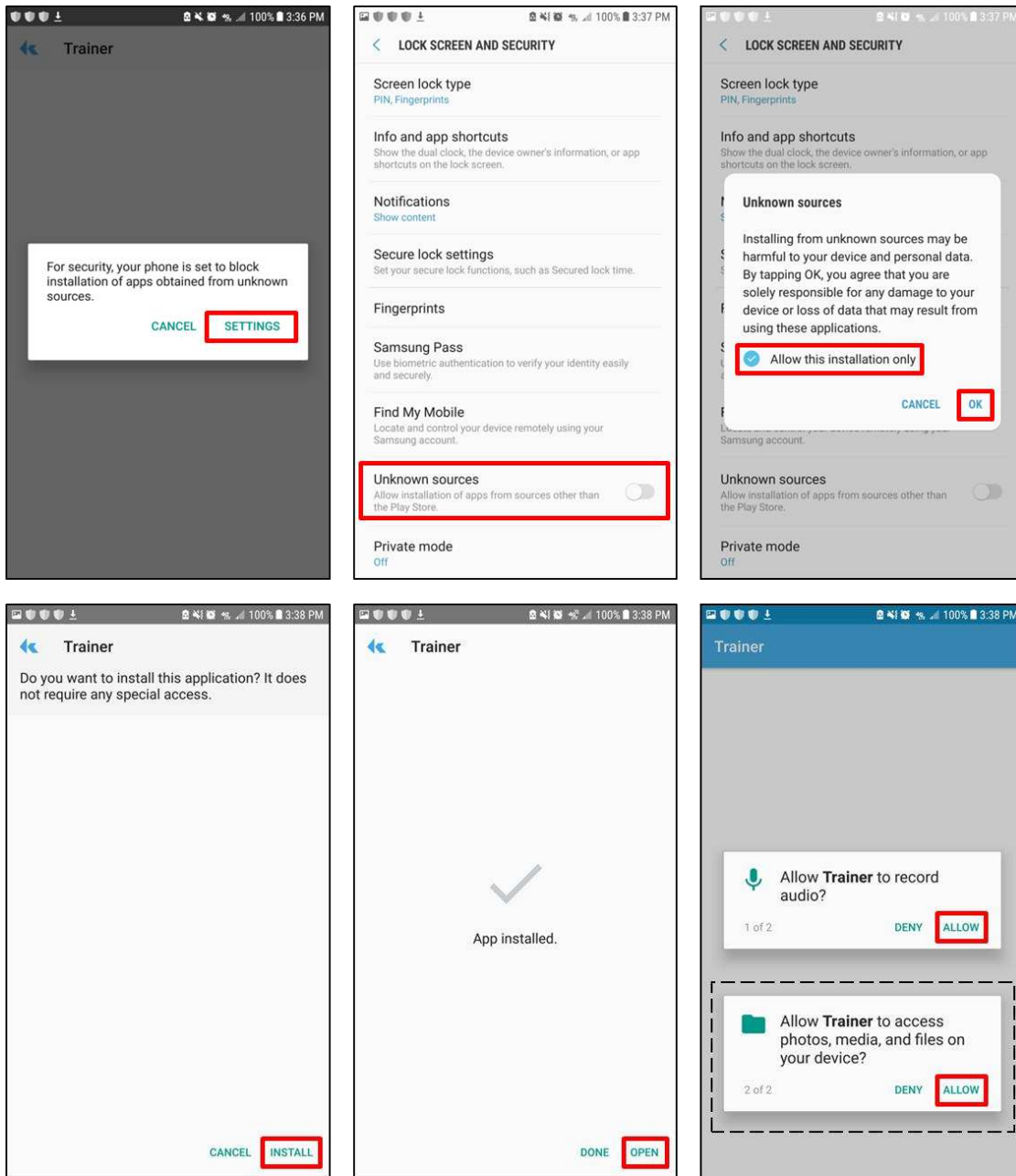


Figure 1 Install Trainer App

6. Tap on **INSTALL** to continue the installation and then **OPEN** when complete.
7. Tap **ALLOW** to allow the Trainer to record audio and tap again to access photos, media and files on device.

Chapter 2: Training Voice ID and UTK

When training for Voice ID or UTK, do the following:

- Use a higher end Android phone with good quality microphone.
- Move to a quiet room (needed for training, demo can be conducted with distractors).
- Sit with your mouth 20-30 cm (8-12 in) from the phone's mic as shown.
- Speak at normally level and say word or phrase distinctly.
- For UTK, use a word or phrase 4-8 syllables long and avoid commonly spoken words or phrases by themselves.
- Say the phrase the same way each time as you would normally say it. Varying how you speak during training could result in poor keyword detection.

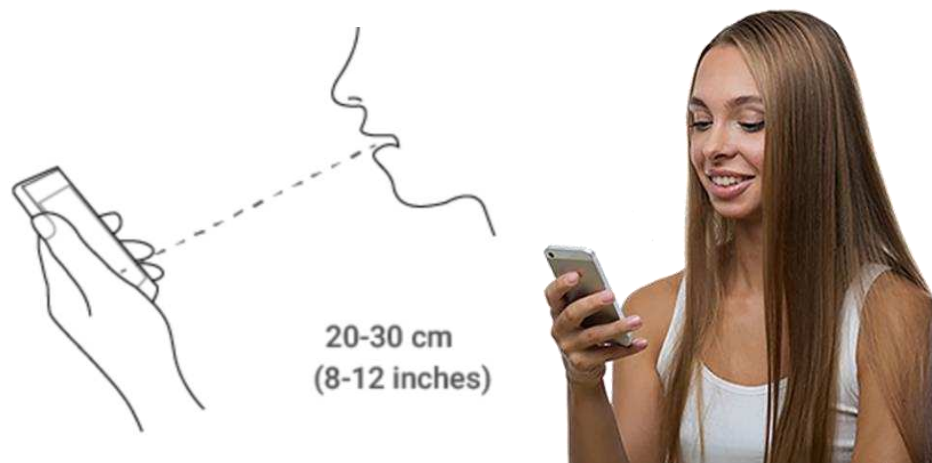


Figure 2 Training Position

2.1 Voice ID

A user voice imprint model of the *Hello VoiceQ* OEM Keyword can be created using the app's Voice ID trainer. Voice ID provides the ability to train a user voice imprint for speaker verified voice activation of the OEM keyword. Once trained, the OEM keyword can be demonstrated to only work for the user who trained the keyword in his/her voice.

1. Start the Trainer app and hold the phone as shown.
2. Tap the **Create Voice ID** button followed by the **START** button.

3. When **Speak Now** appears, say *Hello VoiceQ*.
4. After saying the keyword phrase, **Success** should appear. Remain quiet until **Speak Now** reappears and then say *Hello VoiceQ* again.
5. Repeat until all four utterances of the keyword have successfully recorded as indicated by the **Training Keyword. Please wait** message.
6. Once training is complete, tap the phone's back button to return the Trainer's main screen

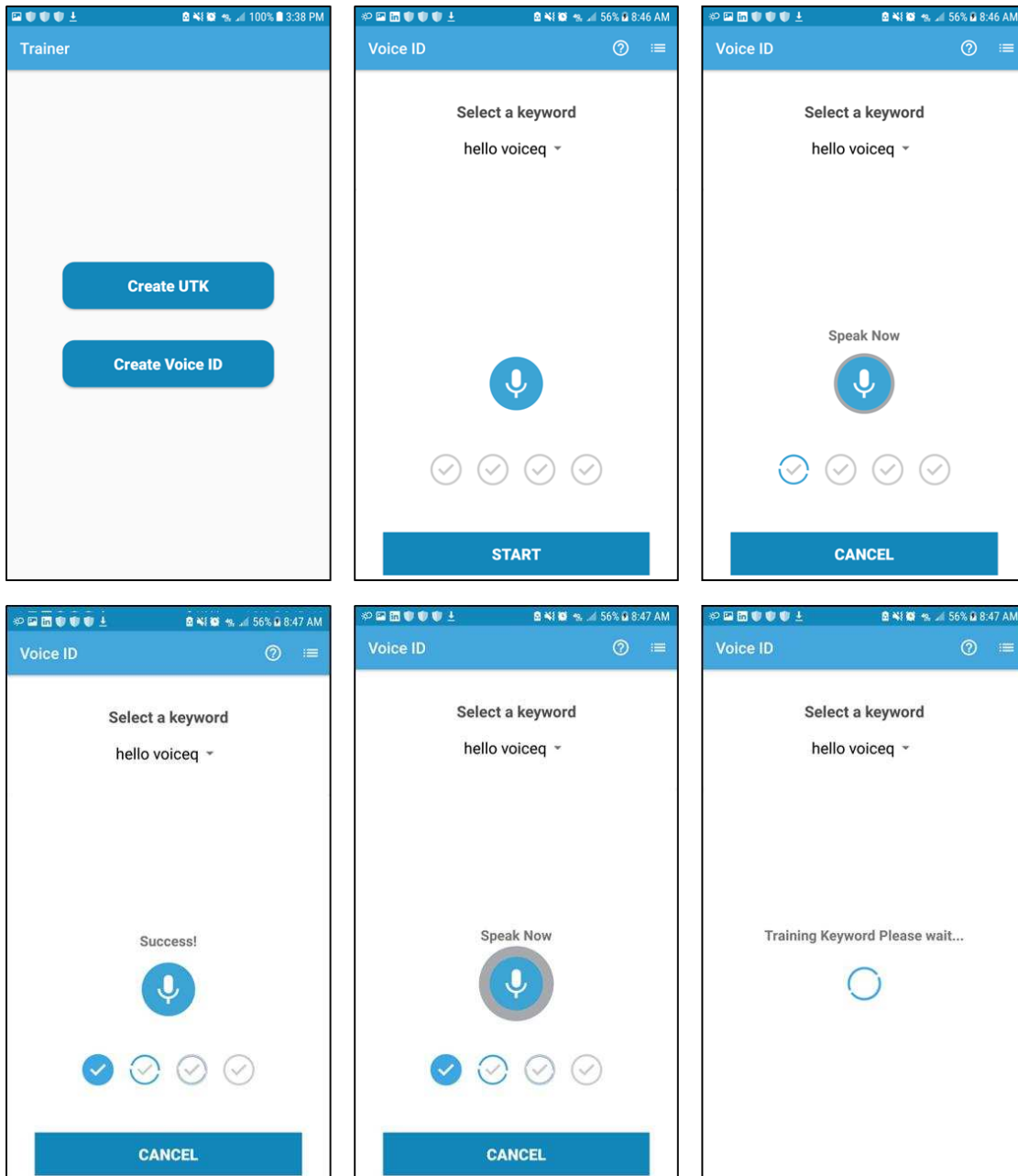


Figure 3 Train Voice ID

2.2 UTK – User Trained Keyword

1. Start the Trainer app and tap **Create UTK**.
2. Tap on the line below **Enter the keyword** to bring up the phones alphanumeric keypad.
3. Use the keypad to enter the UTK name and then tap **Done**.

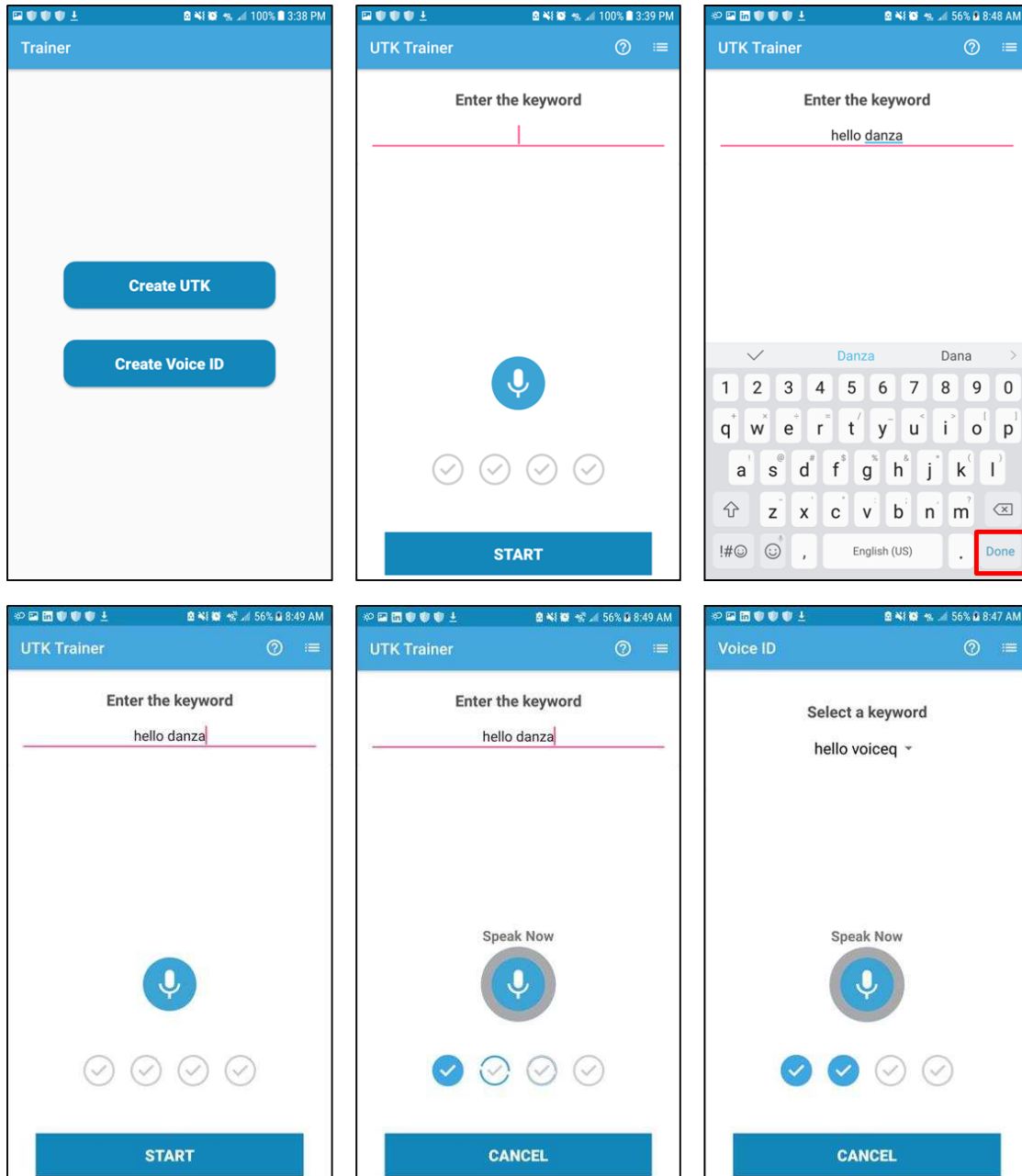


Figure 4 Train UTK

4. Tap on the **START** button and when **Speak Now** appears, say the desired UTK phrase.
5. After saying the keyword phrase, **Success** should appear. Remain quiet until **Speak Now** reappears and then say the phrase again.
6. Repeat until all four utterances of the UTK have successfully recorded as indicated by the **Training Keyword. Please wait** message.
7. Once training is complete, if desired, repeat to record another UTK. Once finished, tap the phone's back button to return the Trainer's main screen.

2.3 Help and Keywords List

- Tap the help (?) icon shown to access the **Help** screen.
- Swipe up to display additional help information.
- Use the back arrow button shown or the phone's back button to return to the previous screen.

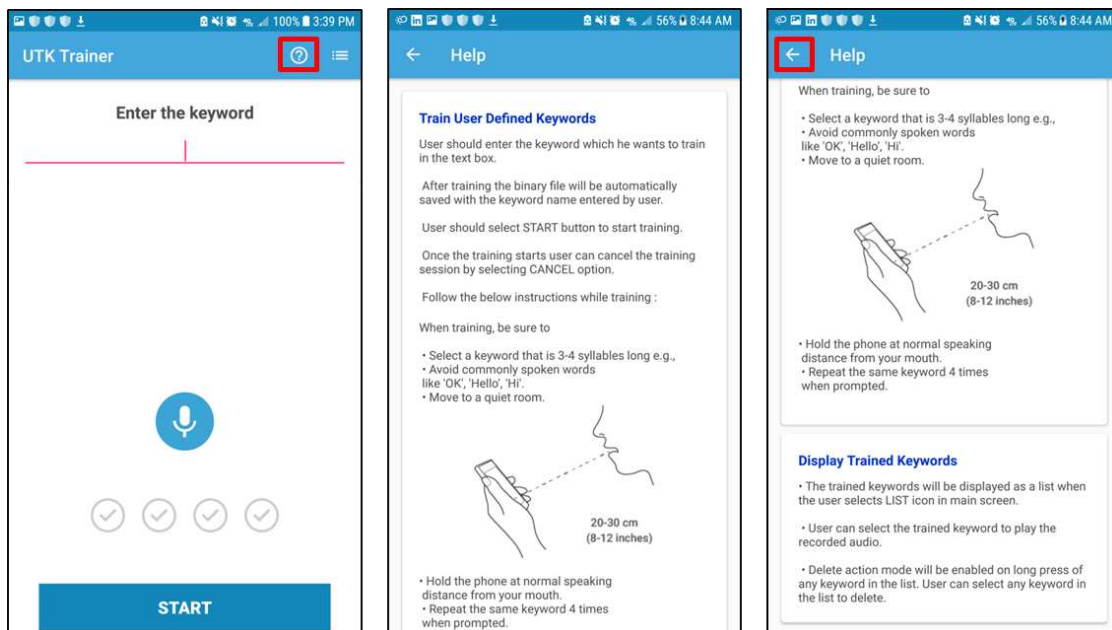


Figure 5 Help Screen

- Tap the list icon shown to access the **Keywords List** screen.
- To delete a UTK, press and hold on its text and once selected, tap the trash icon button.
- To play the .wav file created during training, double tap a UTK's text. Note that not all players can play back wav files of the type created.
- Use the back arrow button shown or the phone's back button to return to the previous screen.

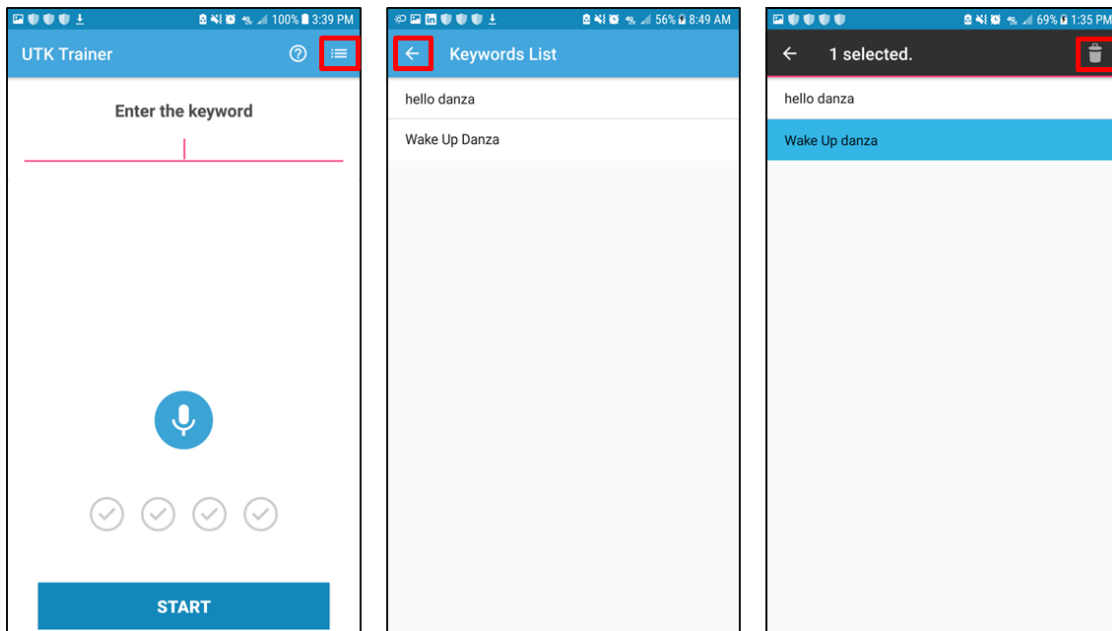


Figure 6 Keywords List Screen

2.4 Model Files

The .bin files created during training will be used with the sample project as described in the *IA611 Xplained Pro Software User Guide*.

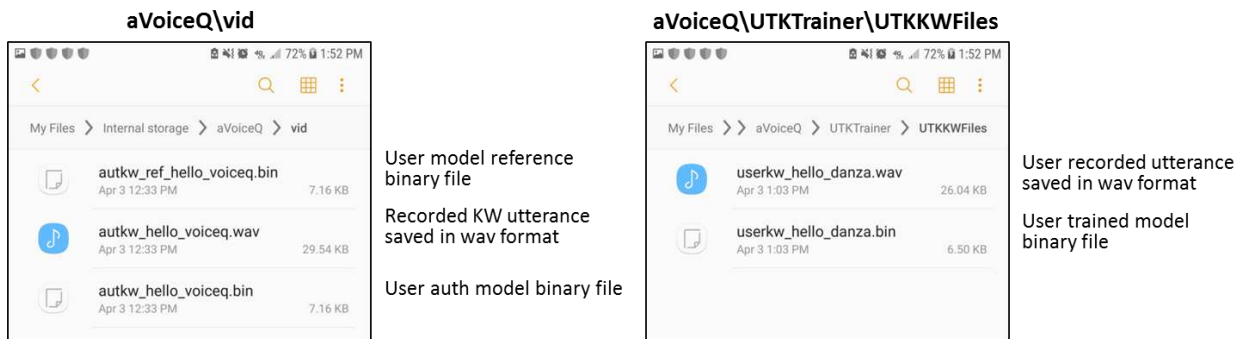


Figure 7 Voice ID (left) and UTK (right) Model Files

Revision History

The following lists the changes made since the previous version of this document.

Version	Revision Date	Author(s)	Comments
1.0	04/03/2018	Ketul/Cawley	Initial release



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