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Introduction

Launcher is a software which replaces the stock launcher of the Android operating system. It provides a user interface to quickly launch several pre selected apps, a drawer to access all the installed apps and to navigate between apps. It also includes a configurator for customization.

Purpose

This functional requirements specification (FRS) document details the capabilities and functions that the Launcher must be capable of performing. This document identifies the requirements of following components of the system:

- Menu bar
- System bar
- Background and logo
- Language selection
- Time and date widget
- Settings

This document also lists the requirements for testing, validation and deployment of the software.
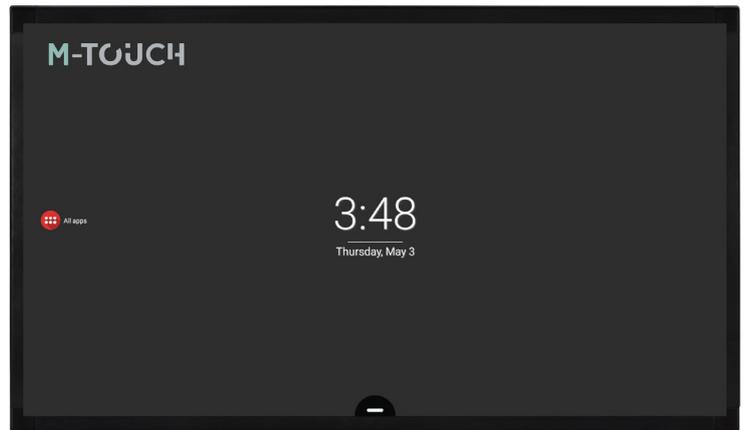
Scope

The FRS addresses all the functions, that Launcher v1.0 must be able to perform.

Assumptions

- The software runs on M-Touch AX Monitors with multi-touch input support.
- The targeted Operating System (OS) is Android TV 7.0.
- The software is a system app (signed with a system certificate).

Home screen requirements (user)

The home screen is the main view that the user is presented with, every time the OS boots up or whenever the "HOME" system button is pressed. It consists of the following main components:

Background

The background is the Android OS's wallpaper. It's changeable from the settings screen. The default background is grey in color.

▸   A default wallpaper can be auto loaded by placing **default_background.png** file in the directory reported by Environment.getExternalStorageDirectory() [Android API].

▸   If this file is present, on first run, the launcher will auto set the OS wallpaper as this image.

▸   The file needs be the Portable Network Graphics (PNG) format.

▸   If the resolution of the image is not same as the monitor resolution, the image will be stretched to fit the entire screen

Time and date widget

The time and date widget shows the current system time and date. It appears at the center of the home screen.

▸   It uses the Android system time format for deciding whether its a 12hr clock or a 24hr clock. Changing the system time format will change this widget's time format.

▸   It also uses the system locale (language settings) to display the date in the correct language. Changing the system locale will change this widget's language.
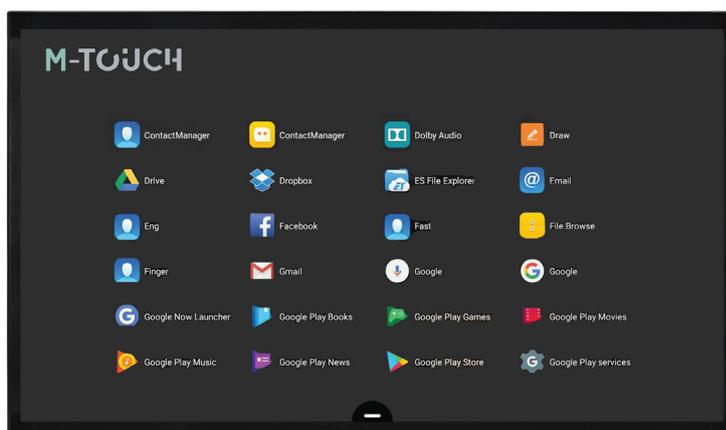
Logo

This widget is used to display a brand logo.

▶ The logo is settable using the settings screen.

▶ The logo can be placed in any of the 4 corners of the screen from the settings screen.

▶ The logo can occupy one of the following four predetermined locations:

  – Top Left
  – Top Right
  – Bottom Left
  – Bottom Right

▶ The logo is always of fixed height in the home screen, which is 50dp (display points).

▶ A default logo can be auto loaded by placing **default_logo.png** file in the directory reported by Environment.getExternalStorageDirectory() [Android API].

▶ If this file is present, on first run, the launcher will auto set the logo in the home screen.

▶ The file needs be of Portable Network Graphics (PNG) format.

Menu Bar

The menu bar shows icons that can be used to launch the respective apps

▶ It can have a maximum of **8 icons.**

▶ The 'All apps' icon launches an applications drawer view (more on this in the next section) that has icons for all the apps available on the system.

▶ The menu bar is always positioned to left edge of the screen.

Applications drawer

The icons/apps shown on the screen (left) are for representation only and may not be available on this platform.
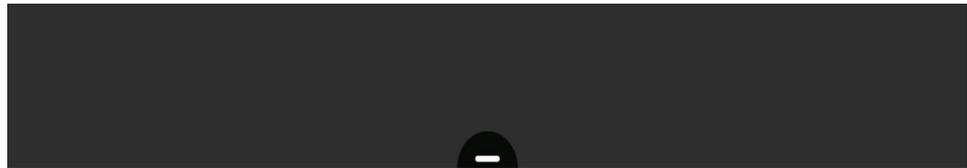
The applications drawer contains all the available apps on the system.

- ▶ The applications drawer is shown when the 'All apps' icon is pressed on the menu bar.

- ▶ Tapping on any of the icons opens up the respective app.

- ▶ The app drawer is vertically scrollable.

System Bar Requirements (User)

The system bar is a special UI widget which controls certain aspects of the Android OS. It's a moveable widget always pinned to bottom edge of the launcher screen. The system bar can be in one of the two states:
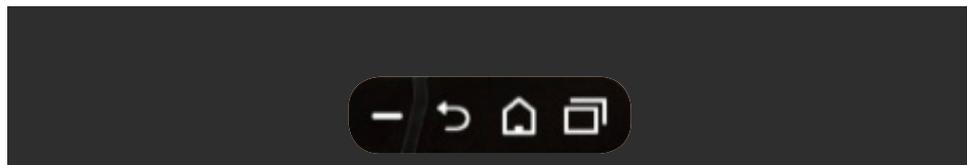
1. Collapsed

In this mode, it is a single button and its background is semi-transparent

- ▶ It can be dragged along the bottom edge of the screen and placed where desired.

- ▶ The icon cannot be dragged outside the scope of the home screen.

- ▶ On tapping the icon, it moves to the expanded mode.

2. Expanded

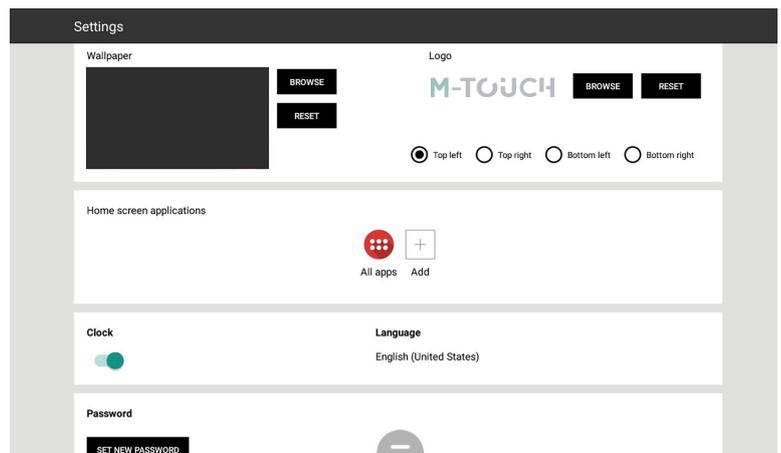In this mode, it has 4 buttons and its background is more opaque

- ▶ The system bar cannot be dragged around when in this mode.

- ▶ The '-' button will bring it back to the collapsed mode.

- ▶ The 'Back' button works the same as the Android systems back button.

- ▶ The 'Home' button brings the User back to the launcher screen.

- ▶ The 'Recents' button will show a list of the recent apps.

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Settings/Configuration requirements (Admin)

This is a password protected admin only section. The admin can use this view to change various parameters of the launcher application.

To access this hidden section, press-and-hold on the logo in the home screen for **10 seconds** and release.

▸ The default password is "android."

▸ On entering wrong password the system will prompt the user to enter the correct password again.

▸ Cancelling the password entry will take the admin back to the home screen.

The settings screen has 4 sections:

1. Wallpaper and logo

Wallpaper

This section shows the preview of the current wallpaper and buttons for browsing for a new wallpaper and to reset to default wallpaper.
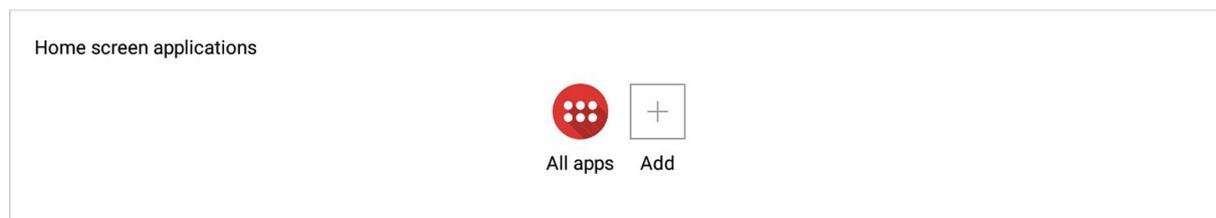
▸ Tapping the browse button under the 'Wallpaper' section brings up the Android system file browser with the supported image formats.

▸ On selection of an image, the Android system wallpaper is changed to the selected image and the preview automatically updates itself.

▸ The selected image will be stretched to fit the full size of the home screen.

▸ The reset button resets the wallpaper to the default image included in the APK (solid dark grey image).

▸ Supported image formats are: **BMP**, **JPEG**, **PNG**, **WebP**

Logo

This section shows the preview of the currently selected Logo.

▸ Tapping the browse button under the 'Logo' section brings up the Android system file browser with the supported image formats.

▸ Selecting an image on that screen sets the logo in the homescreen and also updates the preview in the settings screen.

▸ The reset button resets the logo to the default image.

▸ Supported image formats are: **BMP**, **JPEG**, **PNG**, **GIF**, **WebP**
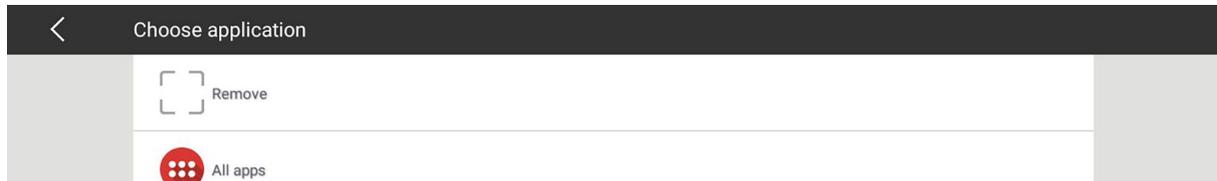
2. Home screen applications

Home screen applications

All apps   Add

This section allows the admin to manipulate the applications (also known as apps) in the menu bar by adding and removing items from the list. A maximum of 8 apps can be selected to be displayed in the menu bar.

▸ A new app can be added to the list by tapping on the Add [+] button.

▸ Pressing the Add button will open a list containing all the installed app on the system.

▸ There are three special buttons on the top of the App selection list:

– Remove : Removes the selected app from the Menu bar
– All Apps : Adds a "All apps" button to the Menu bar
– Settings: Adds a Settings icon to the Menu bar which takes the user directly to hidden settings screen without the need of pressing and holding the Logo

▸ The home button on the bottom left of this screen will bring the admin back to the Launcher home screen.

▸ Maximum 8 apps can be added to the List. The Add button disappears afterwards. The admin then has to select one of the app icons and choose "Remove" button for the Add button to reappear.

▸ Duplicates of the apps are not permitted on the Menu bar, so if the admin selects an app which is already present in the Menu bar, the selection will be ignored.
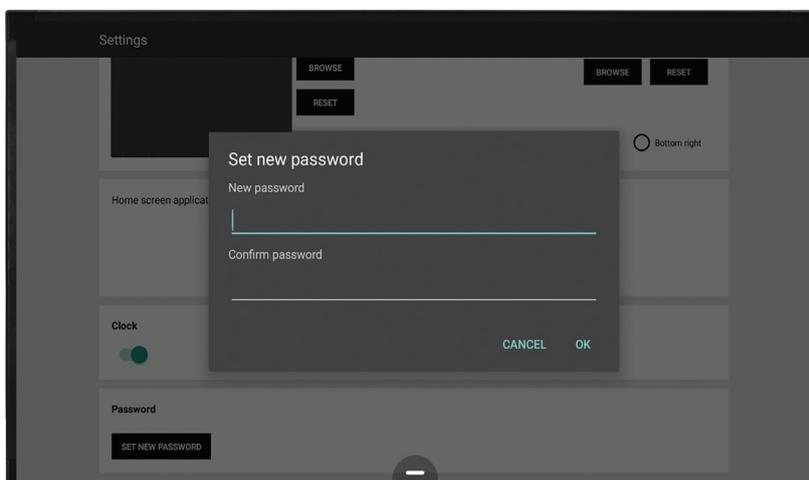

3. Clock and language

Clock

▸ The clock section has toggle button for enabling/disabling the showing of the time and date widget on the home screen.

Language

▸ The language section shows the currently selected language.

▸ Tapping on the currently selected language brings up the Android's language selection screen.

  – After selecting a language the launcher settings will refresh and ask for the settings screen password again.

4. Password

This section has a button for setting a new password.

▸ Tapping on the button shows a modal with password fields for 'New password' and 'Confirm password'.

▸ The password cannot be empty, the system shows an alert if this is the case.

▸ In case of a mismatch, the system shows a 'password mismatch' message.

▸ If the new and confirm password match, tapping the OK button sets the new password and dismisses the modal.

▸ Tapping cancel dismisses the modal without causing a password change.