Democracy Suite® ImageCast® X User Guide

Version: 5.11-CO::9

June 5, 2019

DOMINION VOTING

Our customers come first.

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CHAPTER 1: INTRODUCTION

The purpose of this document is to explain how to perform basic operations on the ImageCast® X devices.

1.1 Relevant Disclaimers

This document may make reference to certain Democracy Suite® functionalities that are not part of the current 5.11-CO campaign and should be disregarded throughout the document.

For a full list of relevant disclaimers, please see the "Relevant Disclaimers" section in the *2.02 - Democracy Suite System Overview* Document.

CHAPTER 2: SYSTEM SETUP

This document contains procedures for setting up and using a voting station that contains the ImageCast® X equipment.

There are 2 types of ImageCast® X stations: the **Ballot Marking Device (BMD) and the Direct Recording Electronic (DRE).**

NOTE: In case ADA/ATI is not part of the ICX system configuration, please disregard any references to it.

The **ImageCast® X BMD** device is made up of the following:

- ImageCast® X device
- Smart card reader/writer
- ADA hardware
- Printer
- A single USB drive containing the election files.

The **ImageCast® X DRE** device is made up of the following:

- ImageCast® X device
- Smart card reader/writer
- ADA hardware
- One or more USB drive(s) for the purpose of saving the election data.
- A single USB drive containing the election files.
- VVPAT printer as well as the thermal (report) printer

This document is written with the assumption that the necessary election files for the ImageCast® X are delivered to the customer and loaded onto the device.

Additionally, this document assumes that an Election Official will perform the duties outlined within this document.

NOTE: Please be advised - When setting the Project Parameters for ImageCast® X in EED, make sure that **Full Face Ballot is not selected** from the Accessible Voting Session Support option > AVS Ballot Mode drop-down (see Figure 2-1).
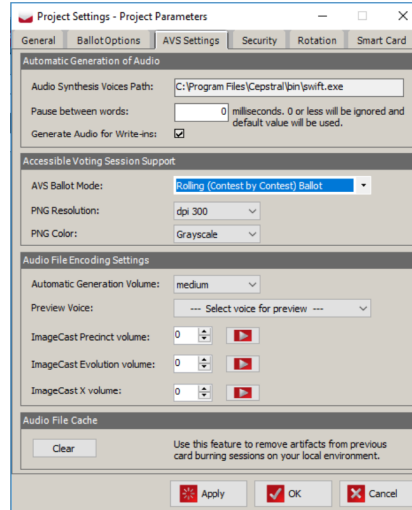
Figure 2-1: Project Settings - Project Parameters

The following equipment is needed to set up a voting station:

- ImageCast® X device
- Smart card writer/reader
- Armadillo sphere with enclosure (Samsung devices only)
- Printer (BMD only)
- LavaLink Adapter (Samsung devices only)
- APC Smart-Ups 1500VA LCD 120V

There are 2 ADA hardware packages for ADA voters.

Depending on the customer requirements the package can contain:

- Tecla interface device for ADA voters with the Paddles, Joystick and Sip & Puff or
- ATI advanced controller interface device for ADA voters with the Paddles, Audio and Sip & Puff

For ADA voters that require only audio support, ImageCast® X application offers "Audio Only" option.

2.1 ImageCast® X BMD

2.1.1 Unpacking the Equipment

The following steps are to be performed by an Election Official:

1. Remove the the ImageCast® X devices from the Ballot Security Unit.

2. Remove the printers from the grey steel supply boxes labeled "ImageCast® X Printers".

3. Remove the following from the grey steel supply box labeled "ImageCast® X Peripherals":

   a. 4-Directional switch (for ADA).

   b. Headphones (for ADA).

   c. LavaLink Adapter (Samsung only).

   d. Tecla Shield or ATI device.

   e. The smart card(s).

2.1.2 Setting up the Equipment

The following steps are to be performed by an Election Official:

1. Set up the booth according to the site layout map in the Supervisors Notebook.

2. Plug both the printer and the ImageCast® X device into the UPS.

3. Plug the headphones into the headphone jack.

4. Plug the LavaLink adapter into a power outlet (Samsung only).

5. Connect the tablet enclosure with the Lava adapter using a micro USB cable (Samsung only).

6. Plug the USB printer cable into printer and into a free USB port.

7. If the ICX device is to be used to support ADA voters then the appropriate ADA device (Tecla Shield or ATI) should be plugged into a free USB port.

NOTE: The tablet(s) that should have the accessibility features enabled have to be tagged with a blue disability sticker.

2.1.2.1 HP LaserJet Pro M402dne Printer Security Lockout Procedure

The HP LaserJet Pro M402dne includes several security features to restrict who has access to the configuration settings, to secure data, and to prevent access to valuable hardware components.

One such security feature is the Embedded Web Server–EWS.

It allows the user to lock out the control panel on the HP LaserJet Pro M402dne printer so that changes cannot be made by the voter.

In order to enable this security feature, the Technician can assign an administrator password that would be used to access the printer settings and the EWS.

This security feature assures that, in case the printer jams, the ImageCast® X device will show an error dialog, advising the Voter to contact the Administrator, i.e. Poll Worker.

The Poll worker will insert their smart card and clear the jam.

Once the printer jam has been cleared, the Poll worker will be prompted to either Reprint the ballot, or Cancel it, depending on whether or not the ballot is printed automatically once the jam has been cleared.

The following steps need to be followed in order to lock out the printer settings:

1. Connect a PC to the HP LaserJet Pro M402dne through an Ethernet cable.

2. Press the **OK** button on the printer control panel.

3. Access the **Network Setup** menu. Once there, select **Show IP Address** to display the printer IP address or host name.

4. Open a Web browser, and type the IP address or host name exactly as it displays on the printer control panel in the address line.

5. Press Enter.
   The EWS opens.

NOTE: If the Web browser displays "*There is a problem with this website's security*" certificate message when attempting to open the EWS, click **Continue** to this website (not recommended). Choosing **Continue to this website (not recommended)** will not harm the computer while navigating within the EWS for the HP printer.

6. Click on the **System** tab at the top of the page

7. Click the **Administration** link in the left navigation pane.

8. In the area labeled **Product Security,** enter the password in the **Password** field.

9. Re-enter the password in the **Confirm Password** field.

10. Click the **Apply** button.

The security lockout has now been set.

NOTE: Make note of the password and store it in a safe place.

2.1.2.2 Printing ImageCast ® X casted votes on HP LaserJet Pro M402dne Printer

The ImageCast ® X has the option to print a cast vote via a configurable BMD option. To enable this option:

1. Insert the Technician smart card and enter the PIN.

2. Go to **Election Preparation.**

3. Press **Select Machine.**
   An **Info** dialog displays.

4. Insert the Poll Worker smart card and enter the PIN.
   The **Machine selection** window displays.

5. In the drop-down menu, select the machine.

6. Press **Select**.
   The **Question** dialog displays.

   a. Press **YES**.
      An **Info** dialog displays.

   b. Press **OK**.
      The **Info** dialog closes.

7. Press **Edit Configuration.**
   An **Info** dialog displays.

8. Insert the Technician smart card and enter the PIN.

9. Under **Main Settings,** press the option **Operating Mode**.
   The **Configuration Editor** dialog displays.

   a. In the drop-down menu, select **BMD**.

   b. Press **Save**.

10. In the upper right corner, press **Apply changes**.
    An **Info** dialog displays.

    a. Press **OK**.
       The BDM printing option is now enabled.

2.1.3 Powering on

1. Powering on the ImageCast® X device

   a. Samsung

   - Using the security **screwdriver**, found in the ImageCast® X Peripherals box, unscrew the security screw found on the upper right-hand side of the tablet's enclosure (case), if necessary.

   - Using the enclosed **hex key,** insert it into the hole where the security screw was and press the power button on the tablet to power it on.

   - Replace the security screw.

   b. aValue

   - Open the security door.

   - Press and hold the power button on the right of the unit until it lights up, then release the button.

   - Close the bottom security door.

   - Secure the bottom security door using a security seal.

2. Power on the printer by pressing the **ON** button.

2.2 ImageCast® X DRE

Direct Recording Electronic, DRE, is a type of tabulator mode which can be used with the VVPAT printer.

Results gathered during the voting process are saved internally on the tabulator. The location of the Result file is determined by the ICX Machine Configuration File.

The internally saved results can further be exported to a USB drive if needed, through the Technician Menu.

2.2.1 Unpacking the Equipment

The following steps are to be performed by an Election Official:

1. Remove the ImageCast® X devices from the Ballot Security Unit.

2. Remove the following items from the grey steel supply box labeled "ImageCast® X Peripherals":

   a. 4 Directional switch (for ADA)

   b. Headphones (for ADA)

   c. ATI device

   d. The smart card(s)

   e. VVPAT printer - Please refer to the Voter-verified paper audit trail (VVPAT) Model: VRP3 User Guide for additional information.

2.2.2 Setting up the Equipment

The following steps are to be performed by an Election Official:

1. Set up the booth according to the site layout map in the Supervisors Notebook.

2. Plug both the printer and the ImageCast® X device into the UPS.

3. Plug the headphones into the headphone jack.

4. Plug the USB printer cable into printer and into a free USB port.

5. Plug a USB drive into a free USB port on the ImageCast® device.

NOTE: If an inserted USB drive isn't being used as a result location, please remove the USB drive from the ImageCast® X Device.

6. If the ImageCast® X device is to be used to support ADA voters then the appropriate ADA device (ATI) should be plugged into a free USB port.

NOTE: The tablet(s) that should have the accessibility features enabled have to be tagged with a blue disability sticker.

2.2.3 Powering on

1. Follow the following steps in order to Power on the ImageCast® X device.

   a. Open the security door.

   b. Press and hold the power button on the right of the unit until it lights up, then release the button.

   c. Close the bottom security door.

   d. Secure the bottom security door using a security seal.

2. Power on the printer by pressing the **ON** button.

2.3 VVPAT - Voter-verified paper audit trail printer

Voter-verifiable paper audit trail (VVPAT) is a method of providing feedback to voters using a ballotless voting system.

VVPAT ballot is a compact representation of a voter's selection. It consists of two parts:

- QR Barcode encoded voter's selection, machine readable part of the VVPAT ballot. The size of the QR-Barcode depends on the data that needs to be encoded (number of available contests, candidates and write-ins).

- Human readable voter selection.

The VVPAT printer is used with a Direct-Recording Electronic (DRE) tabulator, and it is installed by simply connecting it to the tabulator via USB port (please see image below).

NOTE: Please refer to the Voter-verified paper audit trail (VVPAT) Model (see Figure 2-2): VRP3 User Guide for any additional information.
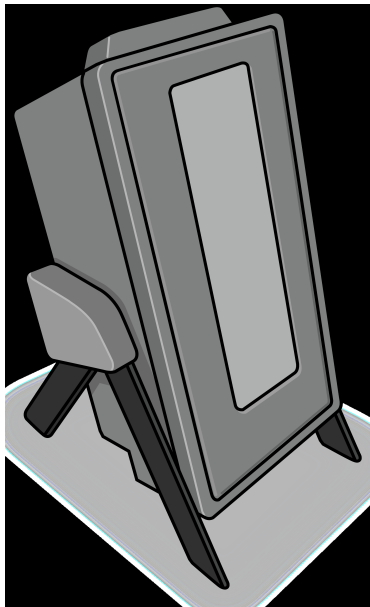
Figure 2-2: VVPAT Printer

CHAPTER 3: USER INTERFACES

Here you will learn about the main modes of operation, i.e. different user interfaces available with the ImageCast® X devices:

- ImageCast® Classic
- ImageCast® Samsung

3.1 Common ImageCast® X device elements

The common elements of all user interfaces are listed here.

- Top Status bar (see Figure 3-1)

This is the top most bar. It displays information about the tabulator that is being used, the battery status, as well as the date and time.

Figure 3-1: Top Status bar

- Bottom Status bar (see Figure 3-2)

It's located at the bottom of the screen and displays the current number of ballots cast.

Figure 3-2: Bottom Status bar

3.2 ImageCast® Classic

3.2.1 Technical Administration

All operations that require a trained technician can be performed from the menu shown in Figure 3-3 below.

Figure 3-3: Technical Administration menu

NOTE: Be advised that the Technician must clear all result locations (internal and USB) before uninstalling an older version of the ICX application, as well as after installing a new one.
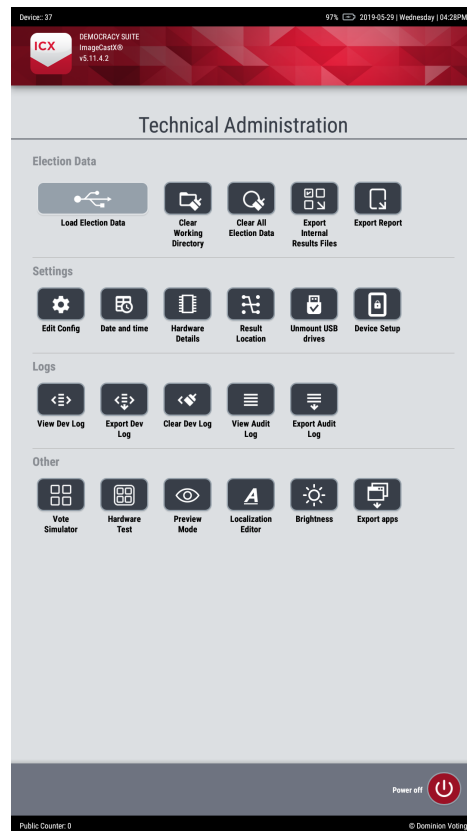
Once the Technician menu has been accessed, the Technician gains access to the following settings:

- Election Data
- Settings
- Logs
- Other

3.2.1.1 Election Data

The Election data section is accessible only when the Technician card is inserted.

Manipulation of election data (*clearing the working directory, clearing all election data, export of internal results files and export report*) is possible only through the Technical Administration screen, and **only** when the Poll is closed (see below images for additional clarification).

Figure 3-4: Poll Closed/Enabled Election Data section

Load Election Data

This option is used for loading Election files from a USB drive.

It is important to note that prior to copying the Election files, the ImageCast® X device needs to be cleared of all previously loaded Election files (the "Clear all election data" button).

To load the Election Data:

1. Press **Load Election Data**.
   The election configuration files on USB drive dialog displays (see Figure 3-5).
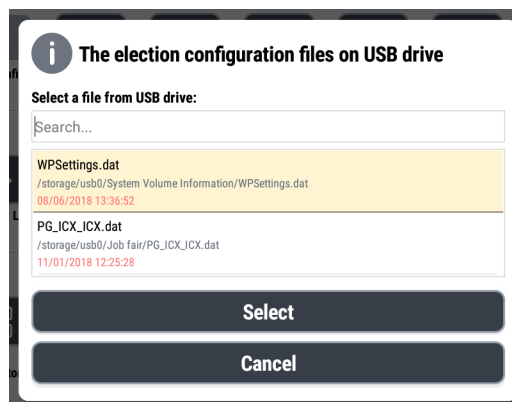
Figure 3-5: "The election configuration files on USB drive" dialog.

2. Select the Election file (**.DAT** file) you want to copy onto the machine and press **Select**.
   A **Confirm** dialog displays (see Figure 3-6).

Confirm

Copy file "/storage/F62A-E5D4/5.10/12Pri 3 Languages/PG_ICX_Default.dat" from USB to the device.

Are you sure you want to load this election file?

Copy

Cancel
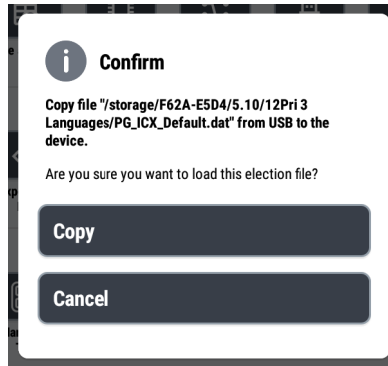
Figure 3-6: "Confirm" dialog.

3. Press **Copy**.
   A **Copy** dialog displays (see Figure 3-7).

Copy

The Dynamic Content file is successfully copied.

OK

Figure 3-7: The "Copy" dialog

4. Press **OK**.
   The Election Data is successfully loaded.

Clear Working Directory

Removes the working copy of the election files (.DAT file) to force election file decryption on the next poll worker login and effectively revert the project to defaults.

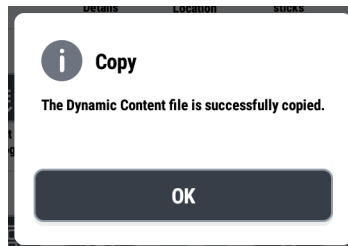**NOTE:** When in DRE mode, the **Load Election Data** option is disabled if there are any result files in result locations, so they have to be deleted. There are two ways of doing that: **Clear all election data** from technician menu or **ReZero** from Poll Worker menu.

Clear All Election Data

Removes all election data from the machine. Returns the machine to factory default settings making it ready for the next election.

The following is removed:

1. Result files from all defined locations, if they exist. If not all locations are accessible, an appropriate message will be presented.
2. Audit log files from all result locations, but the last ten audit logs on the device remain, so that there is evidence of clearing election data.
3. Report file, if it exists.
4. Election file (.DAT file).
5. Vote sim (Test deck file).

Export Internal Result Files

Copies the results from internal storage onto the USB drive. The results are in folder "Result" on the USB drive.

Export Report

Copies the report to the USB drive, if the report exists. The report is in folder "Reports."

3.2.1.2 Settings

This section contains information on the Settings section of the ImageCast® X device which provides the User with access to the application as well as the system settings.

Edit Config

Allows the user to edit the configuration on the machine for the currently selected

tabulator. In order for this button to be enabled, a tabulator must be previously selected.

Here, the Technician can set the tabulator to be in either **DRE** or **BMD** mode.

NOTE: The changes made here will be applied only to the current tabulator.

Date and Time

Allows the user to set the date and time by scrolling through the available days, months and years and the time zone in a pop-up menu.

To set the time and date:

1. Select the time zone first (see Figure 3-9).

2. Then select the time and date.

3. Press the **Save changes** button at the bottom right of the menu (see Figure 3-8).
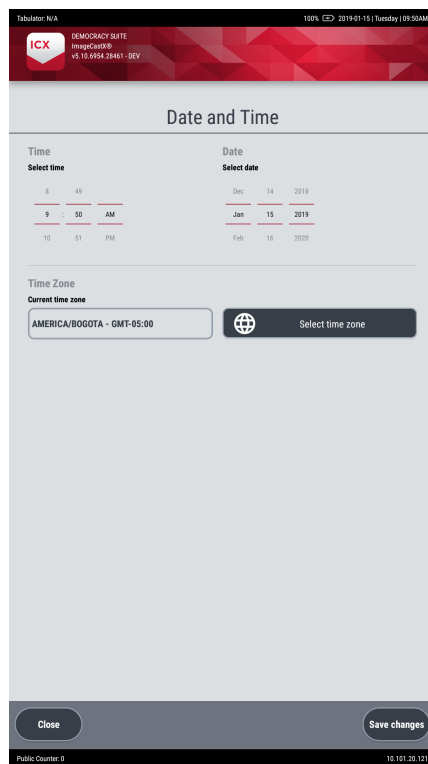   The date and time are now set.
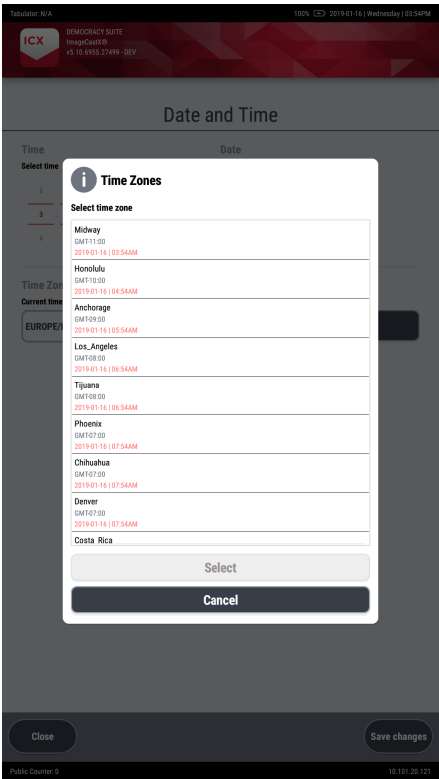

Figure 3-8: Date and Time menu

Figure 3-9: Time Zones menu

Once a selection is saved a confirmation dialog displays at the bottom of the menu (see Figure 3-10).
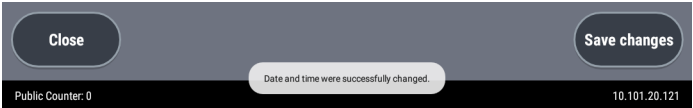
Figure 3-10: Confirmation pop-up

Hardware Details

Displays information such as firmware and serial number of the connected devices and the supported Android and Firmware version in the manifest file of the application, in the form of a dialog, as seen in Figure 3-11 below.

Figure 3-11: Hardware Details dialog

NOTE: At the startup of the application, the supported version of the components from the manifest file is compared with the installed versions. If there are any version mismatches of the components and the ICX APK, the user will be notified with a warning message (see Figure 3-12).

Figure 3-12: Version Mismatch Warning

Result Location

"Mapping *result locations*" allows you to map logic locations from the MCF file to a physical location on the file system (see Figure 3-13).

Figure 3-13: Mapping result locations

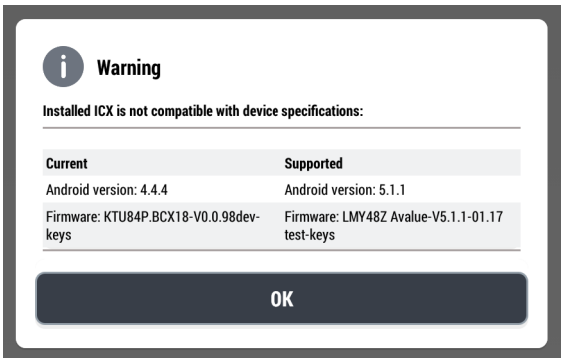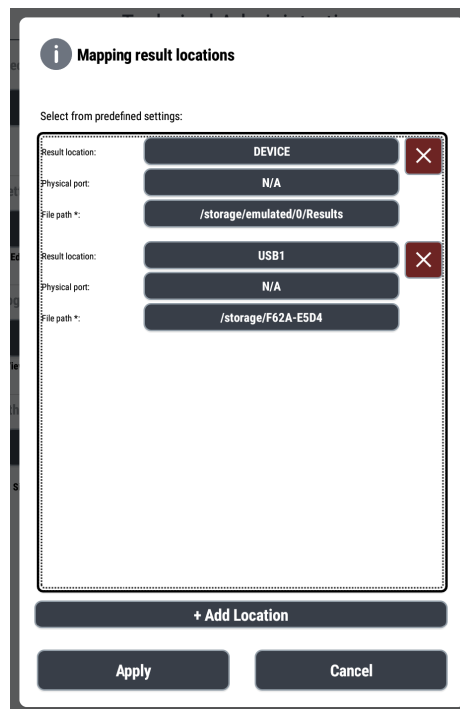You can select predefined values for each device that supports the DRE operating mode.

For each result location, you have its logical name, the physical port on the file system and a file system path. Every location can be removed and new locations can be added.

NOTE: If an inserted USB drive isn't being used as a result location, please remove the USB drive from the ImageCast® X Classic/Samsung Device. The final location of result files is an intersection of a location from the MCF and a mapped location. Every location from the MCF must be mapped to a file system path, and a location can't be present more than once in the MCF configuration and result mappings, otherwise an error will be presented to the user upon an open poll command.

There can be more result mappings, but, the ones that are present in MCF are going to be used for storing result files. Result mappings can be changed only when the poll is not open. If mappings are not set, default mappings will be used for each device we support for DRE mode. Logical locations are not case sensitive.

Unmount USB drives

This option safely unmounts the inserted USB drives.

To unmount a USB drive:

1. Press **Unmount USB devises**.
   The ***Unmount USB devises window*** displays with a list of USB drives.

2. Select a drive and press **Unmount**.
   A confirmation dialog displays.

To unmount the selected drive, press **Yes**.
The drive is now unmounted.

Device Setup

The Device Setup menu (see Figure 3-14) displays information regarding Kiosk Mode, the device's owner and administrator, application version and update option as well as Google's Text-To-Speech version and update option.
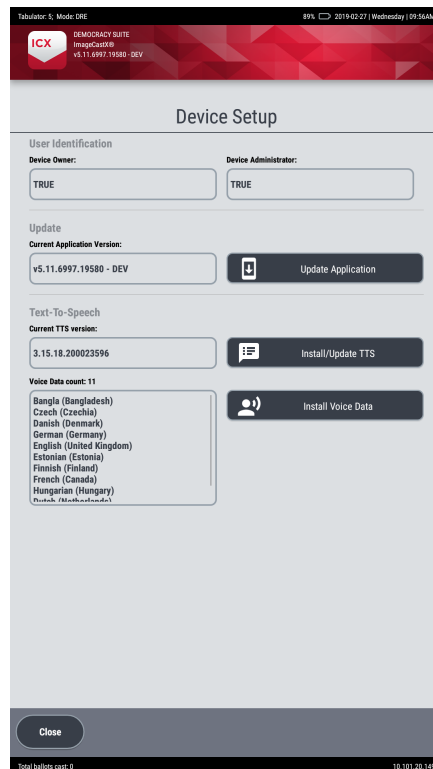
Figure 3-14: Device Setup

If an older version of the ICX application is being installed on the ICX device that has Android OS 8.1, a warning message will display (see Figure 3-15).
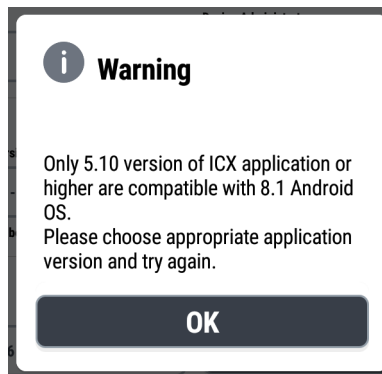
Figure 3-15: Warning dialog

To Configuring Google Text to Speech:

1. Insert the Technician smart card.
   The pin verification window displays.

2. Enter the PIN.
   The Technical Administration menu displays and the following pop-up window displays (see Figure 3-16).
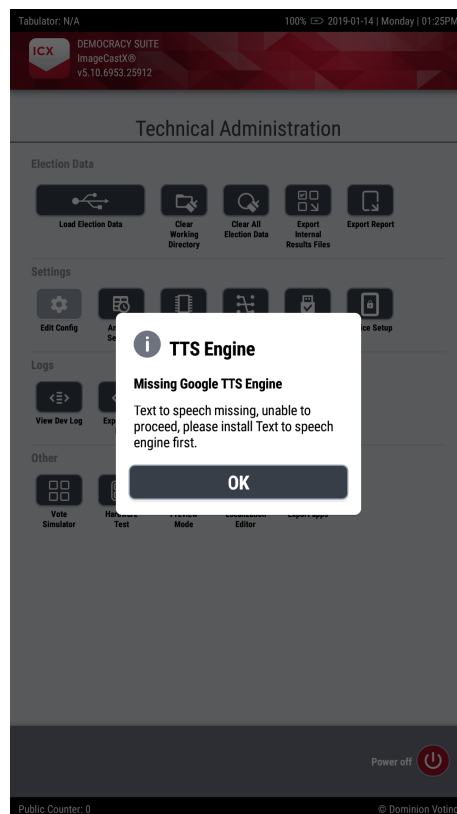
Figure 3-16: TTS Engine

3. Press **OK**.
   The window disappears.

4. Press **Device Setup**.
   The *Device Setup* menu displays (see Figure 3-17).
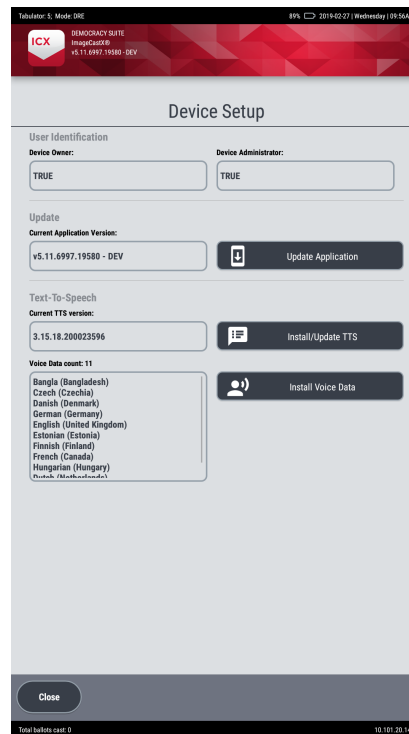
Figure 3-17: Device Setup

5. Press **Install/Update TTS**.
   The *Select a file from USB drive* window displays.

6. Select the desired TTS .apk file and press **Select**.
   An *Info* window displays (see Figure 3-18) to confirm the TTS engine was installed.
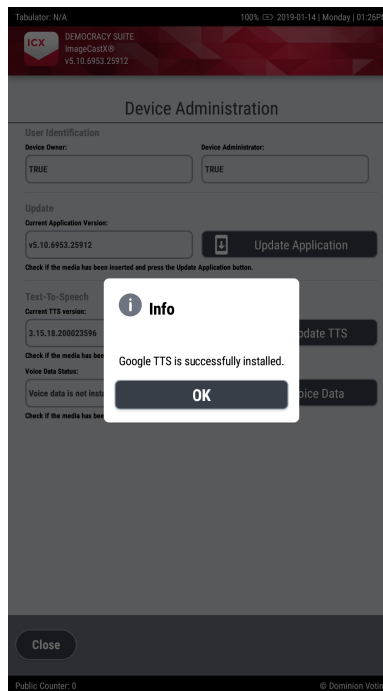
Figure 3-18: Info dialog

If there is no.apk file on the USB drive, the following error message displays (see Figure 3-19):
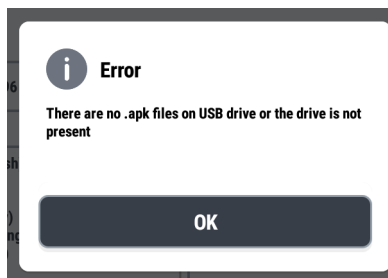
Figure 3-19: No .apk file error message.

To install a specific language file:

1. Press **Install Voice Data**.
   The ***Select a file from USB drive*** window displays (see Figure 3-20).
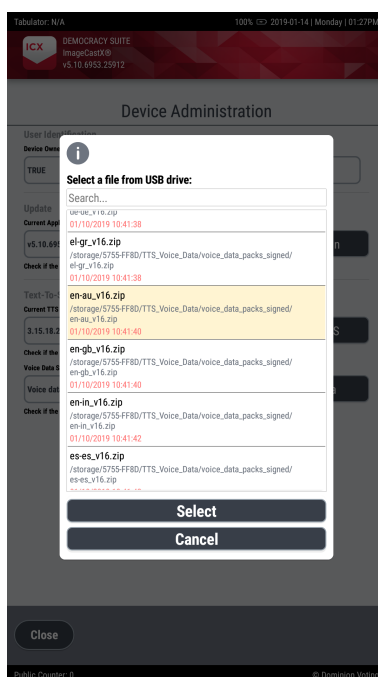
Figure 3-20: File selection window

2. Select the desired .apk file and press **Select**.
    The language file is now installed and displayed in the Voice Data count box
    (see Figure 3-21).
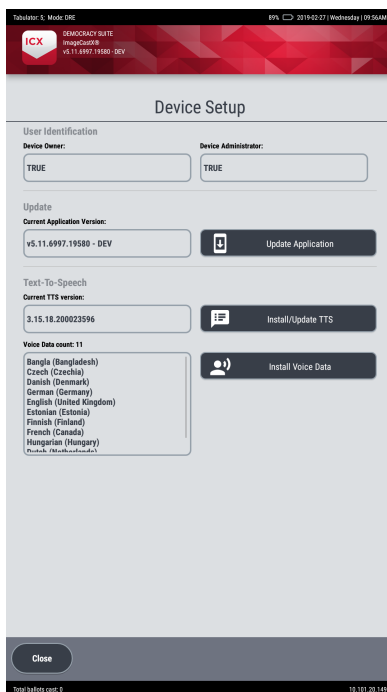
Figure 3-21: Device Setup screen

NOTE: If any other file is chosen from the drop-down menu besides the valid ICX version, Google TTS or voice data file, the following messages will appear:

- **For an invalid application:** *"Selected file is not a valid ICX application. Please choose appropriate ICX application file and try again."*

- **For an invalid TTS:** *"Selected file is not a valid Google TTS application or is not compatible with this device. Please choose appropriate Google TTS application file and try again."*

- **For an invalid voice data:** *"Selected voice data file is not valid. Please select valid voice data file and try again."*

3.2.1.3 Logs

View Developer Log

This option is used to access the developer log.

This is mainly used by developers, the button may or may not be enabled.

It lists all developer log files found on the device. Upon selecting one, the last 100 lines of the log will be shown on the screen (top-down), and more can be loaded by selecting "Load more."

Export Developer Log

Export developer log to a USB drive.

NOTE: If an unexpected error occurs on the Android OS level, please use the *Export Dev Logs* option to obtain the tombstone log containing additional information from the Android OS.

Clear Developer Log

Delete all developer log files from the device. But one file will always remain and that is always the last one that was created.

3.2.1.4 View Audit Log

This option is used to access the audit log.

Upon selecting one, the last 100 lines of the log will be shown on the screen (top-down), and more can be loaded by selecting "Load more".

Export Audit Log

Export audit log to a USB drive.

3.2.1.5 Other

Vote Simulator

This option provides the User access to the Vote Simulator. A valid test pattern file is required in order to perform a valid test. For additional information please refer to "Appendix B - ImageCast® X Vote Simulator".

Hardware Test

Allows the User to test the hardware connected to the ImageCast® X device.

There are tests for the following:

- ATI device
- Paddles
- Sip'n'Puff
- Printer
- Led Lamp

Preview Mode

Allows the preview of the ballot from EED.

In order to start the preview mode, first start the preview in EED, check the EED IP address and port number, then enter those in the ImageCast® X device, and select "Start".

A valid network connection is required in order to be able to preview a ballot.

Localization Editor

The Localization Editor edits localized text resources in English. For more information, see section "Localization Editor".

Brightness

Sets the brightness level of the screen

Export Apps

The "Export apps" button in the Technician menu checks if there is a USB drive present and exports ICX and Google TTS APKs to it.

When the Export is complete a dialog will pop-up saying "Export Complete" with

an "OK" button which will close dialog.

3.2.2 Technical Administration functions

3.2.2.1 Hardware Test

The **Hardware Test** section (see Figure 3-22) allows the Technician or Poll Worker to perform **Functional Tests** on the available accessible devices, the LED lamp and the touchscreen.
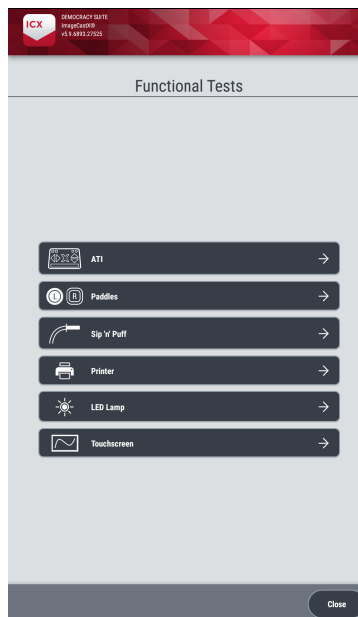
Figure 3-22: Functional Tests

ATI

The Audio Tactile Interface (see Figure 3-23) is an optional voting interface, used primarily for voters with visual and auditory impediments.
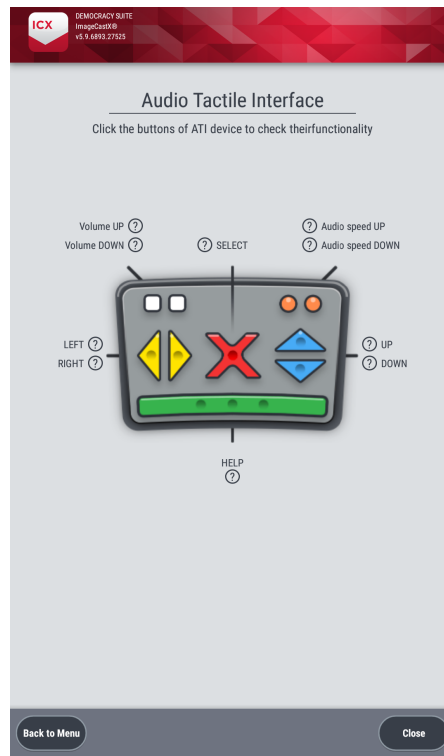
Figure 3-23: Audio Tactile Interface

To test the ATI:

1. Plug in the ATI controller into the unit.

2. Press any button.
   The question mark, associated with the button pressed, will turn into a green check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-24: Check mark

3. Once the test is done, press **Back to Menu** to return to the *Hardware Test* menu, or **Close** to return to the *Hardware* menu.

PADDLES TEST

The paddles (see Figure 3-25) are an optional voting interface, used primarily for voters with movement impediments.
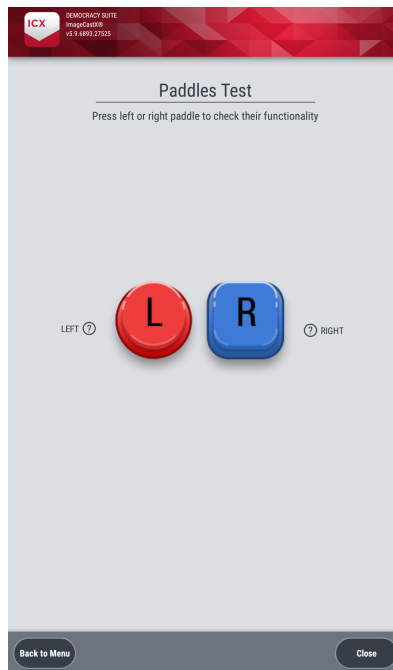
Figure 3-25: Paddles Test

To test the paddles:

1. Attach the paddles to the unit.

2. Press on a paddle.
   The question mark, associated with the button pressed, will turn into a green check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-26: Green check mark

3. Once the test is done, press Back to Menu to return to the Hardware Test menu, or Close to return to the Hardware menu.

SIP N' PUFF TEST

The Sip and Puff is an optional voting interface (see Figure 3-27), used primarily for voters with movement impediments.
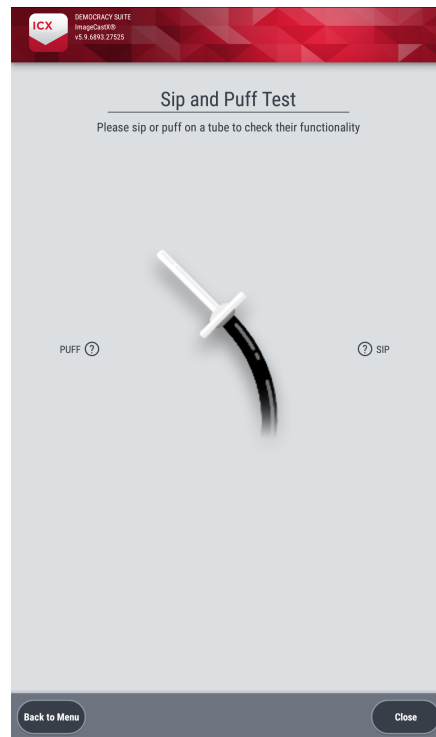
Figure 3-27: Sip and Puff Test

To test the Sip and puff:

1. Attach the sip and puff to the unit.

2. Sip or puff into the tube.
   The question mark, associated with the action taken, will turn into a green
   check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-28: Green check mark

3. Once the test is done, press **Back to Menu** to return to the Hardware Test
   menu, or **Close** to return to the *Hardware* menu.

PRINTER TEST

This test, allows the user to test the printer (see Figure 3-29).
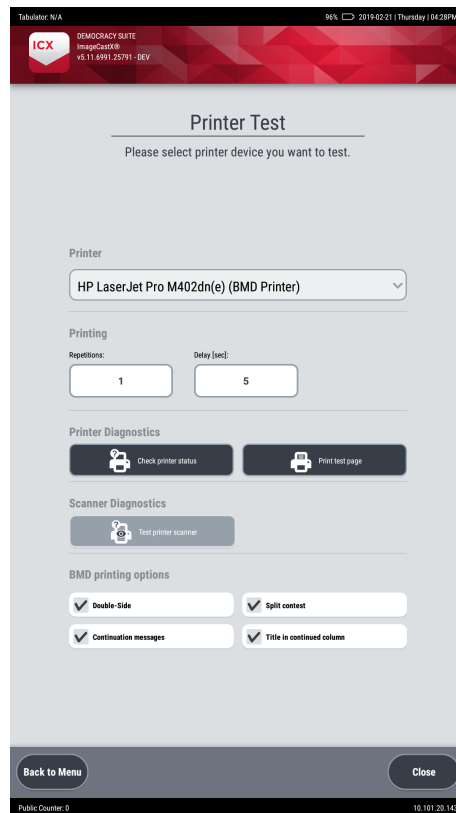
Figure 3-29: Printer Test

To test the printer:

1. Attach the printer to the unit.

2. In the *Printer* menu, select the type and role of the printer.

   a. To check the status of the printer, press **Check printer status**.

   b. To print a test page, press **Print test page.**

   c. To test the VVPAT's internal scanner, press **Test printer scanner** (see Figure 3-30).

Figure 3-30: VVPAT's scanner test

3. Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.

The **BMD Options** in the printer test allow the user four additional options to test the printer duplexer in which the ballot will be printed: **double-sided**, to **split the contes**t, to **continue the message** to the next screen and to add the **title in continued message** on the next page.

LED LAMP TEST

The LED lamp is a visual indicator of the unit's status (see Figure 3-31).
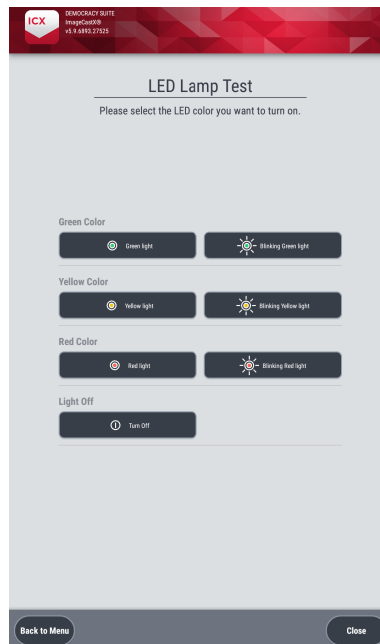
Figure 3-31: LED Lamp Test

To test the LED lamp:

1. On the device's screen, click the color you would like to be shown on the LED lamp. The LED lamp lights up the selected color and mode.

2. Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.

TOUCHSCREEN TEST

The touchscreen is the main input for selections when voting (see Figure 3-32).

To test the touchscreen:

1. Enter the *Touchscreen* test and draw on the screen with up to 10 fingers at one time.
Each finger will be highlighted with a different color.
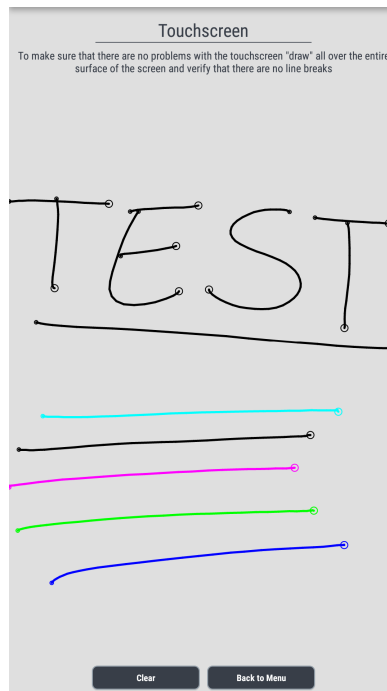
Figure 3-32: Touchscreen

2. Once the test is done, press **Back to Menu** to return to the *Hardware Test* menu, or **Close** to return to the *Hardware* menu.

3.2.2.2 Localization Editor

This section explains the option on how to edit localized text resources in English. A prerequisite to access the Localization Editor is that the Poll Worker must first select the tabulator. For more information on how to select tabulators, see section "Tabulators".

To access the Localization Editor:

1. From the Technical Administration screen, press **Localization Editor**.

The **Localization Editor** screen displays (see Figure 3-33).
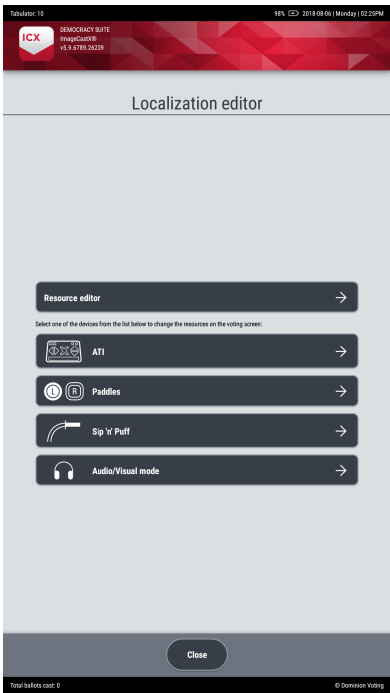
Figure 3-33: Localization Editor

2. To edit a resource, press **Resource Editor.**
   A window with a *Table Editor* and *JSON Editor* tabs displays (see Figure 3-34 and Figure 3-35).
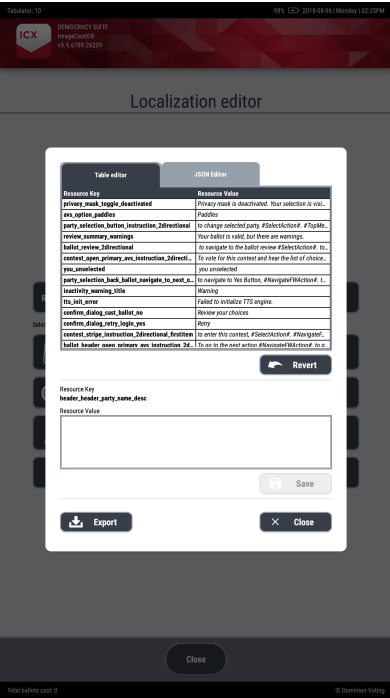
Figure 3-34: Table Editor

Figure 3-35: JSON Editor

3. To edit a resource in the **Table Editor** tab, select a row.
   The value is auto populated in the **Resource Value** table bellow.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press Revert.
      A *Confirm* dialog displays.

   c. Press **Revert**.
      The value is now reverted to it's original state.

   d. To export the updated English localization file, press **Export**.
      An *Info* dialog displays.

   e. Press **OK**.
      The English localization file is now exported.

   f. Once done, press **Close**.

4. To edit a value in the **JSON Editor**, select a value by double-tapping the value text at the end of the line.
   An on-screen keyboard displays.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press **Revert**.
      A *Confirm* dialog displays.

   c. Press **Revert.**

The value is now reverted to it's original state.

5. To export the updated English localization file, press **Export**.
   An *Info* dialog displays.

   a. Press **OK**.
      The English localization file is now exported.

   b. Once done, press **Close**.

Editing ATI / Paddles / Sip 'n' Puff or Audio/Visual mode:

To edit a localization file through the ballot user interface, select one of the following options *ATI/ Paddles/ Sip'n'Puff or Audio/Visual mode*:

Any focused element in the user interface has an option to be edited.

1. To edit, double-press on a button or screen section (see Figure 3-36).
   An *Edit* button displays.
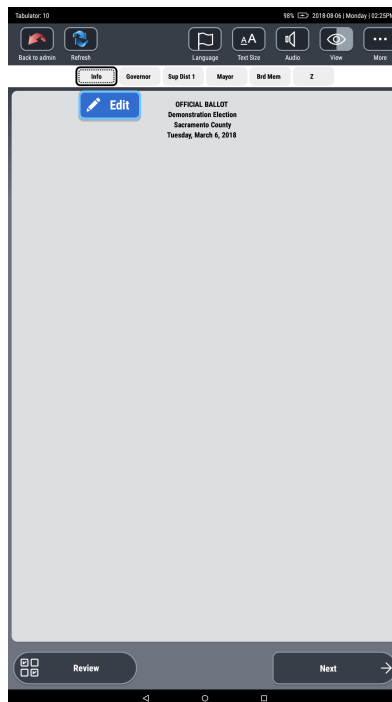
Figure 3-36: Edit

2. Press **Edit**.
   A *Table editor* for that focused element in the user interface displays (see Figure 3-37).
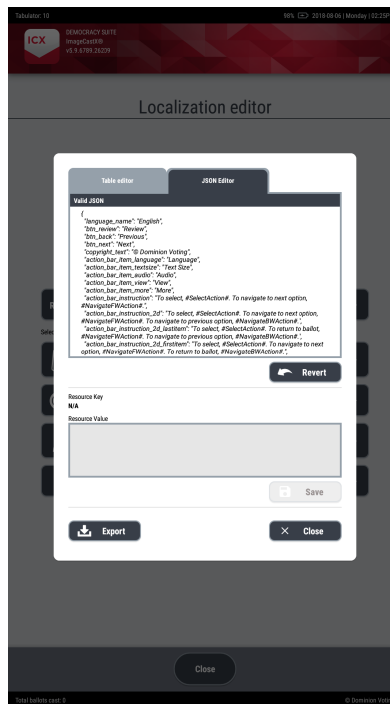
Figure 3-37: Table Editor window

3. To edit a resource in the **Table Editor** tab, select a value.
   The value is auto populated in the **Resource Value** table below.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press **Revert**.
      A *Confirm* dialog displays.

   c. Press **Revert.**
      All the value is now reverted to its original state.

   d. To export the updated English localization file, press **Export**.
      An *Info* dialog displays.

   e. Press **OK**.
      The updated English localization file is now exported.

   f. Once done, press **Close**.

4. To refresh the displays, press **Refresh.**

5. Once done, press **Back to admin.**
   The **Localization Editor** displays.

NOTE: Please note that all the resources that contain a hashtag should not be edited. This is to ensure that the consistency of navigation is not disrupted. For example: #NavigateFWDesc#.

3.2.2.3 USB Unmount

In order to unmount inserted USB drives (applicable on the ImageCast® X Classic and Samsung) go to the ***Technical Administration*** menu and push the **Unmount USB drives** button located in the **Settings** section of the menu.

Once the button is pushed the Technician will get a dialog (see Figure 3-38) listing all the available USB drives, and once that list becomes available, all that needs to be done is to choose the desired USB.
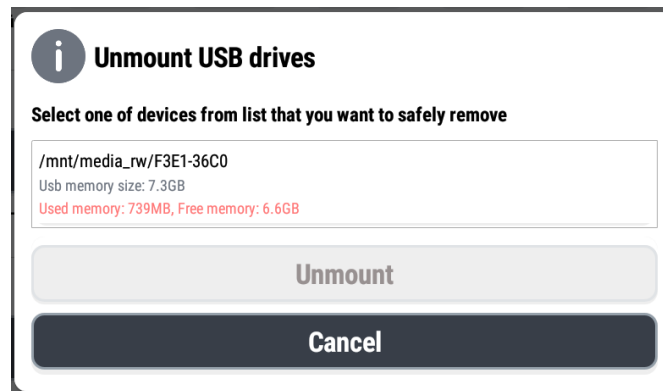
Figure 3-38: Unmount USB drive dialog

NOTE: If a non-certified USB mass storage device is inserted, an error message displays: "*One or more unsupported USB mass storage devices are connected. Please detach all of them.*" To resolve this, remove the USB mass storage device and insert a certified USB mass storage device.

3.2.3 Poll Administration

All poll worker operations can be performed from the menu shown in Figure 3-39 below.

Figure 3-39: Poll Administration menu

The Poll Administration menu is structured in the following sections:

- Tabulators
- Info
- Settings
- Print
- Hardware

3.2.3.1 Tabulators

Select Tabulator

At the top of the screen is a drop-down list with all available Tabulators.

1. Insert the Poll Worker card and enter the PIN.
   The **Poll Administrator** menu displays (see Figure 3-40).

Figure 3-40: Tabulator

2. In the drop-down menu select a tabulator from the provided list.
   When clicking on the drop-down Tabulators menu, a keyboard pops up to type in the desired tabulator.
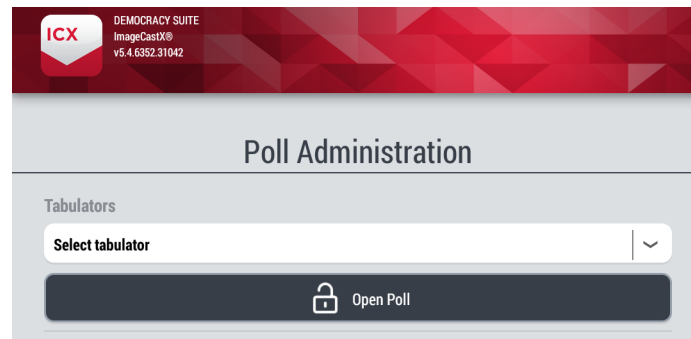   The application starts verifying the election files, and when that's finished a dialog displays with information of the integrity of the election files.

   a. In the *Info* dialog (see Figure 3-41), press **OK**.
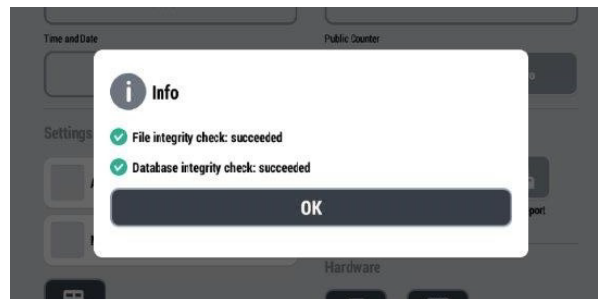
Figure 3-41: Verified File and Database Integrity

The Tabulator is now selected.

NOTE: If the list of tabulators is empty, that means that the HMAC key on the Poll Worker's smart card is different from the HMAC keys of the tabulators in the database, and a warning message displays: "Loading tabulator failed. Election data contains tabulator with HASH different from one on smart card data."

NOTE: For issues regarding loading election files, please see section "Error when loading election files in Poll Worker menu" in chapter "Troubleshooting".

File integrity check

Upon checking and verifying the current state of files, the ImageCast® X device returns a list of missing .png (examples: ballot header, logo, party logo) or .spx (examples: contest, contest heading, choice, political party, ballot header, audio

files) files for the selected Tabulator, for each of the available languages. A dialog is displayed after the File integrity check (see Figure 3-42 "File Integrity Check dialog" for an example).

The files that will be checked and reported depend on the selected tabulator operating mode (DRE or BMD).

Localized printer resources for all available languages are also checked and verified during the File Integrity check: VVPAT resources in DRE mode or Printer resources in BMD mode.

Figure 3-42: File Integrity Check dialog

NOTE: Should there be any missing items, the device will prompt a message similar to the one below:

["PRINT_BLANK_BALLOT_TEMPLATE",
"PRINT_BLANK_CONTEST_TEMPLATE",
"PRINT_CHOICE_SELECTION_TEMPLATE",
"PRINT_CHOICE_SELECTION_TEMPLATE_WRITE_IN",
"PRINT_CHOICE_SELECTION_TEMPLATE_RANK",
"PRINT_CONTEST_NAME_TEMPLATE",
"PRINT_OVERVOTE_CONTEST_TEMPLATE",
"PRINT_UNDERVOTE_CONTEST_TEMPLATE"]

Database integrity check

Depending on the chosen Tabulator operating mode (BMD or DRE), the verification dialog can be closed or printed on a connected printer (thermal or VVPAT).

Open Poll

After a tabulator is selected, the Poll Worker can now open a poll.

3. Press **Open Poll**.
   An *Info* dialog displays (see Figure 3-43), with two options.

Figure 3-43: Open Poll Confirmation dialog

   a. Pressing **Yes** opens the Poll.
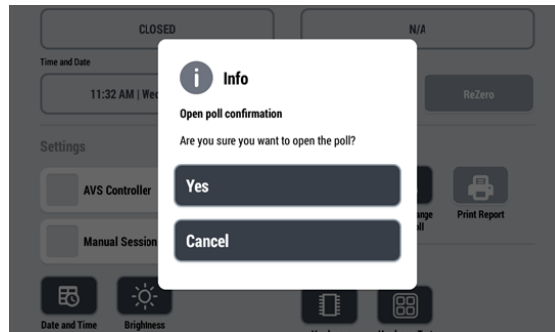If a tabulator has not been selected, after pressing Yes, the User will be informed to select a tabulator from the list before trying to open the Poll. If a tabulator has already been selected, and all configuration settings correspond to the selected tabulator and device, the Poll will be opened and the user will be moved to the login voter activity screen.

   b. Pressing **Cancel** closes the dialog and the Poll Worker can proceed to change the voting settings.

NOTE: If the device wasn't configured appropriately, the user will be informed about a problem and the Poll will remain Closed.

Close Poll

To close the poll, please perform the following steps:

1. In the Poll Administration menu, press **Close Poll**.
In the **Info** dialog, press **OK**.

2. Once the Results report has completed printing, and if the MCF configurable option "Print report on close poll" is set to TRUE, you can choose one of the following options:

   • Save to File

   • Print Another Report

   • OK

If the MCF configurable option "Print report on close poll" is set to FALSE, you can choose one of the following options:

   • Print report

   • Save to File

   • OK

3. Press **OK**.
   The election summary and information is printed. Once finished, the VVPAT printer's light will turn off.

The Poll is now closed.

3.2.3.2 Info

The info section within the Poll Worker menu contains general information about the device and the Poll status:

- Poll Status – There are two available possibilities:
  - CLOSED
  - OPEN
- Lifetime Counter -Shows how many ballots were marked on the device in the lifetime of the machine. If the lifetime counter is not available, the value will be N/A.

If the *Use DRO Box in Electronic Ballot Header* is checked in EED during the preparation of the election project, upon selecting **Open Poll** the Poll Worker will be prompted a dialog (see Figure 3-44) where Election judges will be able to add their signature/initials.

The poll can be open ONLY if the initials are entered.

These initials will be seen in a reserved space on the ballot for election judges to initial when the ballots are provided to the voter.

The ballot will only be accepted by the scanner IF the initials are detected. If no initials are present, the ballot must be rejected with appropriate warnings.

Figure 3-44: Judges signatures

- Public Counter – Shows how many ballots were printed or cast on the device for the particular election.
- Reset/ReZero button – depends on the operating mode of the selected tabulator:
  - ReZero – Resets the public counter to zero and clears all results for the selected tabulator from locations where the results are stored.
  - Reset – Resets the public counter to zero.

NOTE: If the Re-Zero option is used (which is configurable through the MCF), make sure the USB storage device is connected to ImageCast® X.

3.2.3.3 Settings

Settings section contains the following:

- *AVS Controller*– the default option is "**Disabled**". If the AVS voting mode is available on the machine the User should select this option.
  A dialog with one of the available AVS Setup options will pop up.
  Select either ATI or TECLA, depending on the device you have.
- *Manual Session Activation*– Disabled by default. Select this to allow manual voting session activation.
  - *Provisional vote:* once a Manual session is activated and a Provisional vote is chosen, a code will be generated on-screen prior to proceeding to the ballot and can commence voting.
  - *Challenge vote:* once a Manual session is activated the screen automatically proceeds to the Challenge vote tab which contains a Challenge code. Upon clicking continue the User proceeds to the ballot and can commence voting.

3.2.3.4 Print

This section elaborates on the two available options for the ImageCast® X device:

- **Print Status Tape** – During the voting process, the Poll Worker can print a Status Report containing the following information (top-down):
  - Election data
  - Tabulator data (name and ID)
  - Voting Location (name and ID)
  - Precinct names

- Total number of votes Cast

- Total number of Voters

- ImageCast® X device information (model, Serial No., Protective counter and software version).

- **Print Report**

Beneath all the above-mentioned information there is room available for the signatures of Election Officials.

The Footer of the report contains information on the date and time the report was printed, the status of the Poll as well as the Unit status.

Once the report is printed, the following information can be observed on the header of the new paper roll:

- Election name

- Election date

- Voting location name

- Tabulator name

- Counting group name

- Open/close/change roll date / time

- Voting session ID (generated every time poll is opened)

- Public counter

If "**Low Paper Status**" is triggered the tape will be fed through till the end and will contain the following text at the end of the used paper roll - "Keep Safe. Official election results. Authorized personnel only.".

NOTE: Selecting this option when the low paper sensor isn't triggered is just going to present a dialog stating that the device isn't low on paper.

Print Report – this option is prompted upon the opening/closing of the Poll (see Figure 3-45).

A dialog appears allowing the Poll Worker to either Print the report, to "Save it to file", i.e. internally, on the device. The saved files can then be exported to a USB drive from the Technician Menu.

NOTE: The type of the report depends on the status of the Poll - CLOSED Poll allows for the Result/ Summary report to be printed, while the OPEN Poll allows the printing of the Zero Report. These types of reports can be printed only in DRE mode.
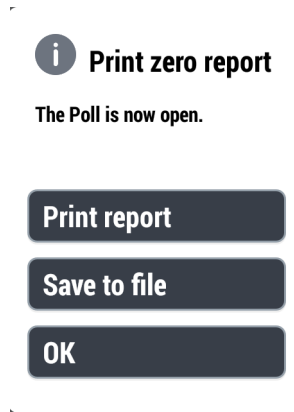
Print zero report

The Poll is now open.

> **Print report**
>
> **Save to file**
>
> **OK**

Figure 3-45: Save Report to File

Cancel Report Printing:
ICX users have the option to enable/disable the "Cancelable printing report" option allowing the cancellation of the report printing during the printing process. This option is disabled by default. Upon tapping the cancel button, the user will see a dialog allowing them to: reprint the report, continue printing, save report to file and cancel. After confirming the cancellation, the   report printing will be canceled.

3.2.3.5 Hardware

HARDWARE DETAILS

Displays information such as firmware and serial number of the connected devices in the form of a dialog, as seen in Figure 3-46 below.

Hardware Details

Information about connected devices:

• **ICX Device**

firmware version: LMY48Z Avalue-V5.1.1-01.00 test-keys

serial number: To Be Filled By O.E.M.

• **CCID Smart Card Reader USB device**

firmware version: N/A
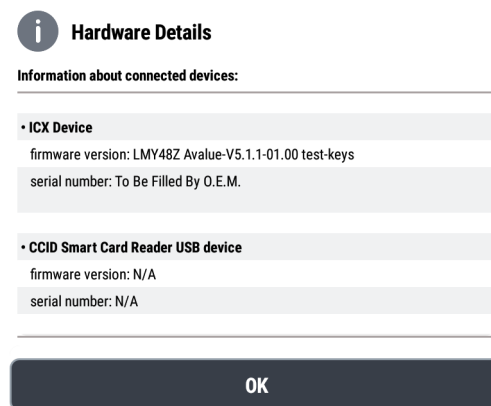
serial number: N/A

OK

Figure 3-46: Hardware Details dialog

HARDWARE TEST

Allows the User to test the hardware connected to the ImageCast® X device.

There are tests for the following:

- ATI device
- Paddles
- Sip'n'Puff
- Printer
- Led Lamp
- Touchscreen

Unmount USB drives

This option safely unmounts the inserted USB drives.

To unmount a USB drive:

1. Press **Unmount USB devises**.
   The ***Unmount USB devises window*** displays with a list of USB drives.

2. Select a drive and press **Unmount**.
   A confirmation dialog displays.

3. To unmount the selected drive, press **Yes**.
   The drive is now unmounted.

3.2.4 Voting

Prior to commencing with the voting section, the following conditions need to be met:

NOTE: Please be advised - When setting the Project Parameters (see Figure 3-47) for ImageCast® X in EED, make sure that Full Face Ballot is not selected from the Accessible Voting Session Support option > AVS Ballot Mode drop-down.
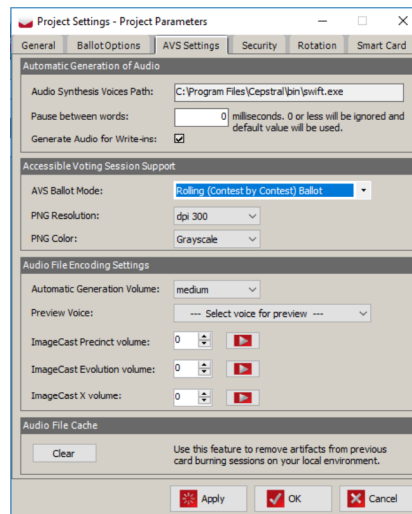
Figure 3-47: Project Settings - Project Parameters

- Election files are loaded and decrypted,
- All the necessary files are present in the Election Files (confirmed with verification of election files),
- The Poll is open.

After the Poll Worker Opens the Poll, the application will redirect the User to login voter screen (see Figure 3-48).
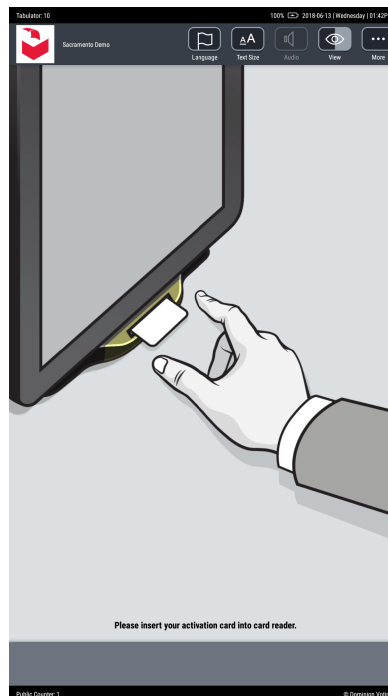
Figure 3-48: Voting interface

A user has to have an appropriate smart card to access the voting screen. On the other hand, voting can be started with the Poll workers assistance if the manual session activation is enabled in the Poll Worker   menu.

If the voting session is started with a voter card, a voter will be redirected to language selection screen, as seen in Figure 3-49 below.
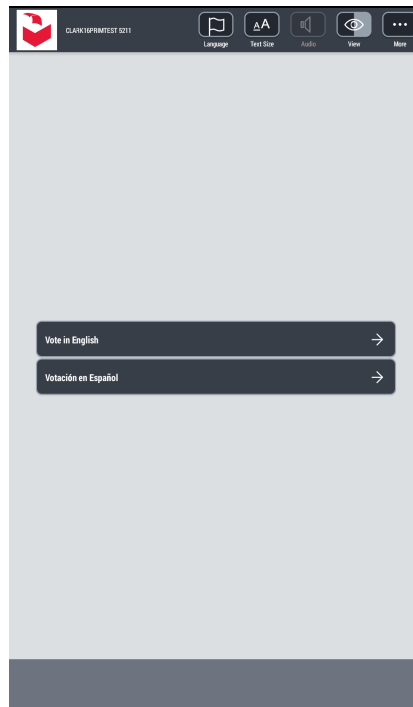

Figure 3-49: Language Selection Screen

When the User selects the desired language, that user can start, and the application will show the screen where the voter can choose one of the available accessible voting devices (AVS voter), otherwise, the application will open the Ballot in the previously selected language (regular voter).

NOTE: When voting in an Open Primary, the Voter will be greeted by a screen with a choice of parties running in that election.

NOTE: The choice is made by clicking the appropriate button on the choice screen (see Figure 3-50).
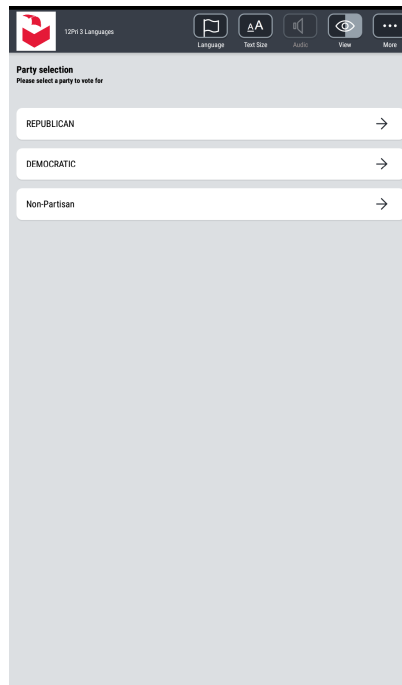
Figure 3-50: Party selection

At any time during the voting, a user can change the language, text size, screen view and, in AVS mode, audio settings.

A Voter can navigate through the Contests using the navigation buttons at the bottom of the screen - Next and Previous buttons.

At any point during the voting process, the voter can go to the Review page using the Review button that is in-line with the navigation buttons.

NOTE: For more details about these features please refer to sections "Voting interface" and "AVS (Accessible Voting Session) Voting Interface".

3.2.4.1 Voting interface

During the active voting session, there are several menus and bars intended for adjusting the voting interface as desired and navigating through the ballot.

At the top of the screen, an ***Action*** bar contains buttons for changing various graphic and audio settings. These settings can be changed at any point in the voting session and are consistent throughout the whole session.
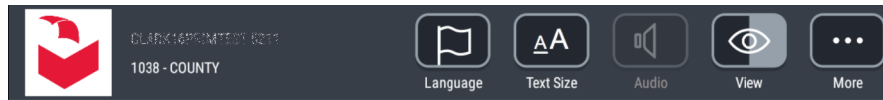
Action bar

Figure 3-51: Action bar

- The **Language** button opens a pop-up menu with all the languages defined for the current elections. The voter can change the language by pushing a checkbox with the desired language.

- Text size can be changed by choosing one of the options displayed by pushing the **Text Size** button.

- The **Audio** button is active only during an AVS session. For details refer to section "AVS (Accessible Voting Session) Voting Interface".

- The **View** button allows changing the visual theme of the voting interface

- Pressing the **More** button allows the voter to cancel the current voting session by pressing the **Cancel Activation** in the pop-up menu, or display the information about the ICX device and software by pressing the **About** button.

NOTE: Please note that the text right next to the logo contains the following information:

NOTE: Project name - this information cannot be disabled and will always be shown.

NOTE: Precinct name - this option can be enabled or disabled through the Edit Configuration option in the Technician Menu, or through the MCF in EED during project creation.

Contest bar

Figure 3-52: Contest bar

The **Contest bar** is located right under the Action bar and is used for navigation between the contests on the ballot. By tapping on the desired button, the corresponding contest will be displayed on the screen.

NOTE: The Cancel Activation button is available only when the voting session was Manually Activated.

Stripe

Figure 3-53: Stripe

The Stripe is located right under the Contest bar and is used to indicate the number of the page the voter is on during an active voting session as well as the voters chosen Party.

Both options can be enabled or disabled through the Edit Configuration option in the Technician Menu, or through the MCF in EED during project creation.

NOTE: The following applies depending on the type of election:
For open primary elections the party name shown is the selected party name. It is already present on the screen per design for open primary elections. Setting "Show party name" to true will duplicate this information on the screen.

For closed primary elections the party name is not present per design, so it's only visible if configured.
For general elections, the party name is not present on the screen ignoring the configuration.
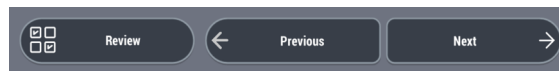
Navigation bar

Figure 3-54: Navigation bar

Beside the Contest bar, the voter can navigate between the contests by using the **Navigation bar** at the bottom of the screen. Pressing the "Previous" and "Next" buttons will display the previous/next contest listed in the Contest bar.

Selecting the **Review** button will display the Review screen that contains all contests and choices marked by the voter.

The Review screen will also display notifications about any errors or warnings if the ballot is not valid or incomplete.

The voter can navigate through all of their choices by pressing **Scroll Down / Scroll Up** buttons at the bottom/top of the contest list.

In case the voter wants to change the choices for a specific contest, selecting (tapping) that contest in the review list will return the voter to that specific contest screen.

The same functionality is provided by pressing the **Back to Ballot** button in the bottom left corner of the review screen.

Depending on the mode of the application, we may have one of two scenarios:

- **BMD** - The ballot is printed by selecting the **Print Ballot** button in the right bottom corner. Pressing this button prompts a final dialog that, again, displays any warnings for the ballot and provides the options to confirm the ballot printing or to return to the Review screen. The marked ballot is printed by selecting the **Print your ballot** button in the dialog.
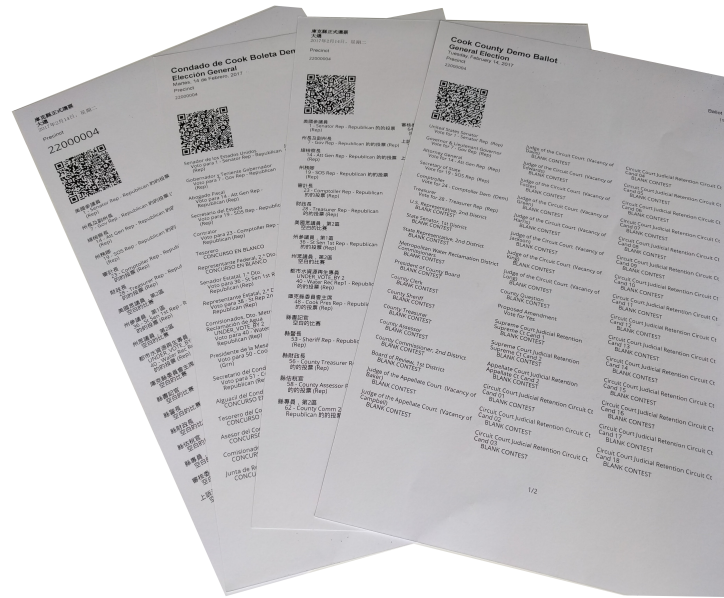

Figure 3-55: Electronic Mobile Ballot

- **DRE** - The ballot is cast by selecting the **Cast Ballot** button in the right bottom corner. Pressing this button prompts a final dialog that, again, displays any warnings for the ballot and provides the options to confirm the ballot printing or to return to the Review screen. Marked ballot is cast by selecting the **Cast your ballot** button in the dialog.

After the voting session is complete, a screen is presented informing the voter of the result of the action. At this point, the voter can safely remove the card.

Manual Session Activation

Manual Session Activation, which is disabled by default, allows the Poll Worker to manually activate the voting session, if a a Voter card cannot be used for any given reason (i.e. shortage of cards).

Alongside a regular vote there are two other voting options accessible in the Manual Voting Session:

- *Provisional vote:* once a Manual session is activated and a Provisional vote is chosen, a code will be generated on-screen prior to proceeding to the ballot and can commence voting.

- ***Challenge vote:*** once a Manual session is activated the screen automatically proceeds to the Challenge vote tab which contains a Challenge code. Upon clicking continue the User proceeds to the ballot and can commence voting.

Depending on the election file, either the Challenge or Provisional voting option will display.

To start the Manual Voting Session:

1. Insert Poll Worker card and log in with the appropriate credentials. The log-in page displays (see Figure 3-56).
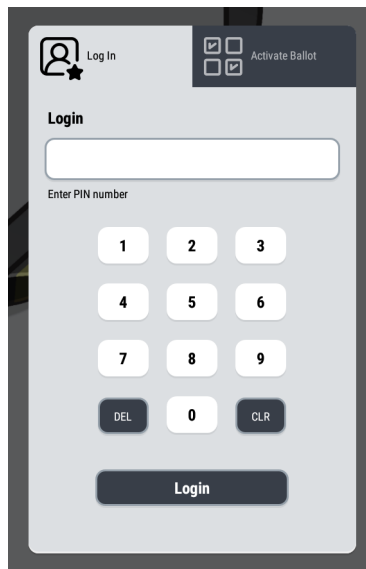

Figure 3-56: Log-in dialog

2. Click the **Activate Ballot** tab.
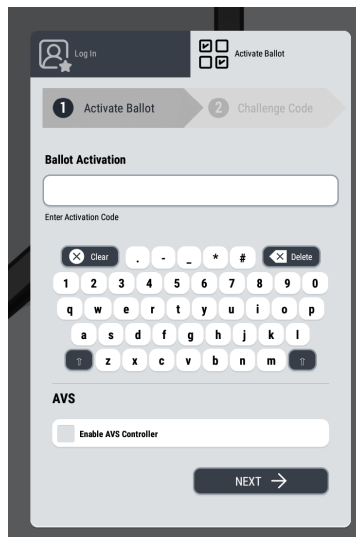   The Activate Ballot window displays (see Figure 3-57).

Figure 3-57: Activate Ballot window

3. With the on-screen keyboard, type in the *Ballot Activation Code.*

NOTE: You can also **Enable AVS Controller** on this window.

4. Click **NEXT**.
The **Challenge Code** displays, if the conditional voting mode was set to CHALLENGE in the election file (see Figure 3-58).
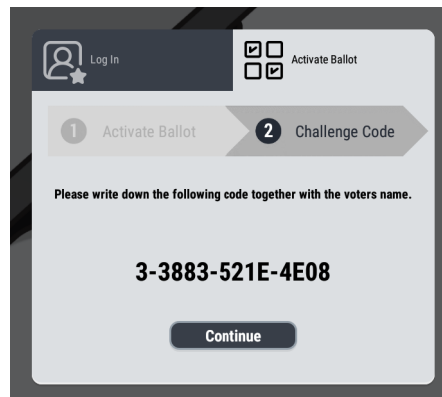

Figure 3-58: Challenge code 1

If a conditional voting mode was set to PROVISIONAL in the election file, the **Provisional Code** menu displays (see Figure 3-59).
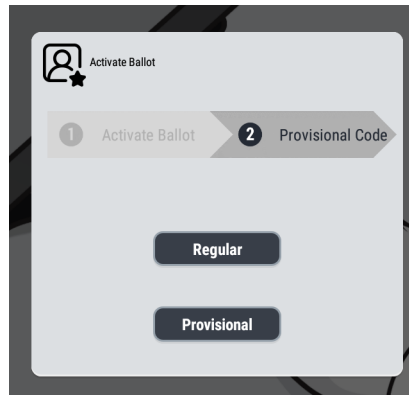
Figure 3-59: Provisional Code menu 1

a. To start a regular voting session, click **Regular**.

b. To start a Provisional voting session, click **Provisional**.
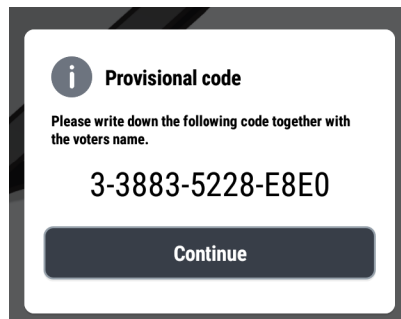The **Provisional code** displays (see Figure 3-60).

Figure 3-60: Provisional Code 1

5. Click **Continue**.
The Voting session is now open.

If the MFC configurable option "*Admin authentication for a manual voting session"* is set to **TRUE**, the Poll Worker will have to first enter the appropriate credentials before starting a manual voting session.

If this option is set, the Manual Session Activation can be done as follows:

1. Insert Poll Worker card.
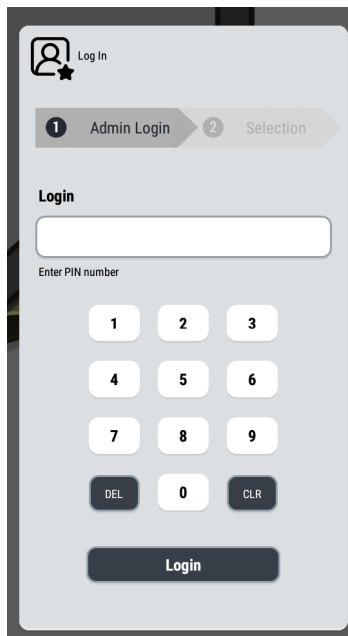The log-in page displays (see Figure 3-61).

Figure 3-61: Log-in page.

    a. Log in with the appropriate credentials
The **Selection** window now displays (see Figure 3-62) with the options
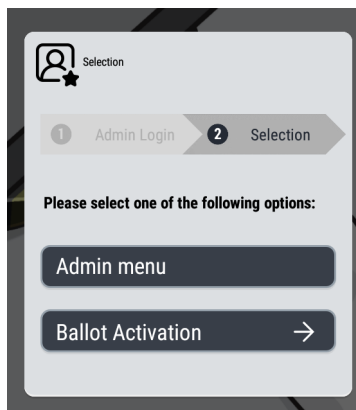**Admin Menu** or **Ballot Activation**.

Figure 3-62: Selection

2. To start the manual voting session, click on **Ballot Activation**. The *Activate Ballot* window displays (see Figure 3-63).
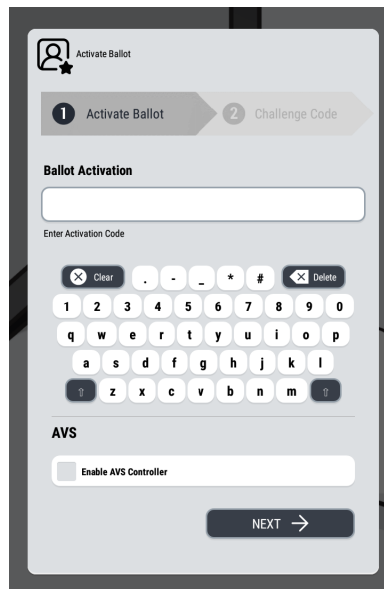
Figure 3-63: Ballot Activation

3. With the on-screen keyboard, type in the *Ballot Activation Code.*

NOTE: Note: You can also **Enable AVS Controller** on this window.

4. Click **NEXT.**
   *The **Challenge Code** displays, if the conditional voting mode was set to CHALLENGE in the election file (see Figure 3-64).*

Figure 3-64: Challenge Code

If a conditional voting mode was set to PROVISIONAL in the election file, the Provisional Code menu displays (see Figure 3-65).
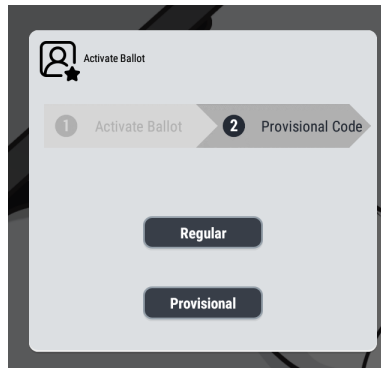
Figure 3-65: Provisional Code

   a. To start a regular voting session click **Regular**.
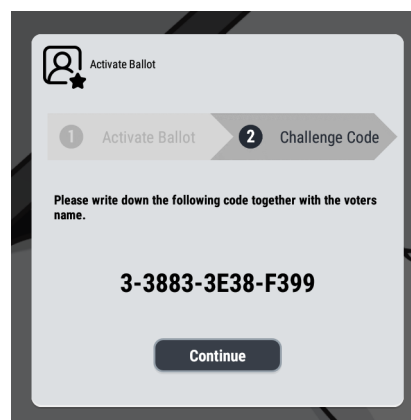
   b. To start a Provisional voting session, click **Provisional**.
       The *Provisional code* displays (see Figure 3-66).
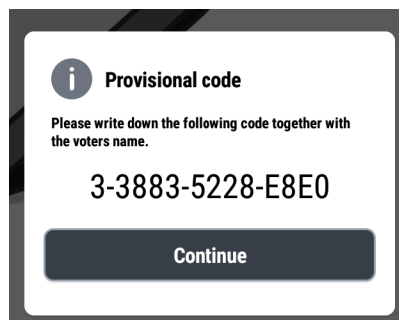
Figure 3-66: Provisional Code

5. Click **Continue**.
    The voting session is now open.

3.2.5 Styling Support

To prepare for the elections, election officials now have the ability to present various text styles on the ImageCast® X. The selection and editing is handled through Election Event Designer (EED)

Types of formatting that are supported are the following:

- Bold

- Italic

- Strikethrough

- Underline
- Unnumbered lists
- Big text
- Small text
- Text color
- Background color
- Indentation
- Tables
- Superscript
- Subscript
- Numbering (various options)

Examples for the available styles are presented in the Example figures bellow:

Figure 3-67: Example 1
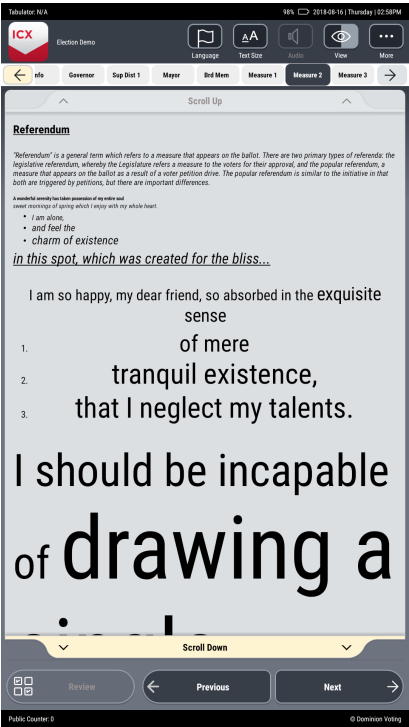
Figure 3-68: Example 2
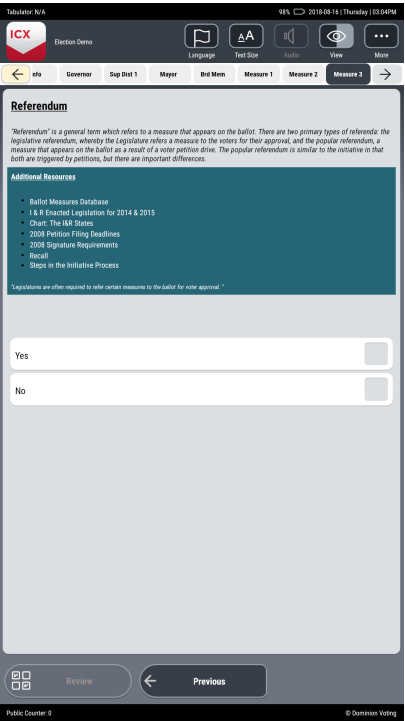
Figure 3-69: Example 3
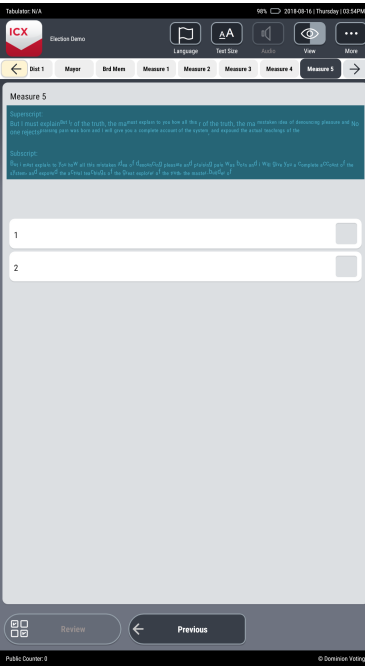
Figure 3-70: Example 4

Figure 3-71: Example 5

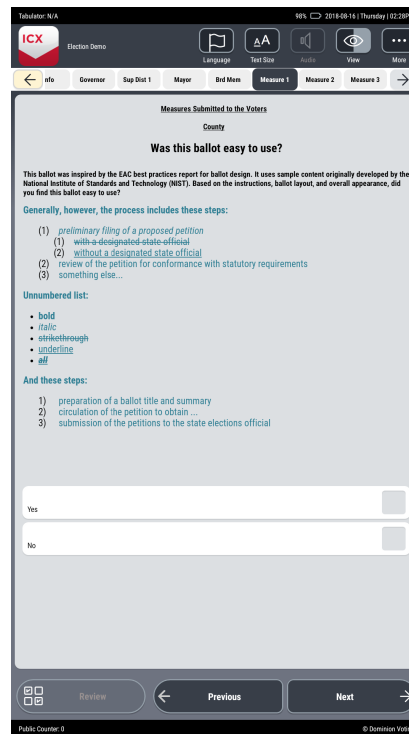For more information on how to edit the ballot text through EED, please see section "Screen content translations" in the *Democracy Suite® EMS Election Event Designer User's Guide.*

3.3 ImageCast® X Samsung

3.3.1 Technical Administration

All operations that require a trained technician can be performed from the menu shown in Figure 3-72 image.

Figure 3-72: Technician Menu

NOTE: Be advised that the Technician must clear all result locations (internal and USB) before uninstalling an older version of the ICX application, as well as after installing a new one.

Once the Technician menu has been accessed, the Technician gains access to the following settings:

- Election Data
- Settings
- Logs
- Other

Along with the above listed settings, the User has a remaining option:

- Exit: Exits the application

3.3.1.1 Election Data

The Election data section (see Figure 3-73) is accessible only when the Technician card is inserted.

Handling the election data (*clearing the working directory, clearing all election data, export of internal results files and export report*) is possible only through the Technical Administration screen, and **only** when the Poll is closed (see below images for additional clarification).

Figure 3-73: Poll Closed/Enabled Election Data section

Load Election Data

This option is used for loading Election files from a USB drive.

It is important to note that prior to copying the Election files, the ImageCast® X device needs to be cleared of all previously loaded Election files (the "Clear all election data" button).

To load the Election Data:

1. Press Load Election Data.
   The election configuration files on USB drive dialog displays (Figure 3-74).
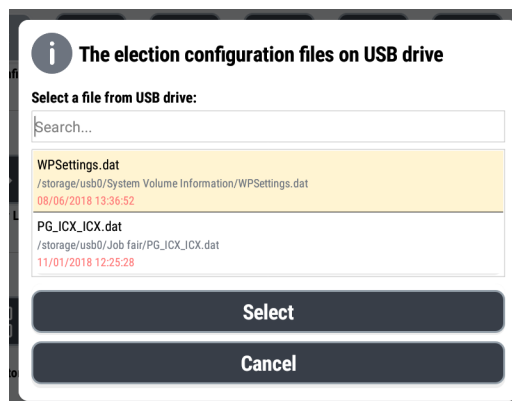
Figure 3-74: "The election configuration files on USB drive" dialog.

2. Select the Election file (**.DAT** file) you want to copy onto the machine and press **Select**.
   A **Confirm** dialog displays (see Figure 3-75).
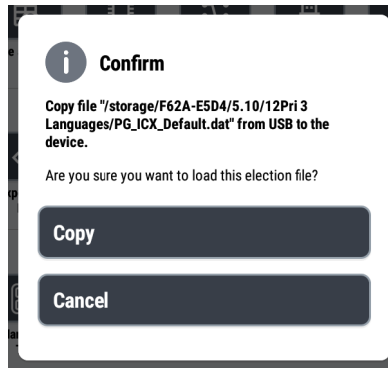
Figure 3-75: "Confirm" dialog.

3. Press **Copy**.
   A **Copy** dialog displays (see Figure 3-76).
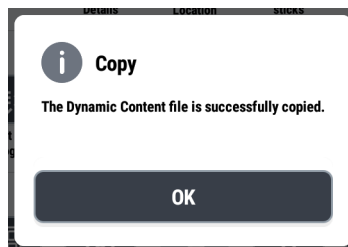
Figure 3-76: The "Copy" dialog

4. Press **OK**.
   The Election Data is successfully loaded.

Clear Working Directory

Removes the working copy of the election files (.DAT file) to force election file decryption on the next poll worker login and effectively revert the project to defaults.

NOTE: When in DRE mode, the **Load Election Data** option is disabled if there are any result files in result locations, so they have to be deleted. There are two ways of doing that: **Clear all election data** from technician menu or **ReZero** from Poll Worker menu.

Clear All Election Data

Removes all election data from the machine. Returns the machine to factory default settings making it ready for the next election.

The following is removed:

1. Result files from all defined locations, if they exist. If not all locations are accessible, an appropriate message will be presented.

2. Audit log files from all result locations, but the last ten audit logs on the device remain, so that there is evidence of clearing election data.

3. Report file, if it exists.

4. Election file (.DAT file).

5. Vote sim (Test deck file).

Export Internal Result Files

Copies the results from internal storage onto the USB drive. The results are in folder "Result" on the USB drive.

Export Report

Copies the report to the USB drive, if the report exists. The report is in folder "Reports."

3.3.1.2 Settings

This section contains information on the Settings section of the ImageCast® X device which provides the User with access to the application as well as the system settings.

Edit Configuration

Allows the user to edit the configuration on the machine for the currently selected tabulator. In order for this button to be enabled, a tabulator must be previously selected.

NOTE: The changes made here will be applied only to the current tabulator.

Android Settings

Opens the Android Settings screen (see Figure 3-77).
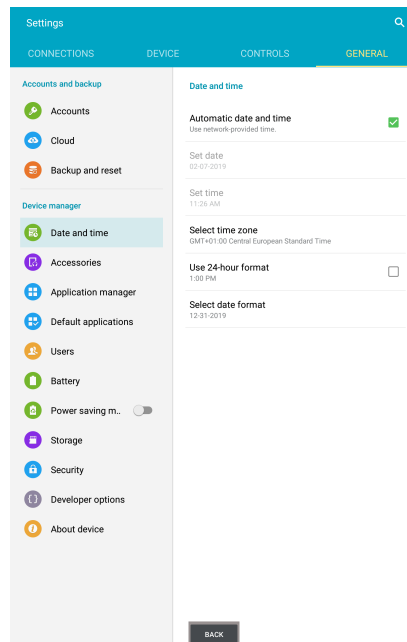
Figure 3-77: Android Settings

To exit, press the **Back** button at the bottom of the screen.

Hardware Details

Displays information such as firmware and serial number of the connected devices and the supported Android and Firmware version in the manifest file of the application, in the form of a dialog, as seen in Figure 3-78 below.

Figure 3-78: Hardware Details dialog

NOTE: At the startup of the application, the supported version of the components from the manifest file is compared with the installed versions. If there are any version mismatches of the components and the ICX APK, the user will be notified with a warning message (see Figure 3-79).

Figure 3-79: Version Mismatch Warning

Result Location Mapping

"Result location mapping" (see Figure 3-80) allows you to map logic locations from the MCF file to a physical location on the file system.

Figure 3-80: Mapping result locations

You can select predefined values for each device that supports the DRE operating mode.
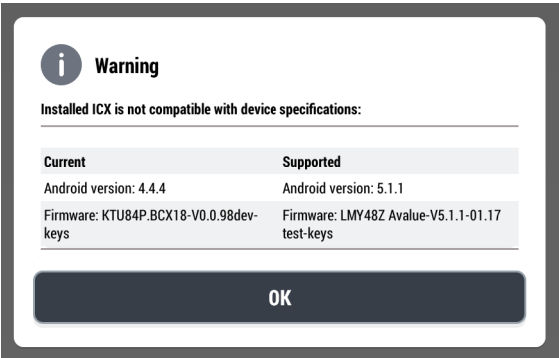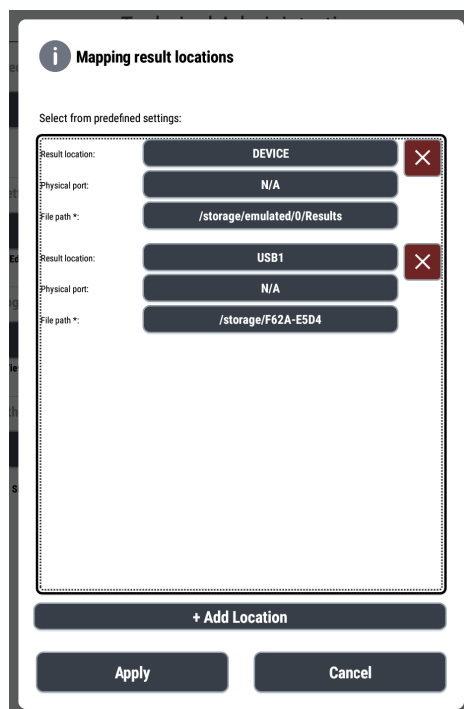
For each result location, you have its logical name, the physical port on the file system and a file system path. Every location can be removed and new locations can be added.

NOTE: If an inserted USB drive isn't being used as a result location, please remove the USB drive from the ImageCast® X Classic/Samsung Device. The final location of result files is an intersection of a location from the MCF and a mapped location. Every location from the MCF must be mapped to a file system path, and a location can't be present more than once in the MCF configuration and result mappings, otherwise an error will be presented to the user upon an open poll command.

NOTE: If a non-certified USB mass storage device is inserted, an error message displays: *"One or more unsupported USB mass storage devices are connected. Please detach all of them."* To resolve this, remove the USB mass storage device and insert a certified USB mass storage device.

There can be more result mappings, but, the ones that are present in MCF are going

to be used for storing result files. Result mappings can be changed only when the poll is not open. If mappings are not set, default mappings will be used for each device we support for DRE mode. Logical locations are not case sensitive.

3.3.1.3 Logs

View Developer Log

This option is used to access the developer log.

This is mainly used by developers, the button may or may not be enabled.

It lists all developer log files found on the device. Upon selecting one, the last 100 lines of the log will be shown on the screen (top-down), and more can be loaded by selecting "Load more."

Export Developer Log

Export developer log to a USB drive.

Clear Developer Log

Delete all developer log files from the device. But one file will always remain and that is always the last one that was created.

View Audit Log

This option is used to access the audit log.

Upon selecting one, the last 100 lines of the log will be shown on the screen (top-down), and more can be loaded by selecting "Load more".

Export Audit Log

Export audit log to a USB drive.

3.3.1.4 Other

Vote Simulator

This option provides the User access to the Vote Simulator. A valid test pattern file is required in order to perform a valid test. For additional information please refer to section "Appendix B - Vote Simulator".

Hardware Test

The **Hardware Test** section (see Figure 3-81) allows the Technician or the Poll Worker to perform **Functional Tests** on the available accessible devices, the
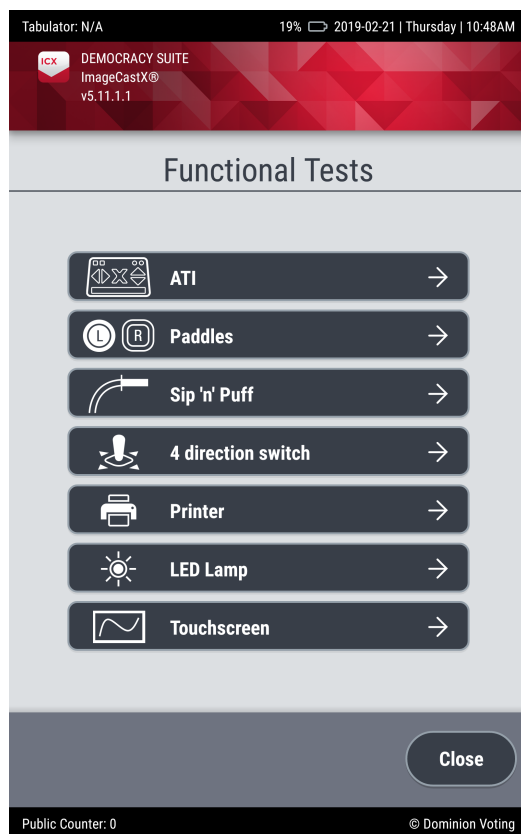
LED lamp and the touchscreen.

Figure 3-81: Functional Tests

ATI

The Audio Tactile Interface (see Figure 3-82) is an optional voting interface, used primarily for voters with visual and auditory impediments.
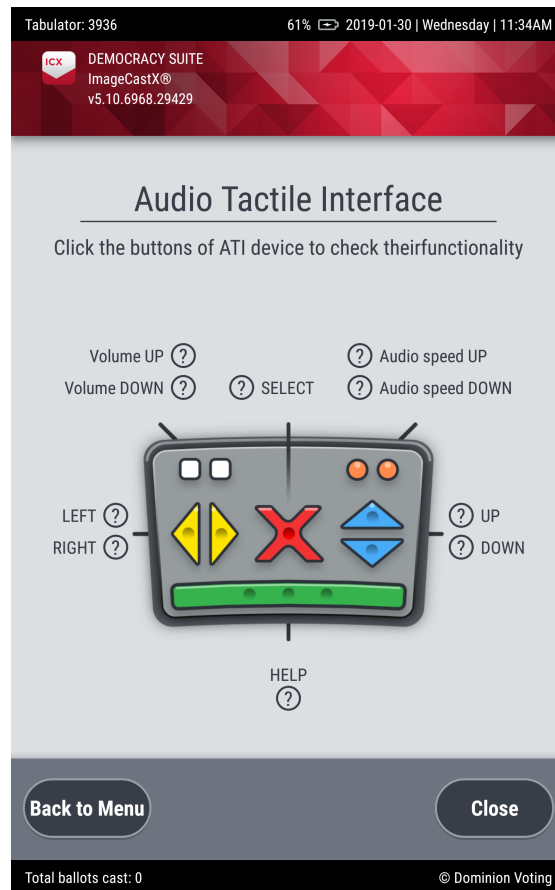
Figure 3-82: Audio Tactile Interface

To test the ATI:

1. Plug in the ATI controller into the unit.

2. Press any button.
   The question mark, associated with the button pressed, will turn into a green check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-83: Check mark

3. Once the test is done, press **Back to Menu** to return to the *Hardware Test* menu, or **Close** to return to the *Hardware* menu.

Paddles Test

The paddles (see Figure 3-84) are an optional voting interface, used primarily for voters with movement impediments.
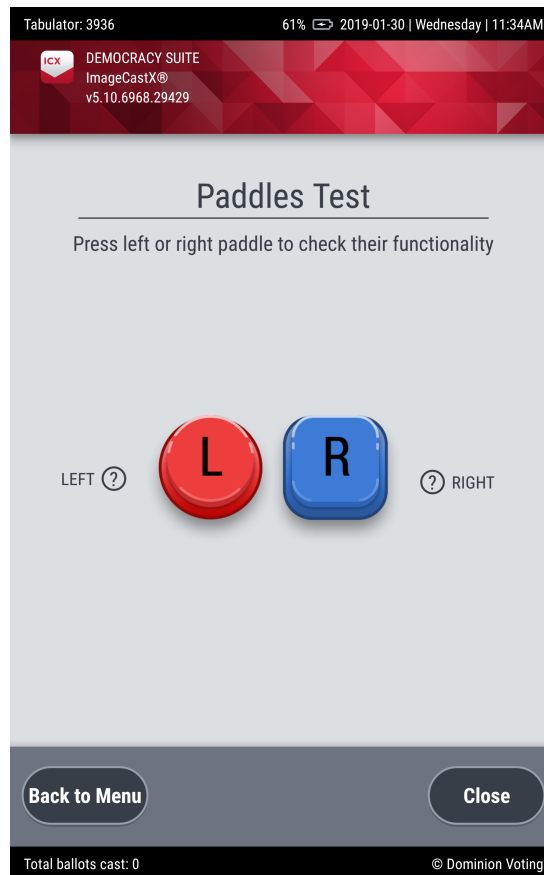
Figure 3-84: Paddles Test

To test the paddles:

1. Attach the paddles to the unit.

2. Press on a paddle.
   The question mark, associated with the button pressed, will turn into a green check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-85: Green check mark

3. Once the test is done, press Back to Menu to return to the Hardware Test menu, or Close to return to the Hardware menu.

Sip n' Puff Test

The Sip and Puff (see Figure 3-86) is an optional voting interface, used primarily for voters with movement impediments.
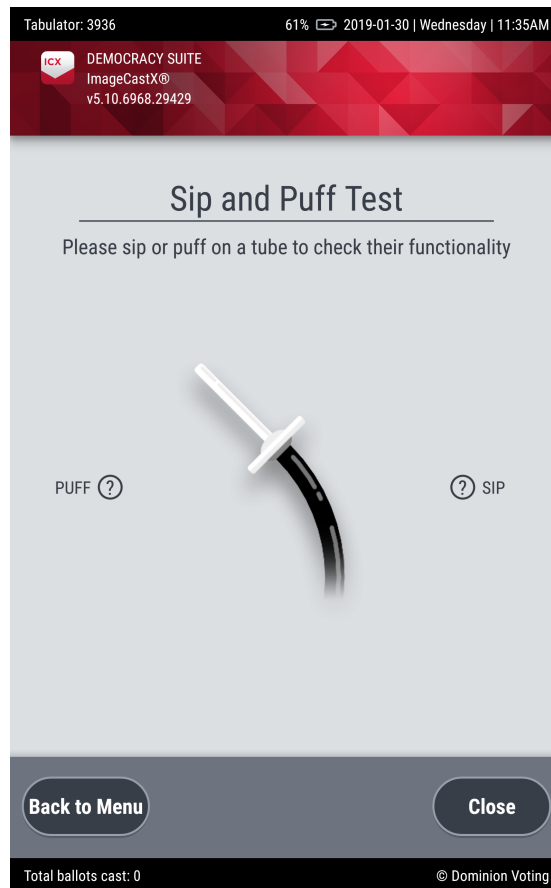
Figure 3-86: Sip and Puff Test

To test the Sip and puff:

1. Attach the sip and puff to the unit.

2. Sip or puff into the tube.
   The question mark, associated with the action taken, will turn into a green check mark on the screen.
   The green check mark indicates a successful test.

Figure 3-87: Green check mark

3. Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.

4 Direction Switch
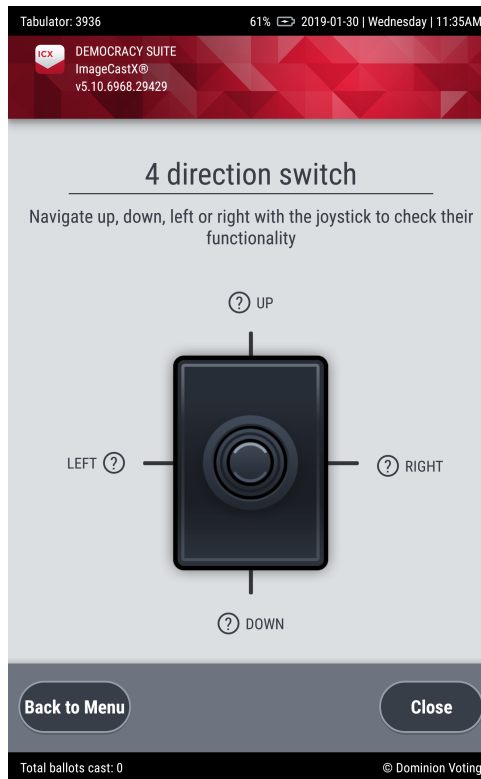
Figure 3-88: 4 direction switch

To test the 4 direction switch:

1. Attach the switch the unit.

2. Pull the switch in all 4 directions, one at a time.
    The question mark, associated with the direction taken, will turn into a green check mark on the screen.
    The green check mark indicates a successful test.

Figure 3-89: Green check mark

Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.

Printer Test

This test, allows the user to test the printer (see Figure 3-90).

Figure 3-90: Printer Test

To test the printer:

1. Attach the printer to the unit.

2. In the *Printer* menu, select the type and role of the printer.

    a. To check the status of the printer, press **Check printer status**.

    b. To print a test page, press **Print test page.**

    c. To test the VVPAT's internal scanner, press **Test printer scanner** (see Figure 3-91).

Figure 3-91: VVPAT's scanner test

3. Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.
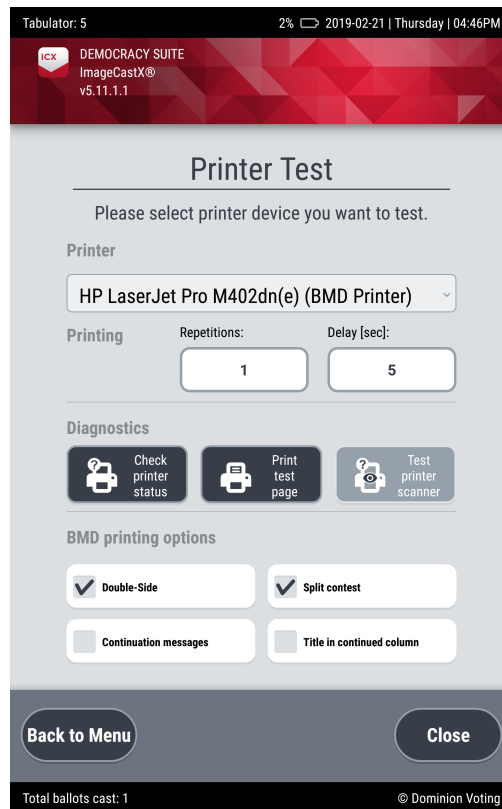
The **BMD Options** in the printer test allow the user four additional options to test the printer duplexer in which the ballot will be printed: **double-sided**, to **split the contes**t, to **continue the message** to the next screen and to add the **title in continued message** on the next page.

LED Lamp

The LED lamp is a visual indicator of the unit's status (see Figure 3-92).
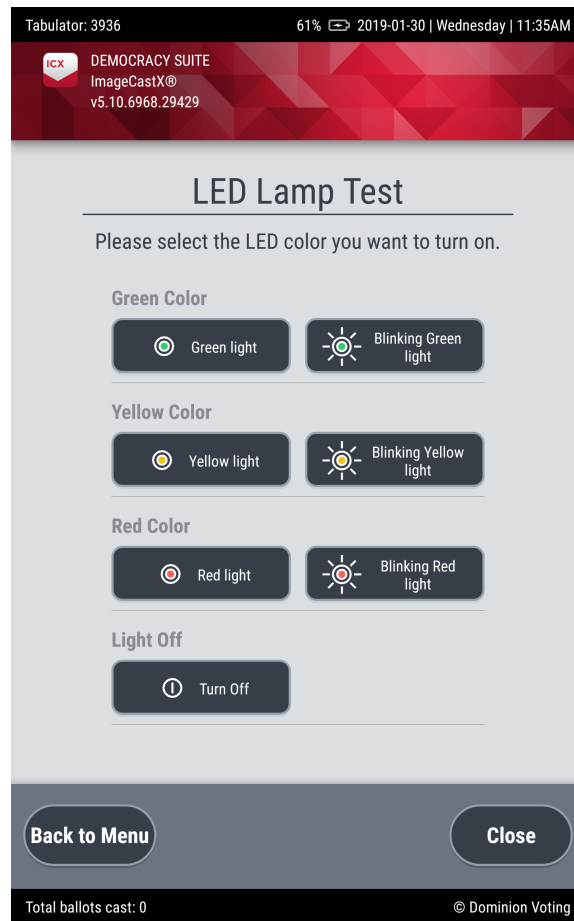
Figure 3-92: LED Lamp Test

To test the LED lamp:

1. On the device's screen, click the color you would like to be shown on the LED lamp. The LED lamp lights up the selected color and mode.

2. Once the test is done, press **Back to Menu** to return to the Hardware Test menu, or **Close** to return to the *Hardware* menu.

Touchscreen Test

The touchscreen is the main input for selections when voting (see Figure 3-93).

To test the touchscreen:

1. Enter the *Touchscreen* test and draw on the screen with up to 10 fingers at one time.
    Each finger will be highlighted with a different color.

Figure 3-93: Touchscreen

2. Once the test is done, press **Back to Menu** to return to the *Hardware Test* menu, or **Close** to return to the *Hardware* menu.

Preview Mode

Allows the preview of the ballot from EED.

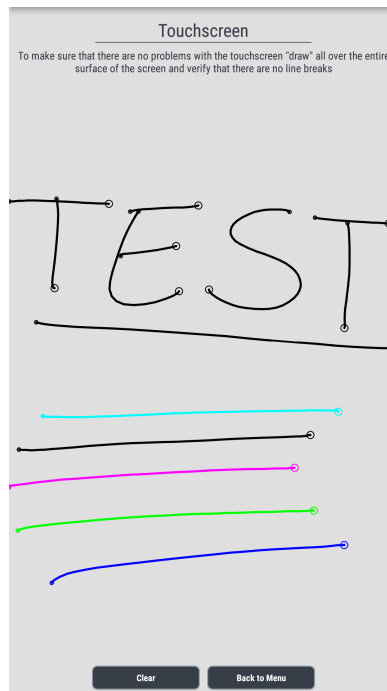In order to start the preview mode, first start the preview in EED, check the EED IP address and port number, then enter those in the ImageCast® X device, and select "Start".

NOTE: A valid network connection is required in order to be able to preview a ballot.

Localization Editor

This section explains the option on how to edit localized text resources in English. A prerequisite to access the Localization Editor (see Figure 3-94) is that the Poll Worker must first select the tabulator. For more information on how to select tabulators, see section "Tabulators".

To access the Localization Editor:

1. From the Technical Administration screen, press **Localization Editor**.

The **Localization Editor** screen displays.

Figure 3-94: Localization Editor

2. To edit a resource, press **Resource Editor.**
   A window with a *Table Editor* and *JSON Editor* tabs displays (see Figure 3-95 and Figure 3-96).
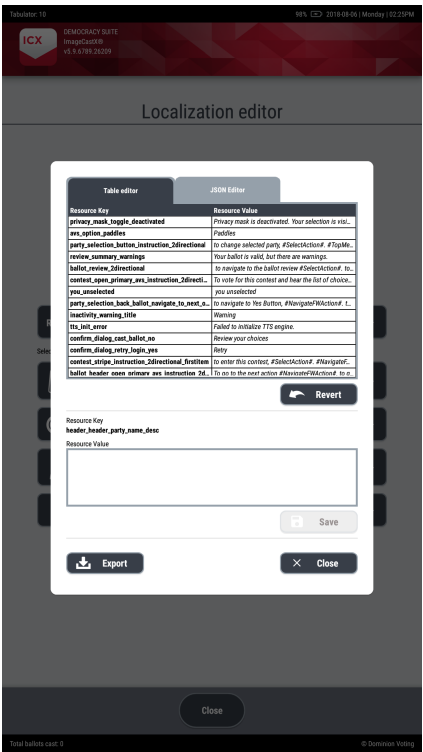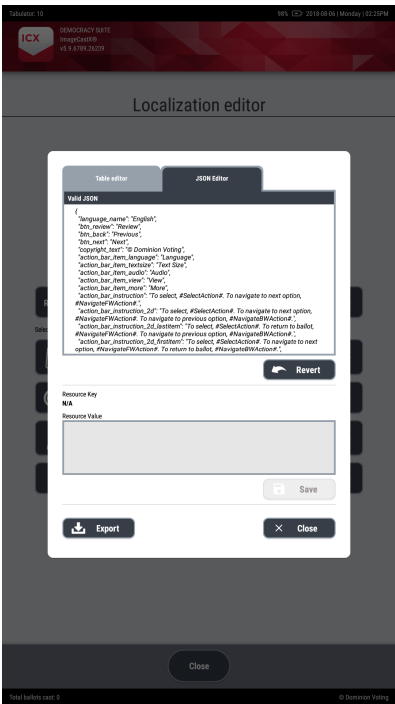
Figure 3-95: Table Editor

Figure 3-96: JSON Editor

3. To edit a resource in the **Table Editor** tab, select a row.
   The value is auto populated in the **Resource Value** table bellow.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press Revert.
      A *Confirm* dialog displays.

   c. Press **Revert**.
      The value is now reverted to it's original state.

   d. To export the updated English localization file, press **Export**.
      An *Info* dialog displays.

   e. Press **OK**.
      The English localization file is now exported.

   f. Once done, press **Close**.

4. To edit a value in the **JSON Editor**, select a value by double-tapping the value text at the end of the line.
   An on-screen keyboard displays.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press **Revert**.
      A *Confirm* dialog displays.

   c. Press **Revert.**
      The value is now reverted to it's original state.

5. To export the updated English localization file, press **Export**.
   An *Info* dialog displays.

   a. Press **OK**.
      The English localization file is now exported.

   b. Once done, press **Close**.

Editing ATI / Paddles / Sip 'n' Puff or Audio/Visual mode:

To edit a localization file through the ballot user interface (see Figure 3-97), select one of the following options *ATI/ Paddles/ Sip'n'Puff or Audio/Visual mode*:

Any focused element in the user interface has an option to be edited.

1. To edit, double-press on a button or screen section.
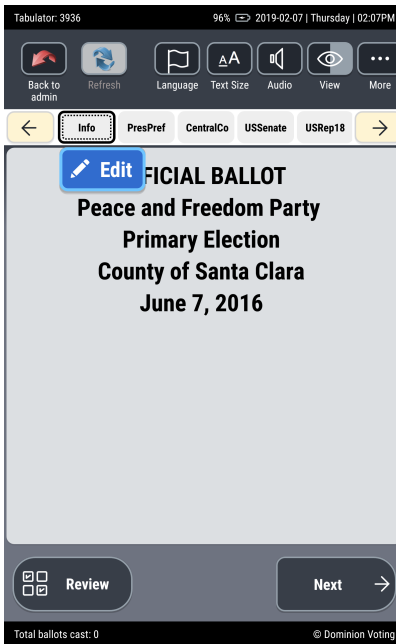   An **Edit** button displays.

Figure 3-97: Edit mode

2. Press **Edit**.
   A **Table editor** for that focused element in the user interface displays (see Figure 3-98).

Figure 3-98: Table Editor window

3. To edit a resource in the **Table Editor** tab, select a value.
   The value is auto populated in the **Resource Value** table below.

   a. Edit the value with the on-screen keyboard, and press **Save**.

   b. To revert all the values, press **Revert**.
      A *Confirm* dialog displays.

   c. Press **Revert.**
      All the value is now reverted to its original state.

   d. To export the updated English localization file, press **Export**.
      An *Info* dialog displays.

   e. Press **OK**.
      The updated English localization file is now exported.

   f. Once done, press **Close**.

4. To refresh the displays, press **Refresh.**

5. Once done, press **Back to admin.**
   The **Localization Editor** displays.

NOTE: Please note that all the resources that contain a hashtag should not be edited. This is to ensure that the consistency of navigation is not disrupted. For example: #NavigateFWDesc#.

Export Apps

The "Export apps" button in the Technician menu checks if there is a USB drive present and exports ICX and Google TTS APKs to it.

When the Export is complete a dialog will pop-up saying "Export Complete" with an "OK" button which will close dialog.

3.3.2 Poll Administration

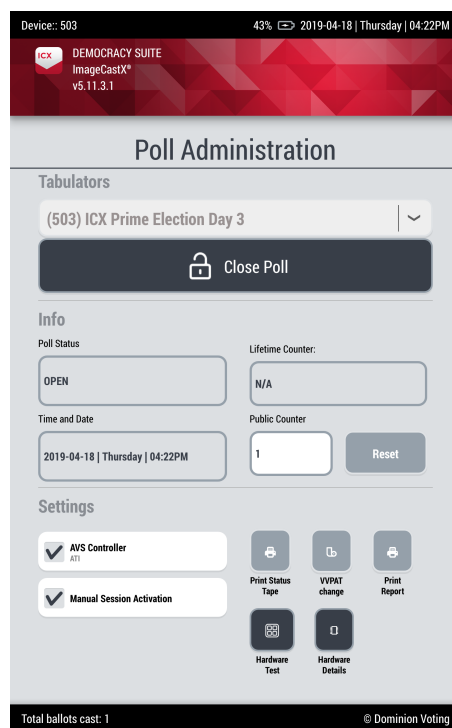All poll worker operations can be performed from the menu shown in Figure 3-99 below.

Figure 3-99: Poll Administration menu

The Poll Administration menu is divided in the following sections:

- Tabulators
- Info
- Settings

3.3.2.1 Tabulators

At the top of the screen is a drop-down list with all available Tabulators.

1. Insert the Poll Worker card and enter the PIN.
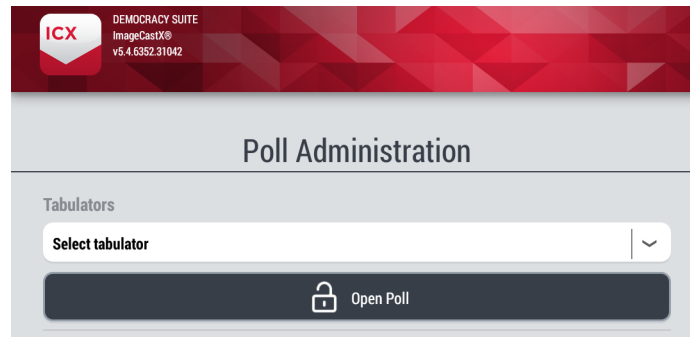   The *Poll Administrator* menu displays (see Figure 3-100).

Figure 3-100: Tabulator

2. In the drop-down menu select a tabulator from the provided list.
   When clicking on the drop-down Tabulators menu, a keyboard pops up to type in the desired tabulator.
   The application starts verifying the election files, and when that's finished a dialog displays with information of the integrity of the election files.

   a. In the *Info* dialog, press **OK** (see Figure 3-101).
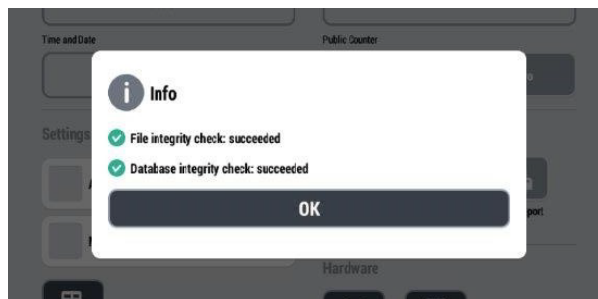
Figure 3-101: Verified File and Database Integrity

The Tabulator is now selected.

NOTE: If the list of tabulators is empty, that means that the HMAC key on the Poll Worker's smart card is different from the HMAC keys of the tabulators in the database, and a warning message displays: "Loading tabulator failed. Election data contains tabulator with HASH different from one on smart card data."

NOTE: For issues regarding loading election files, please see section "Error when loading election files in Poll Worker menu" in chapter "Troubleshooting".

File integrity check

Upon checking and verifying the current state of files, the ImageCast® X device returns a list of missing .png (examples: ballot header, logo, party logo) or .spx (examples: contest, contest heading, choice, political party, ballot header, audio files) files for the selected Tabulator, for each of the available languages. A dialog is displayed after the File integrity check (see image "File Integrity Check dialog" for an example).

The files that will be checked and reported depend on the selected tabulator operating mode (DRE or BMD).

Localized printer resources (see Figure 3-102) for all available languages are also checked and verified during the File Integrity check: VVPAT resources in DRE mode or Printer resources in BMD mode.
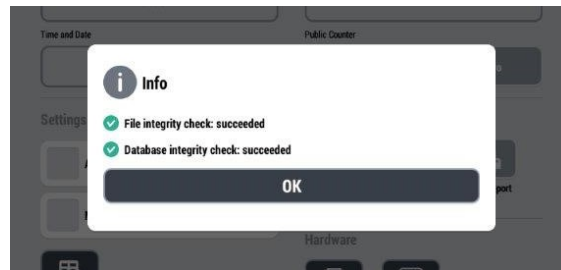

Figure 3-102: File Integrity Check dialog

NOTE: Should there be any missing items, the device will prompt a message similar to the one below:

["PRINT_BLANK_BALLOT_TEMPLATE",
"PRINT_BLANK_CONTEST_TEMPLATE",
"PRINT_CHOICE_SELECTION_TEMPLATE",
"PRINT_CHOICE_SELECTION_TEMPLATE_WRITE_IN",
"PRINT_CHOICE_SELECTION_TEMPLATE_RANK",
"PRINT_CONTEST_NAME_TEMPLATE",
"PRINT_OVERVOTE_CONTEST_TEMPLATE",
"PRINT_UNDERVOTE_CONTEST_TEMPLATE"]

Database integrity check

Depending on the chosen Tabulator operating mode (BMD or DRE), the verification dialog can be closed or printed on a connected printer (thermal or VVPAT).

Open Poll

After a tabulator is selected, the Poll Worker can now open a poll.

NOTE: Before opening the poll, make sure that the Google TTS engine is installed and the election files are properly loaded.

1. Press **Open Poll**.
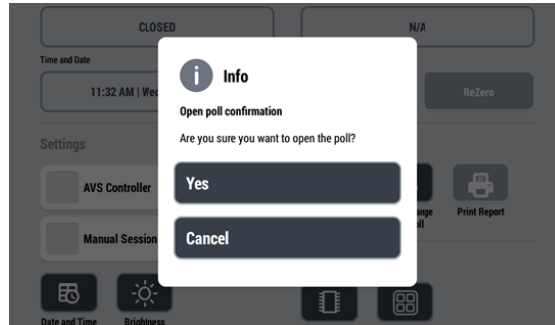   An *Info* dialog displays, with two options (see Figure 3-103).

Figure 3-103: Open Poll Confirmation dialog

2. Pressing **Yes** opens the Poll.
   If a tabulator has not been selected, after pressing Yes, the User will be informed to select a tabulator from the list before trying to open the Poll. If a tabulator has already been selected, and all configuration settings correspond to the selected tabulator and device, the Poll will be opened and the user will be moved to the login voter activity screen..

3. Pressing **Cancel** closes the dialog and the Poll Worker can proceed to change the voting settings.

NOTE: If the device wasn't configured appropriately, the sser will be informed about a problem and the Poll will remain Closed.

Close Poll

To close the poll, please perform the following steps:

1. In the Poll Administration menu, press **Close Poll**.
   In the **Info** dialog, press **OK**.

2. Once the Results report has completed printing, and if the MCF configurable option "Print report on close poll" is set to TRUE, you can choose one of the following options:

   • Save to File

   • Print Another Report

   • OK

If the MCF configurable option "Print report on close poll" is set to FALSE, you can choose one of the following options:

- Print report

- Save to File

- OK

3. Press **OK**.
   The election summary and information is printed. Once finished, the VVPAT printer's light will turn off.

The Poll is now closed.

3.3.2.2 Info

The info section within the Poll Worker menu contains general information about the device and the Poll status:

- P**oll Status** – There are two available possibilities:

  - CLOSED

  - OPEN

- **Lifetime Counter** – Shows how many ballots were marked on the device in the lifetime of the machine. If the lifetime counter is not available, the value will be N/A.

If the "Use DRO Box in Electronic Ballot Header" is checked in EED during the preparation of the election project, upon selecting "Open Poll" the Poll Worker will be prompted a dialog (see Figure 3-104) where Election judges will be able to add their signature/initials.

The poll can be open ONLY if the initials are entered.

These initials will be seen in a reserved space on the ballot for election judges to initial when the ballots are provided to the voter.

The ballot will only be accepted by the scanner IF the initials are detected. If no initials are present, the ballot must be rejected with appropriate warnings.
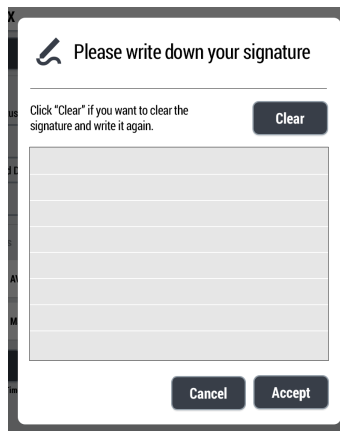
Figure 3-104: Judges signatures

3.3.2.3 Settings

Settings section contains the following:

- *AVS Controller*– the default option is "**Disabled**". If the AVS voting mode is available on the machine the User should select this option.
A dialog with one of the available AVS Setup options will pop up.
Select either ATI or TECLA, depending on the device you have.

- *Manual Session Activation*– Disabled by default. Select this to allow manual voting session activation.

  - *Provisional vote:* once a Manual session is activated and a Provisional vote is chosen, a code will be generated on-screen prior to proceeding to the ballot and can commence voting.

  - *Challenge vote:* once a Manual session is activated the screen automatically proceeds to the Challenge vote tab which contains a Challenge code. Upon clicking continue the User proceeds to the ballot and can commence voting.

- *Print Status -* During the voting process, the Poll Worker can print a Status Report containing the following information (top-down):

  - Election data

  - Tabulator data (name and ID)

  - Voting Location (name and ID)

  - Precinct names

  - Total number of votes Cast

  - Total number of Voters

- ImageCast® X device information (model, Serial No., Protective counter and software version).

Beneath all the above-mentioned information there is room available for the signatures of Election Officials.

The Footer of the report contains information on the date and time the report was printed, the status of the Poll as well as the Unit status.

Once the report is printed, the following information can be observed on the header of the new paper roll:

- Election name
- Election date
- Voting location name
- Tabulator name
- Counting group name
- Open/close/change roll date / time
- Voting session ID (generated every time poll is opened)
- Public counter
- ***Print Report*** – this option is prompted upon the opening/closing of the Poll.

A dialog appears allowing the Poll Worker to either Print the report, to "Save it to file", i.e. internally, on the device. The saved files can then be exported to a USB drive from the Technician Menu.

NOTE: The type of the report depends on the status of the Poll - CLOSED Poll allows for the Result/ Summary report to be printed, while the OPEN Poll allows the printing of the Zero Report (see Figure 3-105). These types of reports can be printed only in DRE mode.
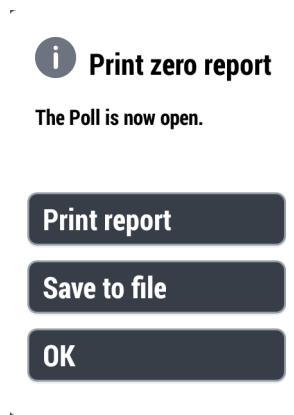
Print zero report

The Poll is now open.

Print report

Save to file

OK

Figure 3-105: Save Report to File

- **Cancel Report Printing:**
  ICX users have the option to enable/disable the "Cancelable printing report" option allowing the cancellation of the report printing during the printing process. This option is disabled by default. Upon tapping the cancel button, the user will see a dialog allowing them to: reprint the report, continue printing, save report to file and cancel. After confirming the cancellation, the report printing will be canceled.

- *Hardware Test*– Opens the Hardware Test menu. Here you can check if the devices connected to the ImageCast® X device are operational (ATI, Paddles, Sip 'n' Puff, Joystick, and Printers).

There are tests for the following:

- ATI device
- Paddles
- Sip'n'Puff
- Four directional switch
- Printer
- Led Lamp

- **Hardware Details** - Displays information such as firmware and serial number of the connected devices in the form of a dialog, as seen in Figure 3-106 below.
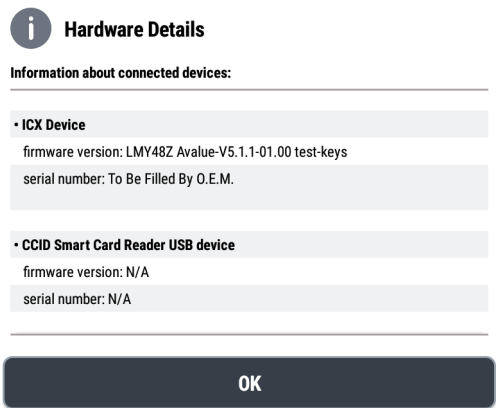
Figure 3-106: Hardware Details dialog

3.3.3 Voting

Prior to commencing with the voting section, the following conditions need to be met:

NOTE: Please be advised - When setting the Project Parameters (see Figure 3-107) for ImageCast® X in EED, make sure that Full Face Ballot is not selected from the Accessible Voting Session Support option > AVS Ballot Mode drop-down.
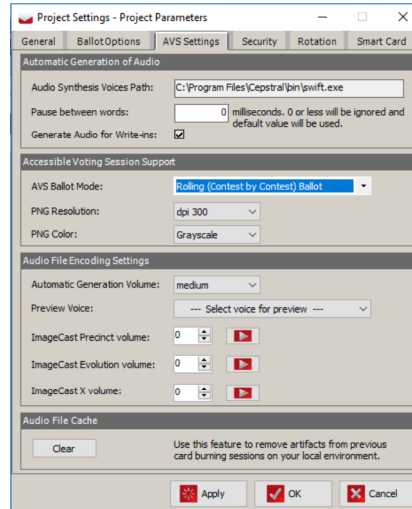

Figure 3-107: Project Settings - Project Parameters

- Election files are loaded and decrypted,
- All the necessary files are present in the Election Files (confirmed with verification of election files),
- The Poll is open.

After the Poll Worker Opens the Poll, the application will redirect the User to login voter screen, see Figure 3-108.

Figure 3-108: Voting interface

A user has to have an appropriate smart card to access the voting screen. On the other hand, voting can be started with the Poll workers assistance if the manual session activation is enabled in the Poll Worker menu.

If the voting session is started with a voter card, a voter will be redirected to language selection screen, as seen in Figure 3-109 below.
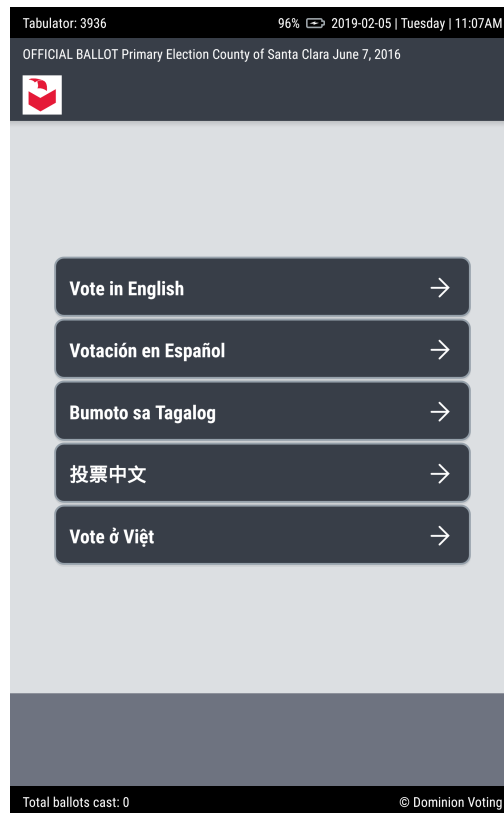
Figure 3-109: Language Selection Screen

When the User selects the desired language, that user can start, and the application will show the screen where the voter can choose one of the available accessible voting devices (AVS voter), otherwise, the application will open the Ballot in the previously selected language (regular voter).

NOTE: When voting in an Open Primary, the Voter will be greeted by a screen with a choice of parties running in that election.

NOTE: The choice is made by clicking the appropriate button on the choice screen (see Figure 3-110).
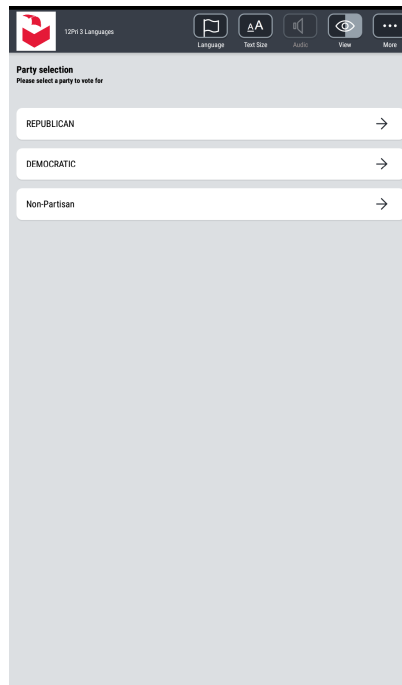
Figure 3-110: Party selection

At any time during the voting, a user can change the language, text size, screen view and, in AVS mode, audio settings.

A Voter can navigate through the Contests using the navigation buttons at the bottom of the screen - Next and Previous buttons.

At any point during the voting process, the voter can go to the Review page using the Review button that is in-line with the navigation buttons.

NOTE: For more details about these features please refer to sections "Voting interface" and "AVS (Accessible Voting Session) Voting Interface".

3.3.3.1 Voting interface

During the active voting session, there are several menus and bars intended for adjusting the voting interface as desired and navigating through the ballot.

At the top of the screen, an *Action* bar contains buttons for changing various graphic and audio settings. These settings can be changed at any point in the voting session and are consistent throughout the whole session.

3.3.3.2 Action bar

Figure 3-111: Action bar

- The **Language** button opens a pop-up menu with all the languages defined for the current elections. The voter can change the language by pushing a checkbox with the desired language.

- Text size can be changed by choosing one of the options displayed by pushing the **Text Size** button.

- The **Audio** button is active only during an AVS session. For details refer to section "AVS (Accessible Voting Session) Voting Interface".

- The **View** button allows changing the visual theme of the voting interface

- Pressing the **More** button allows the voter to cancel the current voting session by pressing the **Cancel Activation** in the pop-up menu, or display the information about the ICX device and software by pressing the **About** button.

NOTE: Please note that the text right next to the logo contains the following information:

- Project name - this information cannot be disabled and will always be shown.

- Precinct name - this option can be enabled or disabled through the Edit Configuration option in the Technician Menu, or through the MCF in EED during project creation.

3.3.3.3 Contest bar

Figure 3-112: Contest bar

The **Contest bar** is located right under the Action bar and is used for navigation between the contests on the ballot. By tapping on the desired button, the corresponding contest will be displayed on the screen.

NOTE: The Cancel Activation button is available only when the voting session was Manually Activated.

3.3.3.4 Stripe

Figure 3-113: Stripe

The Stripe is located right under the Contest bar and is used to indicate the number of the page the voter is on during an active voting session as well as the voters chosen Party.

Both options can be enabled or disabled through the Edit Configuration option in the Technician Menu, or through the MCF in EED during project creation.

NOTE: The following applies depending on the type of election:
For open primary elections the party name shown is the selected party name. It is already present on the screen per design for open primary elections. Setting "Show party name" to true will duplicate this information on the screen.

For closed primary elections the party name is not present per design, so it's only visible if configured.
For general elections, the party name is not present on the screen ignoring the configuration.
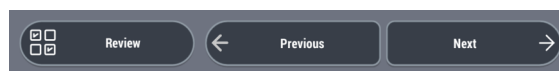
3.3.3.5 Navigation bar

Figure 3-114: Navigation bar

Beside the Contest bar, the voter can navigate between the contests by using the **Navigation bar** at the bottom of the screen. Pressing the "Previous" and "Next" buttons will display the previous/next contest listed in the Contest bar.

Selecting the **Review** button will display the Review screen that contains all contests and choices marked by the voter.

The Review screen will also display notifications about any errors or warnings if the ballot is not valid or incomplete.

The voter can navigate through all of their choices by pressing **Scroll Down / Scroll Up** buttons at the bottom/top of the contest list.

In case the voter wants to change the choices for a specific contest, selecting (tapping) that contest in the review list will return the voter to that specific contest screen.

Once the voter has casted the vote, the following screen displays Figure 3-115 to confirm the vote was cast.
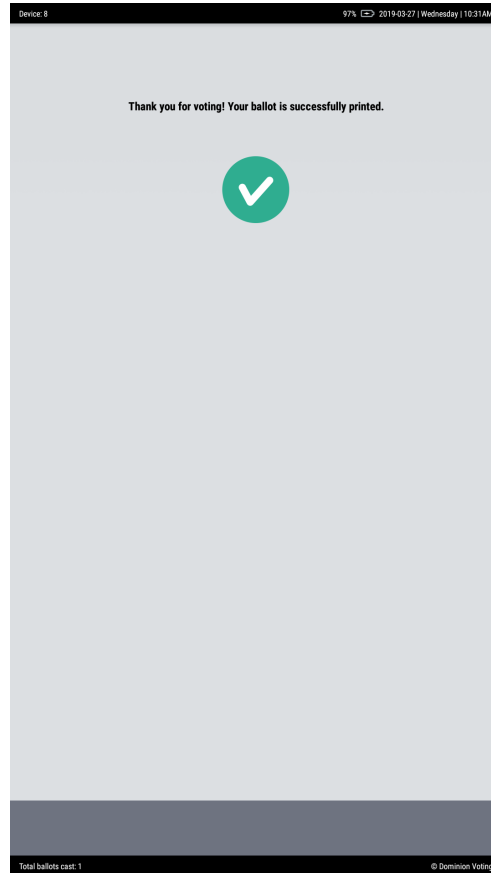

Figure 3-115: Thank You For Voting screen

The same functionality is provided by pressing the **Back to Ballot** button in the bottom left corner of the review screen.

Depending on the mode of the application, we may have one of two scenarios:

- **BMD** - The ballot is printed (see Figure 3-116) by selecting the **Print Ballot** button in the right bottom corner. Pressing this button prompts a final dialog that, again, displays any warnings for the ballot and provides the options to confirm the ballot printing or to return to the Review screen. The marked ballot is printed by selecting the **Print your ballot** button in the dialog.
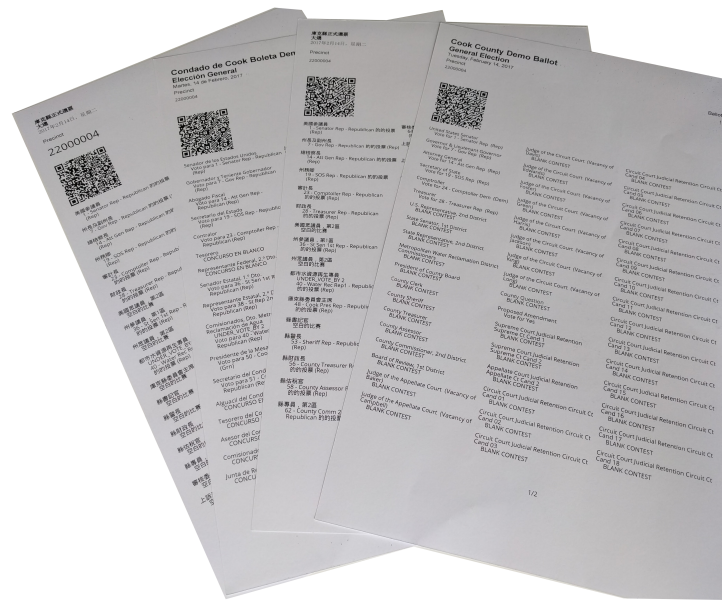
Figure 3-116: Electronic Mobile Ballot

- **DRE** - The ballot is cast by selecting the **Cast Ballot** button in the right bottom corner. Pressing this button prompts a final dialog that, again, displays any warnings for the ballot and provides the options to confirm the ballot printing or to return to the Review screen. Marked ballot is cast by selecting the **Cast your ballot** button in the dialog.

After the voting session is complete, a screen is presented informing the voter of the result of the action. At this point, the voter can safely remove the card.

3.3.3.6 Manual Session Activation

Manual Session Activation, which is disabled by default, allows the Poll Worker to manually activate the voting session, if a a Voter card cannot be used for any given reason (i.e. shortage of cards).

Alongside a regular vote there are two other voting options accessible in the Manual Voting Session:

- *Provisional vote:* once a Manual session is activated and a Provisional vote is chosen, a code will be generated on-screen prior to proceeding to the ballot and can commence voting.

- *Challenge vote:* once a Manual session is activated the screen automatically proceeds to the Challenge vote tab which contains a Challenge code. Upon clicking continue the User proceeds to the ballot and can commence voting.

Depending on the election file, either the Challenge or Provisional voting option will display.

To start the Manual Voting Session:

1. Insert Poll Worker card and log in with the appropriate credentials. The log-in page displays (see Figure 3-117).

Figure 3-117: Log-in dialog

2. Click the **Activate Ballot** tab.
   The Activate Ballot window displays (see Figure 3-118).

Figure 3-118: Activate Ballot window

3. With the on-screen keyboard, type in the *Ballot Activation Code.*

NOTE: You can also **Enable AVS Controller** on this window.

4. Click **NEXT**.
   The **Challenge Code** displays, if the conditional voting mode was set to CHALLENGE in the election file (see Figure 3-119).
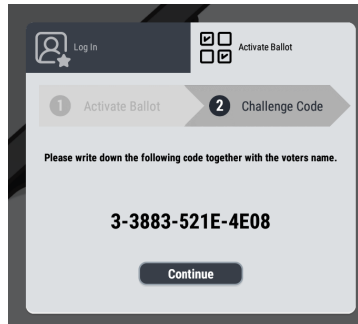
Figure 3-119: Challenge code 1

If a conditional voting mode was set to PROVISIONAL in the election file, the **Provisional Code** menu displays (see Figure 3-120):
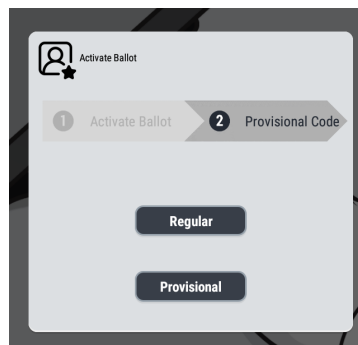

Figure 3-120: Provisional Code menu 1

a. To start a regular voting session, click **Regular**.

b. To start a Provisional voting session, click **Provisional**.
   The **Provisional code** displays (see Figure 3-121).
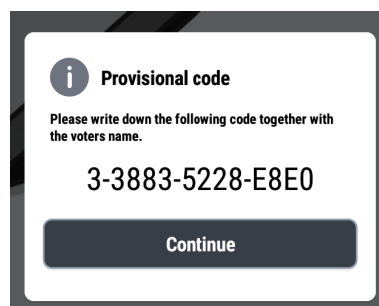
Figure 3-121: Provisional Code 1

5. Click **Continue**.
The Voting session is now open.

If the MFC configurable option *"Admin authentication for a manual voting session"* is set to **TRUE**, the Poll Worker will have to first enter the appropriate credentials before starting a manual voting session.

If this option is set, the Manual Session Activation can be done as follows:

1. Insert Poll Worker card.
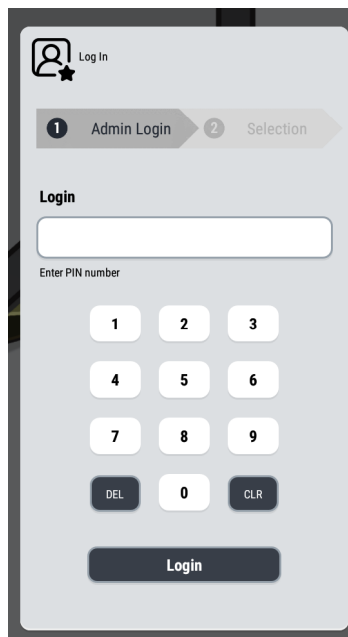The log-in page displays (see Figure 3-122).

Figure 3-122: Log-in page.

a. Log in with the appropriate credentials
The **Selection** window now displays (see Figure 3-123) with the options **Admin Menu** or **Ballot Activation**.
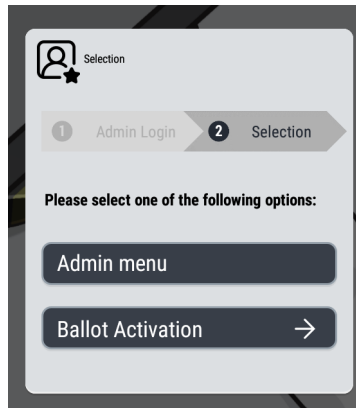
Figure 3-123: Selection

2. To start the manual voting session, click on **Ballot Activation**. The *Activate Ballot* window displays (see Figure 3-124).
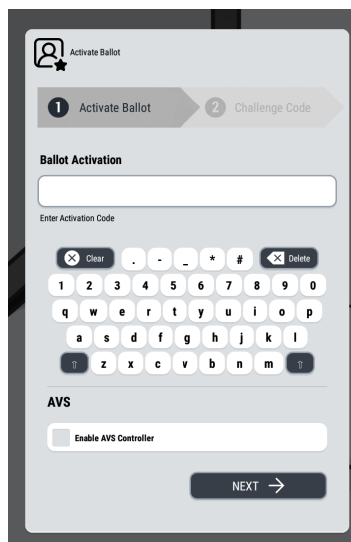

Figure 3-124: Ballot Activation

3. With the on-screen keyboard, type in the *Ballot Activation Code.*

NOTE: Note: You can also **Enable AVS Controller** on this window.

4. Click **NEXT.**
   *The **Challenge Code** dialog displays, if the conditional voting mode was set to CHALLENGE in the election file (see Figure 3-125).*
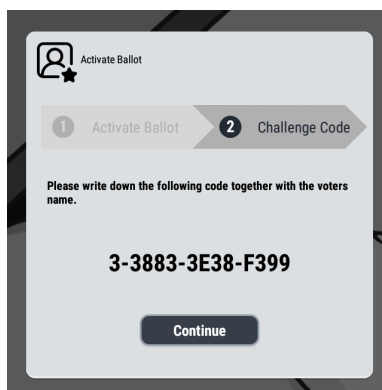
Figure 3-125: Challenge Code

If a conditional voting mode was set to PROVISIONAL in the election file, the Provisional Code menu displays (see Figure 3-126).
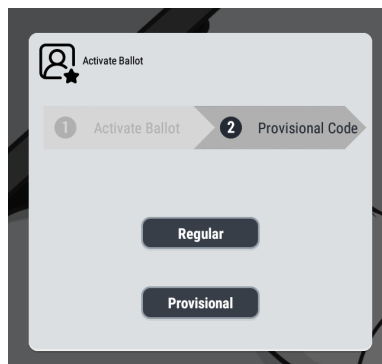

Figure 3-126: Provisional Code

a. To start a regular voting session click **Regular**.

b. To start a Provisional voting session, click **Provisional**.
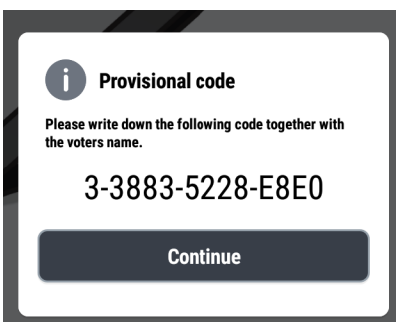The *Provisional code dialog* displays (see Figure 3-127).

Figure 3-127: Provisional Code

5. Click **Continue**.
   The voting session is now open.

3.3.4 Styling Support

To prepare for the elections, election officials now have the ability to present various text styles on the ImageCast® X. The selection and editing is handled through Election Event Designer (EED)

Types of formatting that are supported are the following:

- Bold
- Italic
- Strikethrough
- Underline
- Unnumbered lists
- Big text
- Small text
- Text color
- Background color
- Indentation
- Tables
- Superscript
- Subscript
- Numbering (various options)

Examples for the available styles are presented in the Example figures bellow:
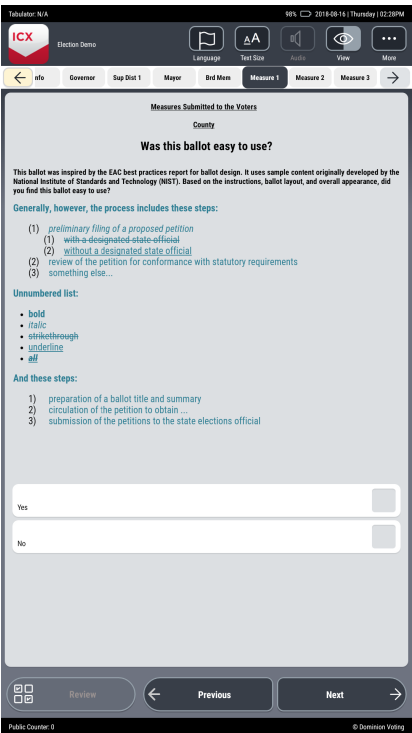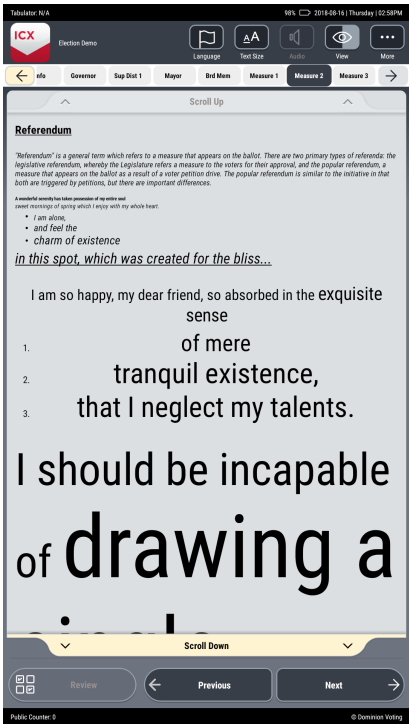
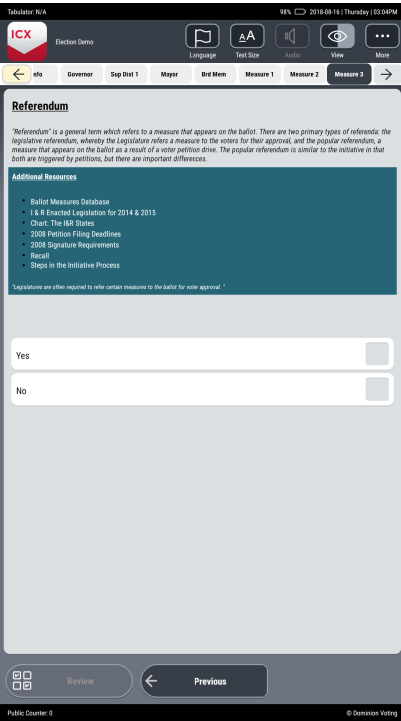Figure 3-128: Example 1

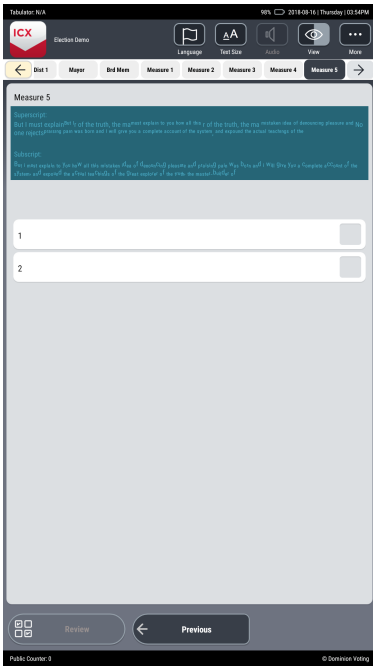Figure 3-129: Example 2

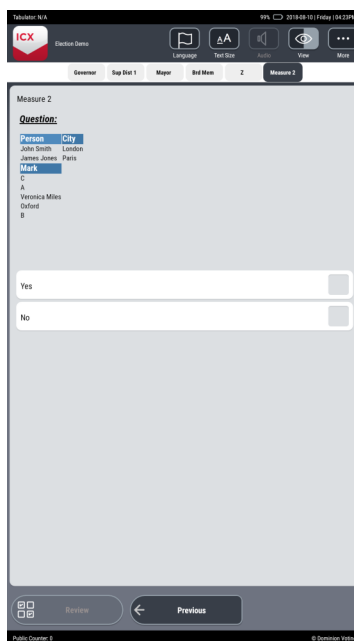Figure 3-130: Example 3

Figure 3-131: Example 4

Figure 3-132: Example 5

For more information on how to edit the ballot text through EED, please see section "5.16.1 Screen content translations" in the *Election Event Designer User's Guide*.

CHAPTER 4: PROCEDURES

This Chapter contains information on the various procedures that can be performed on the ImageCast® X device.

- Preparing the Election
- Pre-LAT
- Advanced voting
- Election day voting
- Post-LAT
- AVS (Accessible Voting Session) Voting Interface

4.1 Preparing the Election

This section will serve the purpose of introducing Poll Workers to the necessary steps in preparing the ImageCast® X device for voting.

4.1.1 Election File Transfer

The preparation for voting starts with the **Election Files** that were previously generated in EED.

After having generated and copied the Election Files onto a USB drive, below are the steps that need to be taken in order to make sure the Election Files have been copied onto the ImageCast® X device. These steps can be performed by the **Technician,** and the Technician card needs to remain inserted during the setup.

1. The Election Files are copied onto a USB drive.
2. The USB drive containing the Election Files is inserted into the ImageCast® X device.
3. Insert the Technician card
4. Enter the PIN provided by Democracy Suite EMS EED Administrator
5. Log in

NOTE: In case the ImageCast® X device is restarted the "Date/Time Confirmation" dialog will be prompted, allowing for the date and time to be altered if necessary. If everything is in order, just press the Confirm button.

In order to copy the election files to the machine press the "Load Election Data" button (see section "Election Data" > "Load Election Data" for further information).

At this time you will be presented with a dialog containing all Election Files that are present on the USB drive:

6. Find and select the Election File you need and press **Select**.

7. After selecting the election file, you will be presented with a confirmation dialog.

8. Select **Copy** to copy the election files.

9. A status bar is visible while the files are being copied.

10. If the operation is successfully done, election files are now present on the machine and Technician can remove the card and exit the menu.

11. Go to **Device Setup**

12. Press **Install/Update TTS** and select the TTS file from the displayed list.

13. Once the file is chosen, press **Select.**
    An **Info** displays, press **OK**.

14. Press **Install Voice Data**.
    A list displays of voice data files display.

15. Select the desired one and press **Select** at the bottom.
    The voice data is now installed.

16. To install more voice data's (voice languages) repeat the previous step with new selection.
    The *Voice Data count* to the left of the button will display a list of installed voice data's.

If the Election Files are copied incorrectly the User will be notified. At this time the Technician should clear the copied files by pressing the **Clear All election data** button in the Technician menu and proceed to copy them onto the ImageCast® X device from the USB drive again.

NOTE: If a non-certified USB mass storage device is inserted, an error message displays: "*One or more unsupported USB mass storage devices are connected. Please detach all of them.*" To resolve this, remove the USB mass storage device and insert a certified USB mass storage device. This is applicable for both Classic and Samsung devices.

4.1.2 Opening the Poll

Once the election files are present on the ImageCast® X device and the Technician is done with his part, insert the **Poll Worker** card, enter the PIN provided by Democracy Suite EMS EED Administrator and log in.

NOTE: The following procedural steps for opening the poll can be performed by the Poll Worker exclusively.

- Decryption of election files
- Installing Google TTS
- Select the tabulator
- Verification of election files
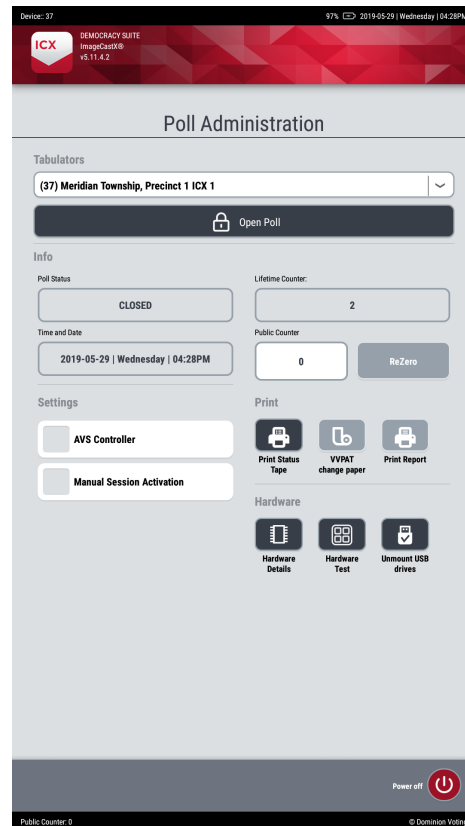- Open poll
- Print zero report (DRE mode)

Figure 4-1: Poll Administrator

After the Poll worker is successfully logged in (see Figure 4-1), the decryption of election files begins. The Poll Worker card contains the keys for decryption, therefore it must remain inserted in order to complete this action. The progress bar is shown, and you have to wait until decryption is done. The process of decryption will be started only if existing files haven't been decrypted yet or after the "Clear *working directory*" is done (See section "Election Data" > "Clear working directory" for further information). The duration of the decryption process depends on the size of the Election Files. In case of large election files, it will last longer.

After this operation is completed, go to the **Tabulators** section on top of the screen where the drop-down list containing all available tabulators is.

Select the drop-down menu with text "*Select tabulator*" (see Figure 4-2) and choose the needed tabulator (See below image for clarification). The option of searching for a specific tabulator by entering a tabulator number is also available.
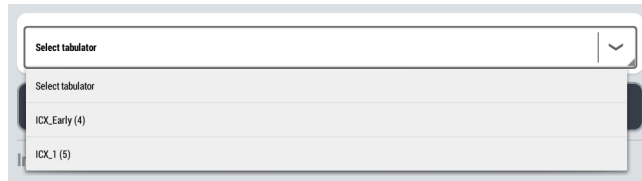

Figure 4-2: Select tabulator

Upon selecting the desired tabulator, the verification of election files will start. The following things for the selected tabulator are checked during this process: **.png files, .spx files, localized resources and database integrity**.

Every component found to be missing will be reported and presented in a dialog so that the Poll worker can decide what to do next (See section "Tabulators" for further information).

Depending on the chosen Tabulator operating mode, a verification dialog can be either closed or printed on a connected printer - **thermal or VVPAT** - by pushing the Print button.

In case the **DRE tabulator** is chosen, the ImageCast® X device will check all of the result locations for the presence of result files. If result files are found in any of the result locations, the poll worker will have the **ReZero** option available.

NOTE: In order to **ReZero** the results the Poll worker needs to confirm the action twice, i.e. - it is necessary for the Poll Worker to enter their **PIN number,** and to choose **YES** on the subsequent dialog.

NOTE: If the **ReZero** option is available, the Poll Worker will not be able to open the Poll until the result locations are cleared. If any unknown result files (belonging to a different election) are found, the Poll worker will be notified.

In case the **BMD tabulator** is chosen, *"Public Counter"* must read 0 in order for the Poll to be opened. If that value is not 0 the *"Public Counter"* needs to be **Reset**. After pushing the **Reset** button, additional confirmation is required, and the Poll Worker must enter his PIN number again. After the *"Public Counter"* is successfully reset, the Poll can be opened.

To open the poll, push the **Open Poll** button. A confirmation dialog will be prompted. The dialog offers a choice between **YES** and **CANCEL**.

Pushing the **Cancel** button will close the dialog and allow the Poll Worker to change/confirm the voting settings.

Pushing the **Yes** button will lead to an attempt at opening the Poll. If all settings for the selected Tabulator are set, the Poll will open and the *Login Voter* screen will appear. At this time, the Poll Worker card should be removed and the Voter card inserted into the ImageCast® X device.

In case the **DRE tabulator** is chosen, prior to switching to the "*Login Voter Screen*" and if the report printer is set to VVPAT or Thermal Printer in the Technical configuration, the ZERO REPORT is printed.

Also, depending on the set configuration options the Zero Report is immediately printed if the configuration value is set to **True** and the Poll worker will have the option of choosing the desired action from the prompted dialog (see Figure 4-3 below), however, if the value is set to **False** the User will immediately be redirected to the "Login *Voter Screen*".
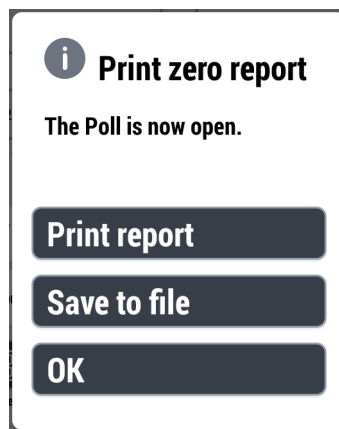

Figure 4-3: Print zero report dialog

4.1.3 Voting Support

In order to provide voting support to all Voters, there are additional options enabling voters to cast their ballots.

Two such additions are:

- **AVS Controller:** If the ImageCast® X device should support the ADA voters, the Poll worker should set the AVS Controller to Enable. Following that, the type of controller should be chosen - **ATI** or **Tecla Shield**.

  Push the **Save** button to save the selection and exit the dialog. Push the **Cancel** button to exit the settings and exit the dialog.

- **Manual Session Activation:** If the Poll Worker needs to enable Manual Activation (see Figure 4-4) of the voting session, the Manual Session Activation should be set to **Enable**. This is used if for some reason there is a need for the Poll Worker to activate the voting session for a voter manually.

Figure 4-4: Manual Session Activation

Additional settings:

- The Date and Time can be adjusted by pushing the "**Date and Time**" button. This button is *disabled* when the poll is open.

- By pushing the "Hardware **details**" button, the Poll worker is presented with the information about connected devices.

- The "**Hardware Test**" button, when pushed, enables the Poll worker to perform functional tests of connected devices.

4.2 Pre-LAT

4.2.1 Prerequisites

In order to start the Pre-LAT procedure, the election files should be loaded into the ImageCast® X application (for more information please check section "Preparing the Election > Election File Transfer".

4.2.2 Clearing the results

1. Insert the Poll Worker card and enter associated PIN.
   If you are opening the poll for the first time, after successful validation of the Poll Worker's smart card, the decryption of election files begins.
   If the decryption passes and there are no errors, the User is presented with the Poll Worker menu.

2. From the Tabulators drop-down, select the desired tabulator.
   This starts the verification process for the selected tabulator.

   - On the confirmation dialog, press the **OK**.

3. Notice the field *Public Counter* which indicates the current number of ballots cast for selected tabulator.
If the value is zero then the selected tabulator is ready for the Pre-LAT test, if not push **Reset** to re-zero it.

4.2.3 Cast ballots

1. Open the poll, by clicking on the **Open poll** button.

2. Cast desired number of ballots.

For more information about how to cast ballots, see the "Voting Interface" sections on both devices (ImageCast$^®$ X Classic/Samsung > Voting > Voting interface).

4.2.4 Compare results

Compare printed ballots visually with desired results or import into RTR and compare them there. For more information on RTR see "Democracy Suite$^®$ EMS Results Tally & Reporting User Guide".

4.3 Advanced voting

When advanced voting, lasting a number of days, is required, use the following procedure to start/stop the voting:

- Open the poll as per prescribed procedure.

- Vote as per prescribed procedure.

- At the end of the day, shut down the ImageCast$^®$ X device (see below section - **Shut down**) without closing the poll.

- If you want to continue voting, power up the machine and insert a poll worker card in order for the voting to continue (see below section – ***Resume voting***).

- Vote as per prescribed procedure.

- Repeat as many times as required.

- Once the voting is complete, close the poll and export the results (DRE).

The remainder of this document shows how to shut down the ImageCast$^®$ X device and resume voting after restarting it.

4.3.1 Shut down

If you want to shut down the ImageCast® X device during voting, please be aware that the Technician is required to unlock the side panels of the device in which the On/Off button is located.

ImageCast® X Classic:

- To turn off the device, log into the Technician menu or Poll Administration menu and press the **Power off** option on the bottom of the screen.

Figure 4-5: Power off option

- ImageCast® X Samsung:

To turn off the device, the Technician needs to open the voting case in which the device is placed and press the On/Off button on the side until a dialog displays with three options: **Power Off**, **Airplane/Flight mode**, **Restart**. Press P**ower Off**, and a confirmation dialog displays and after pressing **Power Off** again, the device shuts down.

4.3.2 Resume voting

NOTE: Please note that this step can be done by the Poll Worker only.

Whenever you want to start the machine and the voting, hold the power button on the device until it starts.

You should make sure that all cards are ejected from the machine.

When the machine is up and running, insert the Poll worker card, enter the PIN provided by the Democracy Suite EMS EED Administrator and log in.

At this time the *Date/Time Confirmation* dialog is presented (due to the machine restart), and if there is any problem (with the results, hardware machines connected, etc.) the dialog will be shown to the user in this case, the Poll worker.

The status of the Poll is Open. If everything is as it should be, remove the Poll worker card and you will be moved to the Login Voter Screen and proceed with the voting as usual.

4.4 Election day voting

Election day checklist:

1. Log in as poll worker.
2. Verify date and time.
3. Verify that the chosen poll/tabulator is correct.
4. Depending on the jurisdiction requirements, make sure the *Public Counter* is **Reset**.
5. Open the poll to start voting.
6. Remove the poll worker card.
7. Voting can continue for as long as required using:
   a. Voter smart cards
   a. Manual session activation (poll worker card is required).
8. Once voting is complete, log in as poll worker again.
9. Close the poll.

4.5 Post-LAT

4.5.1 Prerequisites

To start the Post-LAT procedure, the election files should be loaded into the ImageCast® X application (for more information please check section "Preparing the Election > Election Files Transfer".

4.5.2 Clearing the results

1. Insert the Poll Worker card and enter the associated PIN. The main Poll Worker screen displays.
2. To close the poll, press **Close Poll**.
3. To re-zero the results, press **Reset**.
4. Press **Yes** on the Warning popup windows and enter the Poll Worker PIN to verify your identity. If the action was successful, an ***Info*** dialog displays notifying the User that the operation was completed successfully.

   If the ***Public counter*** field shows zero value, you can proceed to the next step.

4.5.3 Cast ballots

Open the poll, by clicking on the Open poll button. Cast the desired number of ballots (for more information how to cast ballots please refer to ImageCast® X Classic/Samsung > Voting > Voting interface.

4.5.4 Compare results

Visually compare the printed ballots with desired results. Alternatively you can import the results into RTR (Results Tally & Reporting) for comparison.

4.6 AVS (Accessible Voting Session) Voting Interface

In order to use the ImageCast® X device for an Accessible Voting Session (AVS) the following conditions need to be met:

1. The Poll Worker has configured the ImageCast® X device tabulator to use one of two available AVS controllers - ATI or TECLA (Only for Samsung devices).

2. The AVS controller is properly connected to the ImageCast® X device tabulator and fully operational.

3. The ImageCast® X device is set for AVS voting in one of the following ways:

   a. The voting session is started using a smart card configured for AVS voting upon the voter registration.

   b. Manual session activation is enabled, and the Poll Worker activates the voting session on behalf of the Voter by checking the "Enable AVS Controller" checkbox during ballot activation.

NOTE: Samsung device users have the option of selecting either an ATI or TECLA accessible voting device.

After the session is activated by following the steps outlined in the "Voting" section and after the desired language has been selected, the application moves automatically to the screen where a voter can choose one of the available accessible voting devices (AVS voter). See Figure 4-6.
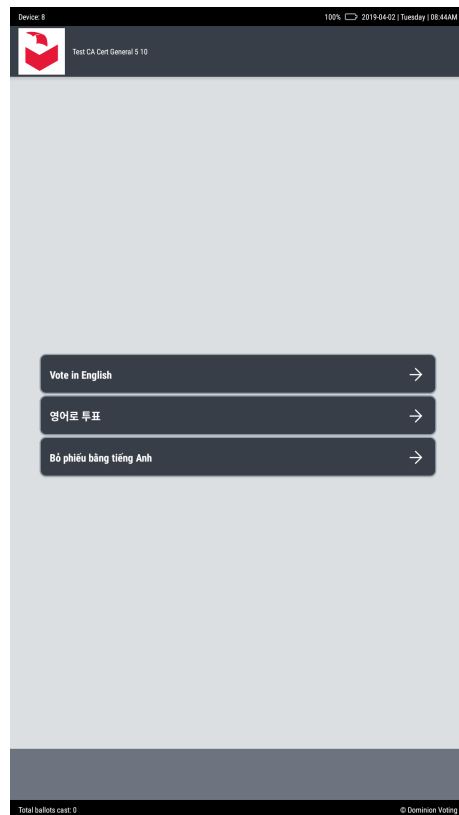
Figure 4-6: AVS Language selection

Upon having configured the ImageCast® X device, the Voter is able to select the preferred accessible voting device - ATI, paddles, Sip and Puff, or Audio/ Visual mode, as can be seen in Figure 4-7 below.
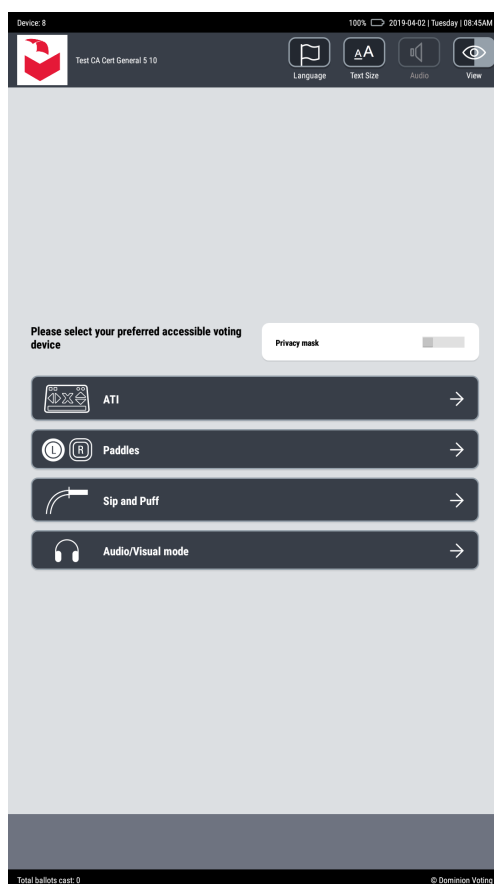
Figure 4-7: ATI device selection

Options offered on the AVS device selection screen also include the option of using a "*Privacy Mask*".

This option is used to activate privacy mode during the session - the Privacy Mask mode will black-out all the content on the screen, except the top most menu bar (containing the election logo and title, and user options buttons).

To activate ***Privacy mask*** (see Figure 4-8 and Figure 4-9), a user should switch the Privacy mode switch to **ON** (see below images for further clarification) before selecting the preferred accessible voting device.

Figure 4-8: Privacy Mask OFF

Figure 4-9: Privacy Mask ON

The AVS device selection screen will contain the following options:

- ATI *(Audio Tactile Interface)*
- Paddles
- Sip and Puff
- Audio/Visual mode —*only available if Privacy mask option is turned off*

Alternatively, if the TECLA device is configured for use instead of ATI (applies to Samsung devices only), contents of this screen will be different:

- Paddles
- Sip and Puff
- 4 direction switch
- Audio/Visual mode —*only available if Privacy mask option is turned off*

After selecting the preferred device, the application will show the ballot to the voter.

At this point, the AVS device is activated, and a voter can use the ImageCast® X device independently by using the attached AVS device to vote and cast the ballot, with no help from other persons.

Optionally, if the selected AVS device is an ATI controller, the first screen that will be shown to a voter is the "ATI Help and instructions to use" (see Figure 4-10).

This instructional screen describes all the functions of the ATI device and can be accessed by a voter at any time during the voting session.

The "Help" dialog can be closed by pressing the Select button on the ATI device.
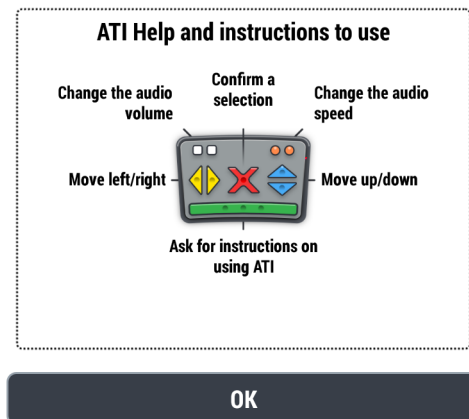
Figure 4-10: ATI usage instructions

During AVS voting, all interaction with the ImageCast® X device is done by controlling the ImageCast® X device without the touch screen, using the selected AVS device only.

Depending on which screen is presented to the voter, there are different processes when the voter presses the *left or right ATI buttons*:

- On the party selection screen (OP elections), the ICX application ignores these events because the ballot has not been loaded yet.

  - On the *ballot* screen, no matter which part of the screen focus it is currently on, the left/right ATI buttons will navigate the voter to the previous/next contest. There are two specific situations:

    - On the first ballot contest, pressing the left button does not do anything because there isn't a previous contest.

    - On the last ballot contest, pressing the right button the voter will be navigated to the Review screen.

  - On the *Review* screen, the **left** button returns the voter to the ballot (the same behavior as when the ***Back to Ballot*** button is clicked), and the **right** button goes to ***Cast/Print Ballot*** opening the ballot cast confirmation dialog. From here select either:

    - **Print your ballot**

    - **Review your choices**
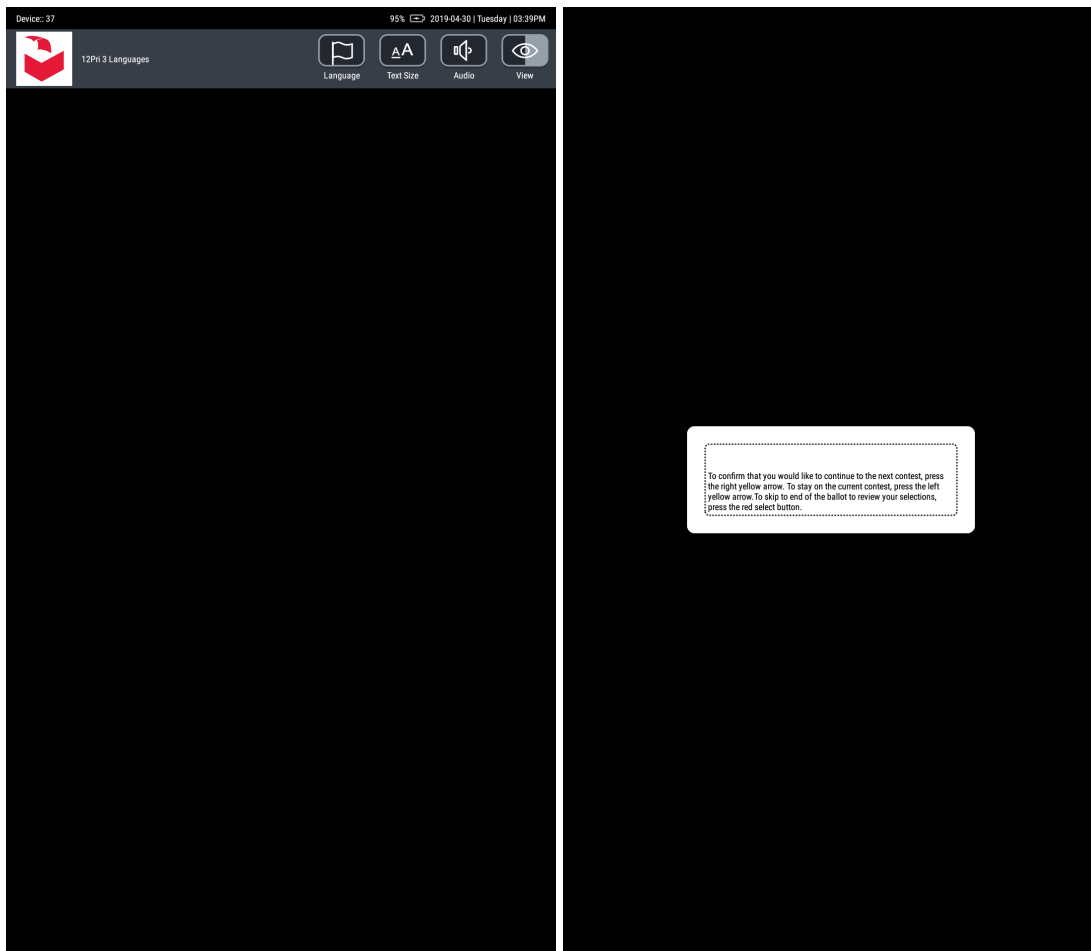
Figure 4-11: Home screen with privacy mask/ First selection right

Figure 4-12: Selection left (returning to previous ballot) / Confirmation to casting ballot

Voice is enabled, and content of the ballot can be heard through the attached headphones.

When AVS voting is activated, the volume setting for the headphones is previously configured to a default value.

Audio volume and tempo (speed) can be adjusted by the voter at any time during the voting session. Volume adjustment is done by pushing the Audio options button in the top menu bar (see Figure 4-13).

Instructions on how to access this menu are provided as spoken text during the voting session. Alternatively, if the selected AVS device is ATI, a voter can manipulate audio volume and tempo (speed) by pressing either of the two sets of buttons on the ATI controller itself (shown both in the image above, as well as

part of the introductory screen on the ImageCast® X device itself). Also, the layout of the buttons on the ATI controller and their functions are described onscreen and spoken.
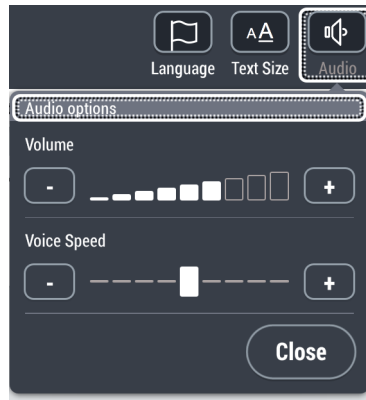
Figure 4-13: Audio options menu

During AVS voting, the ballot is marked and cast by a voter, by using the selected AVS device.

Instructions can be heard on any user interaction with the device. In accordance with the selected device settings, appropriate instructions are spoken, and a voter can navigate through the ballot contests and

choices, as well as configurable options for selecting language, text size, audio volume and tempo, screen colors.

NOTE: Also, a voter can end the voting session by choosing to cancel activation in "More" options menu if the session was activated manually.

The "More" menu, located in the top right corner of the ImageCast® X Voting interface, also offers AVS voters the following:

- During a **manually activated voting session**:
  - Cancel Activation.
  - Go to next Contest (this option allows the voter to skip a contest they do not wish to vote on).
  - Review your ballot (this option allows the user to proceed directly to the Review screen)   once at the review screen, the Voter will have the following options to choose from:
  - Go to navigation bar - (see Figure 4-14) this option will lead the Voter to the screen navigation bar where they can choose to either Print their ballot or to go back to the ballot)
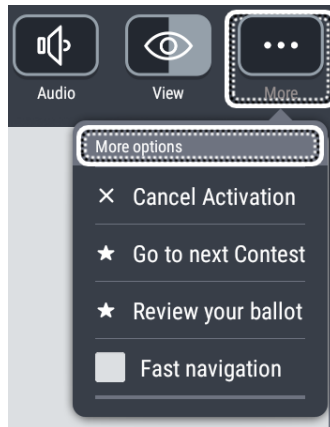
Figure 4-14: More menu in Manually activated AVS session
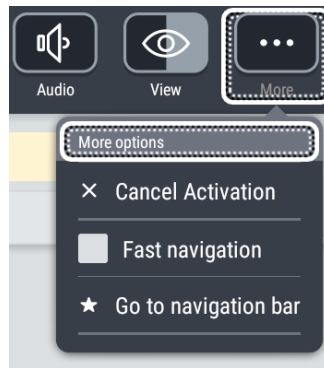
Figure 4-15: More menu options on Review screen

Once a voting session has been activated using a ***VOTER CARD***:

- Go to next Contest - this option allows the voter to skip a contest they do not wish to vote on.

- Review your ballot -this option allows the user to proceed directly to the Review screen.

- Fast navigation - (see Figure 4-16 and Figure 4-17) By default, this option is off, and the left/right buttons require confirmation for previous instructions. If this option is turned on, the confirmation dialog will not be prompted, and the voter will automatically move to the desied contest/screen. When the voter turns this option on or off, the application gives information about how will be handled yellow left and yellow right clicks on the ATI: *Fast navigation has been activated/deactivated. Navigating between contests no longer/now requires confirmation.*
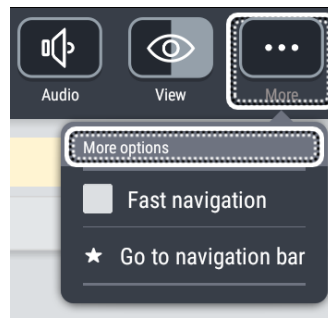
Figure 4-16: More menu with Voter Card activated AVS session
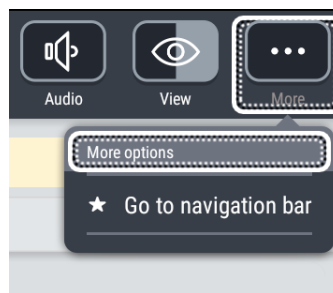
Figure 4-17: More menu options on review screen

The ballot is presented in the following order during AVS voting:

- Initially, the first contest on the ballot is selected and spoken. The voter can hear instruction on how to use the selected AVS device to vote for the first contest or to navigate to any other contest.

- If a voter chooses to enter the first contest, the contest description and instructions on how to hear the available choices will be spoken.

- If a voter chooses to vote for a selected contest and listen to the list of choices, the first choice and instructions on how to mark a choice, or how to navigate to the next choice will be spoken.

- The voter repeats the same process - to vote or hear the next choice until all choices of selected contest are presented.

- After hearing/selecting all available choices in a selected contest, the voter can easily navigate to the contest navigation buttons and choose to select the next contest and repeat the procedure to vote for each available contest.

- When the last contest is reached, after selecting all the available choices, the voter is moved to the "Ballot review" screen.
  The ballot review screen can be navigated to at any time by using a dedicated navigation button on the bottom of the screen, or by navigating through available screen action buttons as instructed by the voice instructions for the selected AVS device.

- On the ballot review screen, the first summary ballot validation status is spoken and instructions are given to the voter on how to hear and review all contests, and when the voter reaches the last contest, an instruction is given on how to cast the ballot.

- When the User activates the command to cast the ballot, a confirmation dialog is presented, and the voter has the option to accept the casting of the ballot or to review the choices that were made by returning to the review screen.

- When the voter accepts the casting of the ballot, the application shows an operation information status screen and speaks a success (or in case something went wrong, a warning) message.

- When the voter has finished listening to the message, by navigating to and selecting the 'Continue' button, the voting session is finished, and the application is redirected to the login voter screen and is then ready for the next voting session.

CHAPTER 5: TROUBLESHOOTING

The Troubleshooting section contains the following sections:

- General Troubleshooting Guidelines
- Loss of Power
- Smart Card Reader
- ATI Device loss of connectivity
- Tecla Device loss of connectivity
- Joystick, Paddles, or Sip & Puff not working
- BMD - Ballot Marking Device
- DRE Voter-verified paper audit trail printer - VVPAT
- Audio cannot be heard while in AVS mode
- Device not responding to touch
- Voter Fled and the Ballot is Still Active
- System and custom navigation bars not available after application uninstallation

5.1 General Troubleshooting Guidelines

In the unlikely event, the ImageCast® X voting system is temporarily inoperable for any reason (loss of power, loss of printer, etc.) the Election Official shall use the Mobile Ballot Printing System (currently in use at the ImageCast Voter Activation station - ICVA) for voting as a backup system or you can use pre printed ballots, if available.

5.2 Loss of Power

When power is lost, the Mobile Ballot Printing (MBP) system is used as the backup so that voting may continue, or you can use pre printed ballots, if available. It is recommended that the dedicated computer and printer be connected to an Uninterruptible Power Supply (UPS).

NOTE: In case the power is lost, and the machine turns off, please remove all smart cards from the smart card reader. When the machine is fully powered on, the smart cards can be inserted in the smart card reader.

5.3 Error when loading election files in Poll Worker menu

After the Poll Worker inserts the Poll worker smart card, the election data is loaded and the decryption starts.

If the card is loaded with an incorrect project, alongside different election signatures and keys for decrypting the election data, unzipping the decrypted data will fail and the following message will display: "**Unzipping file failed!**".

In a different scenario where the keys for decrypting the election data are valid but election signature on card is not, the following error message will display: "**Election verification code is not valid.**"

To resolve the issues in both these scenarios, the Poll Worker smart card must be re-written with the correct project, keys and election signature.

5.4 Smart Card Reader

This section explains potential issues regarding the smart card reader.

5.4.1 Not responding

If the smart card reader is not responding, activate voting sessions manually. See section **Settings** in the Poll Administration menu. After that proceed to activate the voting sessions manually.

5.4.2 Unable to read the card

If ICX is not able to read the card, please check the following:

1. Verify the smart card contacts are facing upwards and re-insert the smart card into the reader.

2. Make sure the card contacts are clean.
   You can use rubbing alcohol and a clean cloth.

NOTE: Do not pour liquid onto the card. Add the liquid to the cloth and wipe the card.

5.5 ATI Device loss of connectivity

If the ATI loses connection, please do the following:

1. Verify that the ATI device is plugged into a USB port on the device or on the LavaLink adapter.

2. Verify that the power indicator light is on.

3. Perform a hardware test of the ATI device
   See section "Settings" in the Poll Worker Menu.

5.6 Tecla Device loss of connectivity

If the Tecla Device loses connection, please do the following:

1. Verify the Tecla device is plugged into a power outlet (The device is charging when plugged into a power outlet).

2. Verify indicator lights are lit.

3. Verify "connectivity" on USB.

5.7 Joystick, Paddles, or Sip & Puff not working

If the Joystick, Paddles, or Sip & Puff don't work, please do the following:

1. Verify all connections.

2. Confirm the cords are plugged in correctly.

5.8 BMD – Ballot Marking Device

- Paper Jam in Tray 2
- Not printing
- Loss of connectivity
- Ballot will not Print

5.8.1 Paper Jam in Tray 2

If a paper jam occurs during ballot printing, printing functionality is suspended and an error message is displayed on the ICX. The voter is prompted to contact the poll worker to resolve the issue and resume printing.

NOTE: When printing resumes, an interrupted ballot may continue printing. This is a spoiled ballot and must be discarded.

To resolve a paper jam in tray 2, the poll worker should complete the following:

1. Insert poll worker card and enter access code.

2. To clear the buffer, press the Cancel X button on the printer.

3. Clear paper jam.
   For detailed instructions on clearing the paper jam, please see the Clear paper jams in Tray 2 procedure, on page 81, of the HP "LaserJet Pro M402, M403 User Guide".

4. Printing can resume when the control panel's Ready light is green. "Ready" will also be visible in the control panel display.

5. On the ICX screen, press **Reprint**.

6. Remove the poll worker card.

NOTE: Important: Please make sure to spoil any interrupted ballots

5.8.2 Not printing

If the device is not printing, please do the following:

1. Verify the device is powered on.

2. Verify the connection to the printer.

3. Verify there is sufficient paper in the paper tray.

4. Check the printer manual for information about printer statuses.

5.8.3 Loss of connectivity

If the Ballot Marking Device loses connection, please do the following:

1. Verify the "READY" light is ON.

2. Verify the printer is plugged into a power outlet.

3. Verify the USB cable is plugged both into the printer and into the ImageCast® device (directly into the LavaLink adapter).

5.8.4 Ballot will not Print

If the Ballot is not printing, please do the following:

1. Verify the printer is powered on.

2. Verify the paper tray has paper.

3. Call Tech Support.

If the printer door is open on the HP "LaserJet Pro M402dne while printing the ballot, the ballot will not print out. To resolve this,

1. Insert Poll Worker smart card and enter the appropriate PIN.

2. Close the printer door.
   Printing can resume when the control panel's Ready light is green. "Ready" will also be visible in the control panel display.

3. On the ICX screen, press **Reprint**.

4. Remove the Poll Worker `smart card`.
   The ballot is now reprinted.

5. Rewrite the Voter's smart card for a new voter.

NOTE: The Voter's smart card will have a error code 75 (*Cast Ballot Error Printer Door Open*) written in it. For more information on smart card error codes see sub-section *Error Codes* under section *Activating and reading Voter Cards* in the "*Democracy Suite® EMS Voter Activation User Guide*".

5.9 DRE Voter-verified paper audit trail printer - VVPAT

When DRE tabulators are utilized, a Voter-verified paper audit trail printer - VVPAT is used to print voter selections, as well as Poll and Status Reports.

The following sub-chapters are meant to aid the Poll Workers in handling situations such as paper jams, the printer not printing, potential losses of connectivity as well as situations where ballots will not print.

- Paper jam
- Not printing
- Loss of connectivity
- Ballot will not print
- VVPAT Printer Paper Roll Empty

NOTE: Please refer to the Voter-verified paper audit trail (VVPAT) Model: VRP3 User Guide for any additional information.

5.9.1 Paper jam

In cases of paper jams the following steps should be followed:

1. Open the printer.
2. Pull out the blue stop in the bottom left corner where the paper is jammed.
3. Pull out the paper.
4. Replace the printer mechanism.
5. Test the printer by pressing the blue button in the bottom right corner.
6. If the mechanism is operational close the printer.

NOTE: Please refer to the Voter-verified paper audit trail (VVPAT) Model: VRP3 User Guide for any additional information.

5.9.2 Not printing

Verify there is enough paper on the roll and test the mechanism by pressing the blue button in the bottom right corner - if the mechanism isn't feeding the paper, disconnect and reconnect the printer's power cable and repeat the test procedure.

If so, check the connection between the DRE tabulator and the VVPAT printer - the ImageCast X will prompt a dialog alerting the Poll worker that an issue occurred.

NOTE: Please note that upon clicking either "Continue printing" or "Reprint report", a dialog will be shown to the user with the following warning message: "The printer is not connected". Please check the printer power cable and the connection (USB) to the ICX Device.

5.9.3 Loss of connectivity

If there is a loss of connectivity the ImageCast X device will prompt a dialog advising the Poll Worker of the issue.

7. The Poll Worker needs to check the cables connected to the machine and confirm that everything is in order.

8. If the cables are connected and the issue persists, remove the USB cable and reattach it.

9. If the Warning dialog is still shown, the Poll Worker should replace the USB cable.

10. If the issue is still not resolved, the Poll Worker should contact the Dominion Voting Systems personnel for additional troubleshooting.

5.9.4 Ballot will not print

In case the ballot cannot be printed the ImageCast X device will prompt a dialog advising the Poll Worker of the issue.

The following may occur:

• Low paper - this will allow the ongoing voter session to finish, after which the Poll Worker can open the printer and replace the paper roll.

• Paper roll is empty - when this issue occurs the Poll Worker should proceed to replace the paper roll.

• Cover is open - the Poll Worker should make sure the VVPAT printer cover is securely in place and locked.

• Paper jam/cutter error - please refer to the section "Paper Jam".

NOTE: Please refer to the Voter-verified paper audit trail (VVPAT) Model: VRP3 User Guide for any additional information.

5.9.5 VVPAT Printer Paper Roll Empty

If the VVPAT printer runs out of paper during the voting process, the Voter will receive a Warning at which point the Poll Worker should be contacted.

Once the Poll Worker enter the Poll Worker Menu they will see a dialog shown in Figure 5-1.

At this point the Poll Worker can proceed to replace the Paper Roll and then the Voter will be able to restart their session.

NOTE: Please refer to Section 4.1 - "Paper loading" in the VOTER-VERIFIED PAPER AUDIT TRAIL (VVPAT) MODEL: VRP3 USER GUIDE for detailed information on how to change the paper roll on the VVPAT.

Warning

Printer error:

Detected statuses:
 • Paper roll is empty, please replace the paper roll.

OK
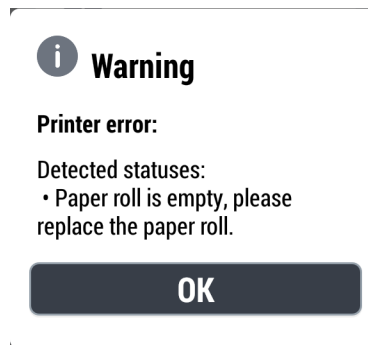
Figure 5-1: Paper Roll Empty Warning dialog

5.9.6 Printer Error - QR Code failed to read 6 times

During continuous use, it is possible for the VVPAT printer head and scanner to collect dirt. When this happens, ImageCast$^®$ X will display the VVPAT error message: "There was an error on printing selections on VVPAT printer. Please go to the officer for more info" (see Figure 5-2).

There was an error on printing selections on VVPAT printer. Please go to the officer for more info.
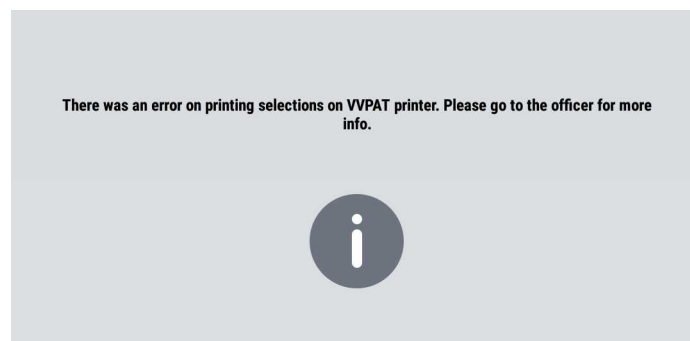
Figure 5-2: VVPAT Error

When the poll worker inserts their smart card, the ImageCast® X displays the VVPAT error message "Error while printing selections on VVPAT printer. QR Code scan fail for 6 times" (see Figure 5-3). The poll worker should clean the thermal head, roller and scanner on the VVPAT printer before continuing.
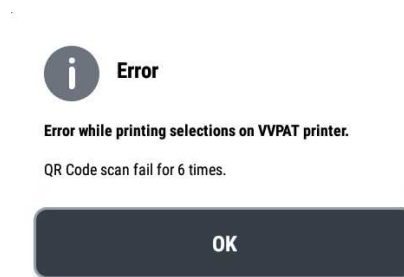
Figure 5-3: QR Code Error

To Clean the Thermal Head, Roller and Scanner:

1. With the Poll Worker smart card inserted, press OK.

2. Follow the instructions in section "5.2 - Cleaning the Thermal Head" in the Voter-verified paper audit trail(VVPAT)User Manual.

3. Remove the Poll Worker smart card.

The Voter will now have to restart the voting session by following the on-screen instructions.

5.10 Audio cannot be heard while in AVS mode

In case there are issues with hearing audio Files while in AVS mode please check if *Google Text to Speech* is installed.

Even if just using audio files, *Google TTS* must be installed in order for the ICX AVS to be able to prepare the audio.

5.11 Device not responding to touch

If the device is not responding to touch, please do the following:

1. Clean the tablet's screen using a soft cloth.

2. If still unresponsive, power the tablet off and then power it on according to the instructions in this guide.

5.12 Voter Fled and the Ballot is Still Active

Follow jurisdictional procedures.

5.13 System and custom navigation bars not available after application uninstallation

After the Custom navigation bar is toggled ON, as is explained in the Democracy Suite® ImageCast® X System Installation and Configuration document > Post-install Configuration > KIOSK Mode section, there   is a potential chance of the application being uninstalled without the Custom navigation bar being toggled OFF.

This would lead to neither navigation bar (system and custom) being available to the user.

Should this happen please bear in mind that the navigation bars can be accessed again by re-installing the ICX application and accessing the Android settings. At that time the user will be able to see the custom navigation bar which they can toggle OFF.

APPENDIX A: STATIC AUDIO FILE INFORMATION

Here you can find the static audio file information.

- File contents
- File format

A.1 File contents

Static Audio files are used in AVS voting sessions in place of languages that are not supported by Google Text-to-speech.

A set of static audio files in SPX OGG format used for an Accessible Voting Session (AVS).

In that case the ImageCast® X application will play static audio files that are generated to read the appropriate resources in the application during the voting session.

The name of the Static Audio File should be the key of one of the system resources, and what the file is meant to be saying should be a value of the resource localized to a certain language. Please refer to Figure A-1 below for examples.

language_name	English
btn_review	Review
btn_back	Previous
btn_next	Next
action_bar_item_language	Language
action_bar_item_textsize	Text Size
action_bar_item_audio	Audio
action_bar_item_view	View
action_bar_item_more	More

Table A-1: File Content

It is important to note that the static audio files *must be named exactly the same way they are named in the Localization (JSON)file*, that they are *case sensitive* and that there are *no spaces anywhere*. Failure to comply with these conditions will lead to having unusable audio files.

The folders containing the generated static audio files need to be created manually on the EMS server by the Administrator and stored at the following location on the EMS server - .

\NAS\Common\Resources\ImageCast_X\staticaudio\. All languages contained within this folder will not be supported by Google Text-to-speech.

Once inside the Audio folder, right-click and select to create New Folder.

Name the newly created folder so that the name matches the language code corresponding to the desired language in the EMS EED application exactly (case sensitive).

This folder should contain audio files for all static resources in that language. Repeat the process until all desired languages have been added.

Example of the folder structure for English Language Static audio files:

- Folder: **en**
  - Root File containing Static Audio Files (e.g. 0.spx, 1.spx,... a_hundred.spx,... accept_your_entry.spx...)
  - Folder **instructions**
    - Folder **ati**
    - Folder **joystick**
    - Folder **joystick_inv**
    - Folder **paddles**
    - Folder **sip_puff**

Instructions for different accessible devices (ATI, Joystick, Paddles, Sip n Puff) are customized specifically for said device as can be seen in Figure A-2 below.

Tem-plate	ATI	Joystick	Joystick Inverted	Paddles	S&P
#Selec-tAction#	press_red_x-_but ton_with_ati	navi-gate_up_do wn_with_joy-stic k	navi-gate_left_ri ght_with_joy-stic k	press_lef t_red_ paddle	sip_the_-sip_and _puff
#Navi-gateF-WAct ion#	press_down_or_ right_button_wi th_ati	navi-gate_right_ with_joystick	navi-gate_down_ with_joystick	press_rig ht_blue _paddle	puff_the _sip_an d_puff

Table A-2: Instructions

Template	ATI	Joystick	Joystick Inverted	Paddles	S&P
#NavigateB-WAction#	press_up_or_left_button_with_ati	navigate_left_with_joystick	navigate_up_with_joystick		
#SelectDesc#	select_action				
#NavigateF-WDesc#	navigate_fw_desc				
#NavigateB-WDesc#	navigate_bw_desc				

Table A-2: (Continued)Instructions

A.2 File format

Codec	Speex
Channels	1, mono
File extension	spx

Table A-3: File Format

APPENDIX B: IMAGECAST® X VOTE SIMULATOR

The Vote Simulator is a Logic and Accuracy test created with the purpose of verifying that the pre-defined patterns are read and tabulated correctly.

In order to run the Vote Simulator a valid test pattern file is required.

The Vote Simulator is to be run before the ImageCast® X machine is put in production on the day of the election.

The simulation is performed by loading an XML file and ImageCast® X election files provided by Dominion Voting. Should there be a requirement for personalized data, the XML file can be edited manually.

The following steps need to be taken in order for the Vote Simulator to perform a valid test:

1. Turn on the ImageCast® X.
2. Insert the USB drive provided by Dominion Voting.
3. To copy the necessary files from the USB drive, Log in as a Technician by inserting the Technician card.
   The ***Administrator Login*** screen displays (see Figure B-1) allowing the technician to enter their PIN (see Figure B-2).
4. Enter the PIN number.
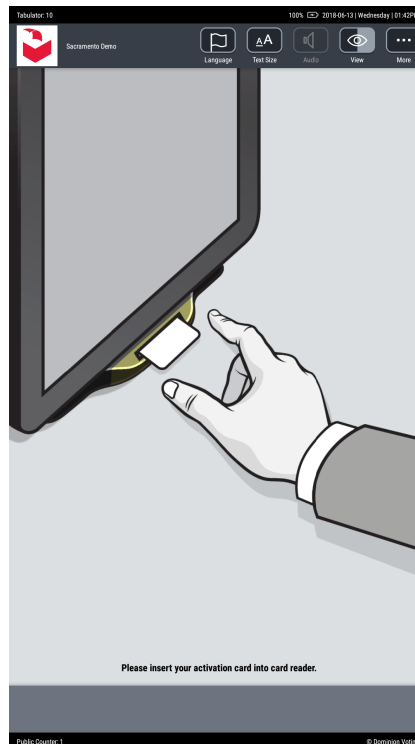
Figure B-1: Introductory screen
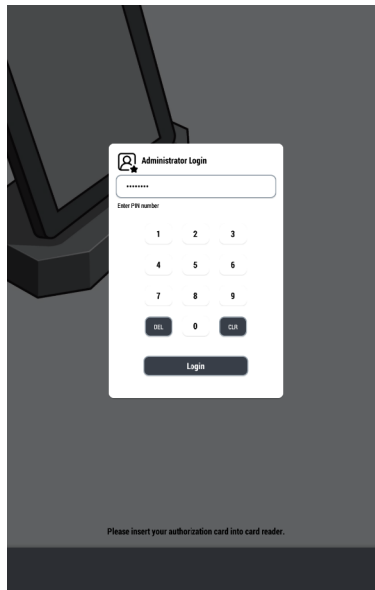
Figure B-2: Introductory screen and Log in screen.

5. In ***The election configuration files on USB drive*** dialog (see Figure B-3) the Technician chooses the needed file and copies the data to the ImageCast® X device.

   a. Press **Select**.
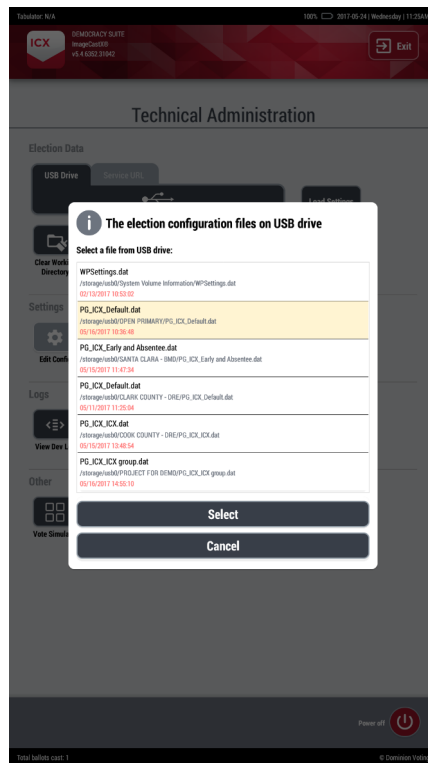
Figure B-3: USB Drive containing Election Files and the Copy/Cancel Election Files Dialog

b. On the *Confirm* dialog (see Figure B-4), press **Copy.**
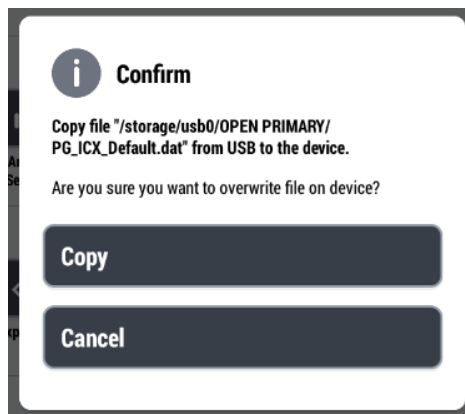
Figure B-4: Confirm dialog

6. In the ***Mapping Result Locations*** dialog (see Figure B-5), set the location where the test information will be saved to and press **Apply**.

Figure B-5: Mapping Result Location screen and Apply Changes Dialog

7. To confirm the choice, in the ***Apply changes*** dialog (see Figure B-6), press **Apply**.
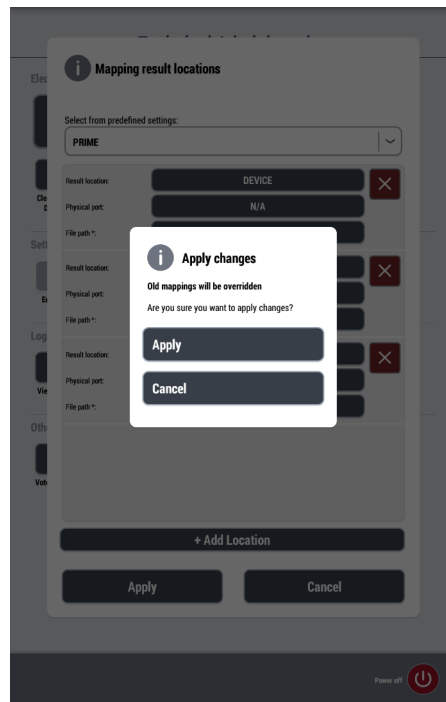
Figure B-6: Apply changes dialog

Having completed this portion, decrypt the election files.

To decrypt the election files:

1. Enter the Poll Worker card and enter the PIN.

   The election file decryption begins and, when completed, the Poll Administration panel is accessible to the Poll worker.

Figure B-7: Election File decryption screen and Poll Administrator screen

2. Select the appropriate Tabulator (see Figure B-8).
   Only one Tabulator should be chosen.
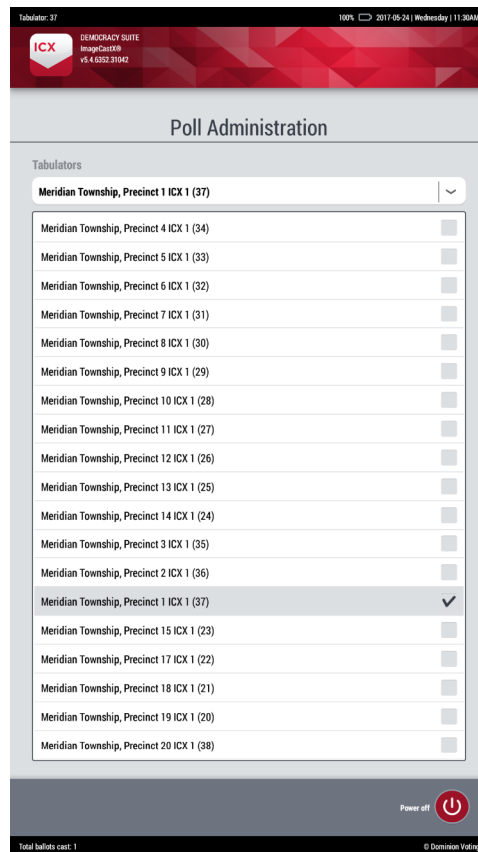
Figure B-8: Tabulators

3. Once the Tabulator validation is completed, press **Open Poll** (see Figure B-9).
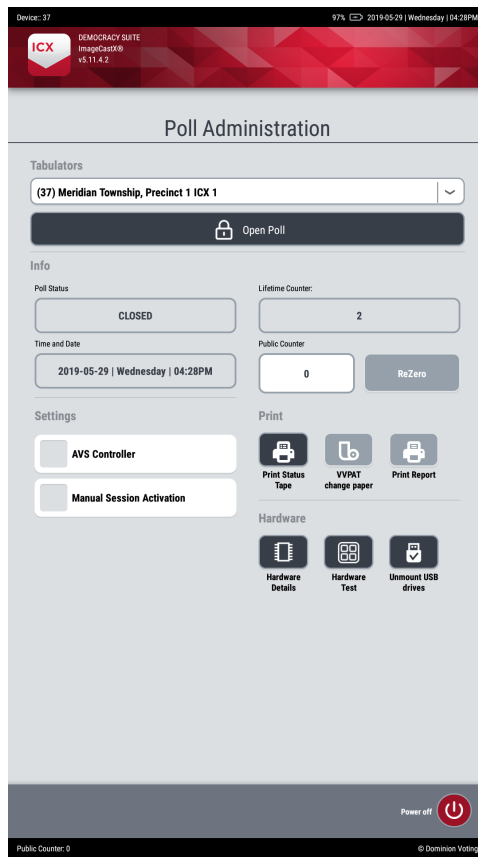
Figure B-9: Open Poll

a. To confirm the selection, on the *Info* dialog (see Figure B-10), press **Yes**.
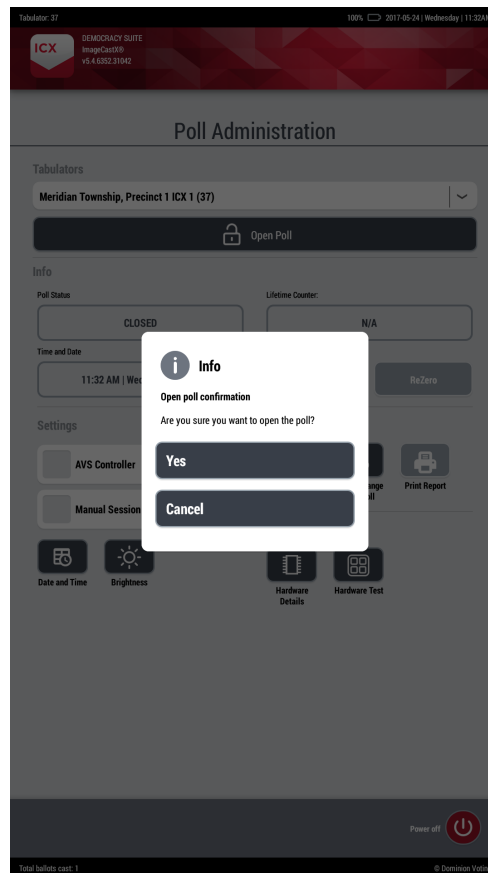
Figure B-10: Info dialog

Once the Poll is Open, the Poll worker will be prompted to *Print the Zero* report in order to confirm that the ImageCast® X device is prepared for the Vote Simulation, and that no redundant files remain on the device.

To print the zero report:

1. On the Poll Administration screen, press **Print zero report**.
   The *Print zero report* dialog appears (see Figure B-11).
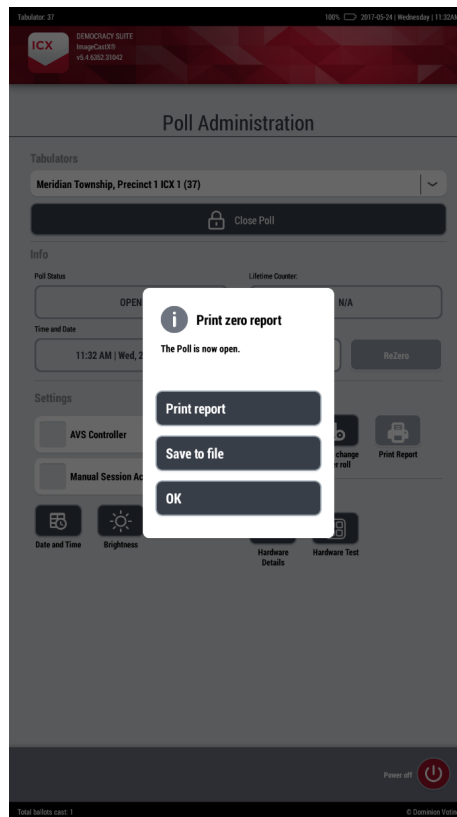
Figure B-11: Zero Report

2. Remove the Poll worker card and insert the Technician card and PIN.
   After the Technician Administration screen is presented (see Figure B-12), a
   Warning dialog displays advising the user that the Administrative menu is
   unavailable while the Poll is open.
   NOTE*:* In order to proceed the Poll MUST remain OPEN.
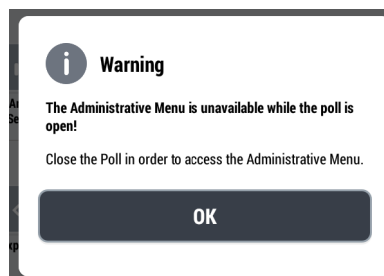
Figure B-12: Warning Dialog

All options except Hardware Details, Brightness, the Hardware Test and the Vote
Simulator are grayed out and cannot be selected.

3. Press **Vote Simulator.**
   The *Voting Test* screen displays (see Figure B-13).

Figure B-13: Voting Test screen

On the *Voting Test* screen, the user has the following options to choose from:

- Print votes on the VVPAT - ON/OFF - default OFF
- Animations enabled - ON/OFF - default OFF
- View ballots being marked - ON/OFF - default OFF

NOTE: The available options are enabled depending on the Automated Test Deck file provided for the testing.

If the **View ballots being marked** box is checked, the ballots will be marked on-screen, if the Test Deck file supports it.

If the **View ballots being marked** box is unchecked (see Figure B-14), a Progress bar displays (see Figure B-16).

Figure B-14: View ballots being marked- unchecked

Figure B-15: View ballots being marked - checked
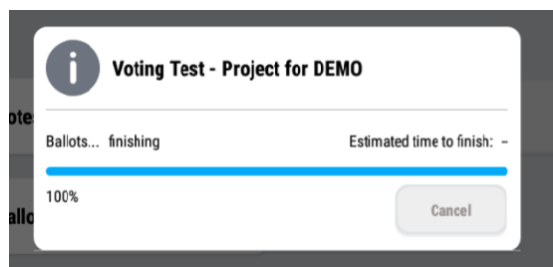
Figure B-16: Vote Simulator Progress bar

NOTE: Be advised that the settings available on the Vote Simulator start screen are independent from the MCF, so any settings for the Vote Simulator can be manipulated from the Vote Simulator start screen exclusively.

To start the Vote Simulator Test:

1. Press the **Load Test Pattern** (see Figure B-17)**.**
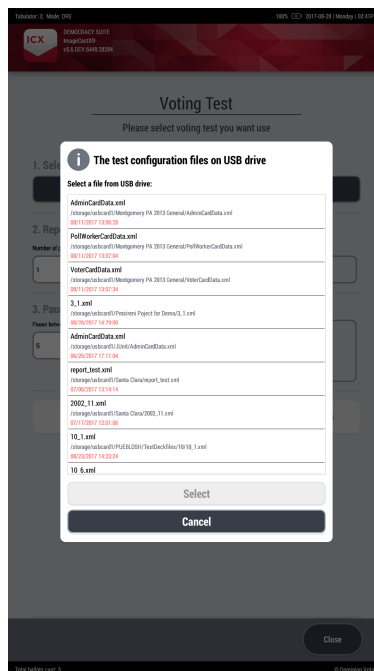
Figure B-17: Load Test Pattern

2. In ***The test configuration files in USB drive*** dialog (see Figure B-18), navigate to the XML file needed.

   The XML files are copied over to the ImageCast® X.
   The XML files are then validated, and the Technician can proceed to set the Test parameters as needed.
   The test automatically starts.

NOTE: "Number of repetitions" refers to the whole pattern.
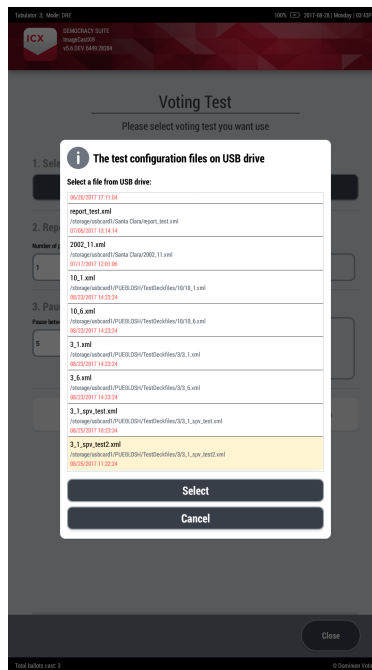
Figure B-18: The test configuration files in USB drive

3. Once the test is complete, press **OK** to close the info dialog (see Figure B-19). The Voting Test screen displays (see Figure B-20).
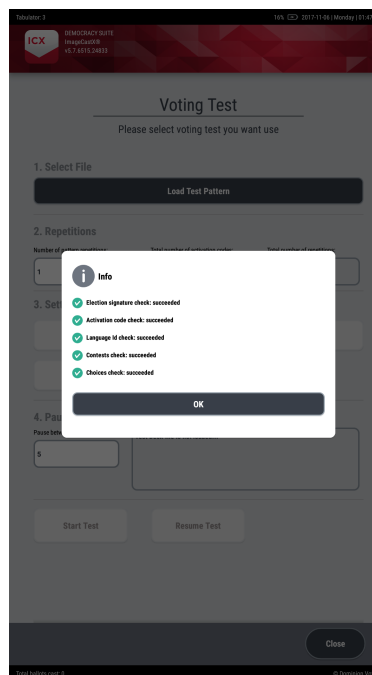
Figure B-19: Info dialog
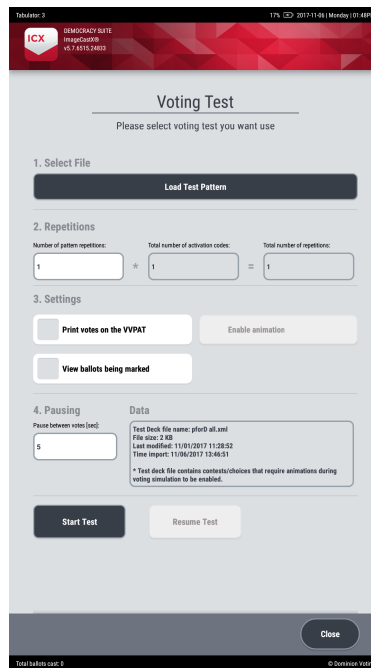
Figure B-20: Vote Sim

4. Remove the Technician card and insert the Voter card.
   The Vote Simulation Test can commence.

NOTE: The Voter card has to remain inserted through the duration of the entire test. If you decide to end the test, prior to completion, simply remove the Voter card.

NOTE: The Vote Simulator Superman is available for both the DRE and BMD modes of operation. The term Superman refers to the highest possible speed of testing or printing.

Should an issue occur while printing the BMD Paper Ballot, the User will receive the following error: "Check the printer. If the ballot has been printed, please discard it, otherwise, press Cancel on the printer control panel." See Figure B-21. If the ballot does not exit the printer once this error message is shown, the user is advised to check for potential paper jams, and to resolve the issue accordingly.

Voting Test

BMD Printer error:

Load paper.
Check the printer. If the ballot has been printed, please
discard it, otherwise, press the cancel button on the
printer control panel.

Continue test

Cancel test
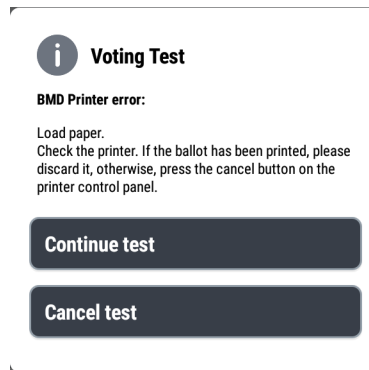
Figure B-21: Vote Sim BMD Printer Error

APPENDIX C: VOTER-FLED SCENARIO

During regular ImageCast® X operation, removing the Voter card may lead to one of three possible scenarios. Please note, that in order to use ImageCast® X devices, an activation card (*Voter, Poll Worker, Technician card*) is needed for the device to operate since the cards function as a key to activate specifically intended menus. If a situation occurs in which a Voter card is removed prematurely, please follow the instructions mentioned below.

C.1 Removing Voter card (Voter fled) while voting or printing

Description:

If a Voter card is removed while voting, prior to casting the ballot, or while printing, the following message displays on the device's screen:

"Voter *card removed. BALLOT WAS NOT CAST. Please re-insert Voter card or call for immediate help".*

NOTE: This situation may lead to a ballot being canceled because the voter left the voting session unfinished and before casting their vote. Additionally for DRE mode only, if the ballot is canceled, a QR code for that voting session will be printed on the VVPAT printer.

Solution:

This situation can be resolved if **the voter inserts their Voter card back into the smart** card reader, after which they will be returned to the page they were on when the voter card was removed. This preserves all the choices made from the beginning of the voting session and allows the voter to resume voting.

If the voter flees from the voting, **the poll worker must then insert the Poll Worker card** and enter the PIN to unlock the unit or cast a ballot (depending on the configuration) after which the first voting screen appears. The voter's session will be cleared, and the same voter can vote once again with the same Voter card, casting only one proper vote. If the voter abandons the voting, the voter card should be re-programmed for the next voter.

In addition, if the Poll Worker inserts a Poll Worker card with an incorrect election signature, the error message: "Election *verification code not valid*" displays. Only a Poll Worker card with the correct election signature can be used to resolve any situation that requests the Poll Worker's assistance.

NOTE: If the ImageCast® X device has been locked due to a voter fled situation, the voting cannot continue until the Poll Worker resolves the issue or until the original voter re-inserts their card and completes the voting session.

C.2 Removing Voter card after maximum number of rejected ballots

During an active voting session, the Voter has the opportunity to reject the ballot and start again.

Description:

If the voter rejects the ballot the maximum number of times allowed, which can be configured in the MCF file, and then removes the Voter card from the smart card reader, an *Information* dialog displays (see Figure C-1) the number of remaining rejection ballot as 0.
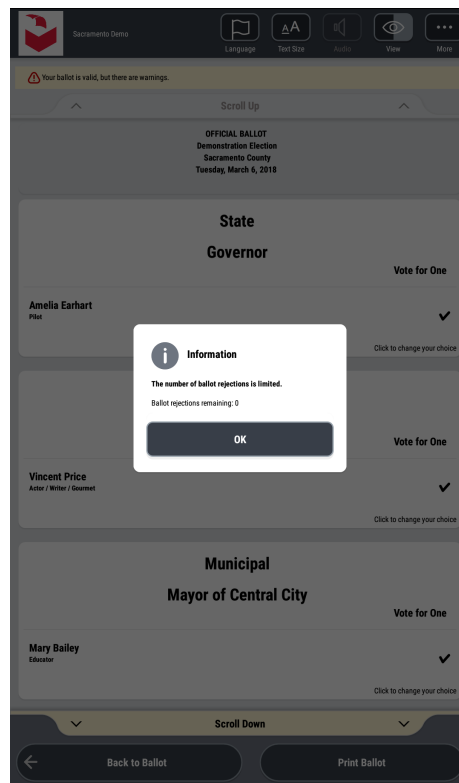
Figure C-1: Ballots rejection remaining zero.

If the voter tries to resume the voting session by re-inserting voter card in the smart card reader, an *Info* dialog displays (see Figure C-2) with the message: "Please call poll worker for assistance.
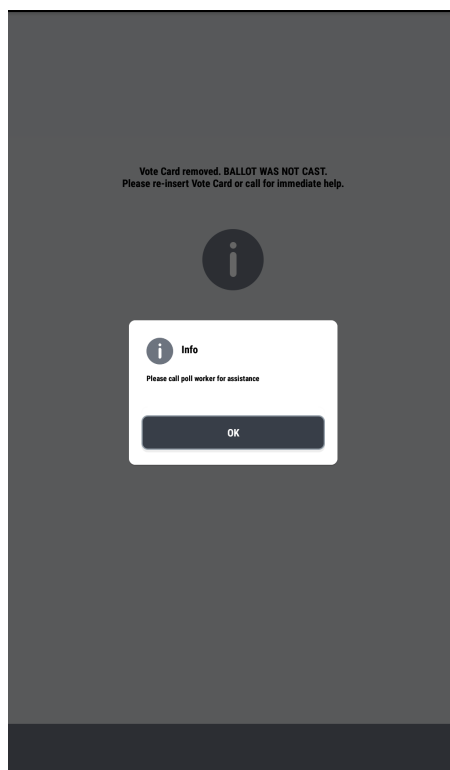
Figure C-2: Info

Once the Poll Worker inserts the Poll Worker card and enters the appropriate PIN, the application shows a ***Warning*** dialog (see Figure C-3) with two available options:
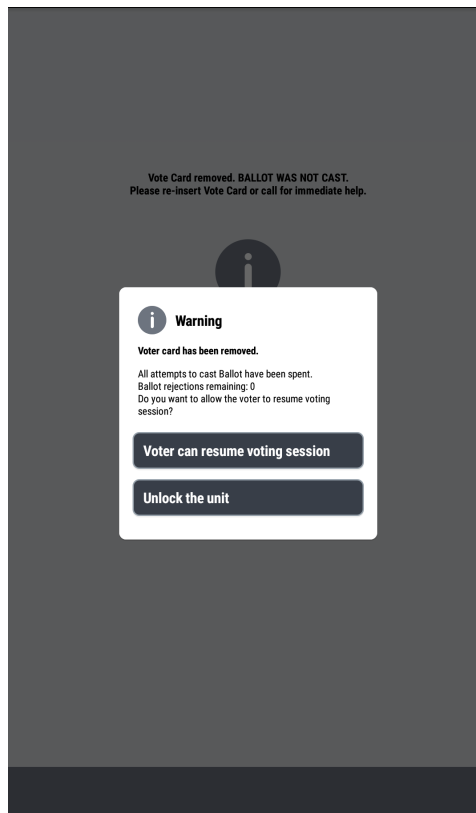
Figure C-3: Warning

Solution:

NOTE: Depending on the MCF configuration (***Allow cast of voter fled ballot***) the second option, instead of **Unlock the unit**, might display **Cast voter fled ballot**.

If the Poll Worker selects the option **Voter can resume voting session**, the voter can then insert the voter card and continue the voting session.

The remaining ballot rejection is still zero.

If the Poll Worker selects the:

- **Unlock the unit** option, the login voter screen displays and the previous voting session is cleared
- C**ast voter fled ballot** option, the ballot is cast and the log in voter screen displays.

C.3 Removing Voter card and pressing the "Accept" button simultaneously

This scenario has two possible outcomes. The outcomes are explained in the following sections.

C.3.1 Removing Voter card with error message "Voter card removed. BALLOT WAS NOT CAST. Please re-insert Voter card or call for immediate help"

Description:

If a voter card is removed after the voter presses the Accept button but ImageCast® X has not registered the "Accept", the following message displays: "Voter card removed. BALLOT WAS NOT CAST. Please re- insert Voter card or call for immediate help".

As a result, the "Error casting ballot, vote was not counted" QR will be printed on the VVPAT printer for DRE mode only.

When this situation occurs, the vote is not counted but the application will change the information on the voter card. The voter card will now contain information that the session status is registered as "CAST" (the ballot casting process is interrupted by the Voter card removal from the device), and the end of the voting time.

NOTE: If the voter abandons the voting, the application will need to be unlocked by a Poll Worker. That voter card will be invalidated and will no longer be used for voting, until it is rewritten with a new ID for the next voter.

Solution:

If a voter tries to recover the ballot, the application will identify the card as invalid card and will log an error code on it (code: 84). The voter will be shown another screen with the message: "Data on smart card is not valid. Please remove your activation card and notify a poll worker for assistance". At this point the Poll Worker's assistance is required.

This situation can be ***resolved if the Poll Worker inserts the Poll Worker card and enters the PIN***, after which a dialog displays, describing the situation that has occurred: *"Voter card has been removed during cast. Vote was not*

counted!" Once the Poll Worker selects **Unlock the unit / Cast voter fled ballot** (depending on the MCF configuration), the login voter screen will display, the unit unlocks and voting can resume.

In addition, if the Poll Worker inserts a Poll Worker card with an incorrect election signature, the error message: "Election verification code not valid" displays. Only a Poll worker card with the correct election signature can be used to resolve any situation that requests the Poll worker's assistance.

NOTE: Be advised that the ImageCast® X device can be configured to notify the Poll Worker of a Voter-Fled situation by playing an audio alert (default duration is 15 seconds) and by flashing RED (if the LED notification light is attached to the ImageCast® X device). The lockout duration is also configurable through the ImageCast® X MCF, with the default time being 5 minutes.

C.3.2 Removing Voter card with error message "There was an error on your ballot casting. Please remove your activation card and go to the officer for more info"

Description:

If a voter card is removed as the voter presses the **Accept** button, the following message displays: "***There was an error on your ballot casting. Please remove your activation card and go to the officer for more info***".

When this situation occurs, the vote is not counted but the voter card is not deactivated yet. As a result the "***Error casting ballot, vote was not counted***" QR will be printed on the VVPAT printer for DRE mode only.

Solution:

The voter can click **Continue** and the *Log In* voter screen appears. The voting session can start again.

If the voter leaves the voting place prior to completing the voting session, the Voter card will need to be re-written.

In addition, if the Poll Worker inserts a Poll Worker card with an incorrect election signature, the error message: *"Election verification code not valid"* displays. Only a Poll worker card with the correct election signature can be used to resolve any situation that requests the Poll worker's assistance.

NOTE: Be advised that the ImageCast® X device can be configured to notify the Poll Worker of a Voter- Fled situation by playing an audio alert (default duration is 15 seconds) and by flashing RED (if the LED notification light is attached to the ICX Device). The lockout duration is also configurable through the ImageCast® X MCF with the default time being 5 minutes.

REVISION HISTORY

Rev.	Date	Author	Summary
9	06-05-2019	sava.antonijevic	Added a note in chapter 3.2.1.3 "Logs" regarding the "Export Dev Log" option.
8	05-29-2019	sava.antonijevic	Added more instructions to chapter 4.3.1 "Shut Down".
7	05-21-2019	sava.antonijevic	Removed references to "Date and Time" and "VVPAT Change Paper Roll" options in the chapter "User Interfaces".
6	05-09-2019	sava.antonijevic	Removed obsolete options in chapters 3.2.3.3 and 3.2.3.4 of the Poll Worker Menu.
5	04-25-2019	sava.antonijevic	Resolved various discrepancies.
4	04-18-2019	sava.antonijevic	Revised document content to address discrepancies.
3	04-02-2019	sava.antonijevic	Added new instructions and images in section "AVS (Accessible Voting Session) Voting Interface".
2	04-01-2019	sava.antonijevic	Added new image in section "Voting".
1	03-06-2019	sava.antonijevic	Branched for 5.11.

LIST OF FIGURES

LIST OF TABLES

End of Document