**980 VTS**

**User Interface Specification**

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# Introduction

## Purpose and Scope

The purpose of this document is to define the look, feel and behavior of the user interface for the 980 VTS application.

## References

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| --- |
| Controlled Documents |
|  |
|  |

## Definitions of Terms

|  |  |
| --- | --- |
| RSA | Remote Service Agent, this is a service running on the local machine which acts as a bridge and postal service for all communication to and from the remote server |
|  |  |

## Representativeness of Images

The images used throughout this document are low fidelity wireframes intended to represent general layout and are included to serve as a visual reference only. The images are not intended to serve as requirements; just a general indication of the design direction. The text strings displayed on these images are also not final text but serve as an indication of general functionality.

# Overview

The VTS application is just one piece of the remote service system. The VTS is divided into User Interface and Business logic layers. The primary communication paradigm between the UI and Business layer is a request / callback pattern. This is due to keep the UI responsive to the user while the Business layer interfaces with either the Remote Service Agent or the Device.



# General Behavior

## Workflow

The following diagram shows an overview of the primary states of the application and the actions available in each of these primary states.

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## Access Control

The VTS software sits between the ventilator (device) and the remote server. The user must be authenticated with the server in order to access any server related functions. The ventilator determines if rights are to be granted to the user access to potentially restricted interface functions. The server can grant override rights to a user who is trying to access a ventilator with locked down functionality.

The first time a restrict ventilator function or server related function is accessed by the user, a pop-up dialog will be displayed and the user will be asked to login to the system.



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | User Name | Text field |
| 2 | Password | Obfuscated text field |
| 3 | Log On Button | Button is active until pressed. When pressed it causes an authentication request to be sent to the agent and activates the Cancel button |
| 4 | Cancel Button | When pressed, it causes a cancel authentication command to be sent to the agent and reactivates the log on button. |
| 5 | Message text | Text field where information to be conveyed to the user is displayed (example: failed login) |

## User Interface Frame Layout

The user interface will utilize a common design layout. Each section has a consistent purpose (independent of operational mode) but the actions or elements display in a section is dependent on the current mode of the UI.



## Command Bar

The command bar contains short cuts to actions which affect the operational mode of the user interface. Examples of this include log out, device type selection and options to select the current operational mode.

## Device Information

The frame contains information describing the device to which the application is current connected. This information includes a picture of the device, its model number, serial number and current hardware / firmware / software versions.

## Main Display

The main display area will be used to display the information associated with the different operational modes.

## Program Status

The program status bar has three sections. One section will display the device connected status. Another section will display any current operations between the application and the device (i.e., retrieving device logs). The final section will display any current operations between the application and the server’s agent (e.g., retrieving new software update).

# Storyboards

The following sections provide a low fidelity layout of the screens and the functionality associated with each screen.

## Splash Screen

The splash screen is displayed for a minimum time while waiting for the system to complete its setup and connection to the remote service agent. After the minimum time period, and after connection to the remote service agent is complete, the application will automatically transition to the next screen.

## Home Screen, Disconnected State

This is the main application screen in the disconnected state. While in this state the user can select a device to connect to and will received instructions on how to connect to the device.



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| --- | --- | --- |
|  | Item | Notes |
| 1 | Device Model Selection | Drop down list containing the list of support devices. Selecting a device will cause the device status frame and the connection instructions to be changed to reflect the information for the selected device. |
| 2 | Log Out Button | The log out button (and the application termination button) will cause a confirmation pop-up to be displayed. Upon positive confirmation, the application will terminate. |
| 3 | Work List Button | Only available when there is not a device connection. This will cause the Device Work List dialog to be displayed. See section 4.3.5 |
| 4 | Connect Button | Sends a command to the agent to connect to the device.   * The device communication status line will be updated to indicate that it is trying to connect to the device. * The Connect button will become the Disconnect button. * Selecting the Disconnect button will cancel the connection request. |
| 5 | Device Status Information | Display a picture of the device but the device status and software update panels are greyed out. |
| 6 | Connection Instructions | TBD |
| 7 | Connection Status text field | This will show “Disconnected” |

## Home Screen, Connected State

Upon entering the connected state, the system will automatically process a transition to the “View Log” state. See section 4.3.1.



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Log Out Button | The log out button (and the application termination button) will cause a confirmation pop-up to be displayed. Upon positive confirmation, the application will terminate. |
| 2 | Software Update Button | These two buttons act in a similar fashion to radio buttons. Only one may be selected at a time. A button is only active if the information which supports it is cached on the local agent. See sections 4.3.1 and 4.3.2 |
| 3 | View Log Button |
| 4 | Disconnect Button | Sends a command to the agent to disconnect from the device. Causes the application to transition to the disconnected state. |
| 5 | Device Image | Displays an image of the connected device |
| 6 | Device Information | This panel contains information specific to the connected device (model number, serial number, software version) |
| 7 | Reset Device Run Hours Button | Displays the “Reset Device Run Hours” dialog. See section 4.3.3 |
| 8 | Update Access Key | Displays the “Set Device Access Key” dialog. See section 4.3.4 |
| 9 | Clear Device Logs | Displays a MessageBox asking the user to confirm the intent to clear the logs on the ventilator. Upon confirmation a command is sent to clear the ventilator logs. |
| 10 | Status Bar | The status bar will show the connected state of the device and the state of requests to the device and server for information. |

### View Log



Each unique log will have its own command row.

|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Log Name | This label identifies the log with which the following button-initiated actions are associated |
| 2 | View Log Button | This initiates a request to display the log in a web browser. This button is only active if the log is currently available. |
| 3 | Save to File Button | Selecting this button causes a Save to File dialog to appear through which the user can select a file name and location in which to save the log. This information will be sent to the agent as part of a request to the save the log as a file. This button is only |
| 4 | Upload Log Button | When selected, the button will be hidden and a text field will be displayed indicating that the log has been marked to be uploaded to the server. |

### Software Update

This screen will also the user to select a software package for the device that resides on the server, has previously been downloaded to the remote service agent or to select a local file for upload.

Once a flash process begins, interrupting it would leave the device in an indeterminate state, therefore while flashing a device no other user actions will be permitted. Upon completion, the connection to the device is lost and the system transitions back to the disconnected state (see section 4.2).



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Current Software Version | This text field displays the revision of the software currently on the device |
| 2 | Software Version Selection | This drop down list contains the software versions available for the device (and cached on the local agent). Selecting a software package will activate the flash button. |
| 3 | Update Device Button | Selecting this button will cause a dialog to be displayed for controlling the software update process. See section 5.4.2.1 |
| 4 | Document Selection | This drop down list contains the documents available for viewing related to this device |
| 5 | View Document Button | A browser window will be launched containing the requested document. |

#### Software Update Progress Screen

The purpose of this screen is to:

* Provide the user instructions on how to update the device’s software
* The ability to begin the update process
* Monitor the update process
* Provide instructions on what to do once the update process completes.



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Selected software package description | This text field displays the revision of the software package to be uploaded to the device |
| 2 | Warning text | This text provides the user with instructions and warnings relevant to the software update process |
| 3 | Start button | Pressing this button will begin the software update process. When pressed, this button and the cancel button will be disabled. |
| 4 | Cancel Button | Pressing this button will close this dialog and navigate back to the software update screen. |
| One progress group will be displayed for each individually updatable component within the device | | |
| 5 | Device component name | Describes the name of the device component being updated |
| 6 | Current action description | Describes the action being executed and whose progress is being monitored |
| 7 | Progress bar | Shows the progress of the current step of the update process |

Upon completion, a message box will be displayed providing the user instructions on what the next steps should be. Upon acknowledging this message, the system will transition back to the device disconnected state. See section 4.2

### Reset Device Timers

This dialog provides an interface to the ventilator through which certain timers on the device can be reset.



One row (items 1 & 2) will be displayed for each timer the device will allow to be reset.

|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Name of the timer to be reset | This label identifies the timer which will be reset to the value entered into the associated text box. |
| 2 | Integer text field | If a value is entered into this test box, that integer value will be uploaded to the ventilator upon selection of the Update button. |
| 3 | Update button | Pressing this button will cause the newly entered timer values to be uploaded to the ventilator and the dialog window to be closed. |
| 4 | Cancel Button | Pressing this button will close this dialog window. |

### Set Device Access Key



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | New key field | Text box for the new access key |
| 2 | Update button | Pressing this button will cause the newly entered access key to be uploaded to the ventilator and the dialog window to be closed. |
| 3 | Cancel Button | Pressing this button will close this dialog window. |

### Device Work List

The purpose of this dialog is to allow the user to preload the remote service agent with packages from the remote server. This supports the use case where Internet access is not available where the ventilators to be serviced are.



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Add Device button | Selecting this button causes the Add Device dialog to be displayed. |
| 2 | View document button | Selecting this button causes the View document dialog to be displayed |
| 3 | Close button | Selecting this button will close this dialog |
| 4 | Device types group box | This container can contain multiple model package status boxes. |
| 5 | Model package status box | A model package status box provides indication of the retrieval process of retrieving a software package and documents for a particular model of ventilators |
| 6 | Individual device group box | This container will contain a device specific status row for each device added through the Add Device dialog |
| 7 | Device specific status | Lists the devices by serial number and the status of the retrieval of upgrade packages for it |

#### Add Device Dialog



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Model selection box | Contains a list of all models currently supported by this application. The model of the device to be added should be found here |
| 2 | Device serial number text box | Used to enter the device’s serial number |
| 3 | Add button | Pressing this button will cause the newly entered identified device to be added to the work list and requests sent to the server to retrieve software update packages for it. Then the form will be reset to allow another device to be added |
| 4 | Close Button | Pressing this button will close this dialog window. |

#### Choose Document Dialog

This dialog is used to identify a document to be viewed. Each model of ventilator will have its own set of documents. It is possible that there will be multiple software version packages available for a particular model of ventilator. Inside a software package will be the documents that have been released along with the software.



|  |  |  |
| --- | --- | --- |
|  | Item | Notes |
| 1 | Model selection box | Contains a list of all models currently supported by this application. |
| 2 | Packages Available selection | Contains a list of currently loaded packages for the selected model |
| 3 | Document selection | Contains a list of available documents within the selected package for the designated model of ventilator |
| 4 | View button | Selecting this button causes a browser window to be opened containing the selected document |
| 4 | Close Button | Pressing this button will close this dialog window. |