INNOVATIVE electronic designs IED®

IED Director

Total System Management Software

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Introduction

IED Director is a comprehensive security and evacuation management system, focusing on usability and productivity. The software provides an easily accessible view of your overall system status and makes system operation easy through an intuitive and fully customizable Graphical User Interface (GUI).

It provides a real time display of announcement activity and system status. Integrated display of system faults allows you to quickly isolate problems within the system. The graphical nature of the interface provides a wide range of user interactivity. The user can view the system at a less detailed full system overview or drill down to display and interact with individual zones.

All elements within the GUI (and as shown in screenshots throughout this document) are fully customizable including, but not limited to, button shapes and locations, zone and background colors, user access, noted feature element location, and much more.

IED Director is the ideal addition to your GLOBALCOM® system for system management in all manner of facilities such as large airports, public transportation systems, industrial campuses or retail centers.

Functionality

Dynamic Audio Matrix Configuration

Switch any available audio sources and audio destinations with ease. IED Director's dynamic audio routing user interface elements open completely new and customized ways of using the audio system. Every change made has an immediate audible effect, no configuration update or rebooting of the device(s) is required.

Create Intuitive User Interfaces

IED Director allows controls for operating announcements to be placed and arranged on a fully customizable graphic workspace. Interactive maps of buildings or facilities can be created allowing management of the evacuation systems. Save time and money by using IED Director's flexible, interactive workspace editor to easily adapt the software to changing facility needs.

See What's Going On In the PA System

IED Director visualizes the usage of the announcement zones in real-time. The status of the system's devices can be monitored, event messages can be viewed and more.

Manage Users and Control Access

Create secure areas that can only be accessed by authorized staff members.

Regulate Zone Volume

IED Director allows for creation of volume presets based on occasion or other factors for individual audio zones. Volume levels for BGM and paging announcements can be adjusted in real-time.

Extend the Workspace

IED Director is the ideal solution for multi-monitor desktop environments such as control center workstations.

Features

- Intuitive User Interface for Single and Multi-Monitor Operator Stations
- Intuitive Configuration Tools Allow for the Creation of Complex User Interfaces to Meet Customized Requirements
- User Interfaces Can Be Changed Easily and Immediately to Meet Changing System Needs
- Flexible User Access Control
- Integrated System Event Scheduler
- Monitor System Status
- Select Background Music Sources and Adjust Levels
- Launch Announcements (Live and Pre-recorded and/or assembled) and Text-To-Speech Messages Through the Graphical Interface

Logging Features

Announcements – Announcements are represented on screen with a complete definition of its characteristics: point of origin, zone group addressed, duration and more.

Faults – All built-in supervision of IED hardware, along with variances in the automated test results (outside tolerances) are permanently logged as Faults for user review.

System Requirements

Hardware Requirements

Processor: 1.2GHz (optimum: dual core)

RAM: Minimum 256MB for the application (optimum: 2GB system RAM)

Hard drive space: 100MB (optimum: 500GB drive)

Graphics: Hardware support for Direct X9

Network: 100MB Ethernet

Mouse: 3 buttons with scroll wheel

Software Requirements

Operating system: Windows® XP® 32bit Service Pack2, Windows® Vista®

64bit, Windows® 7 64bit

Libraries: .Net Framework 4.0

Graphics driver: Direct X9

IED Director Feature Examples

Introduction

A blank page is how every project begins. The user has complete control over placement of elements, color of items, number of pages, and much more.

Figure 1 – Director View when Starting a New Project

When in edit mode, a list of tools is available. All desired elements are dragged over to the page and dropped at their location. Any element can be duplicated to simplify configuring.

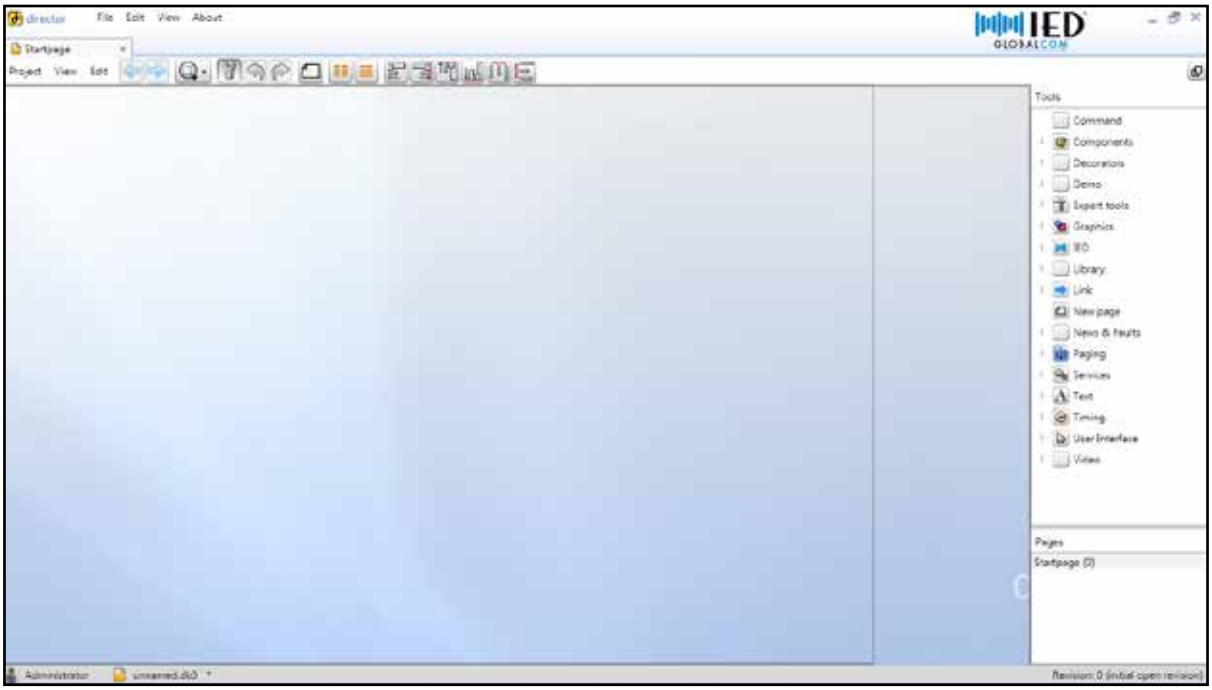

Figure 2 – Director View when in Edit Mode

Live Announcements

In conjunction with an IED microphone station, the user has the ability to initiate Live Announcements to selected zone(s).

Figure 3 – Live Announcement Example

Pre-recorded Announcements

The user has the ability to initiate pre-recorded announcements to selected zone(s).

A list of available pre-recorded messages is shown. Message types can be categorized by checking the **Filter by category** box. The **Name** of the message and the **Duration** of the message can also be seen as illustrated in **Figure 2** below.

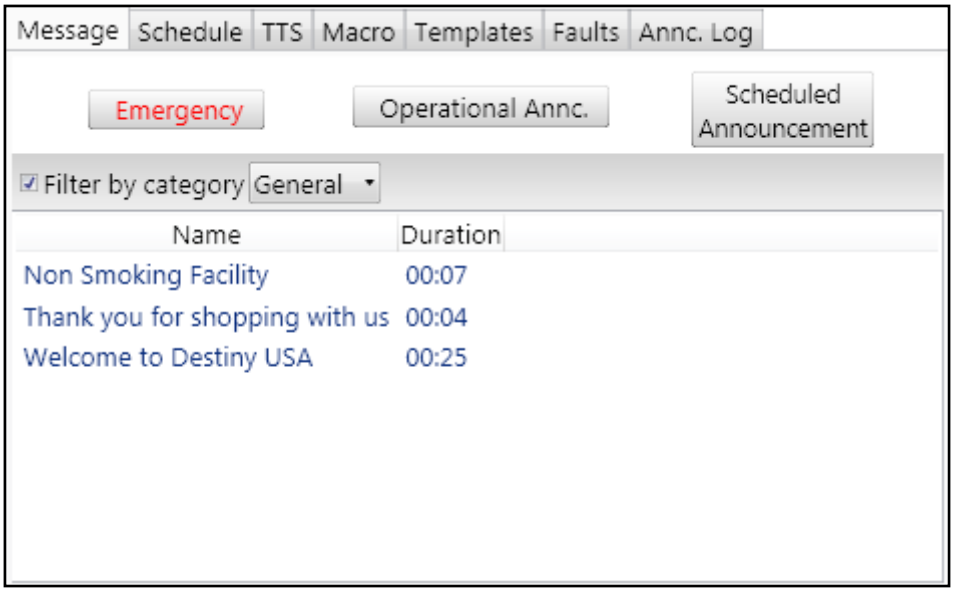

Figure 4 – Pre-recorded Announcements

Text-to-Speech Announcements

The user has the ability to create Text-to-Speech (TTS) announcements and to play to selected zone(s).

Multiple announcements can be played in sequence, which also allows for the capability to play messages in multiple languages (i.e., first in English followed by Spanish).

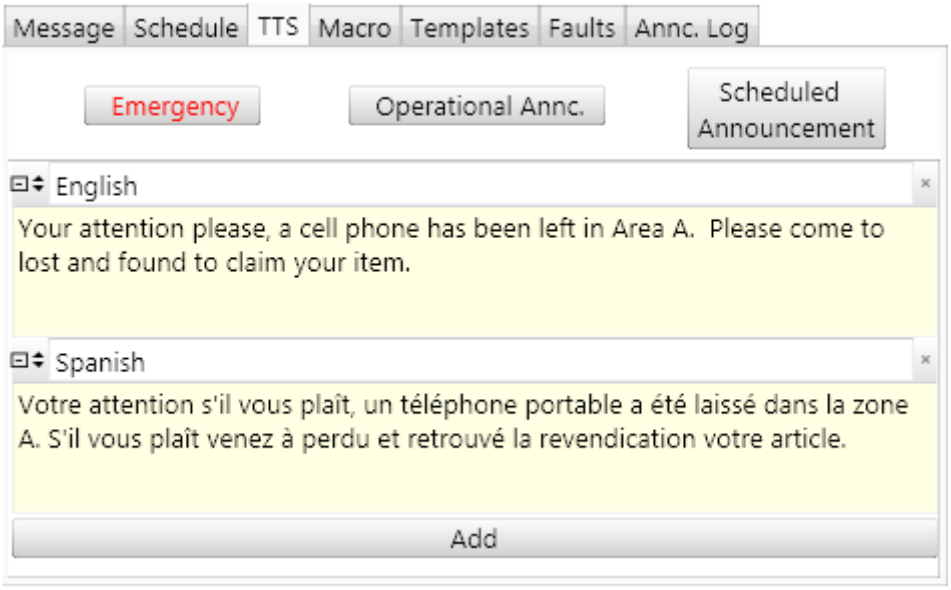

Figure 5 – Text-to-Speech Announcements

Creating Macros

Macros can be created using the Add button and play immediately, sequentially, or on a schedule.

Figure 6 – Macro window

A Macro consists of a set number of pre-recorded messages. These Macros can play sequentially or be separated by a pre-determined amount of time (see Offset below) to selected zones.

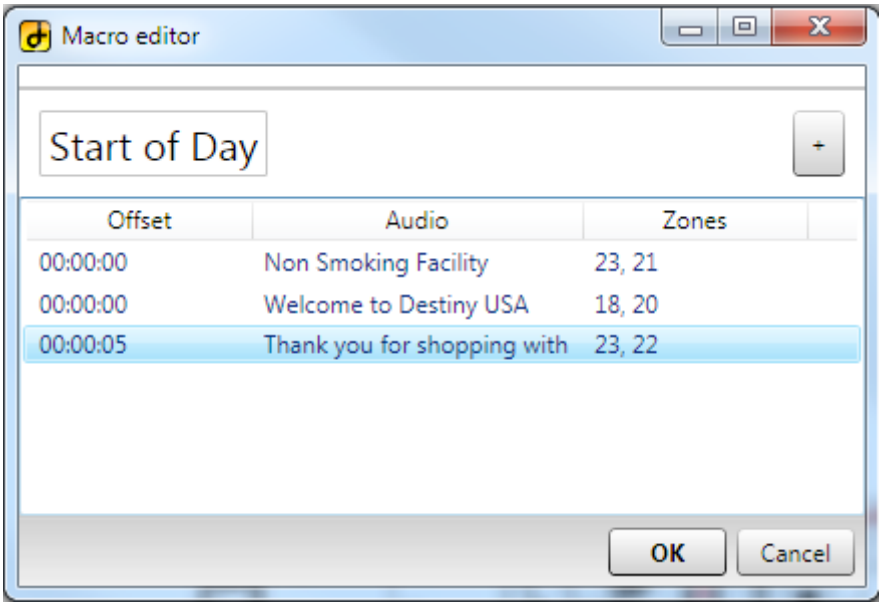

Figure 7 – Macro editor window

Creating Ad-hoc Templates (Prerecorded, Text-to-Speech)

Templates can be created allowing the user to enter variables into pre-determined message strings to be played immediately or on a schedule.

The templates can utilize pre-recorded messages or the text-to-speech engine for the final announcement.

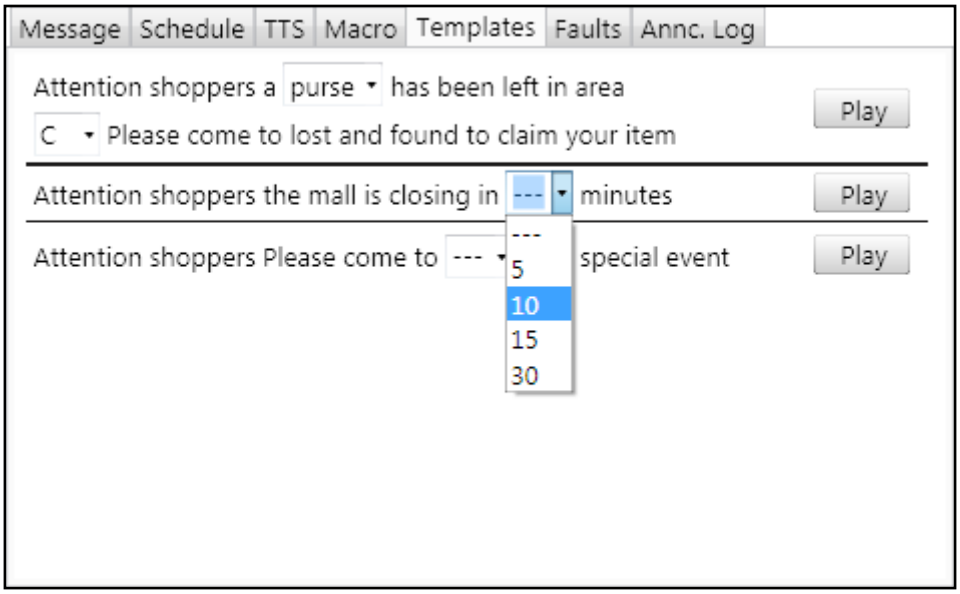

Figure 8 – Template Examples

Scheduled Announcements (Prerecorded, Text-to-Speech, Macros, Templates)

Any pre-recorded, text-to-speech, macro, or message template can be scheduled to play immediately or on a pre-determined schedule.

The process includes scheduling a message to start and/or stop on a specific date and time, number of times to repeat, and determining the interval (i.e., 1 min, 5 min, etc.) between plays.

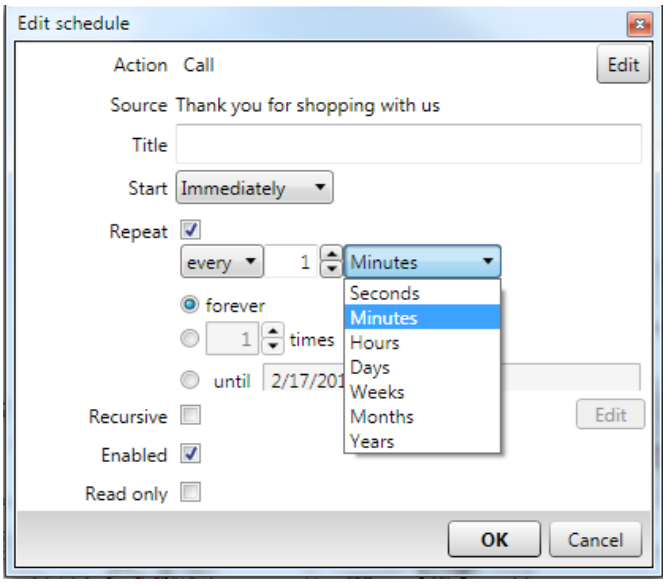

Figure 9 – Edit schedule window

Scheduled messages can be shown in **List** or **Time line** format.

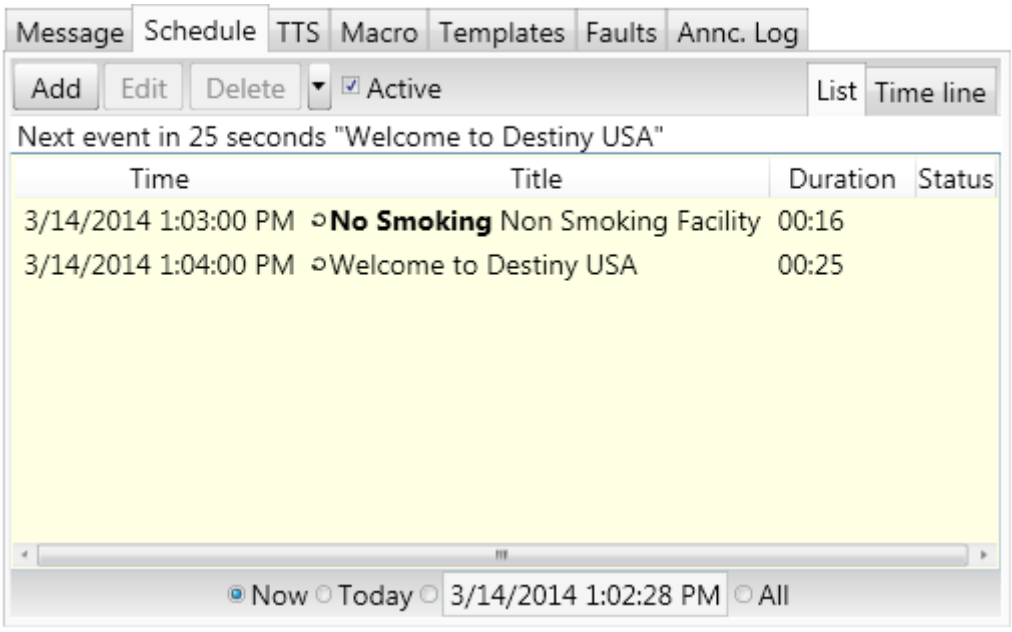

Figure 10 – Scheduler Window / List format

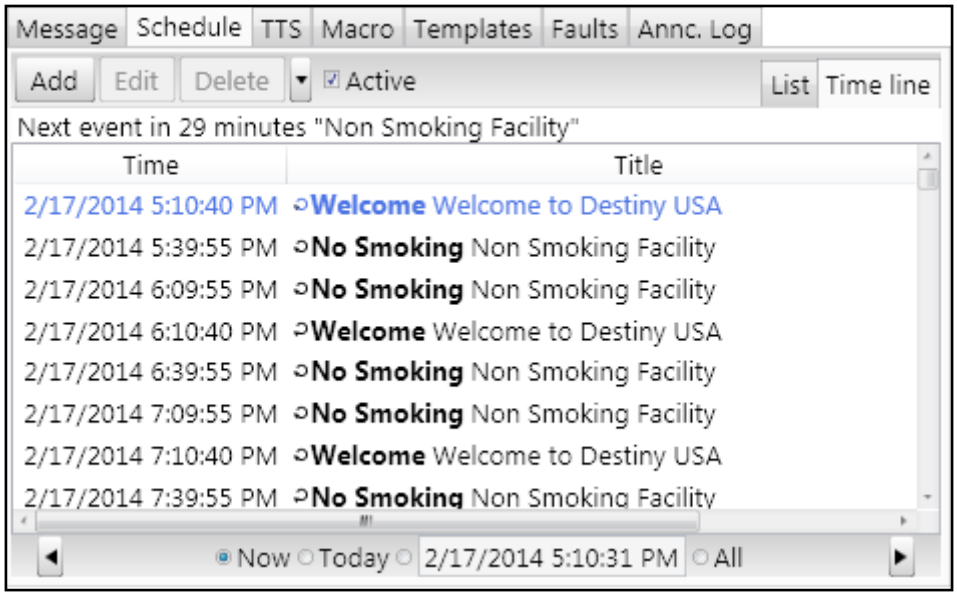

Figure 11 – Scheduler Window / Time line format

Fault Logging

System faults are pulled from the VACS controller and can be shown within the graphical user interface in a variety of ways including a fault indicator and/or custom shape (i.e., amplifier) which will change color based on its state (no-fault or fault). The fault indicators can be filtered to specify what is determined to be a fault (i.e., whole Titan frame or single amplifier output) and by clicking on the indicator, a list of faults specific to the filter selected is shown.

A list of current faults is available to show time, type, and severity of the fault along with a fault description.

A fault history is available, which logs all faults, both past and current, in the system. The faults can be queried to find individual fault occurrences and cleared as needed.

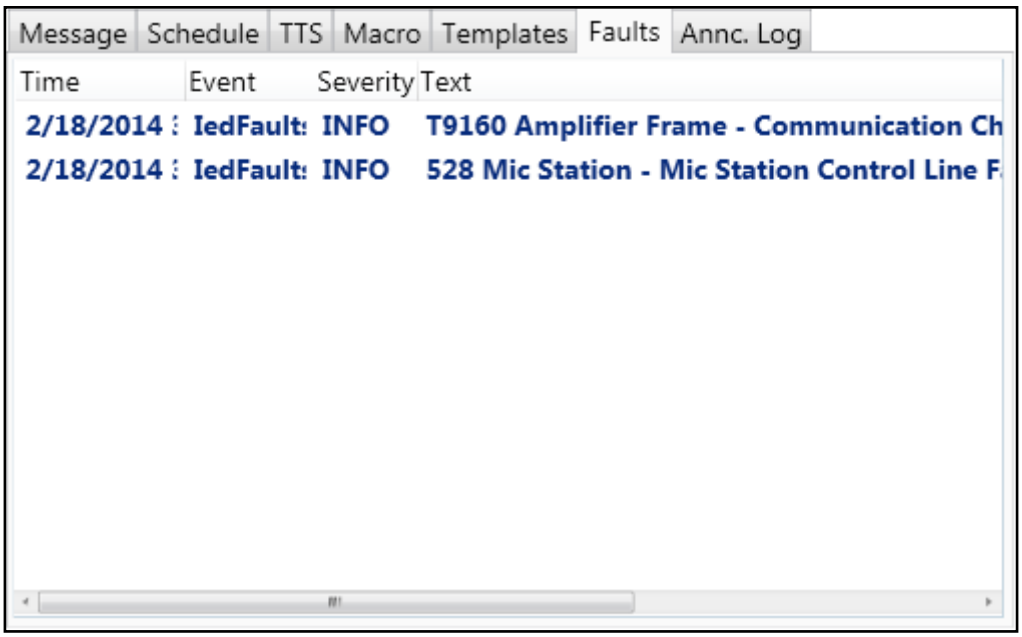

Figure 12– Faults

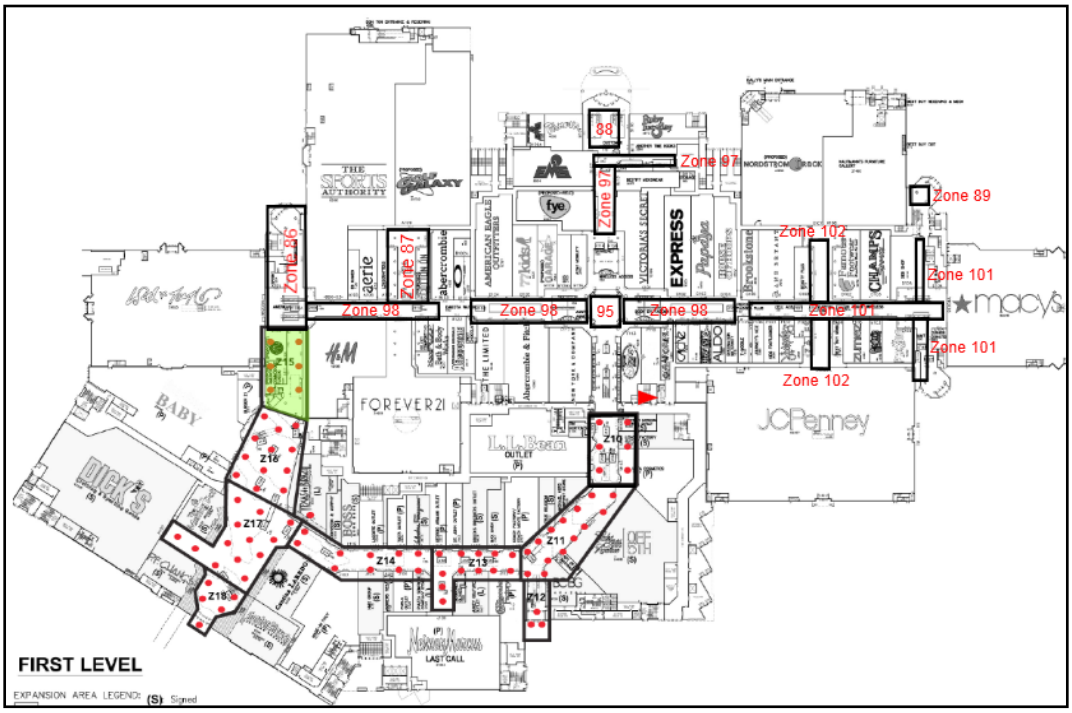

Figure 13 – Destiny Mall Faults Example

Note: Unique shapes (icons), arrows, colors or borders can be chosen to represent a fault indication.

Announcement Logging

All announcements, whether initiated from Director or the vACS controller, are logged and can be shown in a list.

The list includes Location, Status, Message/Mic Number, Zones, Start time, and Remaining time of the announcement.

Prior to being played or during active announcement, any scheduled or listed message can be stopped.

Stop	Location	Status	Message/Mic Number	Zones	Start time	Remaining Time
Stop	GUI (2x)	ACTIVE	All trains on outbound track	OMSF_GROUND	2/18/2014 4:19:45 PM	
Stop	GUI (1x)	COMPLETE	Bus service is in affect	OMSF_GROUND	2/18/2014 4:19:32 PM	
Stop	GUI (1x)	COMPLETE	There is a train approaching this station	OMSF_GROUND	2/18/2014 4:19:22 PM	
Stop	GUI (1x)	COMPLETE	All trains on outbound track	OMSF_GROUND	2/18/2014 4:19:14 PM	
Stop	GUI (1x)	COMPLETE	Train will be delayed due to maintenance	OMSF_GROUND	2/18/2014 4:19:07 PM	
Stop	Prerecorded @ OSMF Headend (10.75.116.102)	Gone	All trains on inbound track	OMSF_GROUND	2/18/2014 5:36:36 AM	

Figure 14 – Announcement Log Example

Third Party Software Link

Director allows the creation of third party links (System Management Center, Internet Explorer) within the custom GUI simplifying operation.

Message Priority

Specific messages and message classes can be prioritized. Live, pre-recorded, text-to-speech, ad-hoc template and scheduled announcements along with Message Macros can be initiated based on priorities configured within the system. This allows the user to override a currently active message with a message of a higher priority (i.e., an emergency message will override an operational announcement).

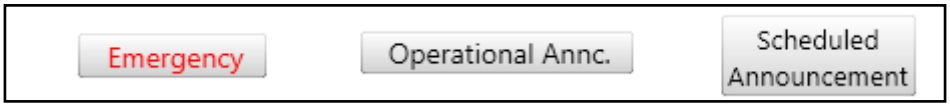

Figure 15 – Message Priorities Example

User Passwords

Multiple users can be set-up within Director with password protection for each type of user. User groups can be configured to allow a set of users with similar operational/configuration permissions to be created together.

Based on the operational permissions, individual button actions, pre-recorded messages and project pages can be restricted. This includes both limiting the ability to use a particular feature and/or hiding the feature from a page.

Configuration can be limited to certain users.

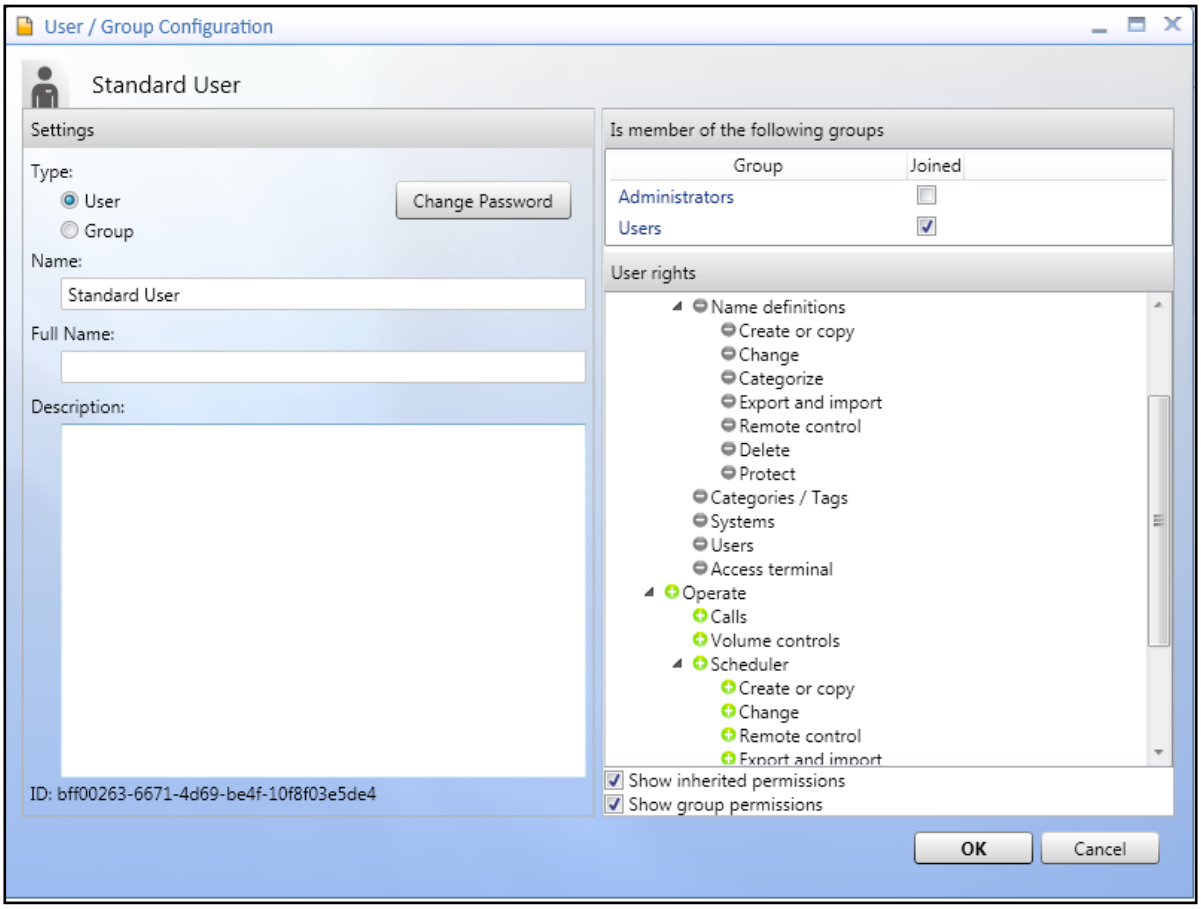

Figure 16 – User / Group Configuration window

Message Recording from Microphone Station

In conjunction with an IED microphone station, the user has the ability to record a message to be played back at a later time.

A set number of empty slots are available to record new messages. The default amount is 100 messages.

Figure 17 – Message Recording window

Once recorded, the message is named and saved on the vACS controller. The list of pre-recorded messages is updated automatically to show the new message.

If a separate zone output is available and connected to a speaker, the new message can be previewed.

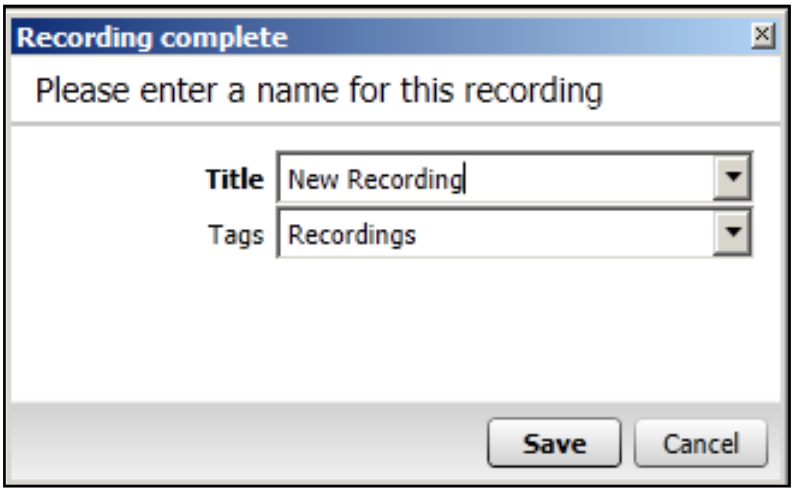

Figure 18 – Recording complete window

Random Message Generator

A random message (ambient sound) generator is available in which a set of messages can be played to a set of zones in a random order. The interval between messages can be set in hours, minutes, or seconds.

Zone Muting

Individual zone and/or group zones can be muted. Based on the priority of a message, the mute will either remain active during a message or will be suspended while a higher priority message is playing.

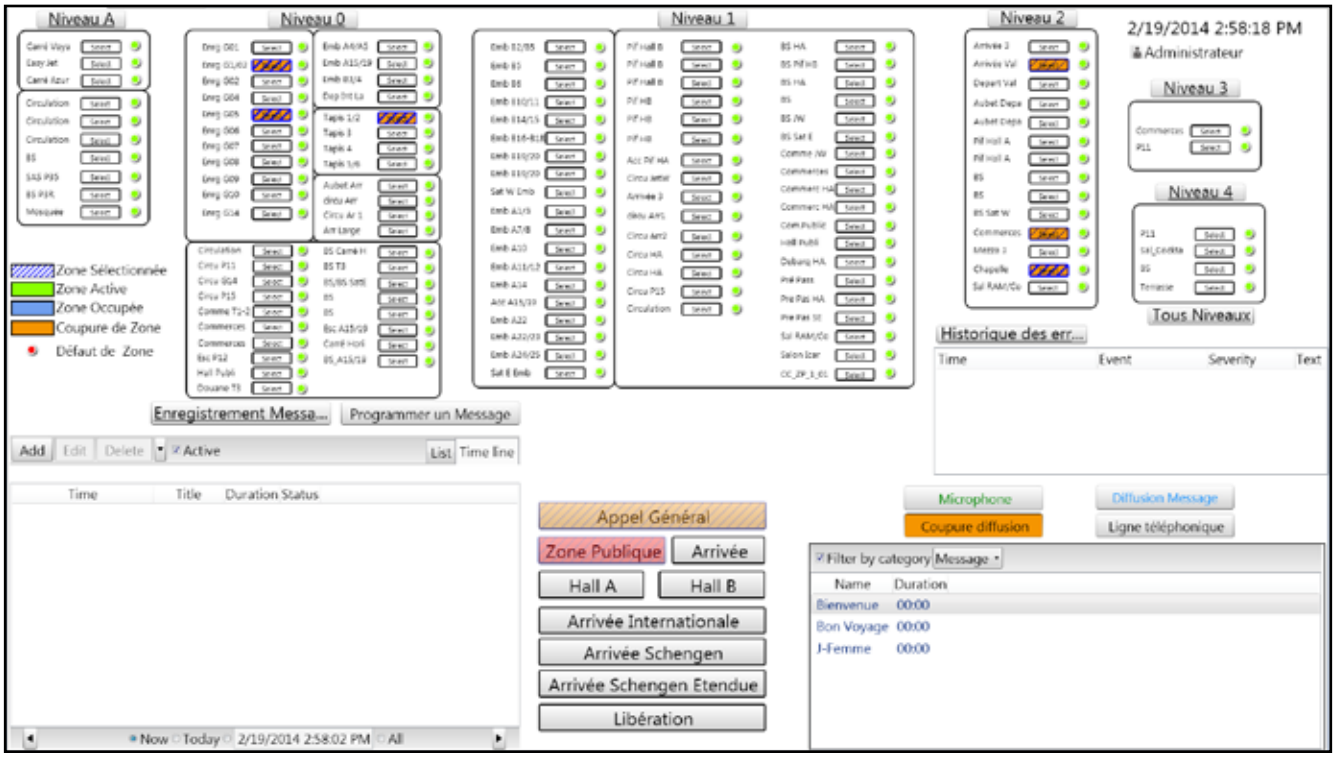

Figure 19 – Orly Airport Muting Example

Note: Call button and zone identification change colors to indicate a zone is actively muted.

vACS XML Configuration

The user has the ability to make any modifications to the vACS controller XML file.

This could include changing the background music source for a particular zone, modifying the extension used to page to a particular zone, or a variety of other re-configurations. The revisions are pushed to the vACS controller; however, they are not saved into memory, therefore if the controller is restarted, the original configuration will return.

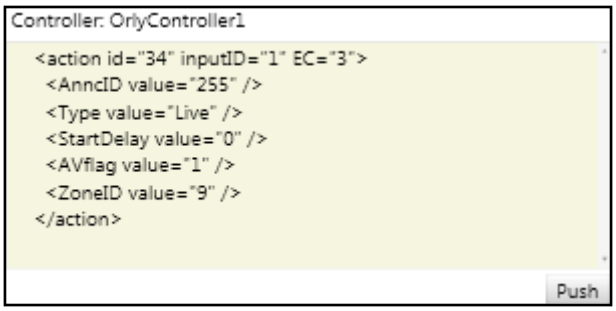

Figure 20 – Orly Airport Reconfiguration Example

Note: Based on a user action, the vACS.xml will be provided the parameters shown that will override the current parameters in the .xml file.

Embedded Pages

Embedded pages can be used within the graphical user interface to allow the user to zoom and pan to a certain portion of the screen. In particular, this allows a large background to be used (i.e., whole transit line, airport level, etc.), which can then been manipulated for zone selection.

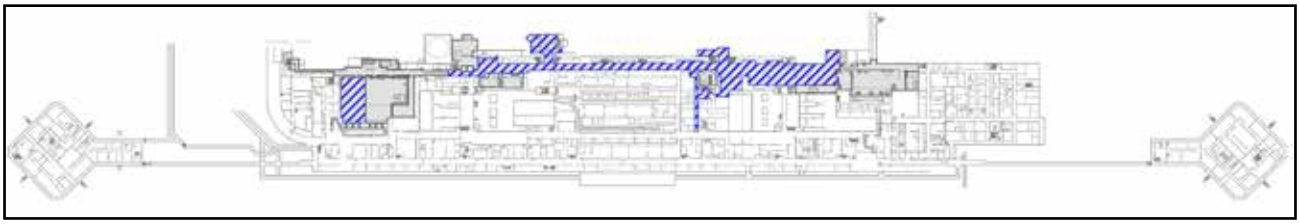

Figure 21 – Orly Airport Overall View of Single Level

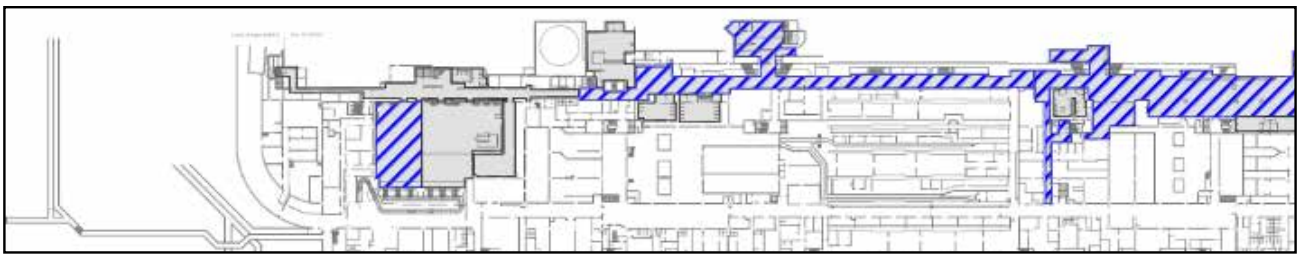

Figure 22 – Orly Airport Overall View of Single Level Zoomed In

Unique Zone Shapes/Zone Selection

Representation of zones in the graphical user interface background can be uniquely shaped to match the actual zone layout or to build a unique user experience.

Zone presets can be created to help the user in quickly selecting a pre-determined group of zones.

The zone color will change (green by default) when it is active (i.e., an announcement is being played to it). The zone color will be different (green if initiated from Director, and blue if initiated from vACS by default) depending on where the announcement was initiated, from either the graphical user interface or the vACS controller.

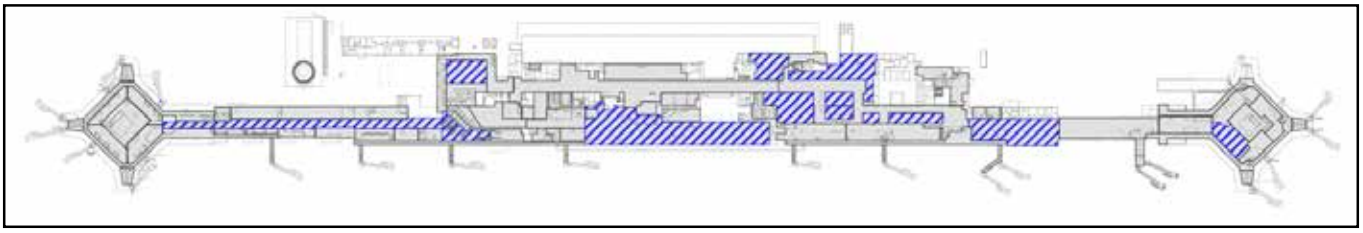

Figure 23 – Orly Airport example of Overall View of Single Level

Note: Unique zone shapes to exactly identify zones.

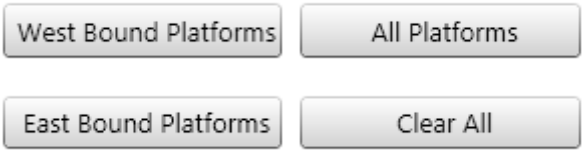

Figure 24 – Zone Preset Examples Allowing User to Quickly Select a Predetermined Group of Zones

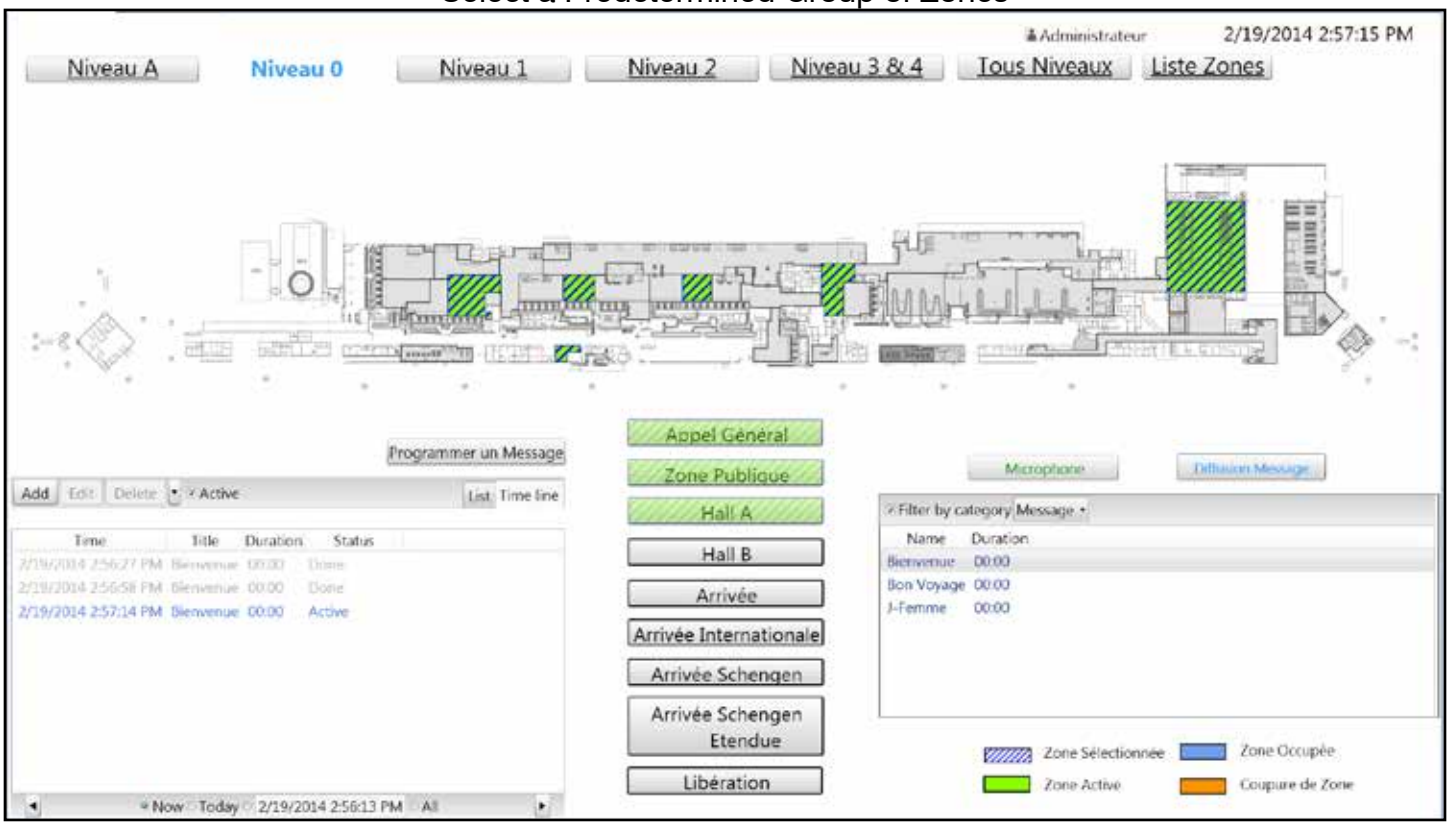

Figure 25 – Orly Airport Example showing Active Zone Identification

Custom Scripts

Custom scripts can be created to customize how the graphical user interface operates. For instance, custom dialog boxes can appear if the user does not initiate an announcement correctly or an announcement can be made to loop indefinitely without needing to use the scheduler.

Figure 26 – Button Example to Trigger Script Shown in Subsequent Figure

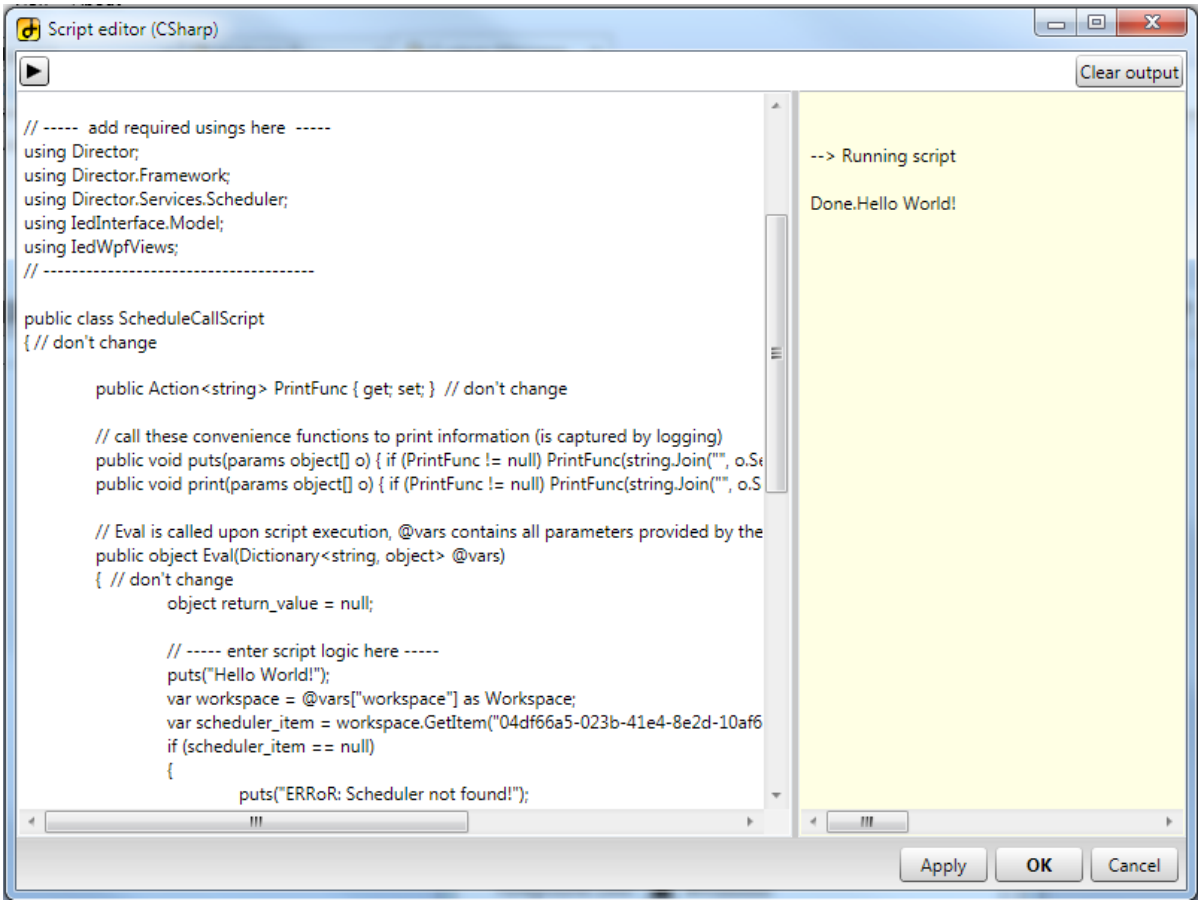

Figure 27 – Script Editor Window

Synchronization Across Workstations

If multiple workstations are utilized, all elements within the project can be synchronized across the workstations so each user sees any changes made from one workstation, giving every user the most up-to-date information and view of the system.

Multiple Desktop Displays

Multiple displays can be used to allow the user to see two or more pages of a project at the same time. For instance, this allows the user to monitor faults on one page while controlling announcements on another.

Sample Projects

Destiny USA

Destiny USA is a mall located in Syracuse, NY. There are three (3) levels, each with their own page. The map is included within an embedded page to allow the user to zoom in areas of the mall for precise selection of zones. All announcement capabilities are available on each page so the user can quickly select a zone and make the appropriate announcement.

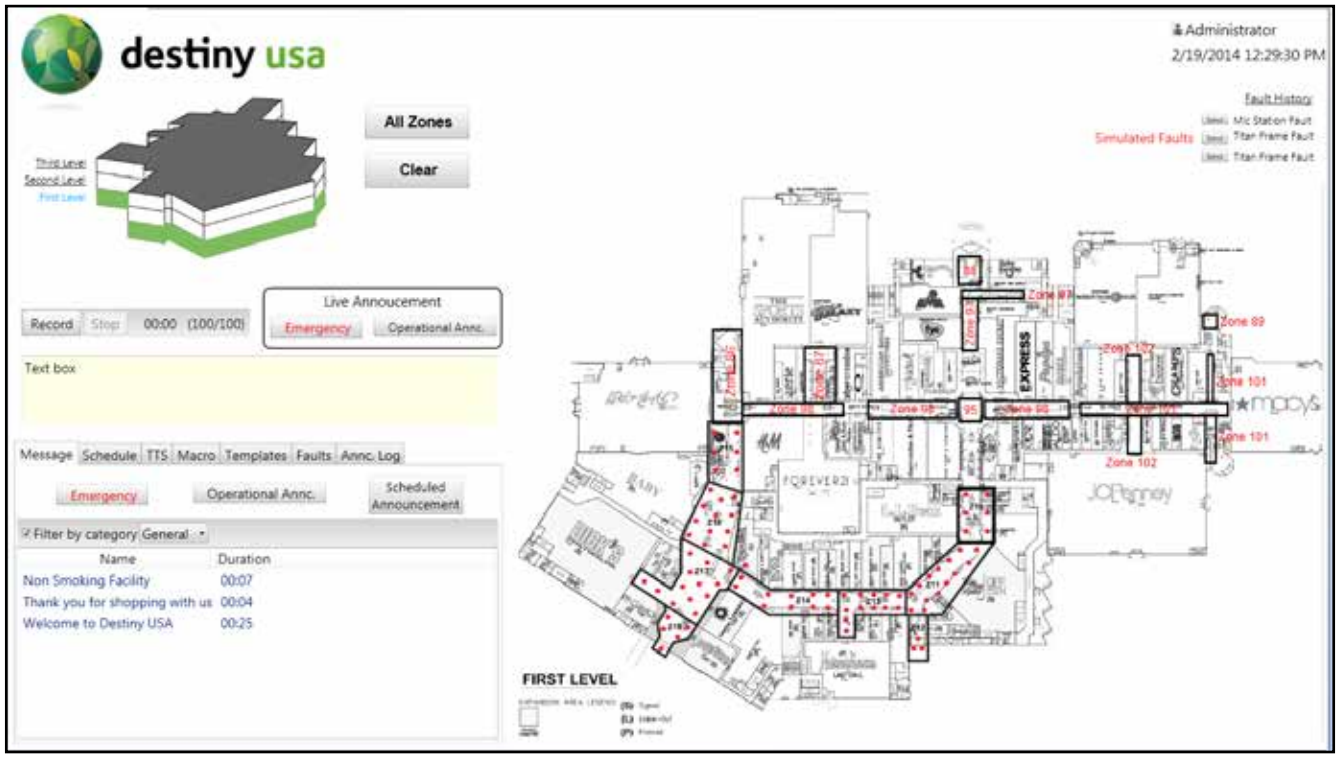

Figure 28 – First Level

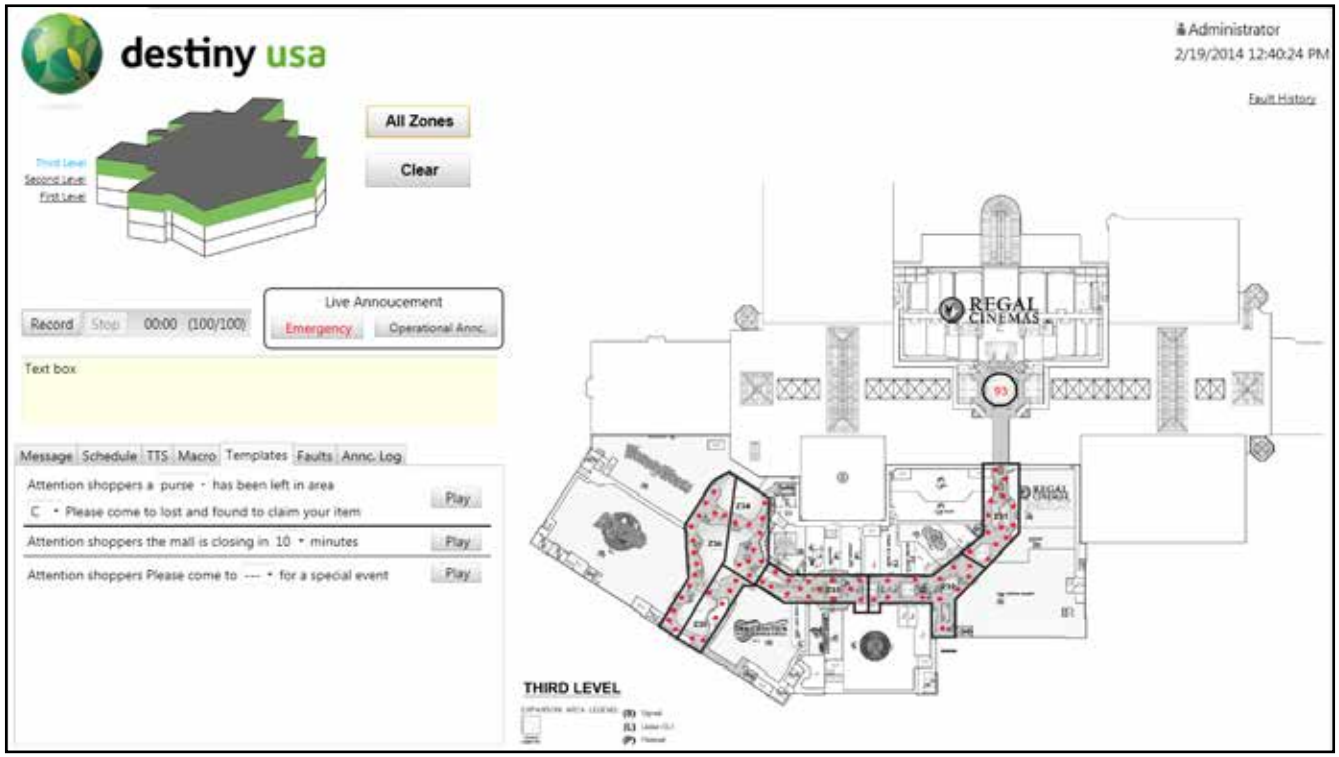

Figure 29 – Third Level

JFK Light Rail

JFK Light Rail is the monorail system that travels around JFK International Airport. There are multiple stations, each with their own respective zones. This is an entirely button-based GUI to be used in conjunction with a touch screen. Depending on the location selected the correct zones will become available. From there, the user can choose the set of messages they want to play along with the number of times the message should play. The history will show a log of all announcements along with the ability to stop a single announcement at any time.

Note: The “greyed out” indicate zones that cannot be selected.

Note: The different zones available due to the location changing (i.e., Location 8T has Platform, Connector, and Ground zones available while HB only has Platform and Ground available).

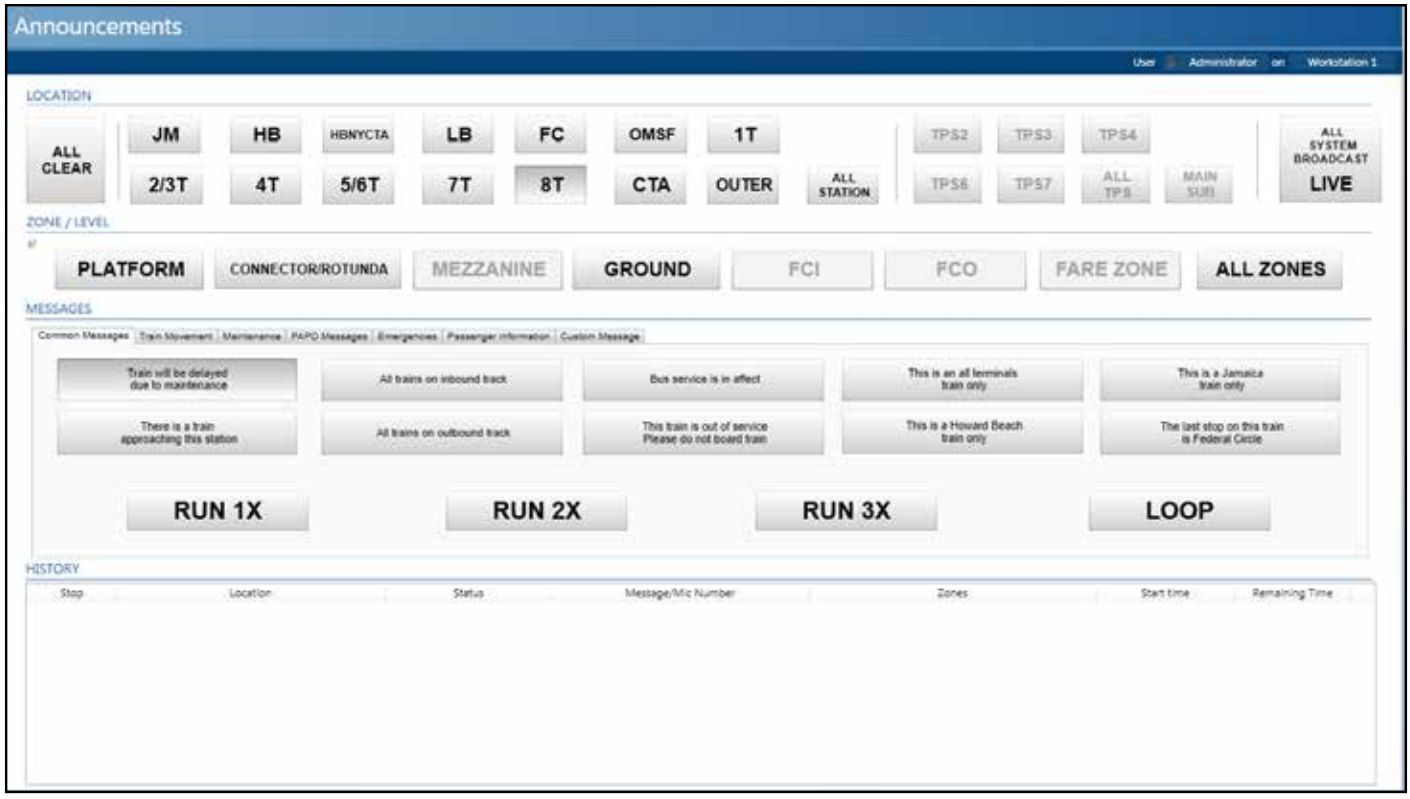

Figure 30 – Terminal 8 Selections

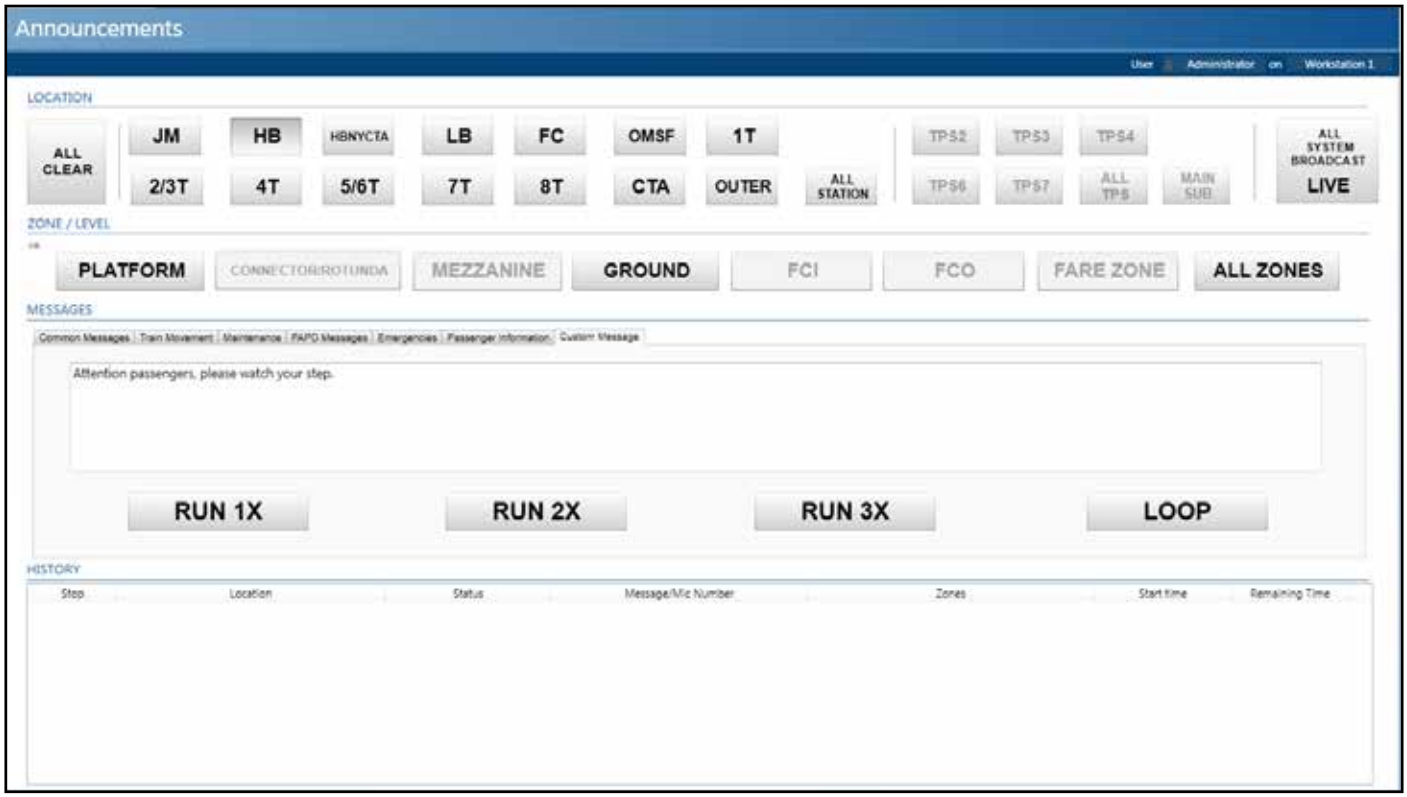

Figure 31 – Howard Beach Selections with Custom TTS Message Capability

Muscatatuck Urban Training Center

Muscatatuck is a military training center located outside Butlerville, IN. An IED system is used to play sound effects to speaker zones placed throughout the facility. The GUI allows the user to determine which sounds play where and/or set those sounds to play according to a schedule.

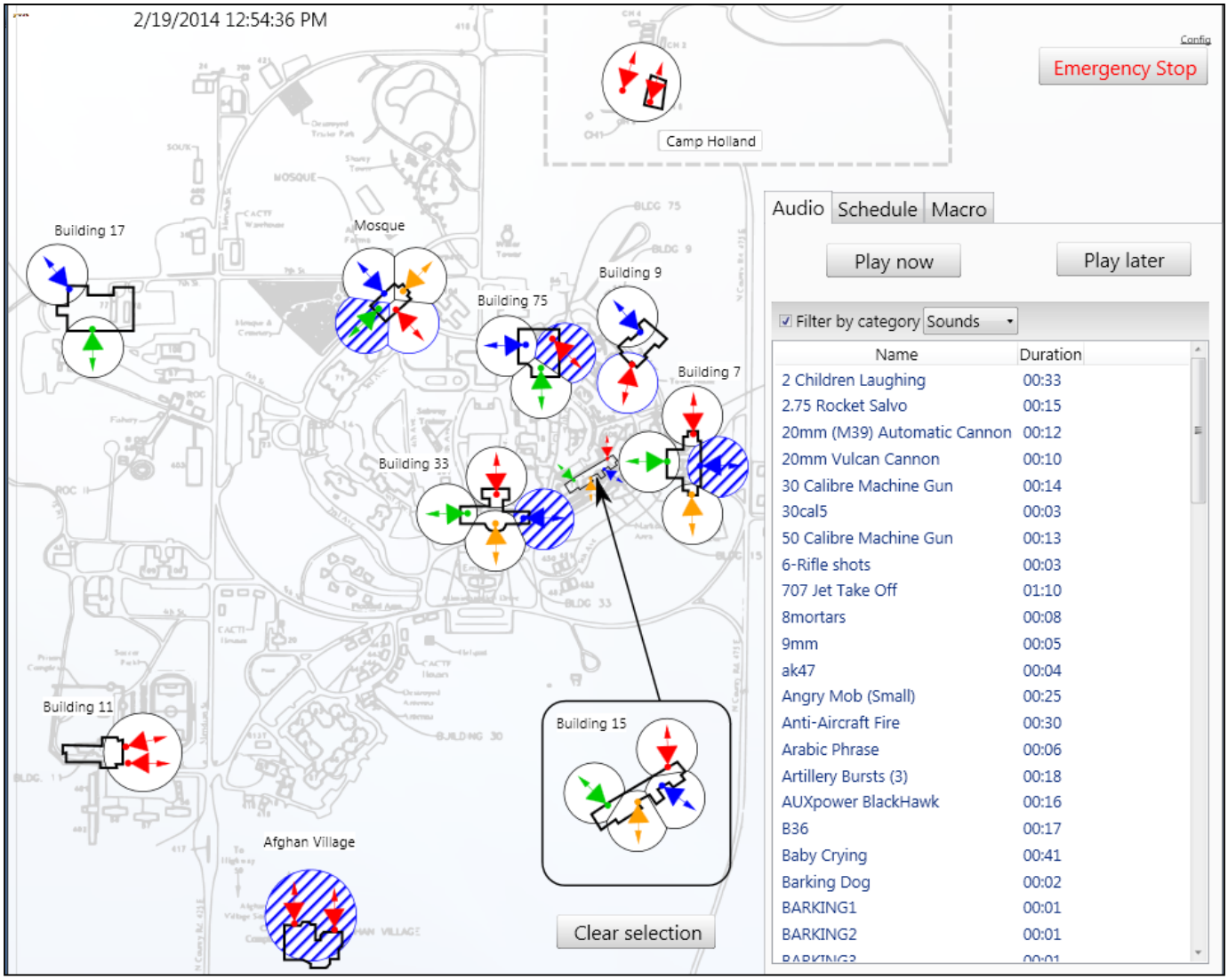

Figure 32 – Front Page of GUI

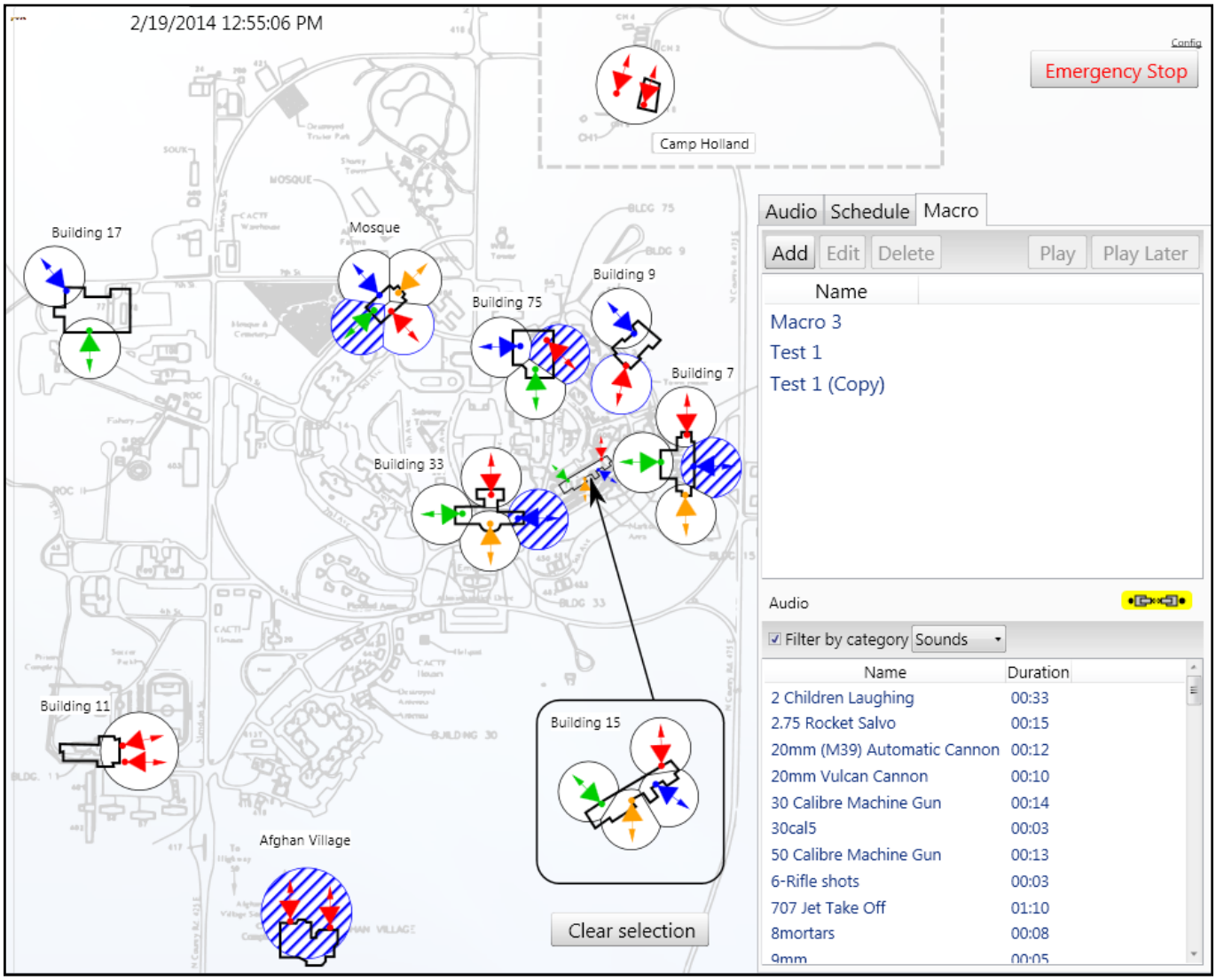

Figure 33 – GUI Background showing Macro Creation

Orly Sud Airport

Orly Sud is a large airport located in Paris, France. The GUI controls the paging for zones spread throughout five (5) levels. The homepage provides the user a quick overview of the entire airport so he/she can quickly see what zones are active. By clicking on a level, the user is brought to that respective level's page. From there, the user can schedule a message, play a message, or make a live page to a single or to multiple zones. Multiple zone groups are available for quickly selecting a group of pre-defined zones prior to paging. The zone list page provides a non-graphical view of all the zones in the airport. In addition to the capabilities on each level page, the user can also mute individual zones, select which zones can be used with VoIP, and get fault status of equipment tied to each zone. In addition, the ability to record a message and preview it is available.

Note: The selected zones are shown on the front page. Active zone information would also be shown.

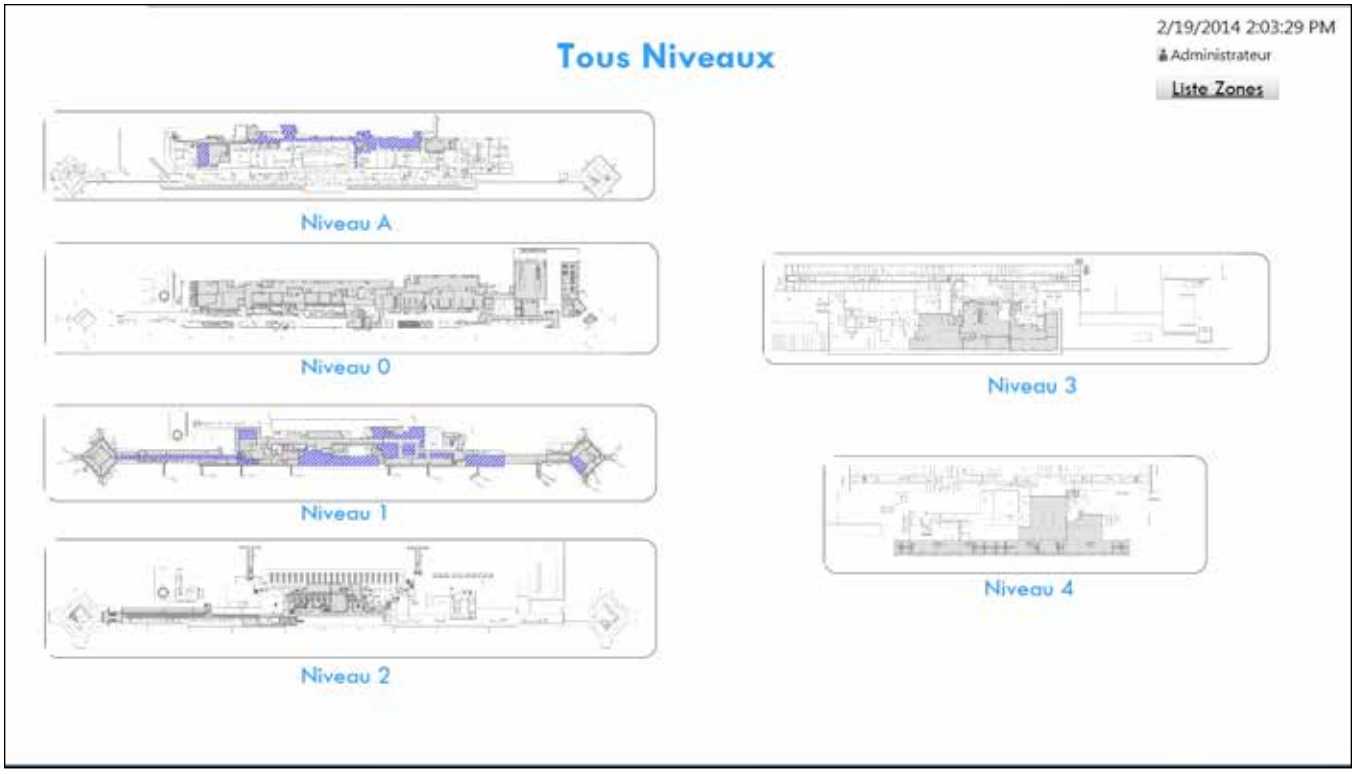

Figure 34 – ORD Sud Airport Front Page

Figure 35 – Orly Sud Airport Level A

Note: The zone groups can be made to show which groups are currently selected.

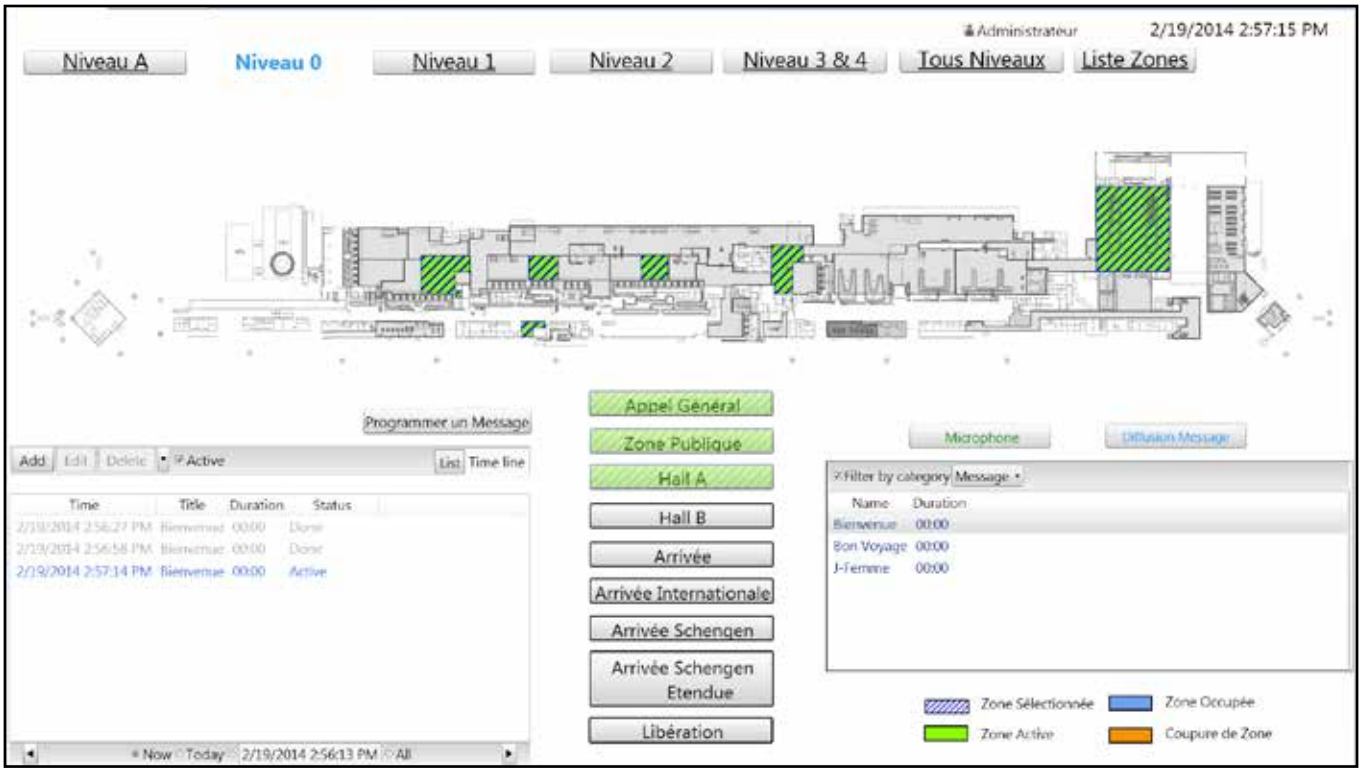

Figure 36 – Orly Sud Airport with Active and Muted Zones

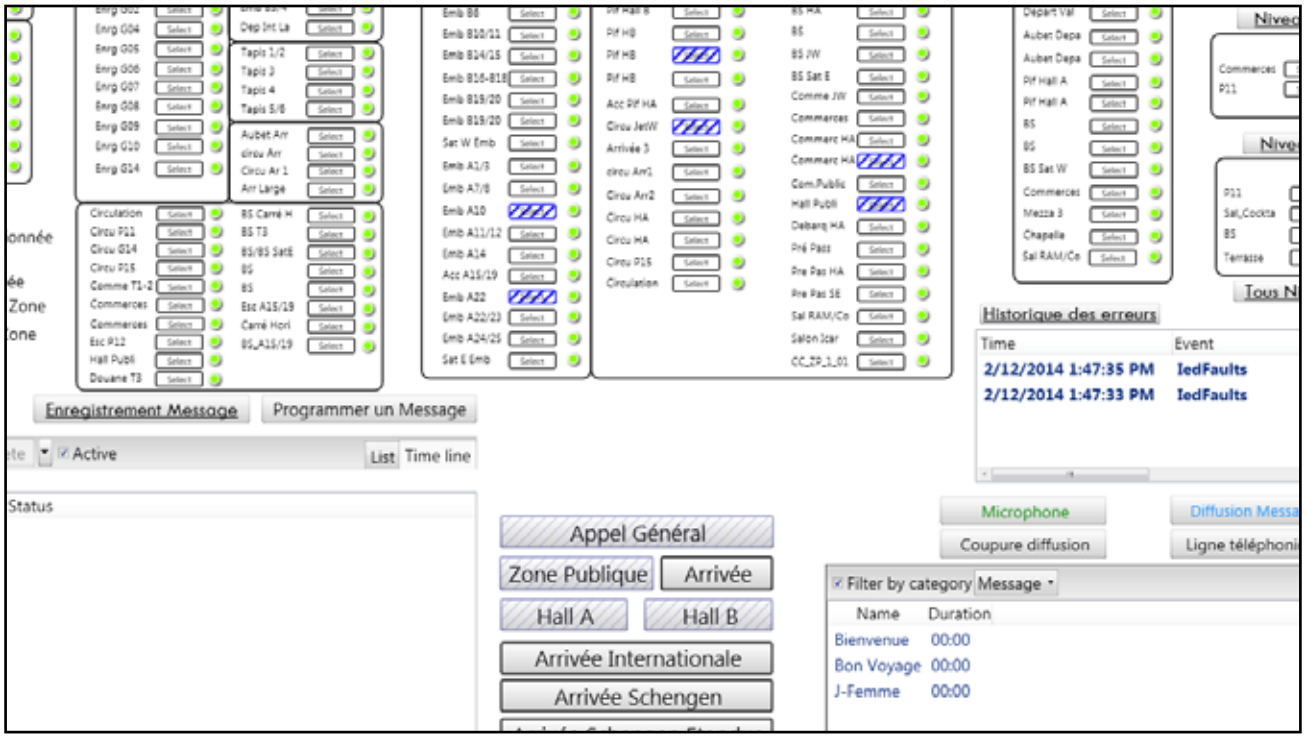

Figure 37 – Orly Sud Airport Complete Zone List

Note: The fault history can be queried to find individual faults. Entire fault list can also be cleared.

Figure 38 – Orly Sud Airport Fault History

World Trade Center Transportation Hub

The World Trade Center Transportation Hub is located in downtown New York City. The GUI controls all the paging within the hub including outlying stations along the subway line. The front page gives an overview of the entire hub and allows the user to quickly make a live announcement to any zone. Each level has its own page with the message capabilities shown in the tab. Multiple users can access the GUI with varying password levels. Depending on the user, various buttons may not be visible and/or pages accessible.

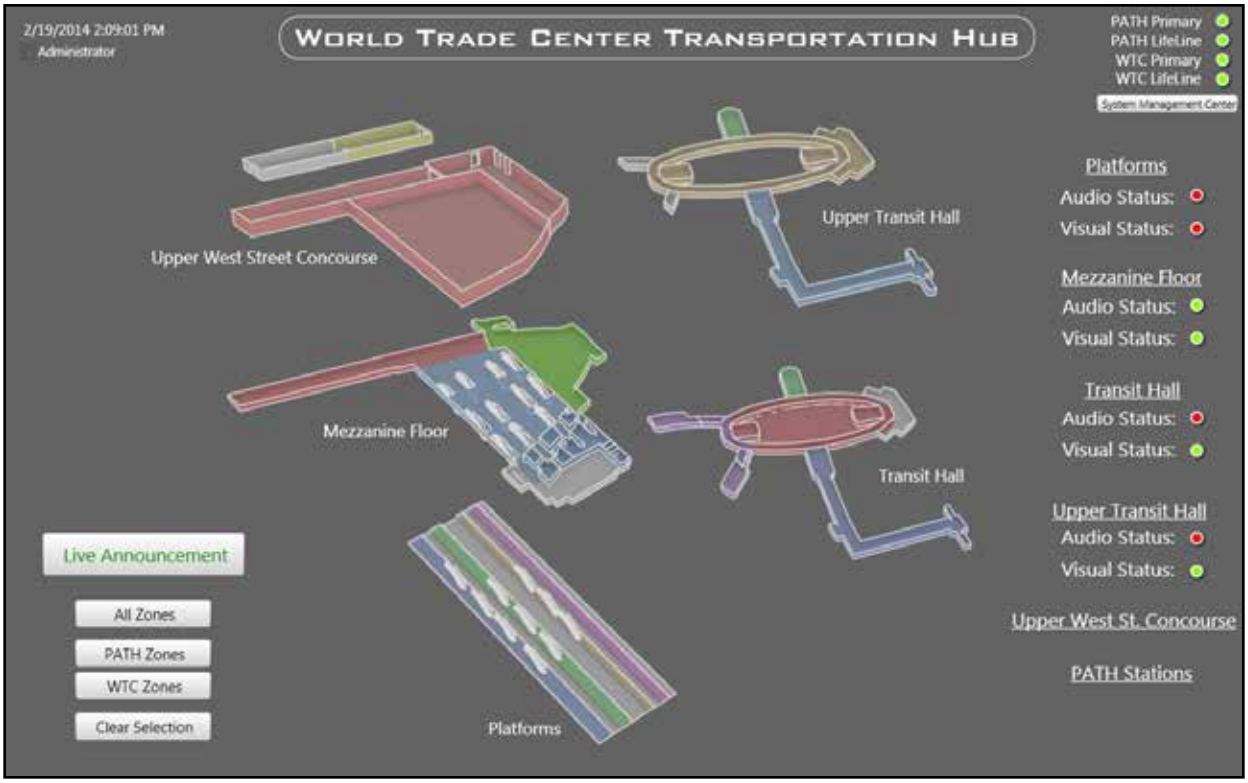

Figure 39 – World Trade Center Transportation Hub Front Page

Note: Fault indicators on this page show there is a type of fault (audio or visual) in a particular area of the system.

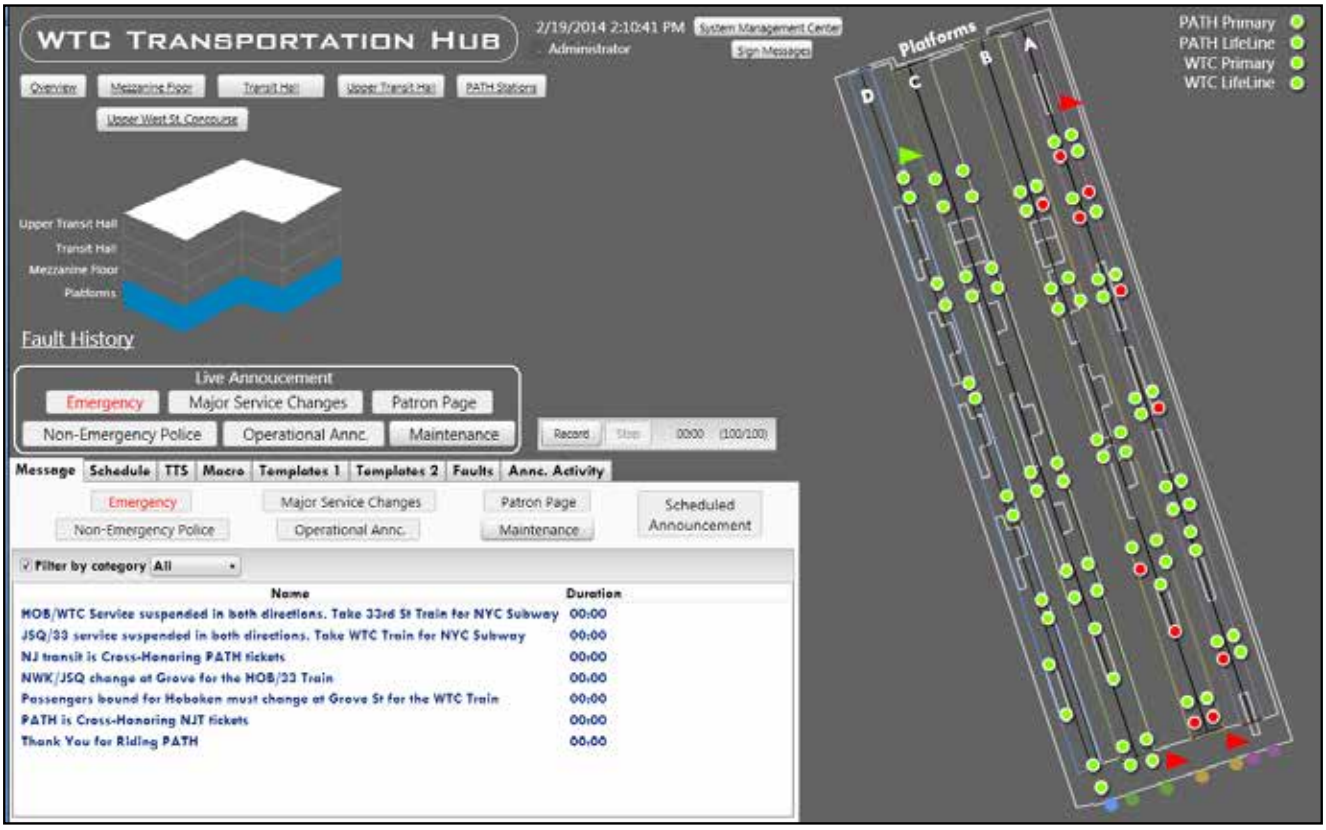

Figure 40 – World Trade Center Transportation Hub Train Platform Page

Note: Different fault notification symbols. This page shows circles and amplifiers as having faults. Any shape can be used to indicate a fault.

Note: A different user logged in. Particular buttons, therefore priorities, are not available for this user based on their access level.

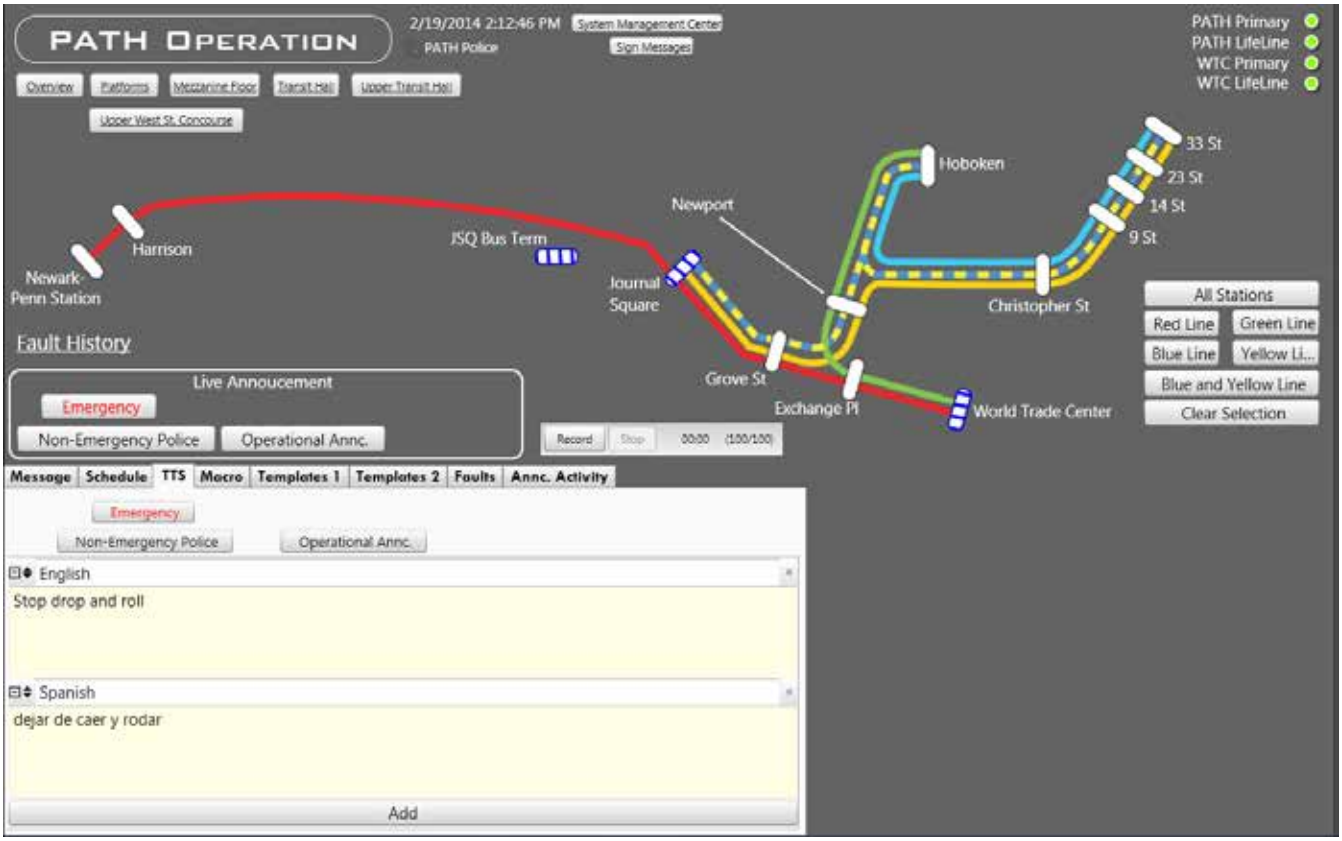

Figure 41 – World Trade Center Transportation Hub PATH Station Page

VivaNext Bus Line

VivaNext is a transit line located in Toronto, Canada. It consists of eleven (11) remote stations controlled from a head-end location. Each station has two (2) individually selectable zones. Basic paging capability is provided on a single page for the entire line. Future expansion is anticipated which would add to the GUI complexity.

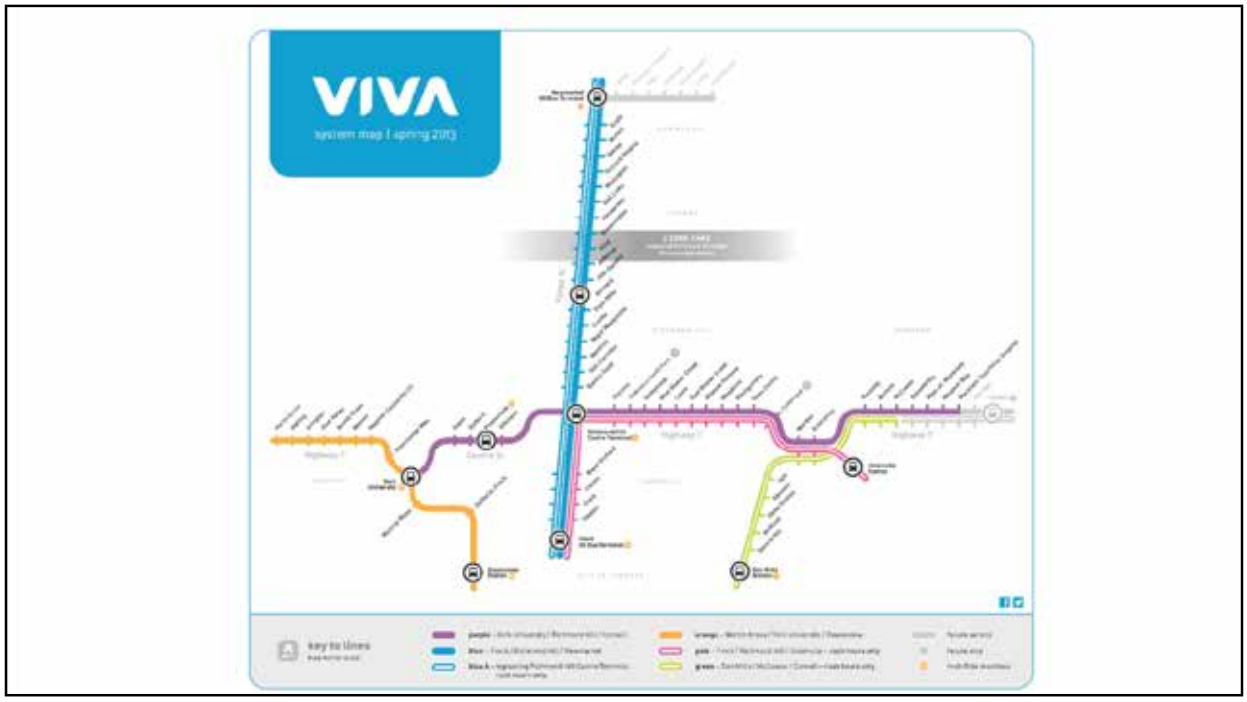

Figure 42 – VivaNext Front Page

Note: The Overall Transit Line map shows the entire transit lines. The user will click on a particular section, thereby enlarging that section by taking them to a particular page

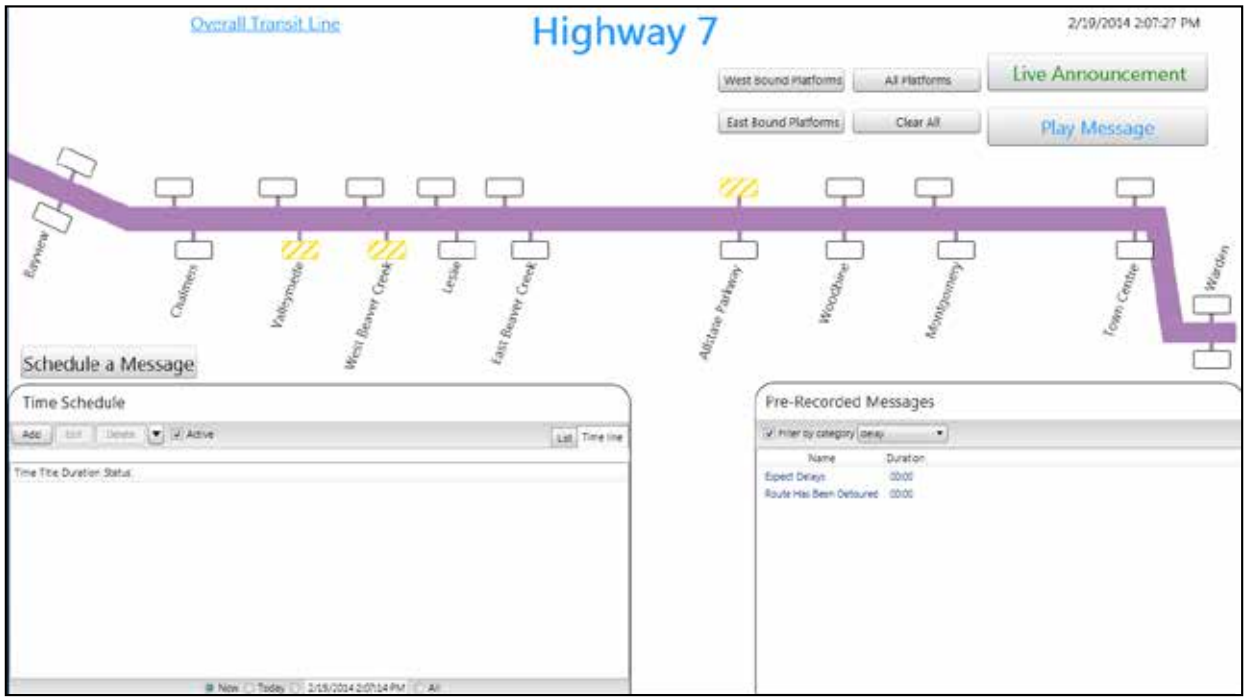

Figure 43 – VivaNext Transit Line Page

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