



## **User and Product Manual**

Engineering Design  
GNG 1103

Team #4 - The DashBoard Deltas

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## List of Acronyms

Table 1: Acronyms

<b>Acronym</b>	<b>Definition</b>
DB	DashBoard
OSEG	Ottawa Sports and Entertainment Group
UPM	User and Product Manual
CSV	Comma Separated Values

# 1.0 Introduction

This User and Product Manual (UPM) provides the information necessary for any user to effectively use the DashBoard (DB) software and for prototype documentation. The DB Deltas were given a design challenge by Ross Video and Ottawa Sports and Entertainment Group (OSEG) to create a DB panel that will be used to control the output of the scoreboard show at the Ottawa 67's hockey games. In this UPM, you will learn the basics of the software and how to recreate the functional panel designed by The DB Deltas from the University of Ottawa.

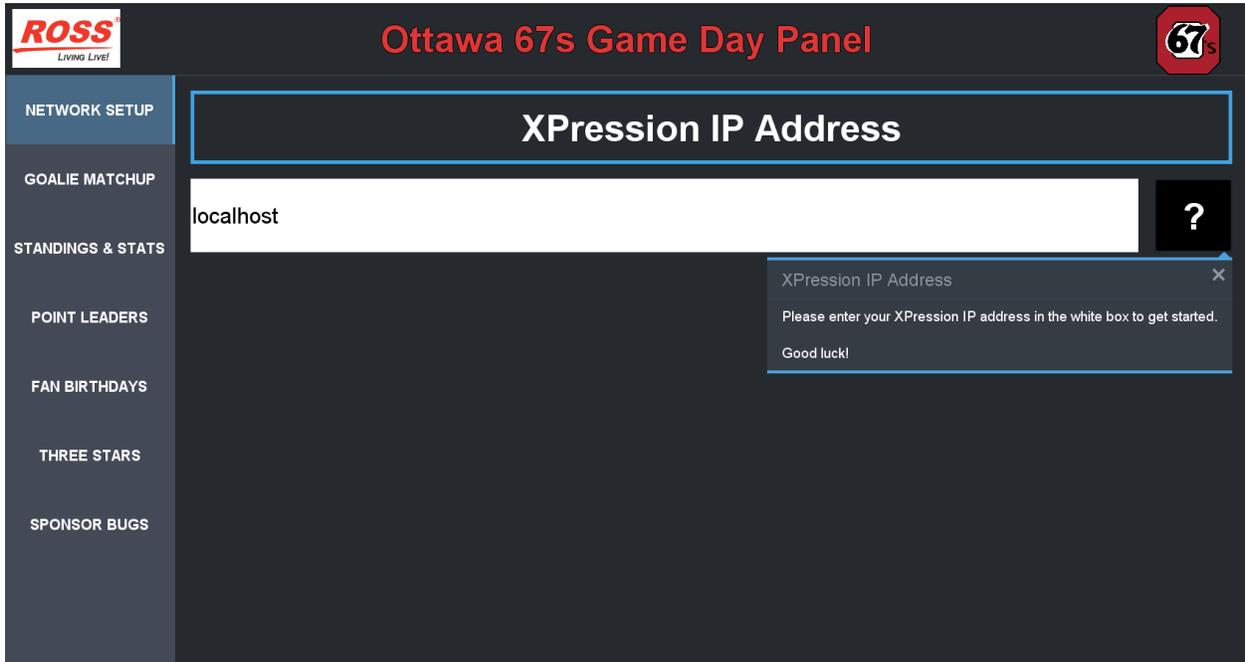
## 2.0 Overview

The focus of this design challenge was to provide practical experience working with real technology and developing a solution that has real impacts and benefits. Ross Video partnered with OSEG to define a challenge that will control equipment that is currently installed at the TD Place Arena. Ross Video's software DB is used to control the production equipment including screens, lights and audio to enhance the fan experience. This team, The DB Deltas, defined the following problem statement: the operator at the TD Place Arena needs a way to quickly and easily control the output of the scoreboard show to enhance the fan experience at the Ottawa 67's games. The solution created meets the user's needs and was successfully tested using the graphics software XPression.

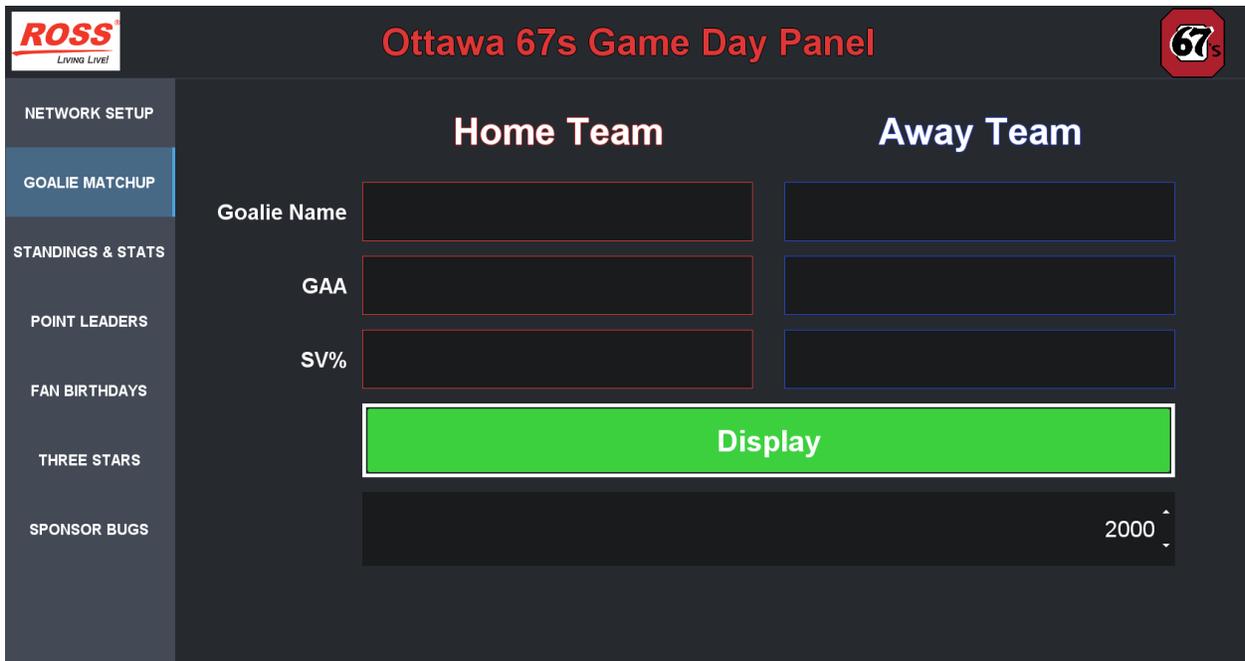
The users were identified as the operators of the panel at the TD Place Arena hockey games. The most important aspects of the project were to create a panel that allows users to quickly and easily alter the desired data, to produce a creative system that increases fan excitement and to focus on quality over quantity. These needs fit into categories that describe the overall goal of the project which are flexibility, creativity and efficiency. The DB Deltas focused on certain control opportunities that are the most valuable for the stadium's revenue and to increase fan engagement and excitement. These features were network setup, goalie matchup, standings and statistics, point leaders, fan birthdays, three stars and sponsor bugs.

The final product designed by The DB Deltas exceeds the challenge criteria and includes aspects that differentiate the solution from others. The network setup tab allows the user to easily type in their XPression IP address to connect the DB Panel to the XPression graphics. The biggest benefit of this aspect is that the operator does not need to alter the code in multiple places of the panel. Another key feature is the use of help buttons that give the user instructions and produce an extremely user-friendly interface.

The following figures (**Fig. 1 - Fig. 7**) represent the final DB panel prototype including all features explained above.



**Fig. 1:** Network Setup Tab with Help Button.



**Fig. 2:** Goalie Matchup Tab.

**Ottawa 67s Game Day Panel**

Read Western Standings file: file://C:/Users/morga/Desktop/Project/WESTERN%20CONFERENCE.csv

#	Team	GP	W	L	OTL	SOL	PTS	PCT	ROW	GF	GA	Streak	P10	PIM
1	London...	17	13	3	1	0	27	0.794	11	67	44	2-0-0-0	6-3-1-0	170
2	Soo Gr...	18	11	7	0	0	22	0.611	11	79	70	1-0-0-0	6-4-0-0	177
3	Guelph...	18	10	6	1	1	22	0.611	10	71	65	1-0-0-1	7-2-0-1	181
4	Owen S...	17	8	7	1	1	18	0.529	7	53	58	0-1-0-0	6-3-1-0	212
5	Windso...	16	8	6	0	2	18	0.563	7	66	62	2-0-0-0	6-4-0-0	157
6	Sagina...	15	8	6	1	0	17	0.567	8	54	53	0-1-0-0	5-5-0-0	186
7	Sarnia ...	16	7	6	3	0	17	0.531	7	54	53	4-0-1-0	6-3-1-0	200
8	Kitchen...	18	8	10	0	0	16	0.444	7	56	66	0-3-0-0	3-7-0-0	212
9	Flint Fir...	14	7	6	0	1	15	0.536	7	45	50	0-1-0-1	5-4-0-1	149

Fig. 3: Standings and Statistics Tab with Specific Conference Standings CSV Files.

**Ottawa 67s Game Day Panel**

Read Point Leaders file: Project/POINT%20LEADERS.csv

Name	Points
Player1	0
Player2	0
Player3	0
Player4	0
Player5	0

Fig. 4: Point Leaders Tab with Arbitrary CSV File.

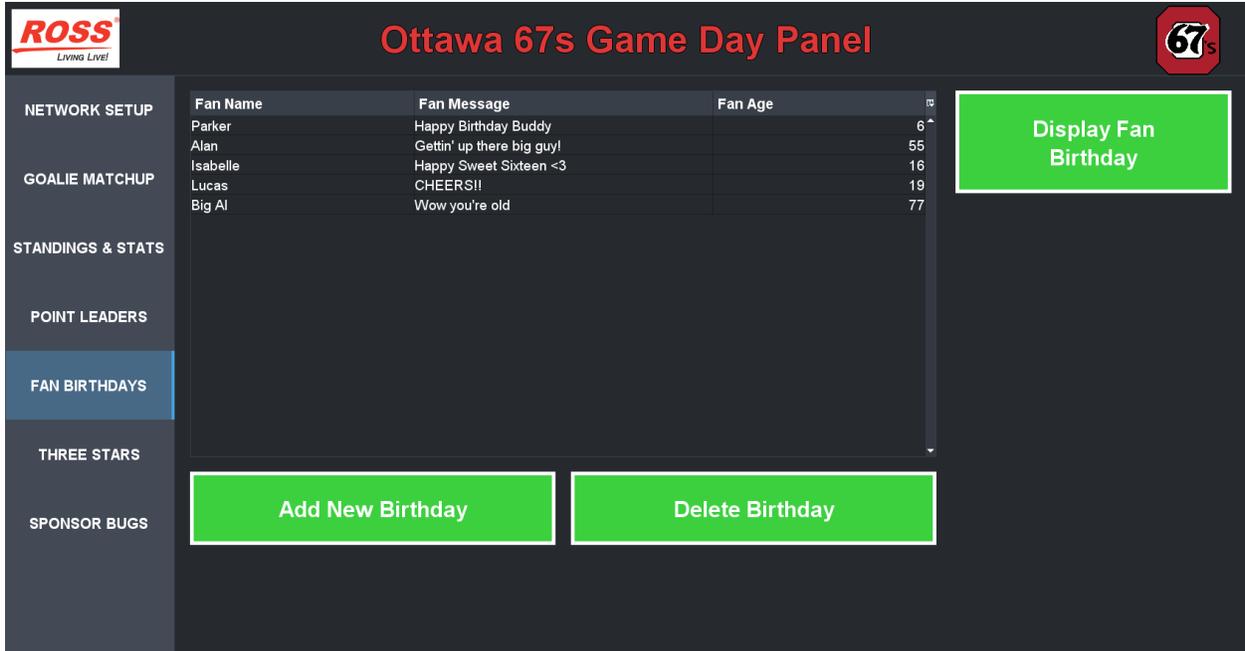


Fig. 5: Fan Birthdays Tab with Random Fan Birthday Information.

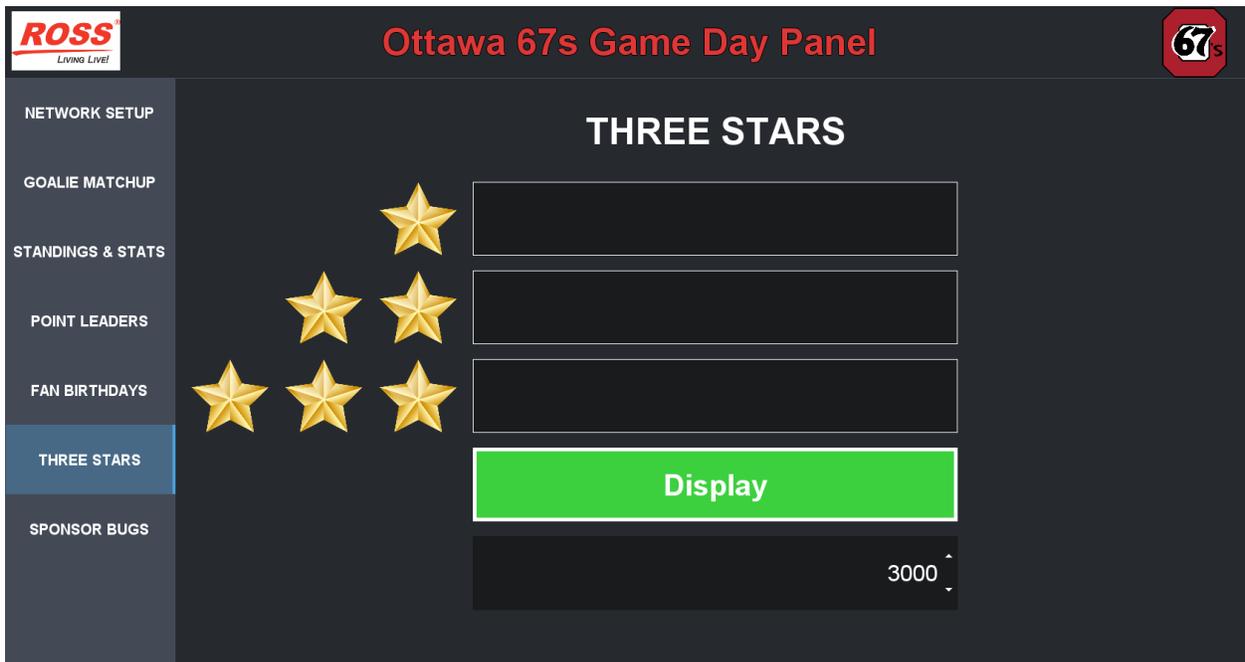
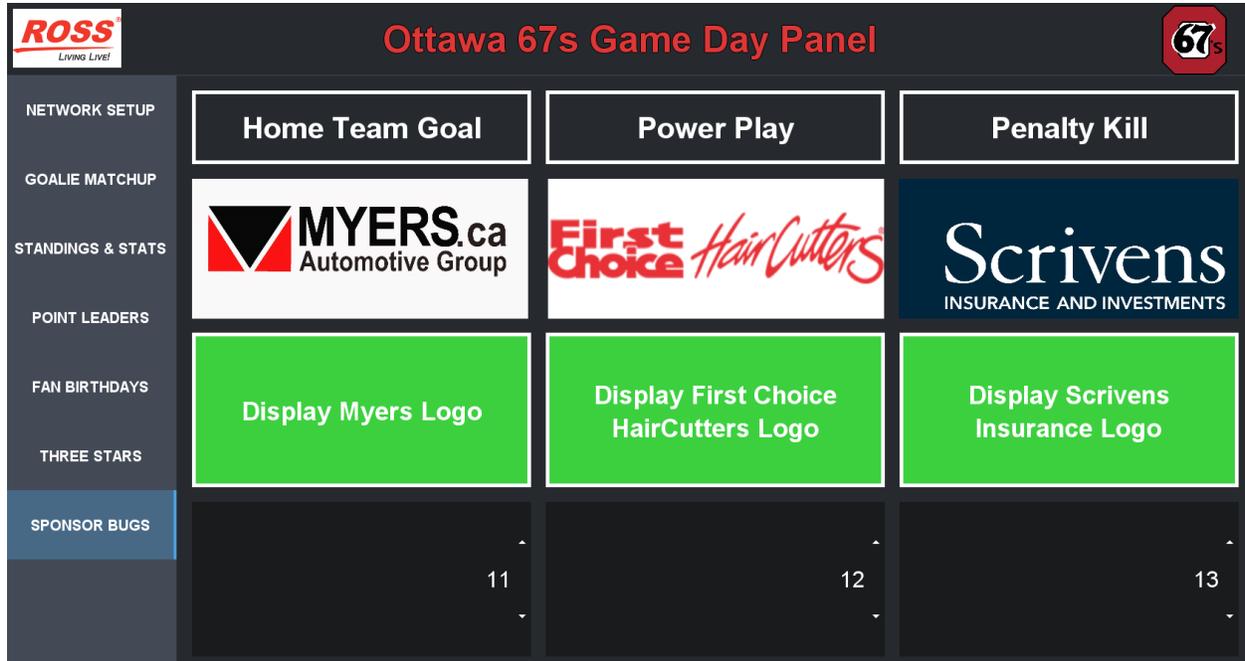


Fig. 6: Three Stars Tab.



**Fig. 7:** Sponsor Bugs Tab.

DB is a free, open and custom platform from Ross Video for facility control and monitoring that enables users to quickly build unique, tailored CustomPanels that make complex operations simple. CustomPanels built in DB are used by major broadcasters and larger sports venues across the world. DB contains many features including OpenGear® Control and Monitoring, Panel Builder, DashBoard Connect™, Visual Logic, Downloads and the User Community.

## 2.1 Cautions & Warnings

**CAUTION** - DB does not save automatically so you must manually save your file before exiting the software by clicking File > Save or by pressing Ctrl + S.

**WARNING** - DB is not a collaborative platform resulting in difficulties for group work.

## 3.0 Getting Started

This section provides a general walkthrough of the DB software from initiation to exit. The information should enable the user to understand the flow of the system and to create the same prototype as The DB Deltas for further work and improvements.

### 3.1 Set-up Considerations

DB is a free application that you can download through this link:

<https://www.rossvideo.com/support/software-downloads/dashboard/>

Scroll down the page where you will see the download options for Windows, OS and Linux operating systems.

### 3.2 User Access Considerations

The users for this specific design challenge are the operators at the TD Place Arena. It is known that this arena has access to the appropriate equipment, so if a different arena wishes to use the DB panel, they would need the required hardware and software. For the user to gain full functionality of the panel, they must type their XPression IP address into the text box in the network setup tab. This consideration is made with the assumption that the user has access to and is trained on the graphics system XPression.

### 3.3 Accessing the System

To access the system, the user has to open the DB software on their device. To use and test The DB Deltas' panel specifically, the user has to connect XPression to DB by entering their IP address in the network setup tab. The user would then customize the panel for the game, adding the correct information for the fan birthdays, three stars and goalie matchup tabs, as well as selecting the proper CSV files for the standings and statistics, and point leaders tabs. After everything is set up, the user should quickly run through the functions to ensure all aspects work as expected.

### 3.4 System Organization & Navigation

This section describes the basic DB interface and its components. The following figure (Fig. 8) displays the basic DB window:

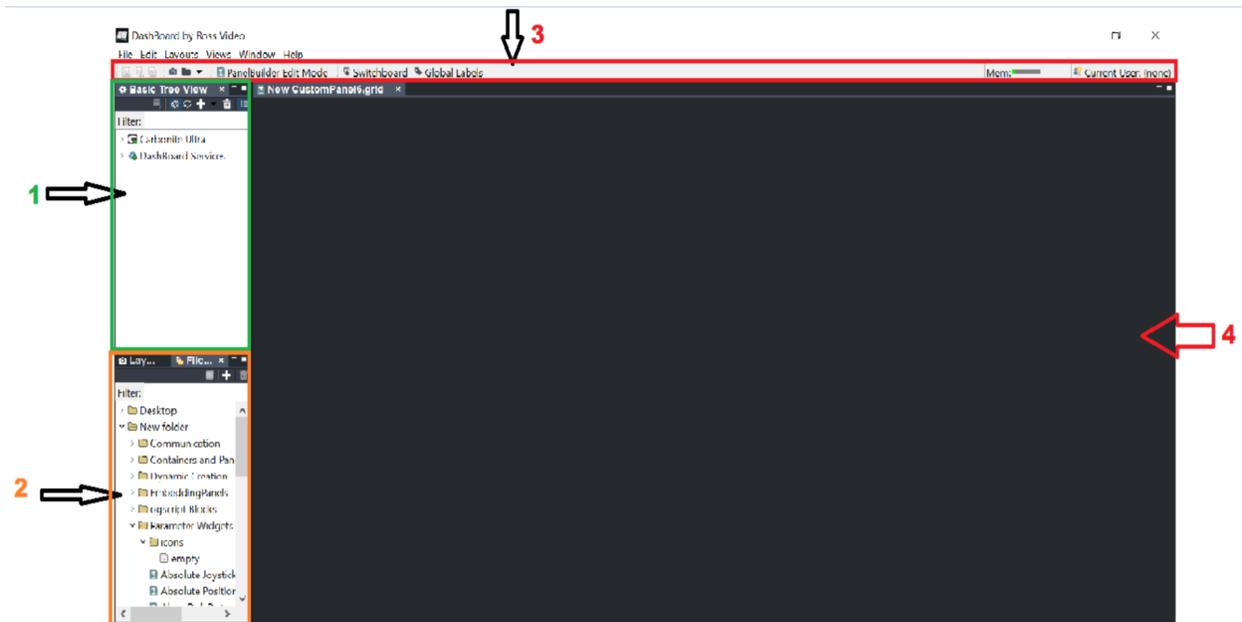


Fig. 8: Basic DashBoard Interface with Components Labeled 1-4 (described below).

## 1. Basic Tree View Tab

This area lists the devices that can communicate with DB. From this tab, you can open Device Editors, enable or disable auto connections to devices, re-query the network for new devices, manually add new connections and delete devices.

## 2. Advanced Tree View Tabs

This feature enables you to create a customized hierarchy of folders and sub-folders in a single tab, where each folder can be expanded to display a list of devices and subfolders.

## 3. Main DashBoard Toolbar

**3.1 File** - From this menu, you can manually add a device or create a new CustomPanel, and save changes made to device configuration files on your computer.

**3.2 Layouts** - From this menu, you can display a Layouts View tab in the DB window, save your current arrangement of tabs in the DB window, lock the DB window to its current state, or select from a list of saved layouts to apply.

**3.3 Views** - From this menu, you specify which tabs to display in the current DB window.

**3.4 Window** - From this menu, you can open multiple DB windows on a single screen, restore the default DB client layout of tabs, show or hide the main toolbar, set the window to the maximum screen size, lock the current DB window, and set preferences for Automatic discovery of devices on your subnet, automatic login, and software updates.

**3.5 Help** - From this menu, you can access the DashBoard online help system (Help Contents).

## 4. Editor

This is where you will be designing your panel.

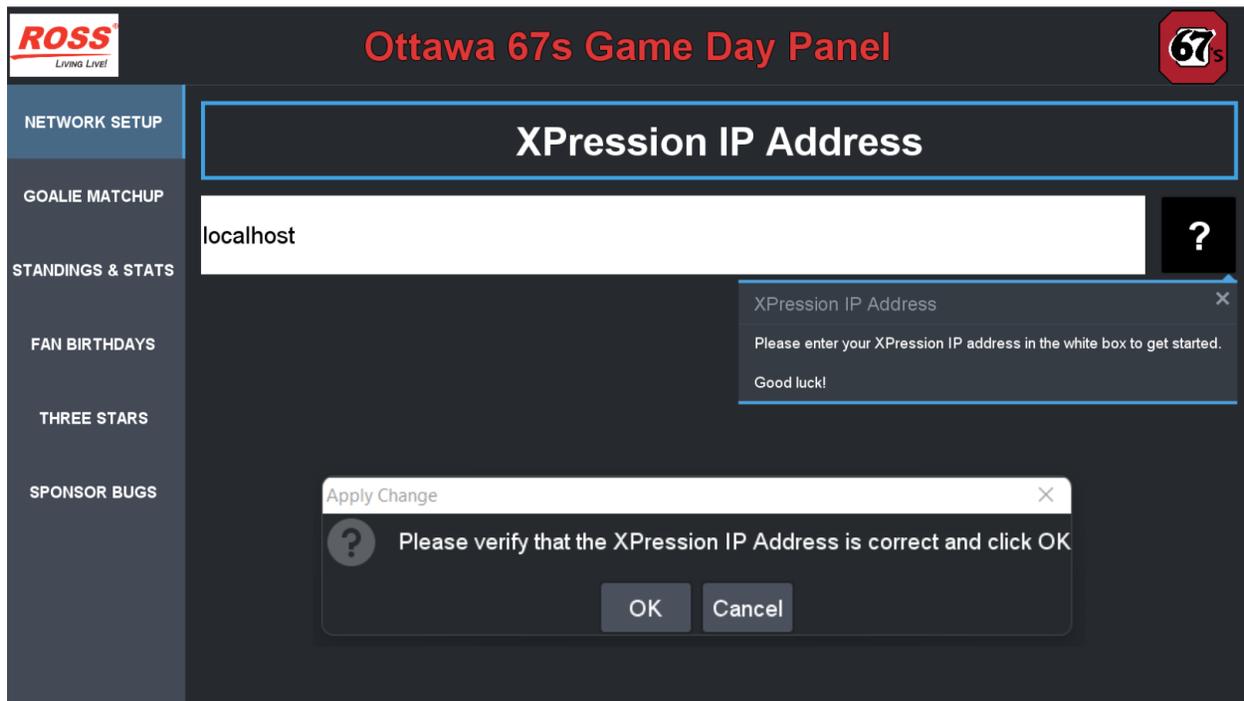
## 3.5 Exiting the System

Before exiting the application DB, ensure the work on your panel has been saved.

## 4.0 Using the System

The following section provides detailed instructions on how to use the various functions and features of the Ottawa 67's Game Day DB Panel.

### 4.1 Network Setup



**Fig. 9:** Network Setup Tab with Help Button and Apply Change Verification Prompt.

The network setup page allows the user to enter their XPression IP address into the text box that connects the buttons on the DB panel to the graphics on XPression. Once the IP address is entered, an apply change verification is displayed which prompts the user to double check the IP address. This helps reduce the risk of an incorrect input and any following errors as a result. Once the input is confirmed, the user can click OK. There is also a help button to the right of the text box that gives the user instructions and wishes them luck before the game.

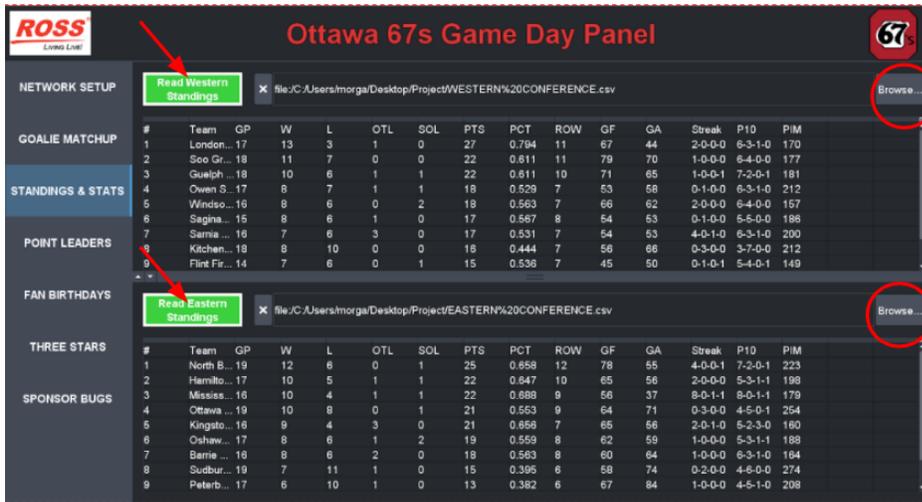
## 4.2 Goalie Matchup

The screenshot shows the 'Ottawa 67s Game Day Panel' interface. On the left is a sidebar with the following menu items: NETWORK SETUP, GOALIE MATCHUP (highlighted), STANDINGS & STATS, POINT LEADERS, FAN BIRTHDAYS, THREE STARS, and SPONSOR BUGS. The main content area is titled 'Ottawa 67s Game Day Panel' and features a '67s' logo in the top right. It is divided into two columns: 'Home Team' and 'Away Team'. Under 'Home Team', there are three input fields labeled 'Goalie Name', 'GAA', and 'SV%'. Under 'Away Team', there are three corresponding empty input fields. A large green button labeled 'Display' is centered below the input fields. At the bottom right of the main area, there is a spinner control showing the number '2000'.

**Fig. 10:** Goalie Matchup Tab.

The goalie matchup tab consists of six textboxes that allow the user to enter the goalies names, goals against average, and save percentage for both the home and away teams. Once this information is entered, the user can select the takeID from XPression using the spinner at the bottom. Once the display button is pressed, the information will be passed on to XPression and displayed on the jumbotron. The information can be changed quickly and easily as the information changes.

### 4.3 Standings and Statistics



**Fig. 11:** Standings and Statistics Tab with Specific Conference Standings CSV Files.

The standings and statistics tab includes two file pickers, two buttons, and two tables. There are two of each element, one for the eastern conference standings and the other for the western conference standings. To use this tab, the operator must click browse on the file picker circled in red in **Fig. 11** and select a pre-made CSV file. Once the file is selected, the user clicks the bright green button indicated in **Fig. 11** with the red arrows. When the button is pressed the information in the CSV file will appear in the corresponding tables. If the operator does not select a file, no information will appear in the tables. If the operator chooses a file that is not a CSV file the system will say that it could not read the file.

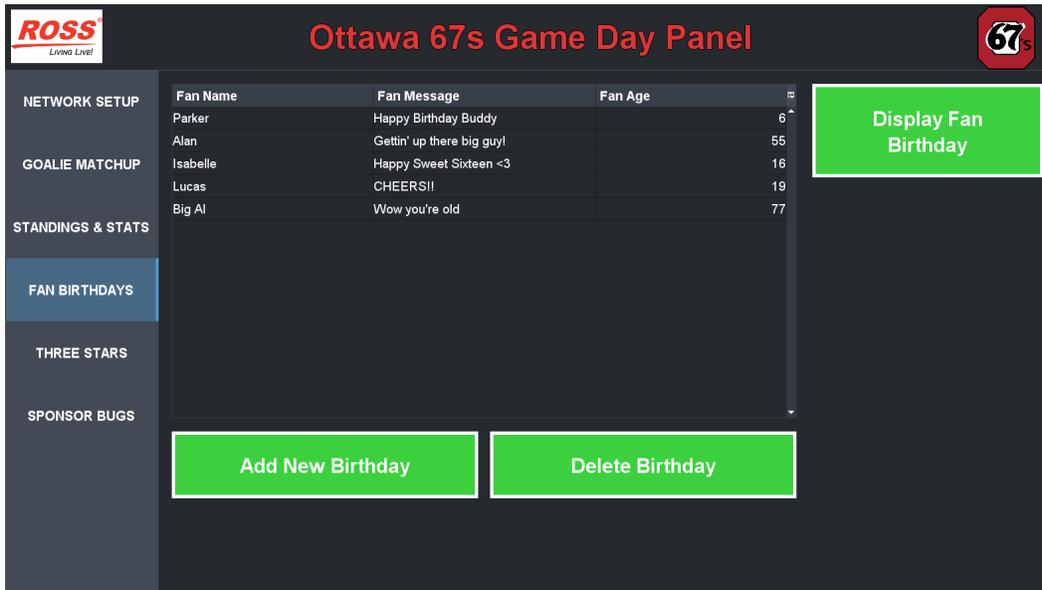
## 4.4 Point Leaders



**Fig. 12:** Point Leaders Tab with Arbitrary CSV File.

The point leaders tab works the same as the standings and statistics tab. There is one file picker, one button, and one table. The operator has to select a CSV file in the file picker circled in **Fig. 12** by pressing browse and selecting a file. Once a file is selected the user presses the bright green button indicated with a red arrow in **Fig. 12** and the information from the file is displayed in the table. If there is no file selected no information will appear in the tables, and if the file selected is not a CSV file then the system will not load the file.

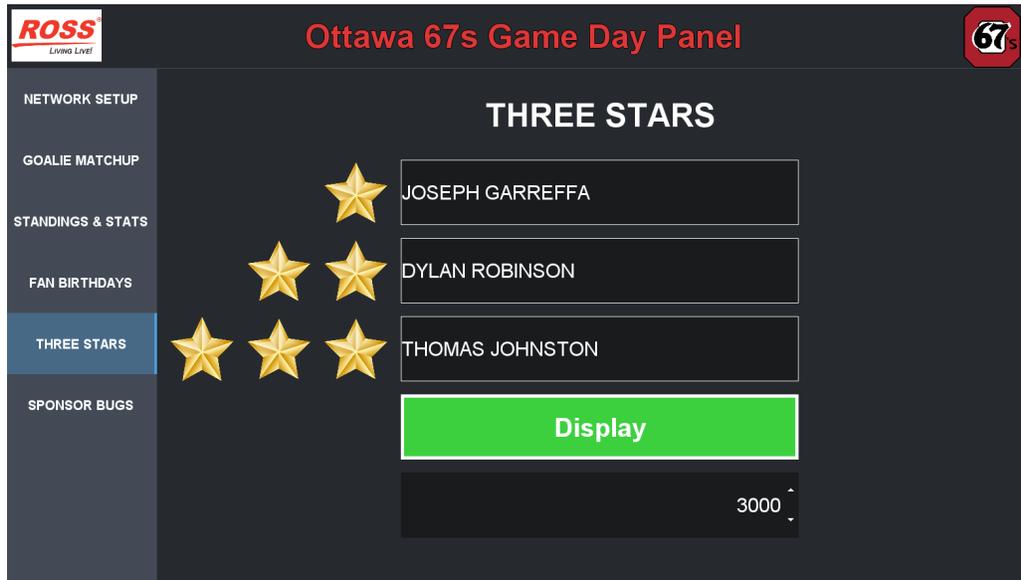
## 4.5 Fan Birthdays



**Fig. 13:** Fan Birthdays Tab with Random Fan Birthday Information.

The fan birthdays tab includes three functional buttons. The first is the “Add New Birthday” button, which allows the user to add a new row of data in the table, including a name, message and age for the fan. The “Delete Birthday” button does just the opposite, it will remove the most recently created row of data in the table. The “Display Fan Birthday” button will display all of the fan birthdays from first to last, for equal time intervals.

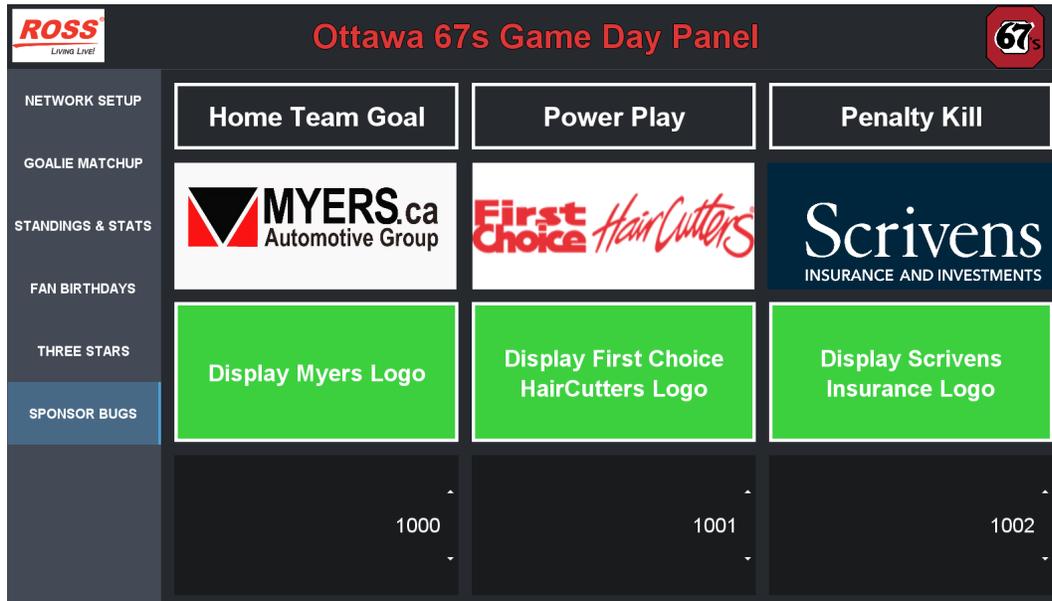
## 4.6 Three Stars



**Fig. 14:** Three Stars Tab.

The three stars tab has four functional aspects including three modifiable text boxes that can be used to input the names of the desired players. The fourth element is the “Display” button which displays the information from the text boxes. Its functionality can be proven by opening the openGear debug information tab under “views” in the top left corner while using DB, and seeing the output when the display button is pressed. The final trait of the panel is the bottom modifiable number box, which is used to enter the necessary takeID from XPression.

## 4.7 Sponsor Bugs



**Fig. 15:** Sponsor Bugs Tab.

The sponsor bugs tab consists of three buttons and a modifiable takeID box for each corresponding button. The first button displays the Myers logo upon being pressed. The second button displays the First Choice HairCutters logo upon being pressed and the third button displays the Scrivens Insurance logo when pressed. Each button and logo has a corresponding situation for which the sponsor bug will be displayed, for example the Myers logo will be displayed when the home team scores a goal.

## 5.0 Troubleshooting & Support

This section describes recovery and error correction procedures, including error conditions that may be generated and corrective actions that may need to be taken.

### 5.1 Error Messages or Behaviors

Errors can occur when sharing the DB panel file with other users due to the use of an External XML Data Source File. The correction for the problem is to instead use a Blank Self-Contained Data Source File.

Errors may occur when a DB panel file is shared with other users that have different monitor resolutions. The correction for the problem is to make sure that all users have the same screen resolution (1920 × 1080 is recommended).

### 5.2 Special Considerations

DB can be updated at any point in time. When the software is updated, it may not always be backwards compatible. It is possible that an update may cause some bugs to occur.

## 5.3 Support

Ross Video's website has a [Help Center](#), [Help / FAQs Page](#) and a section called [DashBoard U](#) with tutorials on commonly used functions in DB. There are also forums where users can ask questions and get solutions from Ross Video employees and other users. **Note** that only Ross Video members can ask questions. To create an account click [here](#).

**Ross Video Contact Information:**

Phone: +1 613 228 0688

Email: [community@rossvideo.com](mailto:community@rossvideo.com)

## 6.0 Product Documentation

This section documents important aspects of the project work and how the final result can be obtained.

### 6.1 BOM (Bill of Materials)

- Ross Video's DashBoard Software
- XPression Graphics System

### 6.2 Equipment List

The only equipment needed to build the system is a device capable of running the DB software (laptop, computer, etc.)

### 6.3 Testing & Validation

The functionality and ease of use of each subsystem in the DB panel was tested by all team members. The results obtained verified that each tab functioned how it was expected to. Due to lack of time and access to the lab on campus, only one subsystem was fully tested using XPression (see **Fig. 16**). To test the panel, the graphic takeIDs were manually inputted into the panel and when each button was pressed the sponsor bug appeared on the screen (not shown in **Fig. 16**). This proves that the sponsor bugs tab is fully functional.



Fig. 16: DashBoard Panel Testing using XPression.

## 7.0 Conclusions and Recommendations for Future Work

Throughout this project, The DB Deltas learned that producing content meant to be outputted on another device is not as simple as it sounds. The work put in to develop a proper functioning code does not do justice to the simplicity of the final result. Countless hours were spent creating these prototypes meaning that a large amount of failed attempts were inevitable. The biggest challenge of producing this prototype was having no previous knowledge of DB and very little training. This challenge taught us that it is possible to produce high quality work even when working with a new software and no previous knowledge of it. With the use of feedback and recommendations from many different sources, it was possible to create prototypes as DB beginners. The most productive avenues for future work would be to improve all around simplicity and user comfort of the prototypes as well as XPression implementation.

If we had a few more months to work on this project, we would have done more advanced research into the XPression system and how our prototypes could easily function with it. Basic knowledge of XPression was acquired to test one of our prototypes towards the end of the project work, but with more time, this knowledge could be developed to integrate XPression into all tabs. This is also something that we abandoned because of lack of time, but would be very important to add to ensure a proper functioning of all prototypes.

## 8.0 Bibliography

Link to MakerRepo: <https://makerepo.com/morganquinn/968.gng1103-g04-the-dashboard-deltas>

- *Dashboard U*. Ross Video. (2021, August 25). Retrieved December 8, 2021, from <https://www.rossvideo.com/products-services/management-systems/automated-production-control/dashboard/dashboard-u/>
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