

SurgeCart and Podcast Generator

Student Radio Awards 2009 Technical Achievement Award Entry

By Jason Allen

This document illustrates the technical innovations achieved in the past year at Surge Radio. These include the following:

1. **SurgeCart** – our new bespoke playout software, incorporating a number of features missing from our current software.
2. **Surge Podcast Generator** – a podcast generator automatically removing music from recordings and stitching links together.
3. **Other Innovations in Brief**
 - a. **MusicBox** – our music tagging software, simplifying the previously laborious task of adding music to the system.
 - b. **iSchedule** – a drag and drop web interface to easily modify the schedule.
 - c. **Committee's Choice Choon Chooser (C₄)** – a system to vary the music played during Jukebox by playing the more popular tracks selected by the committee.

SurgeCart

As a committee, we initially wanted to address the problem of our inability to automatically log played tracks with our current software. Our solution was to create a brand new program which incorporated this feature. We made the software similar in layout and design as the current playout system so that it was familiar to DJs. We also ensured that the new software had an enhanced search feature as this was lacking in the current software.

Another problem we had noticed in the past years was that tracks were played too frequently: sometimes more than once per hour. SurgeCart notifies DJs of tracks that have been played within a set time – usually set to one hour. These tracks are highlighted in pink until they are allowed to be played again.

Surge has a music policy which is enforced by the Head of Music and requires DJs to play a certain number of tracks from particular playlists during the day. SurgeCart displays the number of tracks required to be played in each playlist and the number which have already been played for each.

If a DJ is playing a track from a CD, MP3 player or laptop, they can easily log tracks into the system by clicking on the *Manually Log Track* button on SurgeCart.

The automatic playlist logging system has completely replaced our paper logging and has allowed us to easily keep an eye on which shows are obeying the playlist policy via our playlist logging web interface. This feature has also allowed us to automatically generate weekly charts of the most played tracks in just a few seconds, a process that used to take several hours of tallying on paper.

Surge Podcast Generator

This year, the Surge committee wanted to have a listen-again feature on the website. Due to our license we were not able to do this. However, as we know when tracks are played via the playlist logging produced by SurgeCart we were able to develop an application to remove the tracks from hourly recordings of transmission and just keep the links between the songs. This method proved to be satisfactory for shows which played all their tracks via SurgeCart but was flawed when a DJ played a track from a laptop and the system did not know the length of the track.

The system was improved with a hardware solution used to detect when the microphones were on using the remote on the back of the mixer. This method uses the same system as the one that switches the *Mic Live* light on and off. The signals from the mixer plug into a USB digital interface in the back of the podcast generating computer and the software logs these signals with the time they occurred. The Podcast Generator software uses this data to know when the microphones were on and keeps those links to put in the podcast.

The podcast generator software generates each of the links, normalises them so they are of equal volume, cross-fades each of them together with sound effects along with introduction and conclusion jingles.

If, for any reason, the microphone data cannot be retrieved, the original music method can still be applied. The podcast generator has a user interface to allow a user to manually select links and create a podcast should they ever need to.

One minute after a show has finished airing, the podcast generator starts generating a podcast for the previous hour. If the length of the show is greater than one hour then the links from all the hours are stitched together to produce one podcast. A podcast can be generated and downloadable from the website within ten minutes of the show airing with no human interaction.

MusicBox

Prior to this year, the process of adding new music to the system was as follows:

- I. Rip the track from CD
- II. Trim the silence
- III. Tag the file
- IV. Find the next track code via a script on the server
- V. Manually rename the file
- VI. Upload the file to the server

This was a painstaking process requiring six different programs to perform the task of adding one track to the system. We developed an application to reduce those six applications into just three. We encapsulated the process of steps II to V into one application. Having this new application has allowed us to add more music to the system this year than ever before.

iSchedule

After having to make many last minute alterations to the schedule which took many steps to simply change the length of a show we decided to implement iSchedule. iSchedule is our interactive schedule editing system. It allows us to drag and drop shows on the schedule to different times in the week or resize them to change the duration of the show similar to Google Calendar. Show times can be changed in a matter of seconds.

Committee's Choice Choon Chooser (C4)

When no live shows are on air the Jukebox only played tracks from the Playlists. This reduced the variety of the music played so we used C4 to allow committee members to vote on their favourite tracks. The most popular tracks are played more frequently. It was interesting to see how the music taste changed as the committee changed over in May and June.