

## **Boomdizzle Producer Studio Prototype 2 - Statement of Work**

The following document details the specific work to be completed by Zero G Games for Boomdizzle (the client) in the subsequent phase of the Producer Studio product. This document should be considered the definitive outline of all proposed work to be included in Prototype 2 development. Any supplementary discussions, diagrams, or concepts not specifically outlined in this document are not part of the Prototype 2 development. This does not by any means limit Zero G Games from adding features and or functionality as it sees fit to be best realize proposed features in this document.

### **Format of This Document**

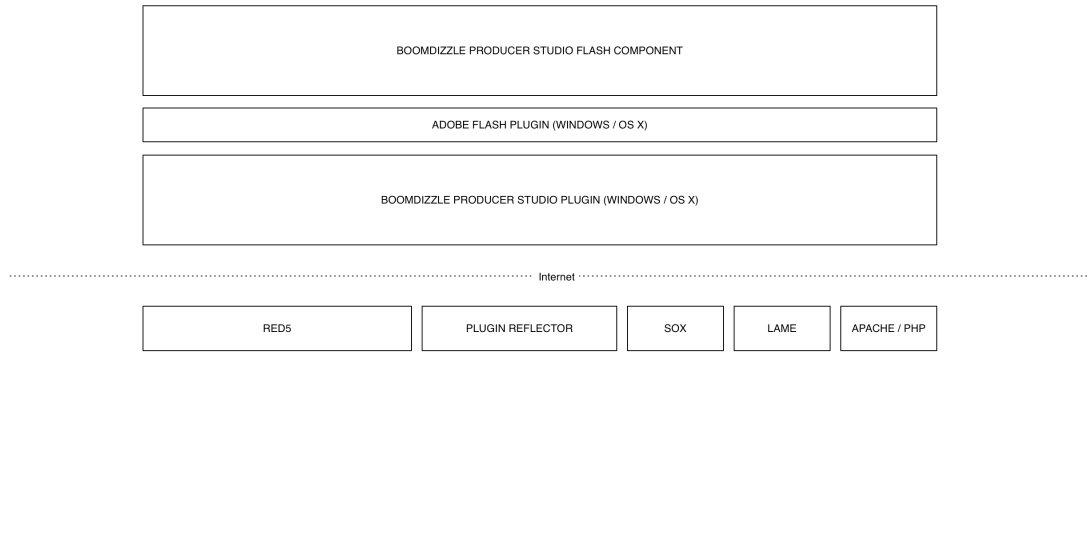
Each section of development has been illustrated in a diagram that has been given a label. This document will refer to each diagram and add any level of otherwise undocumented clarity to those areas of development. Any missing descriptions or concepts not included in this document should be considered not included in the work being performed by Zero G Games for Prototype 2 development.

It should be assumed that the information in the feature diagrams and in this document are both true to each feature design.

## Architectural Shift

### PROTOTYPE 2 ARCHITECTURAL DIAGRAM

Prototype 2 Architectural Diagram captures the raw components being developed to support the proposed features.

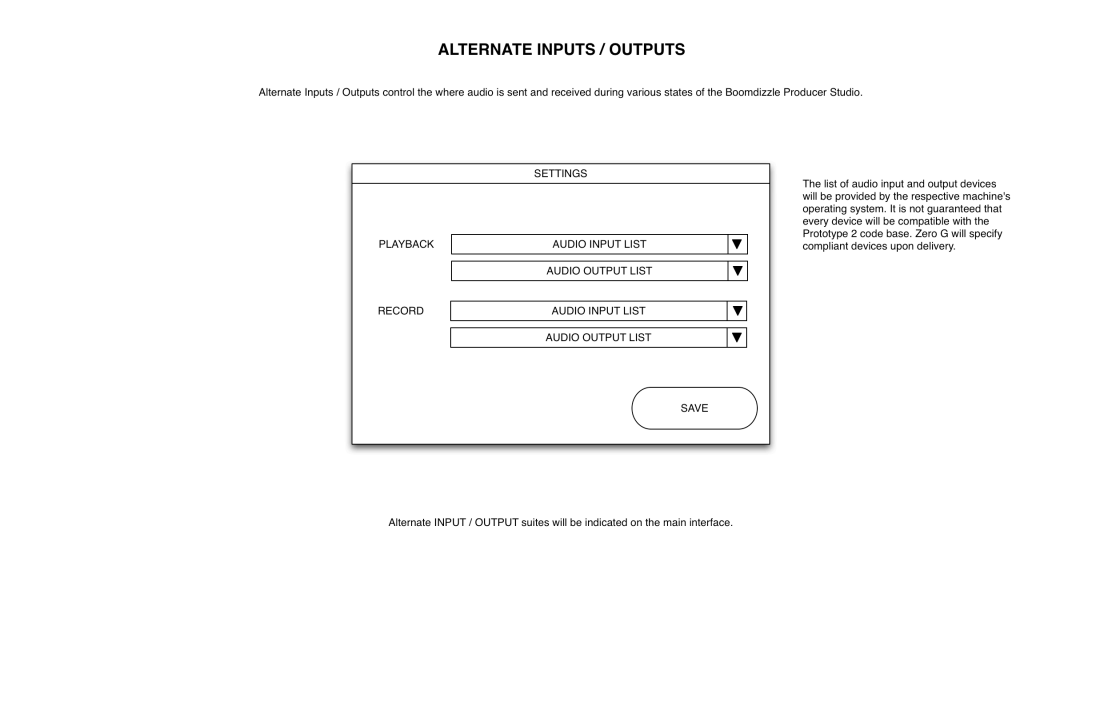


The Boomdizzle Producer Studio Prototype 2 will incur a shift in fundamental technologies. The Java applet layer will be removed in lieu of a pure C++ / Objective C plugin component that will take on all previously Java applet related tasks. The overall purpose of migrating features into the plugin is to achieve ultimate access to application memory heaps as constrained by the operating system and not browser security models, and to improve the overall responsiveness of the Producer Studio interface.

The Boomdizzle Producer Studio plugin will not be compatible with all operating system versions or web browser applications. We will provide a list of compatible configurations upon completion of Prototype 2 development.

*Note: It is the sincere belief that the Producer Studio will ultimately migrate out of the Flash interface plugin to achieve the visual performance required to display volume meters and other critical interface elements in as close to real-time as possible.*

Figure 1 – Alternate Inputs / Outputs

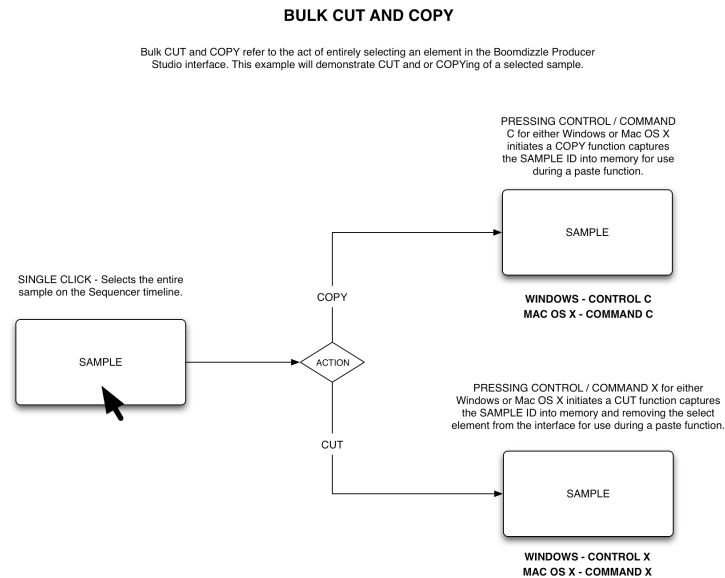


This feature allows the user to select alternate inputs for idle use of the Producer Studio and during recording sessions. The purpose of this feature is to allow the user to have multiple input and output sources available that automatically switch during the two modes of use, being defined as Engineering adjustments and Vocalist recordings.

The Producer Studio will not support all input and output devices. Zero G Games will provide a list of acceptable devices upon delivery of the Prototype 2 development. It is likely that all currently supported devices will remain supported save any operating system changes introduced by with Microsoft or Apple.

These alternate settings will be added to the existing settings entry in the database for the specified user, and reloaded once the user reloads the given account.

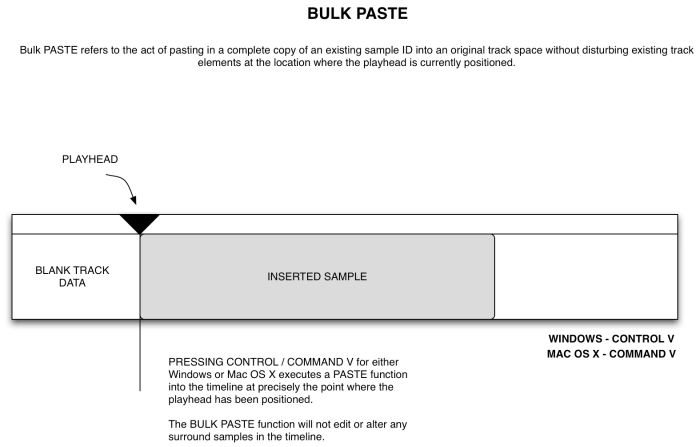
Figure 2 – Bulk Cut And Copy



This feature refers to the basic ability to select an element in the Producer Studio interface and copy an object ID into memory for later pasting into the appropriate interface construct. The user is required to single-click the element to notify the interface of its selection, and press the specified keyboard combination to COPY or CUT that element's ID into memory.

Should the user press the COPY keyboard command, the element will remain in the interface undisturbed. Should the user press the CUT keyboard command, the element will be removed from the interface entirely.

Figure 3 – Bulk Paste

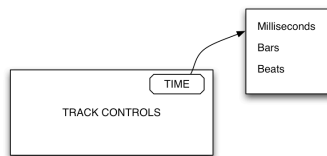


This feature allows the user to PASTE a COPIED or CUT element ID into the interface at a specified location as designated by the playhead. This feature is called out uniquely from other advanced forms of pasting.

Figure 4 – Grid Editing

#### GRID EDITING

Grid Editing refers to the denomination of time that is used to move a sequencer element.



This feature will be present for waveform editing and moving, and playhead adjustments. This feature is currently available in the normal sequencer.

This feature denotes the global ability for the Producer Studio interface to specify which denomination of time is being used to manipulate elements in the interface. The three available options for Prototype 2 are milliseconds, bars, and beats. This feature will be available via waveform editing, waveform moving, and playhead adjusting.

Figure 5 – Grid Toggle Button

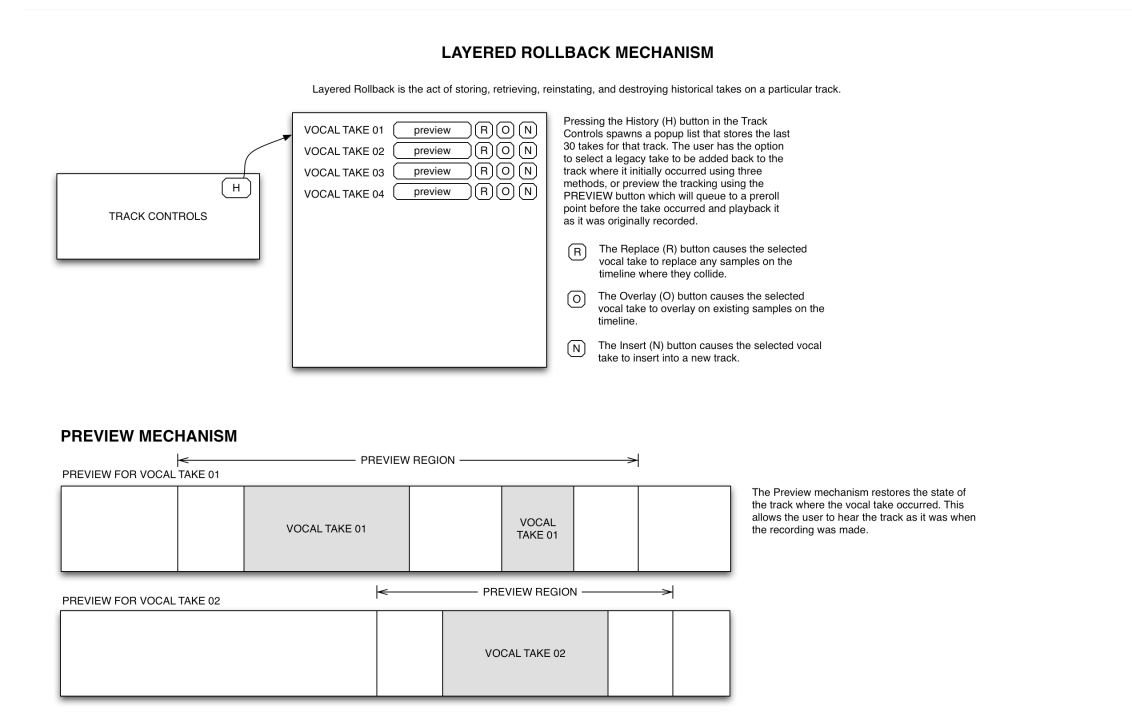
#### GRID TOGGLE BUTTON

Grid Toggle Button refers to a user interface element that tells Boomdizzle Producer Studio whether or not to snap elements to a grid during sequencer editing.



The feature allows the user to toggle ON / OFF the snap to grid feature of the Producer Studio interface. When enabled, elements in the sequencer will snap to the nearest specified unit of music (millisecond, bars, or beats). When disabled, the smallest form of measurement milliseconds will be used for all placement into the sequencer.

Figure 6 – Layered Rollback Mechanism



This feature provides a means for the user to preserve multiple vocal takes once recorded. Each vocal take that is saved by the controlling user is stored on the server as a separate sample along with its track state. The track state is defined as the area around the vocal take when the recording was made. As additional vocal takes are made, new samples are saved along with unique track data at the time of recording.

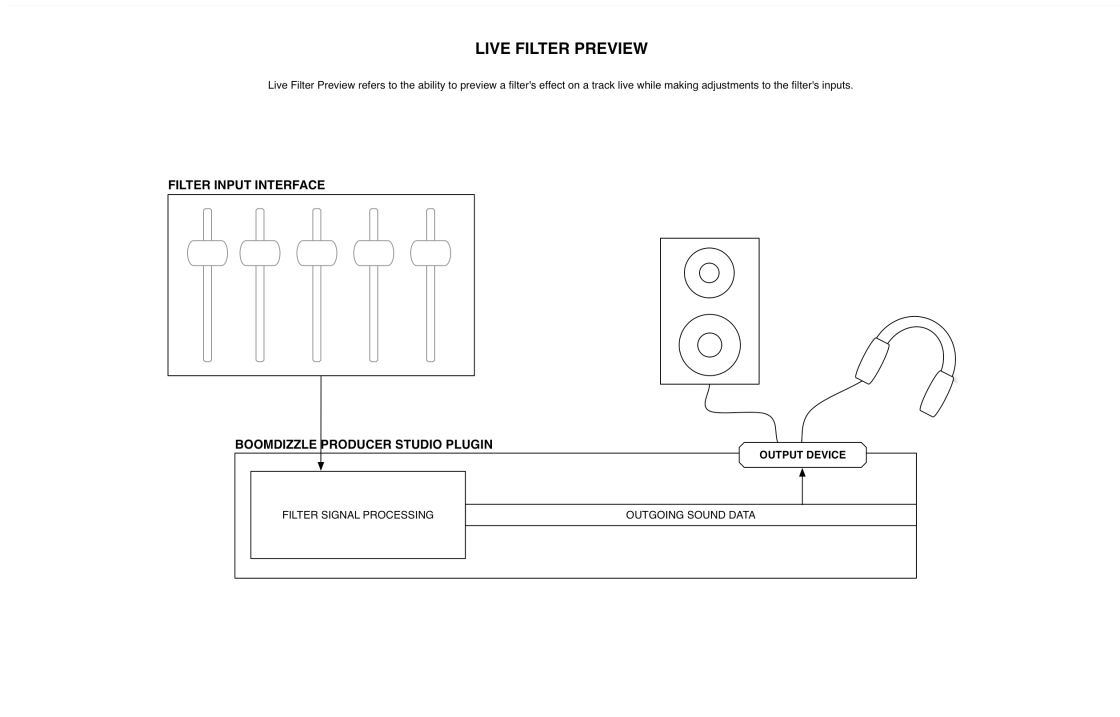
An interface button (indicated by the letter H above) allows the user to access a list of saved vocal takes. Additional buttons allow the user to preview the vocal take as it was during its recording. If the user wishes to use the specified vocal take, three options are available:

1. Replace (indicated by the letter R above) allows the user to overwrite any and all elements that conflict with the current vocal takes area. Meaning, if a sample intersects the given vocal take being used to replace existing track data, it will be overwritten and or erased.
2. Overlay (indicated by the letter O above) allows the user to add the vocal take to existing track elements. Meaning, no track data will be deleted unless it is overlaid by the specified vocal take.
3. Insert Into New Track (indicated by the letter N above) allows the user to insert the vocal take into a new track provided additional tracks are available. In the event additional tracks are not available, the user will be notified that they need to make room to use this feature before proceeding.

Previewing a given vocal take will automatically start the playhead two bars before the vocal take and follow-up with two bars after the vocal take.



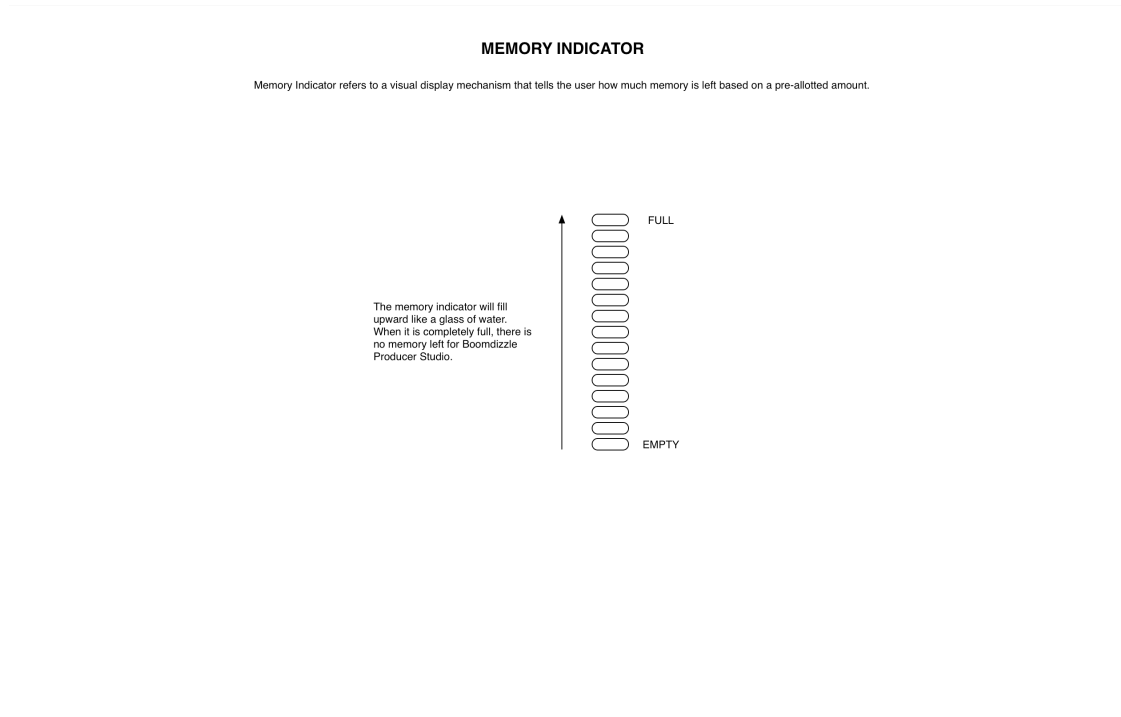
Figure 7 – LIVE Filter Preview



This feature enhancement allows the existing reverb and equalizer edits to be heard during playback. This feature is only accessible when the user has started a playback, and then accesses the filter panels. If the interface is not playing back music, this feature is not applied.

This feature is achieved by the Producer Studio browser plugin taking in interface controls by the Flash interface, and routing the controls into the plugin for immediate signal processing to the currently specified output device.

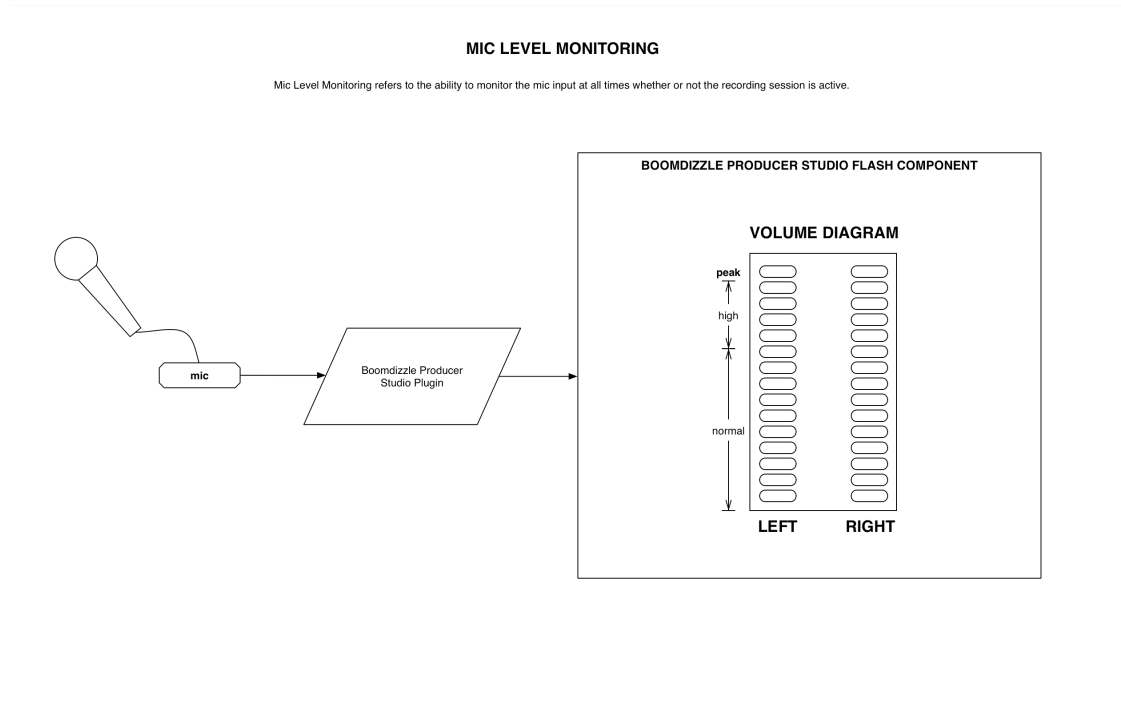
## Figure 8 – Memory Indicator



This feature allows the user to see how much designated memory is left for the Producer Studio. Each time a feature is used that consumes memory the browser plugin will update the Flash interface to notify the user in the change.

The amount of total memory is not set in stone at this time. The browser plugin will hardcode this value each time it is built. We will begin the development with a 1 gigabyte limit or proportionately less depending on the designated computer.

Figure 9 – Mic Level Monitoring



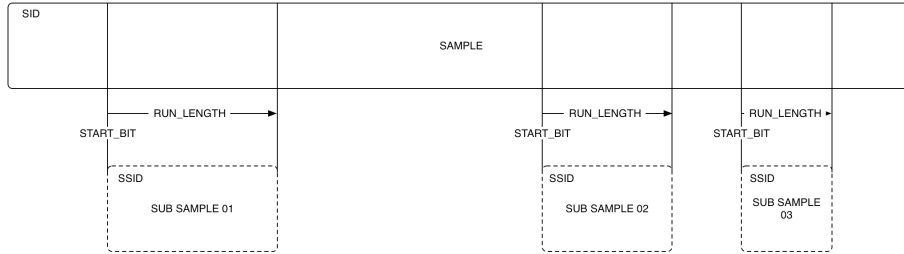
This feature continually monitors the input device when a track is armed for record. The browser plugin will monitor the input level and report this to the Flash interface. The existing volume meter will signify normal, high, and peak levels to allow the controlling user to adjust input levels before creating distorted vocal takes.



Figure11 – Non Destructive Editing

**NON DESTRUCTIVE EDITING**

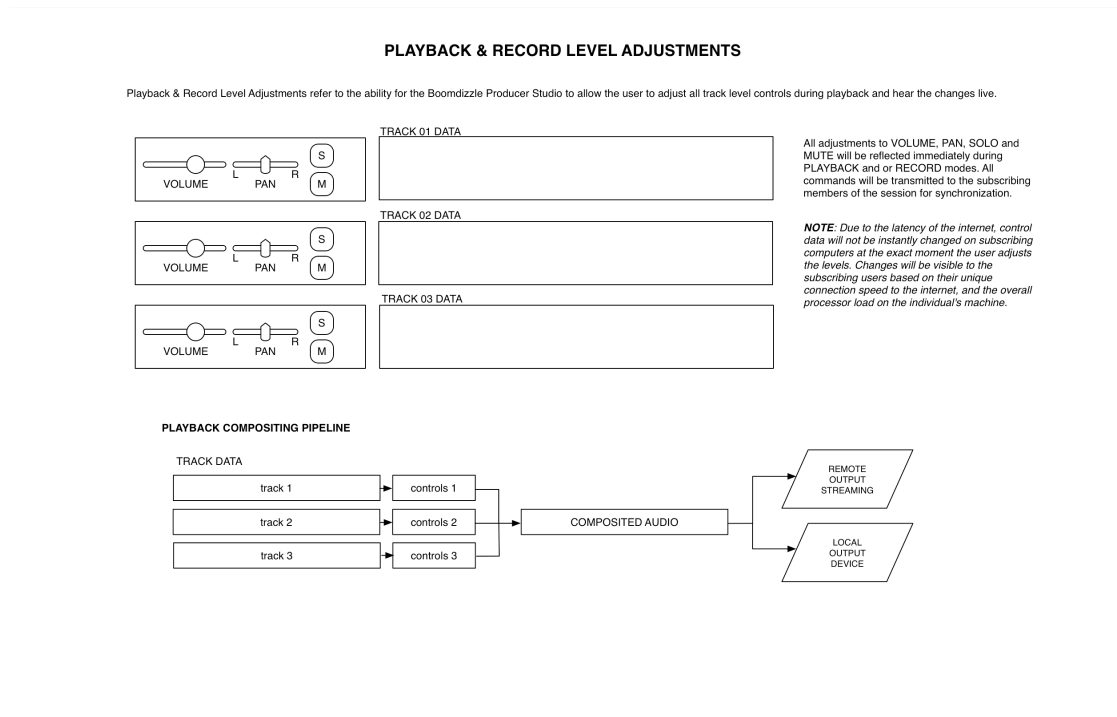
All samples in Boomdizzle Producer Studio are derived from master samples that are never manipulated. A core sample is sub selected into sub samples for playback composition. If the entire sample is desired for playback sequencing, a sub sample of the entire length of the master sample is created. Any filtering or editing of the sub sample is stored either algorithmically or rasterized into duplicate files based on a date time stamp mechanism.



SID - Sample Identification Number.      SSID - Sub Sample Identification Number.  
 START\_BIT - Millisecond position of where the sub sample begins.  
 RUN\_LENGTH - number of milliseconds the sample is intended to run before looping or quitting its playback.

This feature allows the Producer Studio to store original sample information in its raw form, and derive sub-sample data using minimal byte information. Filters and other editing applied to the sub-samples will not affect the master sample stored in memory or in the user's account or Boomdizzle database.

Figure 12 – Playback and Record Level Adjustments



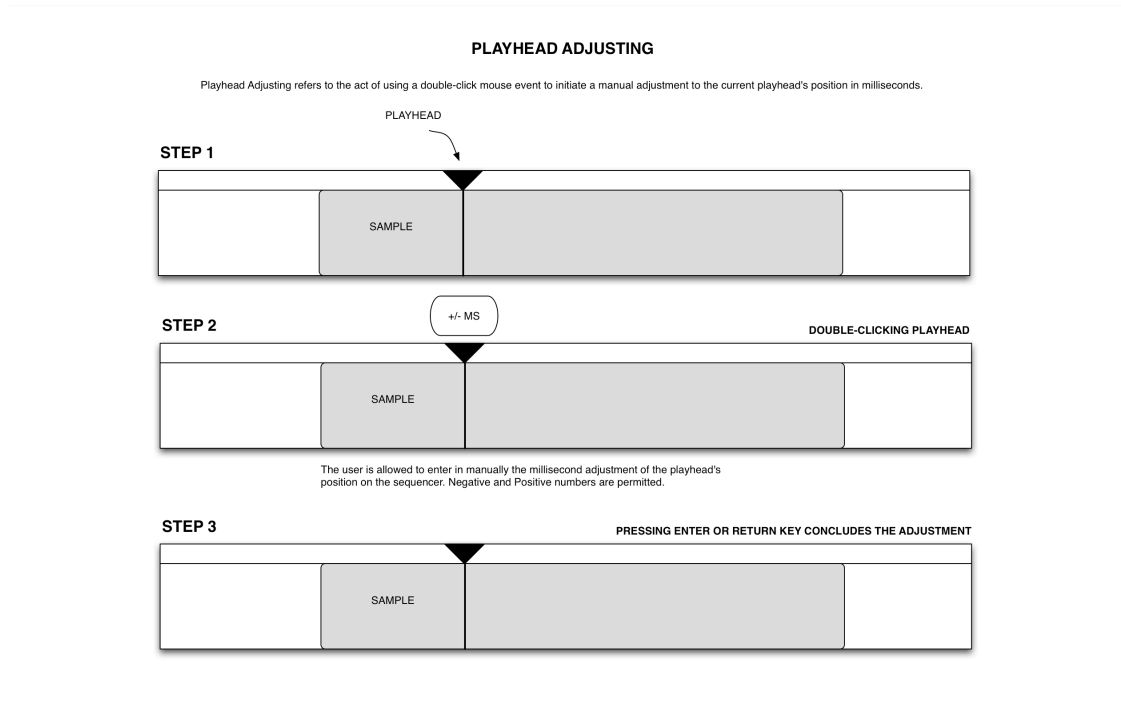
This feature allows users to edit control panel levels during playback, and have subscribing users see the edits as quickly as the supporting Internet connections and dependent software allows.

The output signal is routed down two possible paths:

1. Local Output Device – meaning, during playback the authoring user of the control change will be permitted to listen to the change live during playback.
2. Remote Output Streaming – meaning, subscribing users will hear the composited edit via a streaming pipeline to their interface.

*Note: This feature will not allow two users to modifying controls simultaneously. Only the controlling user will be permitted to make changes at a time.*

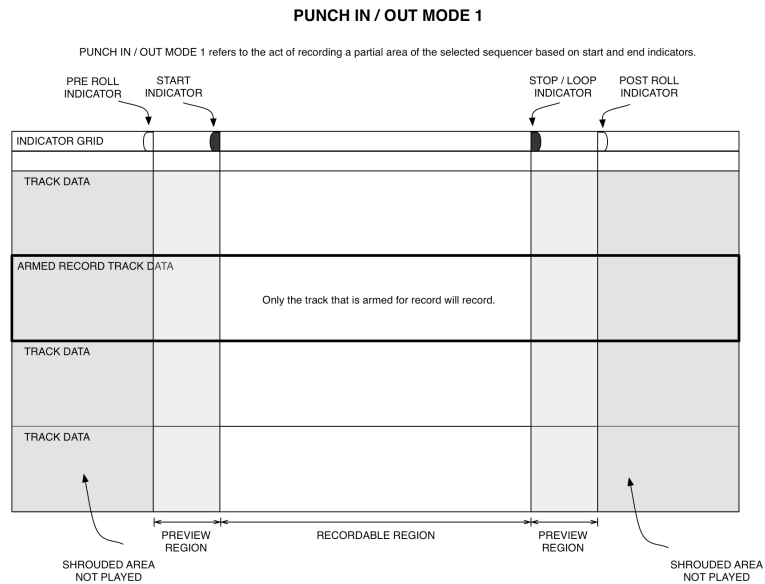
Figure 13 – Playhead Adjusting



This feature allows the user to double-click the playhead and make millisecond level edits to its positioning. Once the user has finished the edit, pressing the ENTER or RETURN key will commit the change.

This feature is made available to allow the user to achieve millisecond perfect accuracy for punch-in and punch-out settings, and later features not yet available.

Figure 14 – Punch In / Out Mode 1

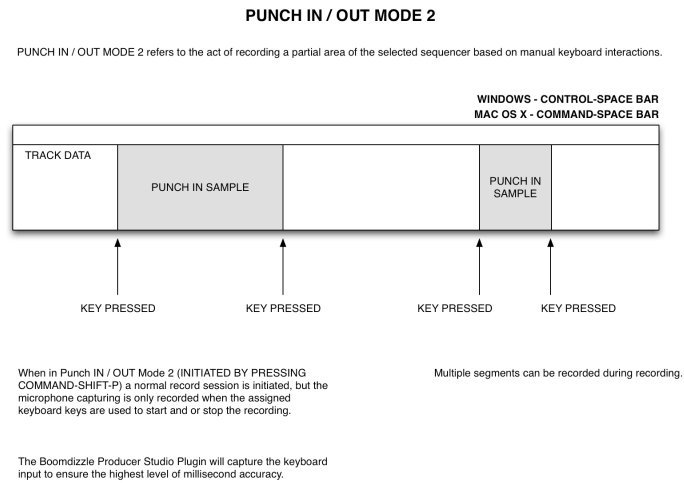


This feature allows the user to specify start points for pre-roll and record start, as well as end points for record stop, and post-roll. Once the RECORD button is invoked, only the areas specified between record start and record stop for the selected track will be recorded into memory for normal confirmation and saving.

Each start and stop marker will exhibit the playhead editing feature to allow for millisecond level editing prior to recording.

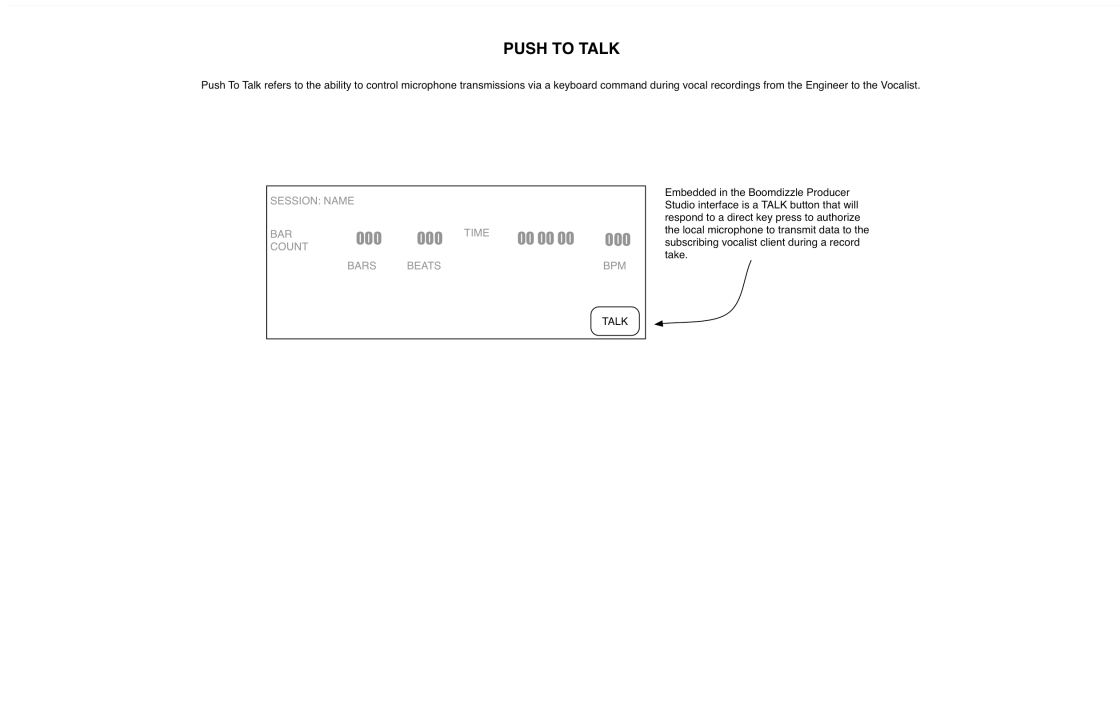


Figure 15 – Punch In / Out Mode 2



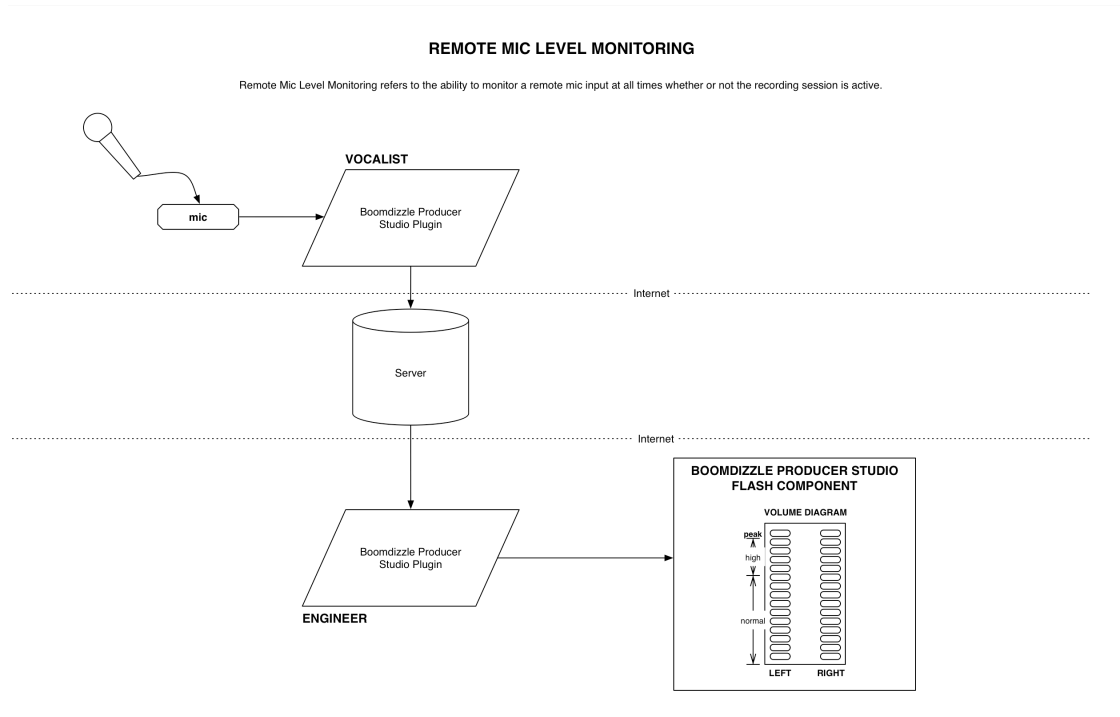
This feature allows for a manual method of starting and stopping the input device during a recording. Using a special keyboard command, the Vocalist user will be allowed to start and stop the recording however many times until the STOP button is pressed. At that time, the entire vocal take (designated by a raw RECORD and STOP button pair) will be saved in memory as a single vocal take.

Figure 16 – Push To Talk



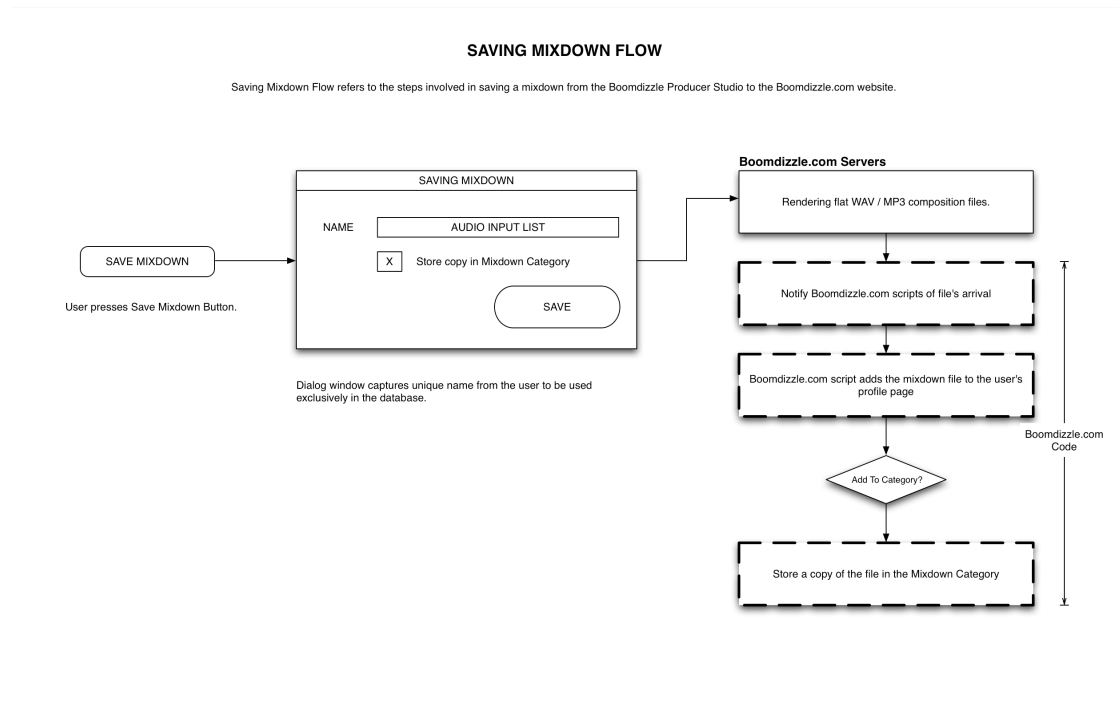
This feature allows the user to use a designated keyboard command to “talk” to the recording vocalist during a take. Otherwise all vocal input to the recording vocalist will be muted during record.

Figure 17 – Remote Mic Level Monitoring



This feature will allow subscribing users to see mic level inputs display on their local machines using a remote protocol from the authoring computer to the subscribing machine. These levels will experience normal network latency, but still provide valuable peak input monitoring prior to recording.

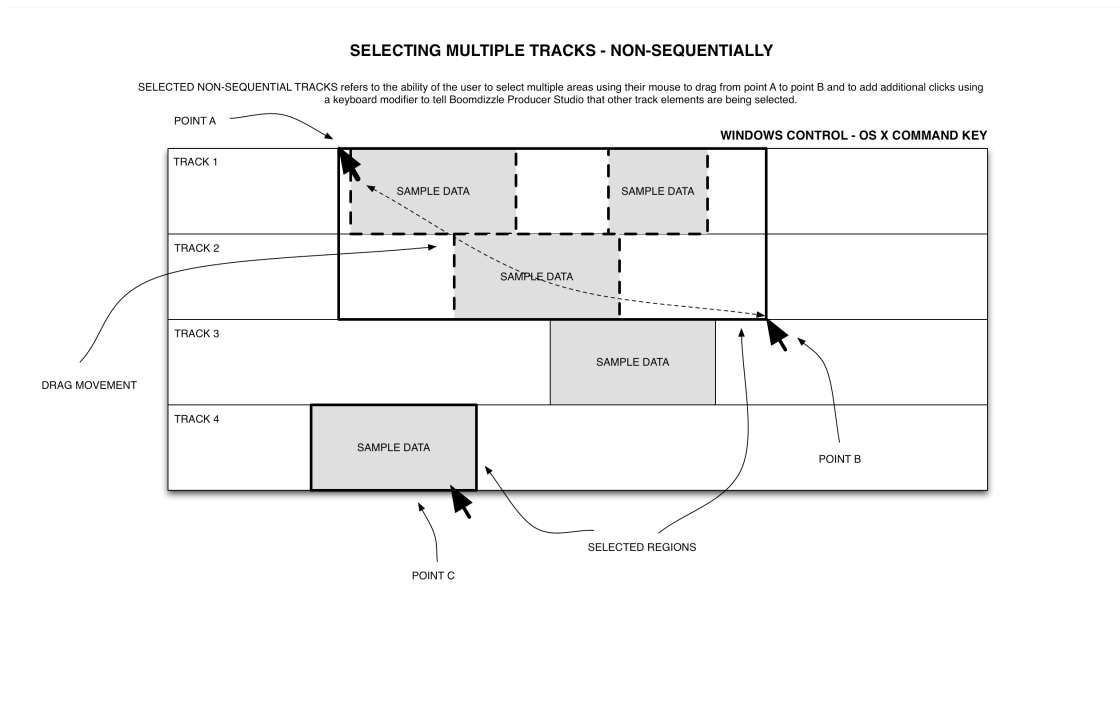
Figure 18 – Saving Mixdown Flow



This feature allows the user to save the current state of the session into a single flatten file for purchasing through the Boomdizzle.com website. Zero G Games will make a single call to existing Boomdizzle.com created PHP scripts that will make all appropriate database additions for the user's profile page to function.

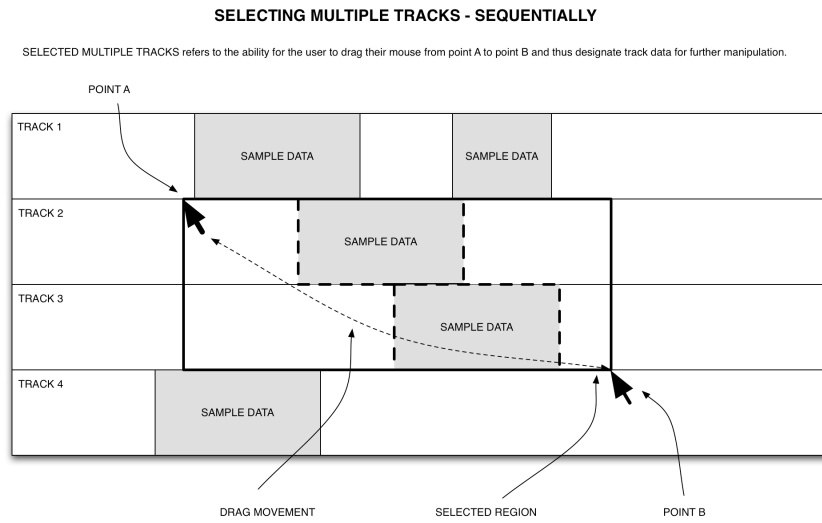
An added checkbox will be made available should the Boomdizzle.com website engineers decide to add the sample back to the user's personal MixDown category. Zero G Games can assist in this coding, but will need to specify additional statements of work and estimates prior to development.

Figure 19 – Selecting Multiple Tracks – Non-Sequentially



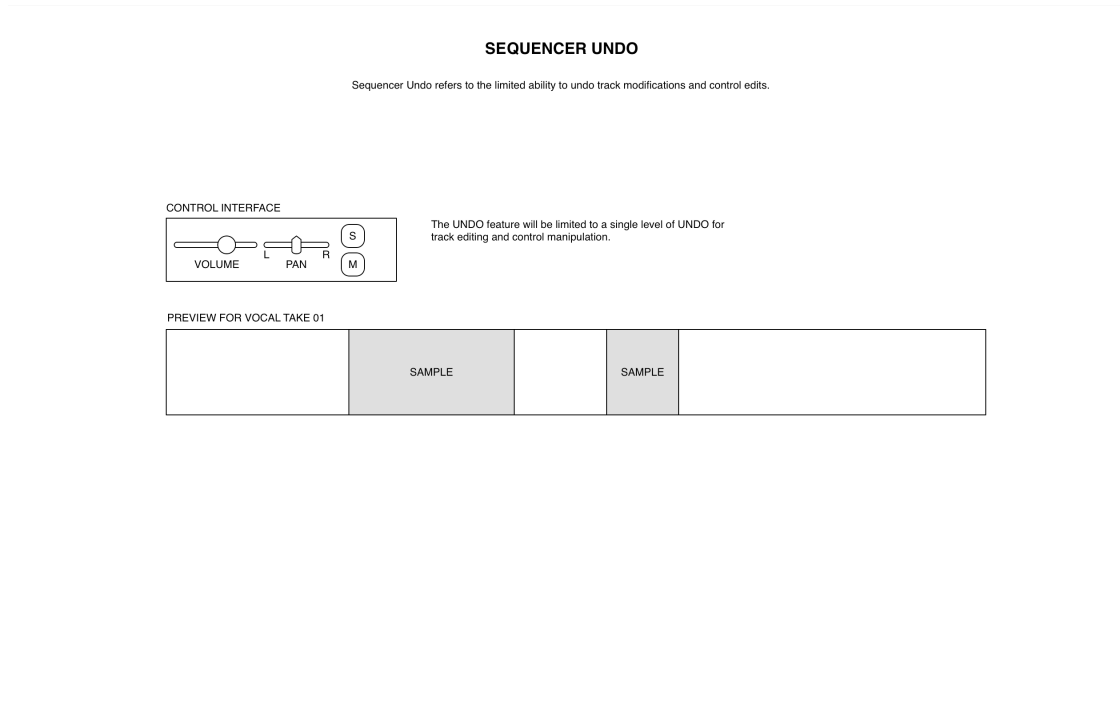
This feature allows the user to select multiple track elements that are not represented sequentially using a combination of manual mouse clicks and or dragging techniques in combination with keyboard commands. Every effort will be made to match the commonly specified user interface guidelines of each respective operating system.

Figure 20 – Selecting Multiple Tracks – Sequentially



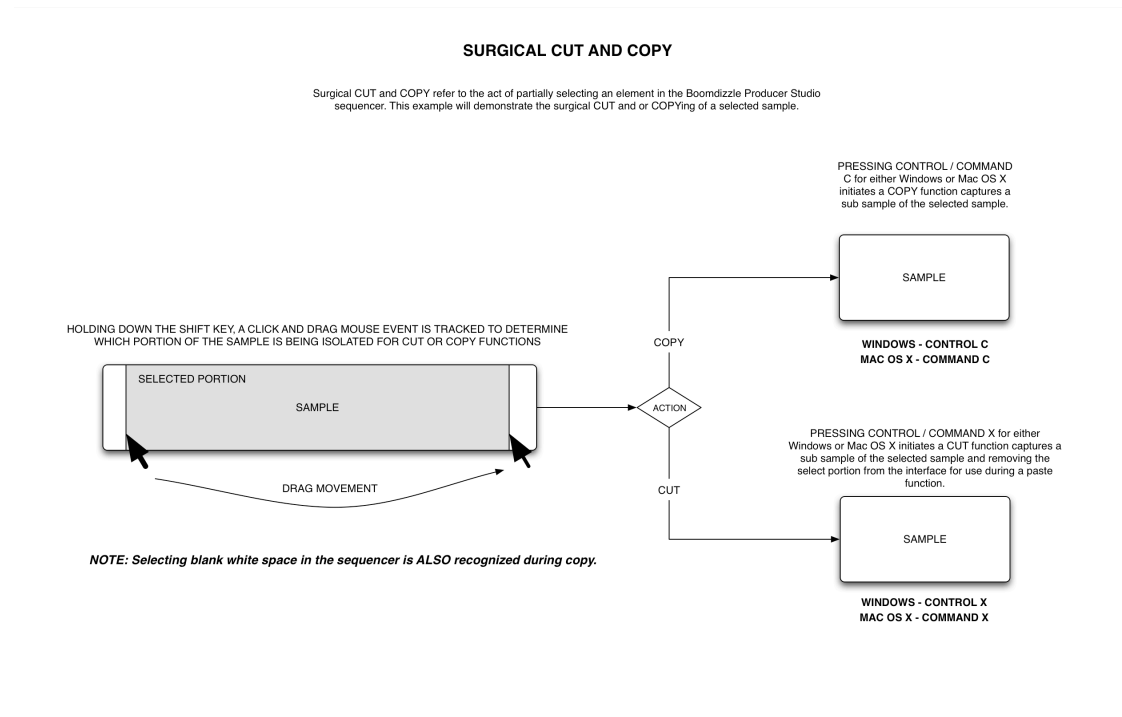
This feature allows the user to select track elements sequentially based on simple dragging techniques.

Figure 21 – Sequencer UNDO



This feature allows the user to UNDO a single action in the Producer Studio interface in the area of control panels and sequencer edits.

Figure 22 – Surgical CUT and COPY

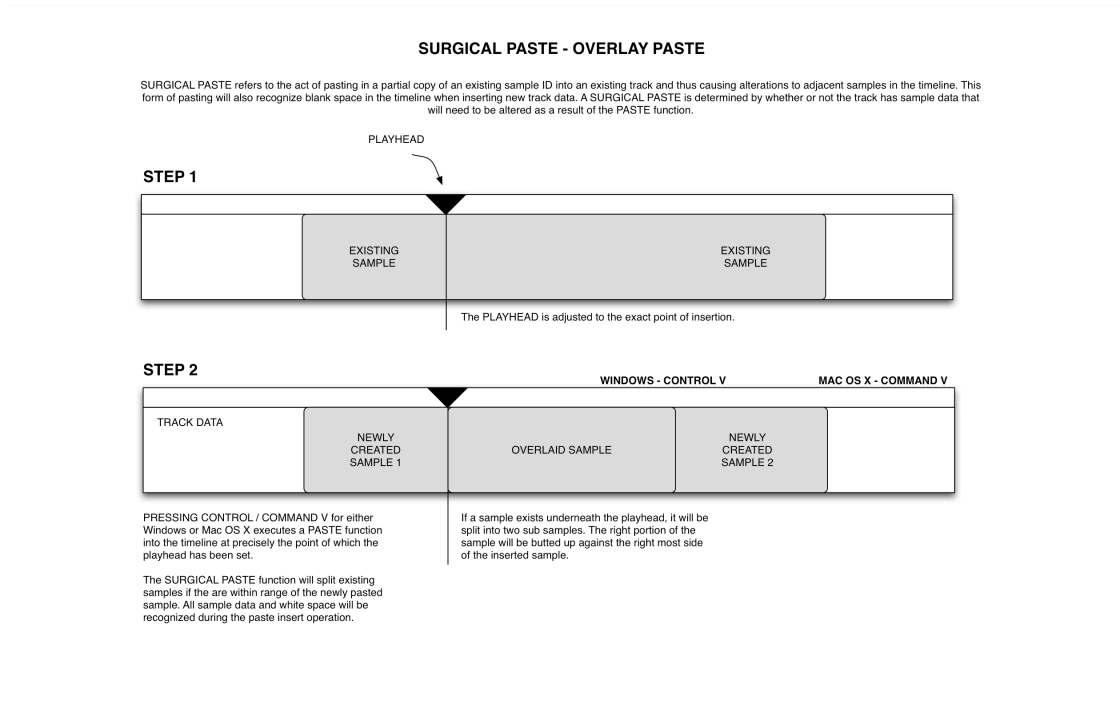


This feature allows the user to select sub elements of track data to later be used during a PASTE. Where the pixel data is representing multiple milliseconds, the first available millisecond and last available millisecond respectively will be gathered in the COPY and or CUT commands.

In the event of a COPY command the originally selected data will remain behind. In the event that a CUT command is used, the selected element will be removed from the interface leaving behind any residual data that is not selected.



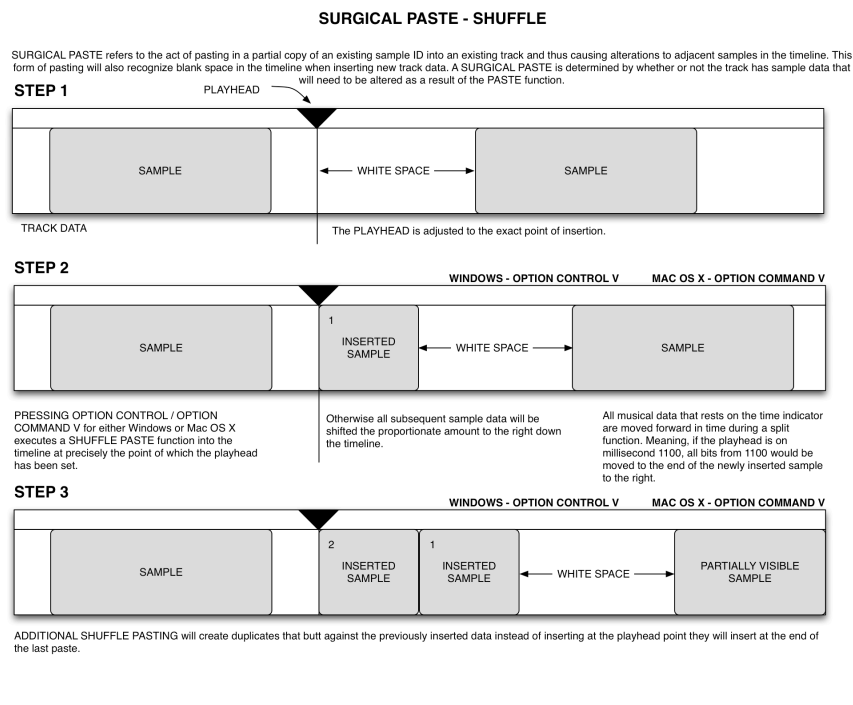
Figure 23 – Surgical Paste – Overlay Paste



This feature allows the user to surgically paste on top of an existing track overlaying all current track data. All sample data below the pasted element will be erased using the non-destructive process outlined in the Prototype 2 development doc.

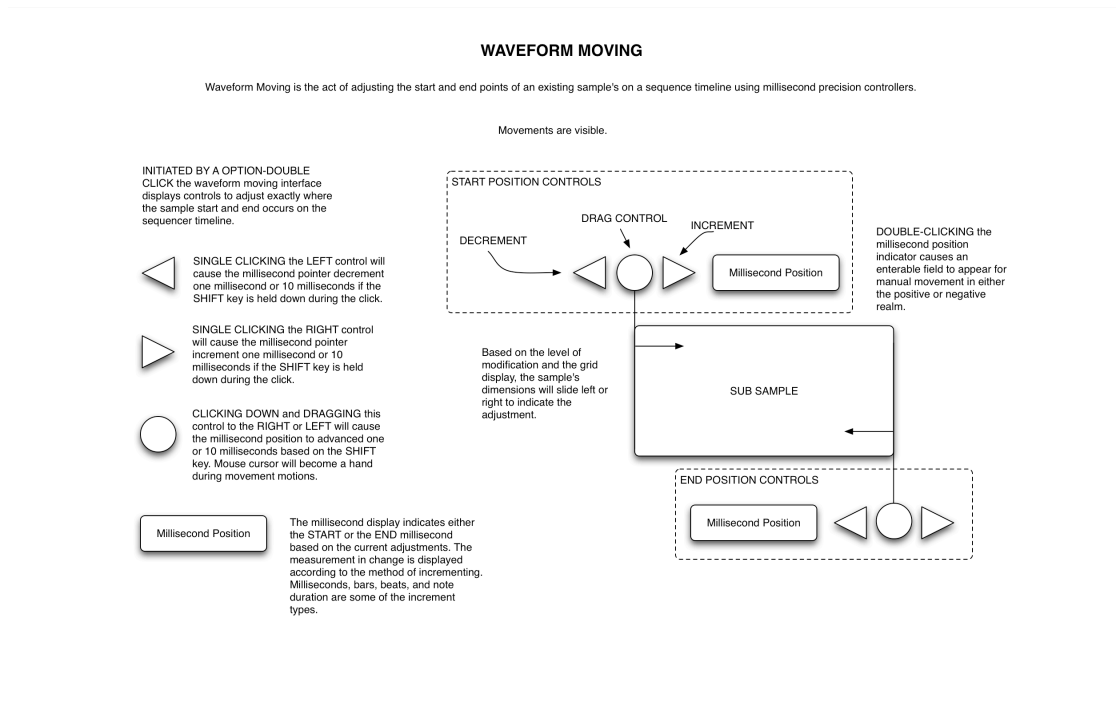
*Note: This feature will not preserve “layered” data beneath the pasted portion. All sample data intersected by the new data will be truncated or split respectively.*

Figure 24 – Surgical Paste – Shuffle



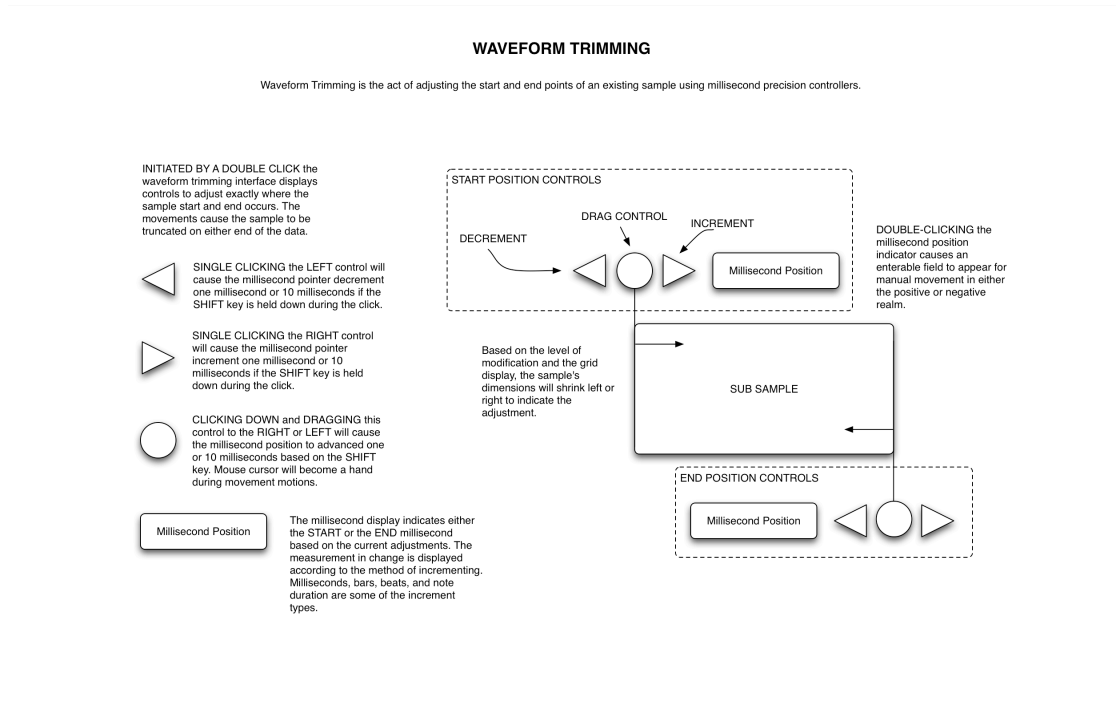
This feature allows the user to insert data into a track(s) and bump the existing track elements forward proportional to the data being added.

Figure 25 – Waveform Moving



This feature allows the user to edit the exact placement of a sample element in the timeline. By double-clicking an element using a specific keyboard combination, the user invokes an editing mode that allows for timeline editing (based on the selected increment as outlined in Figure 4). Controls are present that allow for increment, decrement, and manual typing of the desired modification to the placement of the element. Pressing the ENTER or RETURN key commits the change.

Figure 26 – Waveform Editing



This feature allows the user to edit the exact start and end of a sample element in the timeline. By double-clicking an element, the user invokes an editing mode that allows for sample editing (based on the selected increment as outlined in Figure 4). Controls are present that allow for increment, decrement, and manual typing of the desired modification to the exact start and end of the element. Pressing the ENTER or RETURN key commits the change.

