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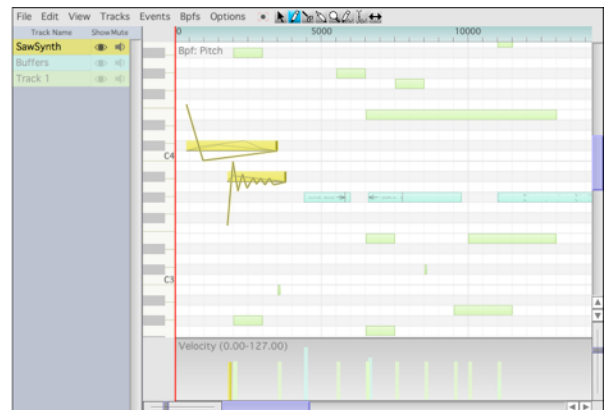
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Introduction

rs.delos is a GUI timeline editor and player for MaxMSP.

The name is derived from the Greek island of [Delos](#), the ancient cultural centre of the Cyclades.



rs.delos, sort of a crossbreed of the pre-Max5 timeline object with a pianoroll style Midi editor, lets you put events in a timeline and send them out synchronized to a transport object.

Each event acts as a container for:

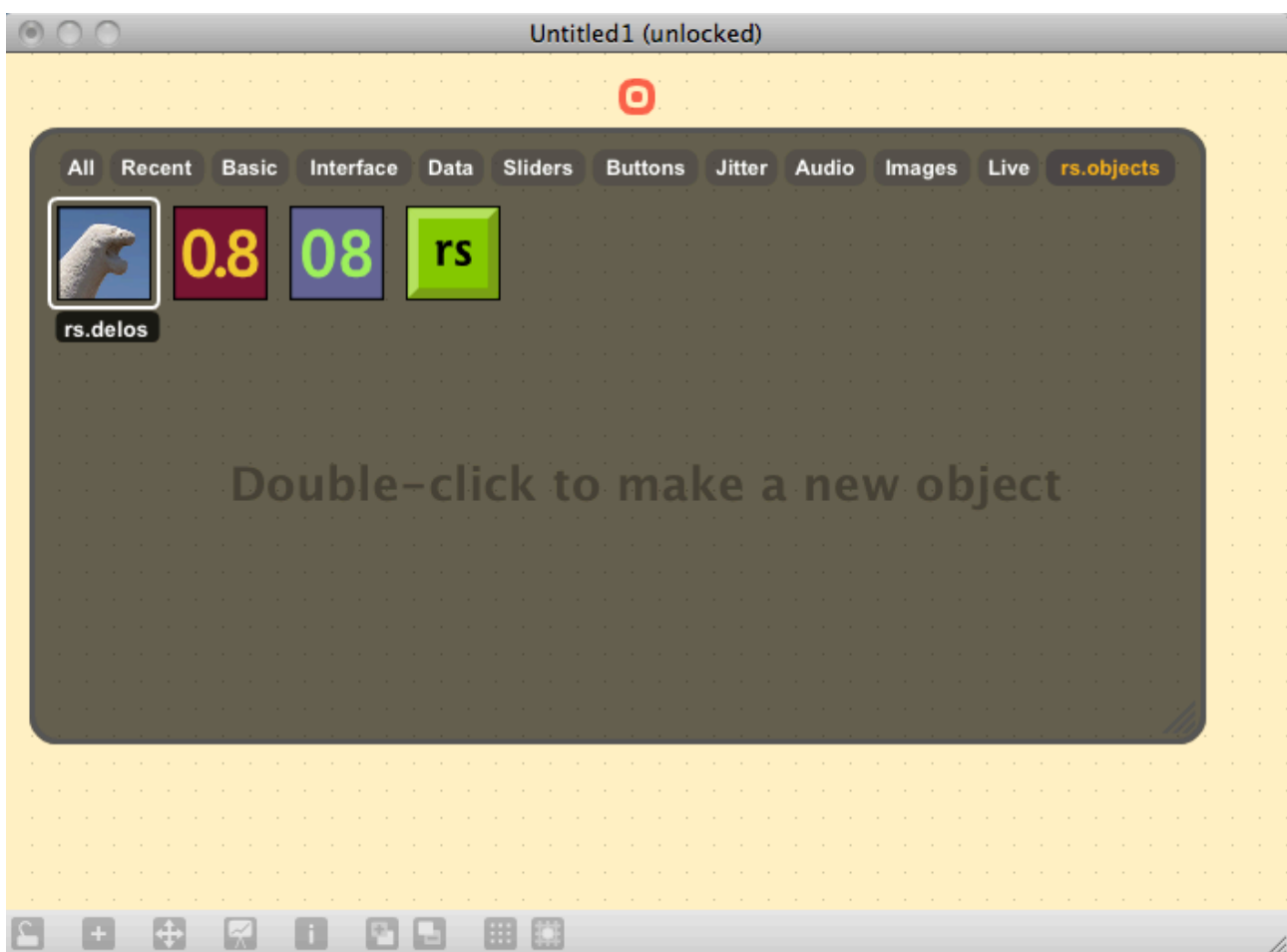
- pitch/velocity and duration information,
- user definable parameters,
- user definable breakpoint functions,
- MSP buffer display,
- any arbitrary message.

Many Thanks to all the beta Testers.

Special Thanks to Dan Nigrin (<http://defectiverecords.com/>) for his ongoing support.

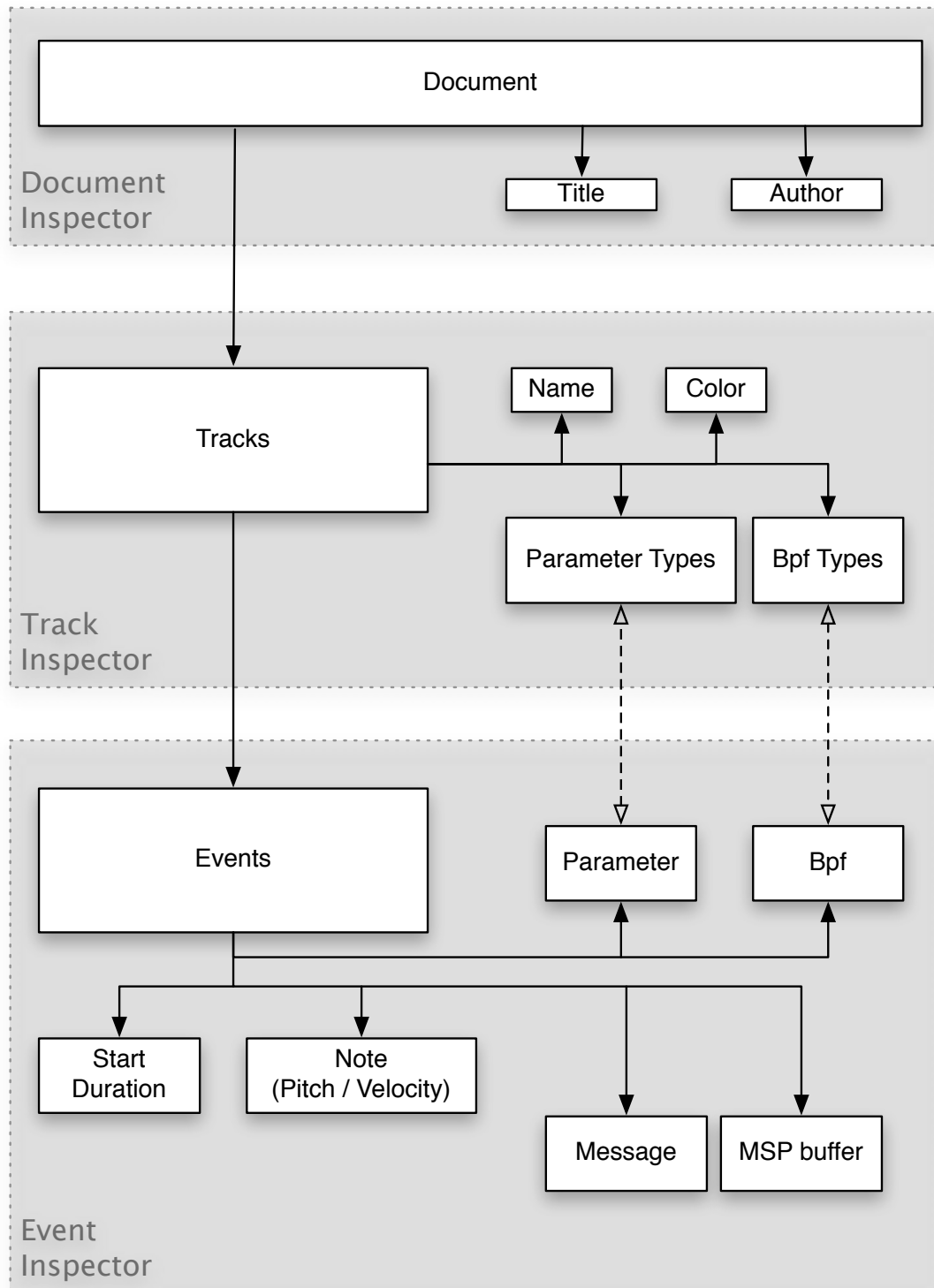
Installation

1. Put the folder **rs.delos** into a folder called "3rdparty-externals" inside the "Cycling '74" folder.
2. Put the file **rs.delos.maxhelp** into a folder called "3rdparty-help" inside the "Cycling '74" folder.
3. Put the file **rs.delos.palette.json** and the file **rs.delos.png** into a folder called "object-palettes" inside the "Cycling '74" folder.



Concepts

Take a look at the Organisational Diagram below to understand the relation between a Document, the Tracks, Events, etc.:



An rs.delos Document can have multiple tracks, however the display area for the tracks' events is the same for all, they are all displayed in the same space. Distinction is made by color.

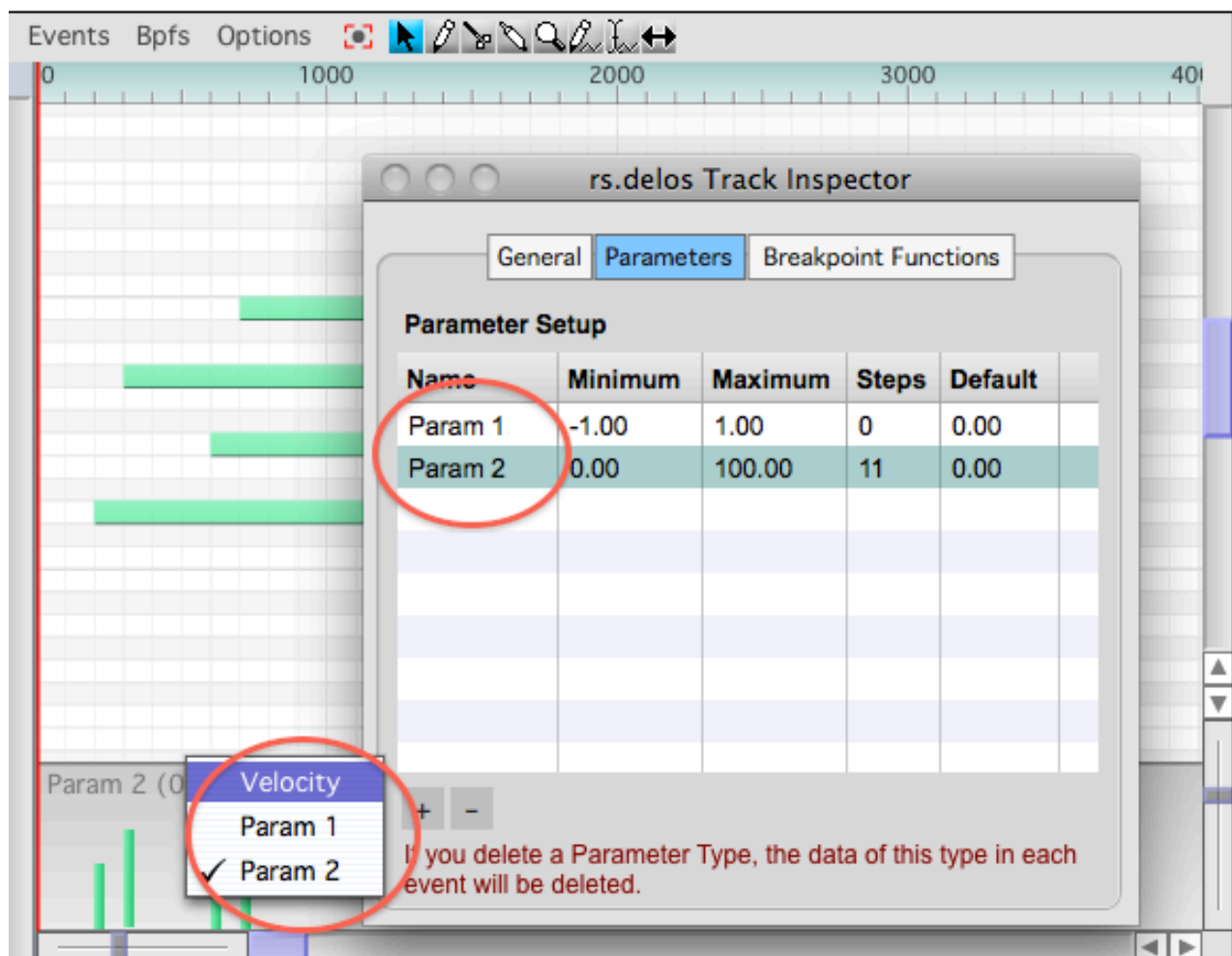
Parameter and Bpf Types are defined per track.

Parameters Velocity

Because each Event has basically a Midi Note concept, we need a place where to edit the note's Velocity. This is done in the Parameter Display.

Other Parameter Types can be defined per Track in the Track Inspector. Those types will then be available for each event in the track and can be edited in the Parameter Display in the same Multislider-like fashion.

To switch from Velocity to the other Parameter Types, Right - Click (or Control - Click on Mac) inside the Parameter Display and choose the Type from the Contextual Menu.



Breakpoint Functions (Bpfs)

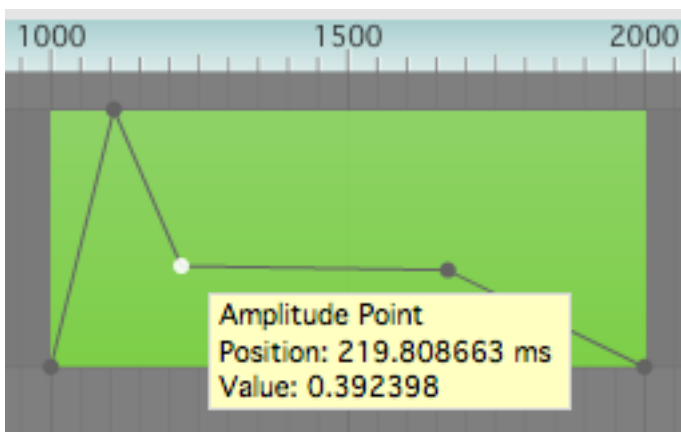
Each event is a container for 1 or more Breakpoint Functions (Bpfs):

a default Pitch Bpf and optional User Defined Bpfs.

Each Bpf has at least 2 points, the first at x position 0. and the last at the events' end.

Those points can not be deleted nor can their x position be modified.

User Defined Bpfs

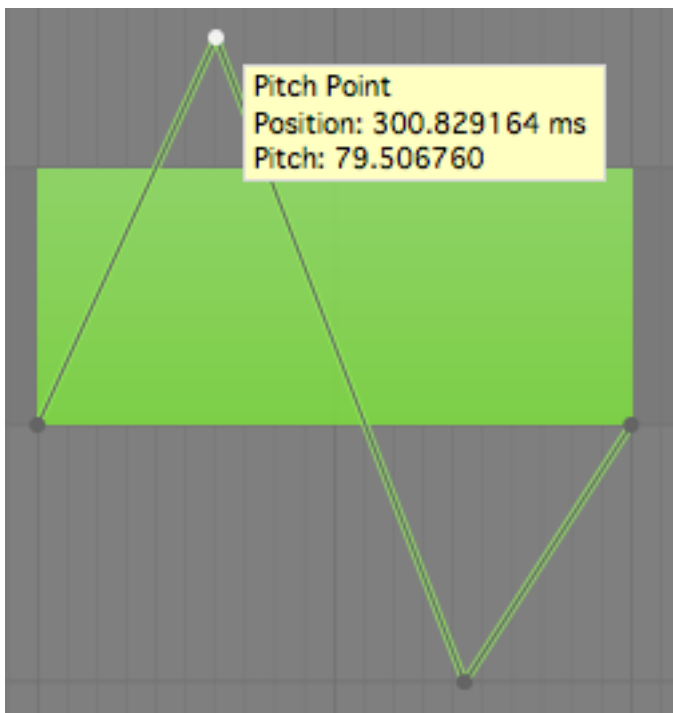


Except for Pitch, all Bpfs are contained inside the events visual box.

Here you see an example of a user defined Bpf with the name 'Amplitude'.

The y-axis min and max values are definable for each Bpf, in this example they are 0. - 1.

Pitch Bpf



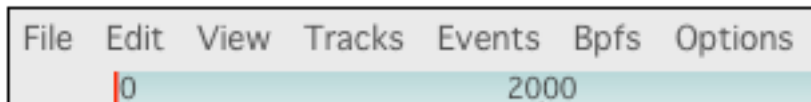
As opposed to user defined Bpfs, the points of the Pitch Bpf are not restricted to the events' bounding box, this in order to have a correct visual representation of changes in pitch.

In this example the events' global pitch is 78., the 2nd point has a value of approx. 79.5. (1.5 steps higher than the first), the 3rd point has a value of 77. and the last point a value of 78.

Mouse Actions

Upper Menu Display

Popup Menu

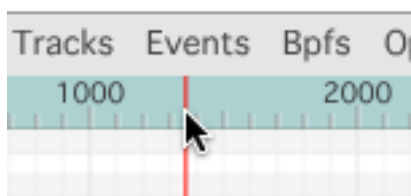


Clicking on one of the above Menu Headers pops up a Menu with specific options. Note that the whole Menu can be hidden by setting the attribute <menudisplay> to 0.

Icon Menu

	Select, Move, Resize Events
	Insert Events
	Slice Event
	Glue 2 Events (the 2 Events must have exactly the same pitch)
	Zoom In, Zoom Out (Alt)
	Insert, Move Bpf Points (switches to Bpf editing mode)
	Select Bpf Points (switches to Bpf editing mode)
	Change Start and/or End of an MSP Buffer Display

Time Display



Click / Drag in Time Display to set / move the line cursor and at the same time the playback position.

The new position in ticks is output from the rightmost outlet to feed into the transport object.

The behavior also depends on the “Time Snap” settings under the Options Menu.

Track Display

Left Button

Clicking on a Track's name selects that track and makes it the active track.

DoubleClick Left Button

Double Clicking on a Track's name opens the Track Inspector or brings it to the front if already open.

Double Clicking in an empty space inside the Track Display creates a new Track.

Main Display

Select Mode 

Left Button

Clicking on an event selects the event.

Click + Alt + Drag copies the event.

Click + Shift inverts the selection.

Clicking in an empty space deselects all events.

While holding and dragging the mouse, a selection marquee is drawn.

When one or more events are selected, its content is output from the 2nd outlet from the left on mouseup.

DoubleClick Left Button

Double Clicking on an Event opens the Event Inspector or brings it to the front if already open.

Right Button

opens the Contextual Menu which gives several choices depending on where the mouse cursor stayed when the button was clicked.

(can be simulated with Left Click + Ctrl on Mac).

Insert Mode 

Left Button

Insert default Event into the Track.

Holding the button and dragging allows to change the vertical position (Pitch) and duration of the event.

Slice Mode 

Left Button

Slice Event into 2 Events at Mouse Position.

The resulting Events will overtake the Message and Buffer settings of the sliced Event.

Glue Mode 

Left Button

Clicking on an Event makes rs.delos look for an Event with the same Pitch following the clicked Event and glues the 2 Events together if an Event was found.

The resulting Event will overtake the Message and Buffer settings of the left clicked Event.

Zoom Mode 

Left Button

Clicking in the Main Window zooms to the clicked point with this point centered.

Alt - Clicking in the Main Window zooms out of the clicked point with this point centered.

Click - Dragging zooms to the area drawn by the marquee.

Note that the Zoom Animation can be turned on / off in the rs.delos Object Inspector (Animate Zooming in the Display tab)

Bpf Edit Mode

In this mode, the Track-specific Breakpoint Functions (Bpfs) can be edited by inserting, deleting or moving the Points in the Bpf.

Left Button

Clicking in an empty space inside the Event area adds a new point.

Clicking on an existing point and dragging moves an existing point.
Click + Shift on an existing point deletes it.

While editing the default “Pitch” Bpf, the vertical axis of the area is as large as the Main Display Area.

Bpf Select Mode

Left Button

Allows to select multiple Bpf Points by moving the cursor inside the Event's area.

Buffer Edit Mode

Left Button

If an MSP Buffer is attached to the clicked Event, this mode allows for changing the start and end point of the buffer.

All Modes

Scroll Wheel

Allows to scroll vertically or horizontally (with Shift) in the rs.delos timeline window.

Parameter Display

Left Button

If the Parameter View is visible, the Velocity or other track specific Parameters of an event (as defined in the Track Inspector) can be changed by clicking or dragging

Right Button

Opens a Contextual Menu which allows to choose between the default Velocity parameter or other track specific parameters defined under the Parameters Tab in the Track Inspector.
(can be simulated with Left Click + Ctrl on Mac).

Scroll Bars

Left Button

Allows to scroll the contents of the window or zoom in / out.
Pushing Shift while scrolling or zooming provides a finer resolution.

Messages

int

- 0 stops playing the rs.delos timeline.

A stop message is sent out from the leftmost outlet on all existing tracks.

- int > 0 starts playing the rs.delos timeline from the current line cursor (transport) position.

If the transport reaches the start of an event, its content is output from the leftmost outlet.

However, If an existing “receive” object is defined in the corresponding Track Inspector, the content is send to that receive object rather than sent out from the leftmost outlet.

position

The message position followed by an int sets the playing position and the line cursor to the new value. The new position in ticks is output from the rightmost outlet to feed into the transport object.

event

The message <event> is used to insert events into or modify existing events in the rs.delos timeline in a flexible way.

Thus, beside manual editing with the mouse, this is a powerful way to alter the contents of the timeline.

The message can take several optional **specifiers** determining the insertion or modification process:

id

Each event that has been inserted into the timeline has a unique id.

1. If the <event> message contains an id specifier, all the information contained in the message will modify the existent event with the specified id.

Example: [event id 10 start 500 <note> 60.5 80. </note>]

This message will make the existent event with id 10 start at 500 ms and modify the note information so that the pitch will be 60.5 and the velocity 80.

2. If the <event> message does not contain an id, a new event will be inserted into the timeline. The characteristics of the inserted event will then depend on the other information contained in the message.

Example: [event start 500 duration 2000 <note> 60.5 80. </note>]

This message will insert a new event at position 500 ms with a duration of 2000 ms and with pitch 60.5 and velocity 80.

track

If a track specifier is present (e.g: track 2) the event will be inserted (no id specifier) into the specified track or, if an id specifier is present, moved to the specified track.

If no track specifier is present, the active track will be used.

If the specified track doesn't exist the message will be ignored.

start

1. if a start specifier is present:

- id specifier present: event specified by id is moved to the position determined by start
- no id specifier present: new event inserted at position determined by start

2. if no start specifier is present:

no id specifier present: new event will be inserted at position determined by the position of the line cursor, i.e. the position of the transport.

Thus, by sending messages with no start and no id specifiers while the transport is running, we can record events in realtime into the timeline.

duration

The duration specifier sets the length of the event.

This affects the break point functions as well as the buffer output if a buffer is set and if the "Link Buffer Size to Event Length" is set in the Event Inspector.

If there is no duration specifier and a new event will be inserted, a default value (1000 ms) is used.

label

The label specifier sets the Label of an event.

To see it, "Show Labels" must be activated under the "Events" Menu or in the Event Inspector.

<note> </note>

<note> pitch velocity </note>

The note specifier (in xml-style opening and closing tags) takes 2 values, a Midi pitch value (0. - 131., eleven full octaves) and a Midi velocity value (0. - 127.). The values are in floating point format.

If an id specifier exists in the message, the note specifier will change the event with the specified id to the new note and velocity values.

If there is no id specifier, a new event will be inserted into the timeline with the values from the note specifier.

Currently the Y-Axis of the timeline is Pitch-based only (but other options should be possible in the future). For this reason every event has always a pitch value as this value determines the vertical position of the event on the Y-Axis.

If the note is not specified (because for example you only want to insert events for message handling), a default value will be used for the pitch (value at the centre of the display) and the velocity (0.)

This pitch value (and the velocity value) will always be sent out as a note specifier when playing the timeline or when selecting the event. If you are not interested in the note information, just ignore it.

<bpf> </bpf>

The break point function specifier is in the style:

```
<bpf> Bpf_A xa0 ya0 ... xan yan Bpf_B xb0 yb0 ... xbn ybn Bpf_M xn0 yn0 ... xmn ymn </bpf>
```

where we have m Bpfs defined by their name followed by n pairs of x y data.

The y values are clipped to the Minimum and Maximum values of the corresponding Bpf type. If the type is "Pitch", the y value corresponds to the relative value compared to the absolute pitch defined in <note>.

If there is no bpf with the given name defined on the track, the data will be ignored.

If the bpf exists in the track, the data in the message will replace the data of the named bpf inside the timeline.

If the x position of an x y pair exceeds the duration of the event, that pair will be ignored.

<message> </message>

```
<message> any symbol, list, single int or float, ... </message>
```

If "Show Messages" is activated under the "Events" Menu or in the Event Inspector, the text inside the <message> </message> tags will be displayed in the event.

<buffer> </buffer>

```
<buffer> buffername (symbol) int (optional, 0 / 1 to specify if the buffer size is linked to the event's size, default = 0) </buffer>
```

To remove an existing buffer from an existing event, use an empty specifier <buffer> </buffer>

mouse_mode

The message `mouse_mode`, followed by one of the following commands, sets the behavior of the mouse cursor:

select 

insert 

slice 

glue 

See also: [Mouse Actions](#)

zoom 

edit_bpf 

select_bpf 

buffer 

Attributes

upperdisplaycolor

menutitletextcolor

menufontsize

timedisplaycolor

linecursorcolor

keydisplaywhitekeycolor

keydisplaywhitekeybordercolor

keydisplayblackkeycolor

keydisplaylabelcolor

keydisplayhighlightcolor

maindisplaywhitekeycolor

maindisplayblackkeycolor

maindisplaysubdivisionlinecolor

maindisplaymaindivisionlinecolor

event_capture_span

When rs.delos receives event messages, this is the time span it takes before a new Undo item will be inserted into the UndoRedo line. Its default value is 60 milliseconds.

snaptime

If set, events will snap to the time grid when inserted, moved or resized.
It applies also to the line cursor when this is moved with the mouse.

snappitch

If set, events will snap to the pitch grid when inserted or moved.

menudisplay

Display the upper dropdown menus

keydisplay

Display the piano keys on the left

parameterdisplay

Show the Event Parameter + Velocity Display

showlabels

Display the Event Labels. Of course if no Label is defined in the Event Inspector nothing will be displayed.

showmessages

Display the content of the Message (if defined) of an Event.

showbpfs

Display the Breakpoint Functions inside the Events.

showbuffers

Display the MSP Buffer's content (if defined) inside the Events.

display_all_bpfs

If set, all Breakpoint Functions on the active track will be displayed.
Else, only the active Bpf will be displayed.

border

Draw a border around rs.delos.

notelanes

Turn on / off the drawing of the horizontal Pitch lines.

Turning this of can be useful if you want to freely display events that are not related to Midi Pitch.

keyhighlight

Turn on / off the highlighting of the piano keys while mousing over the Main Display

zoom_animation

Turn on / off the animation while zooming

linecursor_update

The rate in milliseconds at which the redrawing of the line cursor takes place.

Default is 50 milliseconds. Minimum - Maximum is 10 - 200.

A lower value will make the movement of the cursor “smoother” but at the cost of higher CPU values.

base_frequency

The frequency that is used to convert Pitch to Frequency. Default is 440 Hz.

Output

Left Outlet

The leftmost outlet is the realtime outlet.

If, while in play state, the cursor reaches the start of an event, the content of that event is output from this outlet as a single message.

The format of the realtime output message is the following:

```
tracknumber event duration value <note> pitch velocity </note> <message> anything
</message> <buffer> name startvalue endvalue ratio </buffer> <parameter>
[name value] </parameter> <bpf> [Name [targetvalue time] ] </bpf>
```

Except for the **duration**, all other data is wrapped inside XML style tags, with an opening and a closing tag:

```
<openingtag> some data </closingtag>
```

This allows for flexible data messaging with an unambiguous syntax.

At the same time, because the data of one event is contained inside one single message, the use with poly~ objects is largely simplified (with prepend note).

But on the other hand some parsing is needed in order to be useful within Max.

The parsing can be easily done with the provided [rs.delos-parser](#) and [rs.delos-bpfparser](#) helper objects.

Let's take a look at the different tags from a realtime output message:

tag	value	comment
	<i>tracknumber</i>	the track number (starting at 0) where the output event lives. Run the messages through a route object to separate the tracks by its track number. (See the Note below)
event		the event message is needed for the rs.delos-parser object.
duration	<i>value</i>	the duration of the event in milliseconds

<code><note></code> <code></note></code>	<i>pitch</i> <i>velocity</i>	<p>Midi pitch (float)</p> <p>Midi velocity (float)</p> <p>If you are not interested in pitch / velocity information, you can turn off the output of the <code><note></code> tag on a per track basis by checking the “Discard Note Info” checkbox in the General tab of the Track Inspector.</p>
<code><message></code> <code></message></code>	<i>anything</i>	<p>any Max message or list</p>
<code><buffer></code> <code></buffer></code>	<i>name</i> <i>startvalue</i> <i>endvalue</i> <i>ratio</i>	<p>This tag is only present if the name of an existing buffer name is defined in the ‘MSP Buffer’ tab of the Event Inspector.</p> <p>the name of the referred buffer~ object</p> <p>where to start playing the buffer</p> <p>where to end playing the buffer</p> <p>When ‘Link Buffer Size to Event Length’ is checked ed in the ‘MSP Buffer’ tab of the Event Inspector, the buffer display always adapts to the event length. This adaption is expressed in the ratio. If there is no adaption, ratio = 1.</p>
<code><parameter></code> <code></parameter></code>	<i>[name value]</i>	<p>This tag is only present if there are any parameters defined in the ‘Parameter’ tab of the Track Inspector.</p> <p>There are as many <i>[name value]</i> pairs as defined parameters, where <i>name</i> corresponds to the defined parameter name and <i>value</i> to the value set in the Parameter Display for that parameter.</p>

<code><bpf></code> <code></bpf></code>	<p><i>[Name</i> <i>[targetvalue</i> <i>time]]</i></p>	<p>Due to the default Pitch breakpoint function which cannot be removed, this tag is normally always present. However if you are not interested in the Pitch bpf, you can turn off its output by checking the “Discard Default Pitch Bpf” checkbox in the General tab of the Track Inspector.</p> <p>For each defined breakpoint function an aggregate starting with the breakpoint function’s name appears inside the tag. Inside that aggregate there are as many <i>[targetvalue time]</i> pairs as there are points defined for the event in that function. This list of values can be directly fed into a line object.</p> <p>The provided <code>rs.delos-bpfparser</code> helper object comes in handy to parse the content of the bpf tags.</p>
---	--	--

Note:

If the name of a receive object is defined under Output, the event content is send to that receive object rather than sent out from the left outlet. In that case the *tracknumber* value is missing at the beginning of the message.

2nd Outlet from the left

The 2nd outlet from the left outputs the content of **selected** events on mouseup.

The purpose of this output is to allow for external modifying or processing of the events, for storing them inside a coll or js, etc.

The format is slightly different than the format of the realtime output messages:

```
event value id value track value start value duration value <note> pitch velocity
</note> <message> anything </message> <buffer> name startvalue endvalue ratio
</buffer> <parameter>[name value] </parameter> <bpf> [Name [x-value y-value] ]
</bpf>
```

An “event clear” message is sent out just before the actual content messages, followed at the end by an “event done” message.

Format for selected events:

tag	value	comment
event	value	a sequential number from 0 to (number of selected events)-1
id	value	each inserted event has a unique ID number
track	value	the track number (starting at 0) where the output event lives.
start	value	the start of the event in milliseconds
duration	value	the duration of the event in milliseconds
<note> </note>	pitch velocity	Midi pitch (float) Midi velocity (float)
<message> </message>	anything	any Max message or list

<buffer> </buffer>	<i>name</i> <i>startvalue</i> <i>endvalue</i> <i>ratio</i>	<p>This tag is only present if the name of an existing buffer name is defined in the 'MSP Buffer' tab of the Event Inspector.</p> <p>the name of the referred buffer~ object</p> <p>where to start playing the buffer</p> <p>where to end playing the buffer</p> <p>When 'Link Buffer Size to Event Length' is checked ed in the 'MSP Buffer' tab of the Event Inspector, the buffer display always adapts to the event length. This adaption is expressed in the ratio. If there is no adaption, ratio = 1.</p>
<parameter> </parameter>	<i>[name value]</i>	<p>This tag is only present if there are any parameters defined in the 'Parameter' tab of the Track Inspector.</p> <p>There are as many <i>[name value]</i> pairs as defined parameters, where <i>name</i> corresponds to the defined parameter name and <i>value</i> to the value set in the Parameter Display for that parameter.</p>
<bpf> </bpf>	<i>[Name [targetvalue time]]</i>	<p>For each defined breakpoint function an aggregate starting with the breakpoint function's name appears inside the tag. Inside that aggregate there are as many <i>[x-value y-value]</i> pairs as there are points defined for the event in that function.</p> <p>The provided rs.delos-bpfparser helper object comes handy to parse the content of the bpf tags.</p>

Middle Outlet

The middle outlet outputs Track information.

This can be useful if you want to build your track manager or if you need information about Bpf and Parameter definitions.

4th Outlet (2nd from the right)

This outlet outputs system related information:

message	arguments	comment
zoomvert	float (0. - 1.)	the vertical zoom value
zoomhor	float (0. - 1.)	the horizontal zoom value
scrollvert	float (0. - 1.)	the vertical scroll value
scrollhor	float (0. - 1.)	the horizontal scroll value
ticks	int	the current play position in ticks, to be fed into the transport object
patcherwindow_rect	list ((x y width height)	the window rect of the enclosing patcher window
undoredo	clear append 'Undo Action' append 'Undo Action' done	the Undo / Redo History in umenu format

Rightmost Outlet

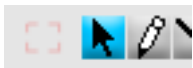
dumpout outlet

Keyboard Shortcuts

Currently implemented Keyboard Shortcuts

x	Cut
c	Copy
v	Paste
⌘	Delete
z	Undo
Shift z	Redo
a	Select All
i	Open Event Inspector
⏪	Select Previous Event
⏩	Select Next Event

The above shortcuts will of course only function if rs.delos has keyboard focus. In the upper display there's a visual hint to show if the object has the focus or not. (If this hint is not displayed it is turned off in the rs.delos object Inspector -> Show / Hide Focus Hint)



object doesn't have focus



object has focus

Menus

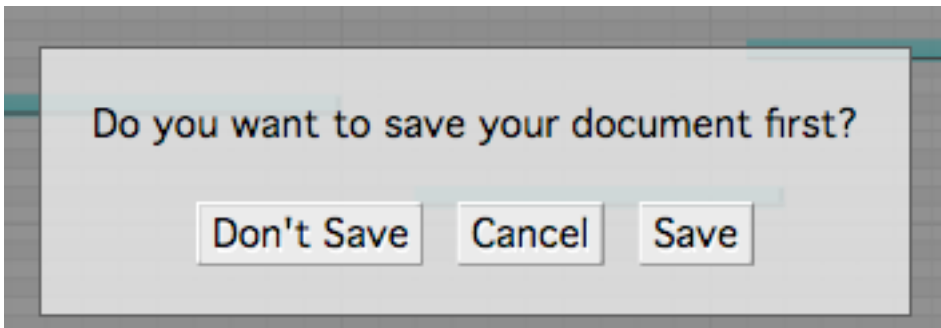
All Menu actions can also be triggered through messages or attribute changes.
Several Menu actions can be triggered through keyboard shortcuts.

The display of the entire menu can be switched on / off with the `menudisplay` attribute.

File

New

Creates a new document. An existing document will be erased from memory.
If the existing document has been dirtied, a Modal Dialog will present you with 3 options:



Open...

If the existing document has been dirtied, the above Modal Dialog will appear. Depending on your choice, you are presented with an Open File Dialog to choose an `rs.delos` file to open.

Save

If the file had been saved previously on the hard drive, it can be saved again under the previously saved name.

Save As...

You are presented with a Save File Dialog to save the `rs.delos` file under a new name.

Document Inspector

Open the Document Inspector or bring it to the front.

Edit

Undo

Go back one step in the Undo / Redo History

Redo

Go forward one step in the Undo / Redo History

Cut

Delete the selected events while copying them to the rs.delos specific clipboard.

Copy

Copy the selected events to the rs.delos specific clipboard.

Paste

Paste the events from the clipboard to the active track.

Pasted events which contain Bpf and/or Parameter types that are not defined on the track to which they get pasted will generate those Bpf / Parameter types on that track.

~~Also, if Bpf points of a certain Bpf type are pasted to a track where that Bpf type is not defined, the type will be added to the track.~~

Note that a type which already exists with the same name but has different min, max or default values will generate a new type called "nameBis"

Delete

Delete the selected events or the selected points in a breakpoint function.

Select All

Select all events or all points in a breakpoint function.

View

Zoom In

Zoom in to the center.

Zoom Out

Zoom out from the center.

Zoom to Selected Event(s)

Zoom in or out to display the selected events at maximum size.

Zoom Out All The Way

Zoom out to display the whole document in the rs.delos window.

Track Display

Switch the Track Manager Display on the left side on / off.

Key Display

Switch the Keyboard Display on the left side of the Main Display on / off.

Parameter Display

Switch the Parameter Display at the bottom on / off.

Show Note Lanes

Switch on / off the drawing of the horizontal integer Pitch Lanes.

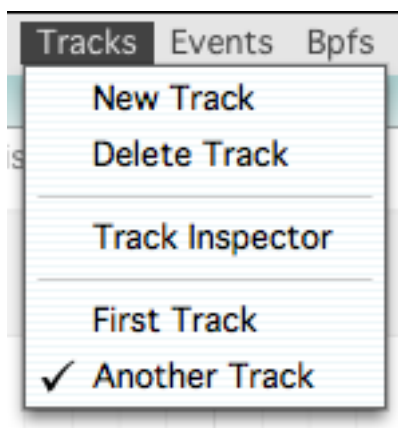
msecs

Switch to display the time in the upper timeline display in milliseconds.

m:s:ms

Switch to display the time in the upper timeline display in minutes:seconds:milliseconds.

Tracks



New Track

Create a new default track

Delete Track

Delete the active track without warning

Track Inspector

Open the Track Inspector for the active track or bring it to the front.

Existing Tracks

Display the existing tracks in the document and allow to switch the active track.

Events

Show Labels

Switch the display of event labels on / off.

In order to see the labels, label names must be entered in the Event Inspector.

Show Messages

Switch the display of messages inside events on / off.

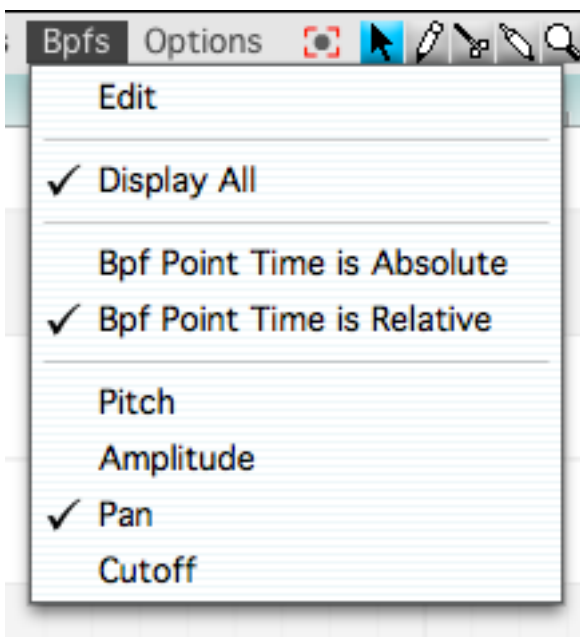
Show Bpfs

Switch the display of breakpoint functions inside events on / off.

Show Buffers

Switch the MSP buffer display of events on / off.

Bpfs



Edit

Switch to / from Bpf Edit Mode.

Display All

If unchecked, only the active Bpf is displayed.

If checked, all existing Bpfs are displayed in the events.

The active bpf is drawn in the front while all others are drawn with a lighter color in the back.

Bpf Point Time is Absolute

The x position of the bpf points is expressed relative to the beginning of the timeline.

Bpf Point Time is Relative

The x position of the bpf points is expressed relative to the beginning of the enclosing event.

Existing Bpfs

The defined Bpfs of the active track are displayed here.

Options

Follow Line Cursor

If checked, the display follows the line cursor while playing.

Pitch Snap

If checked, mouse operations snap vertically to the grid.

Thus, if unchecked, it is possible to enter notes with floating point values for Midi Pitch.

Time Snap

If checked, mouse operations snap horizontally to the grid.

Inspectors

Inspectors are part of an rs.delos instance.

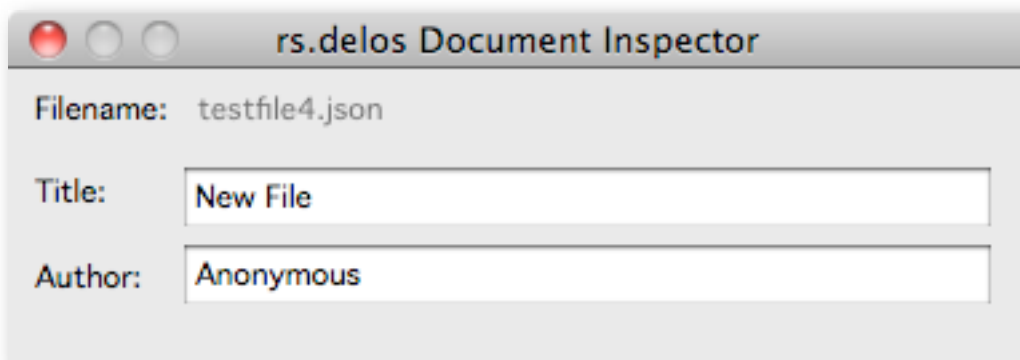
This means that, if you had 2 instances of rs.delos in your patch, you could have 2 Document, Track or Event Inspectors open at the same time.

I agree that this might lead to confusing situations but it is the way it works for now. So you have to be careful with this when using multiple rs.delos objects.

Document Inspector

The Document Inspector is opened with the message <document_inspector_open> or by selecting “Document Inspector” in the “File” Menu.

Sending <document_inspector_close> to rs.delos closes it.



Filename shows the name of the read file or the name of the saved file if it has been saved already

Title, will be saved with the document (limited to 256 characters)

Author, will be saved with the document (limited to 256 characters)

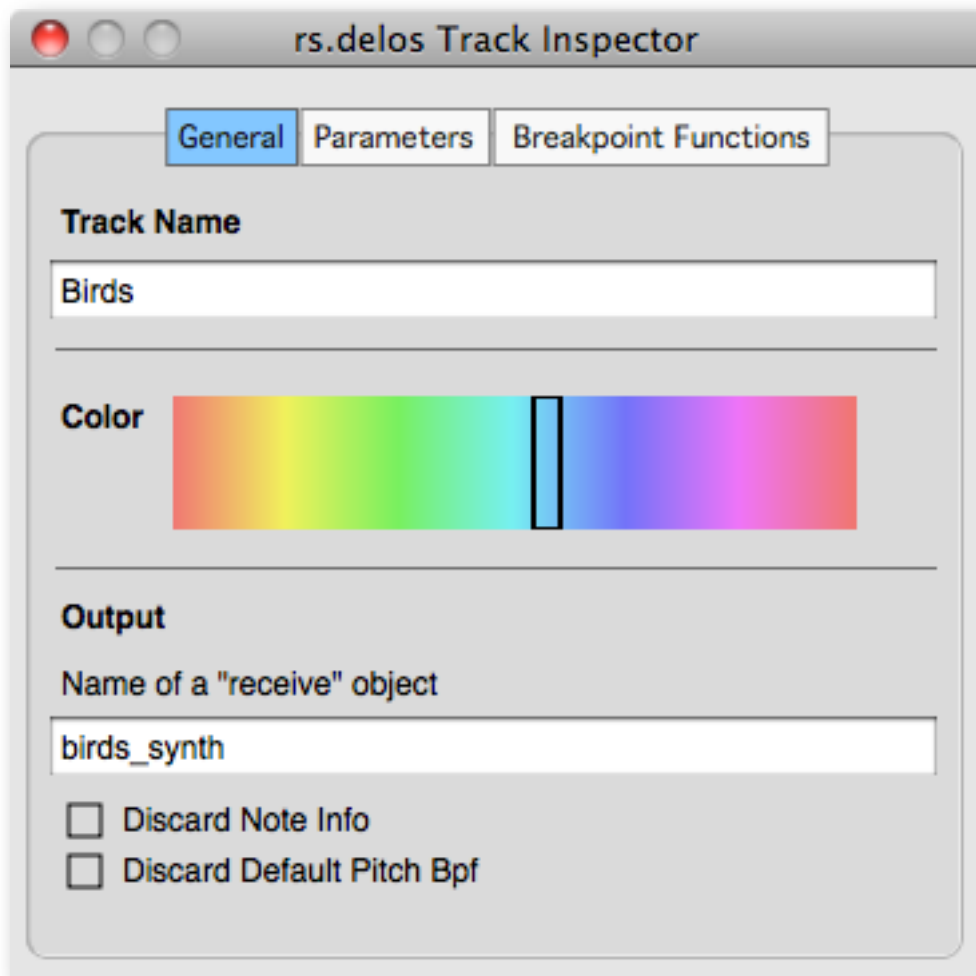
Track Inspector

The Track Inspector is opened with the message `<track_inspector_open>` or by selecting "Track Inspector" in the "Track" Menu.

Sending `<track_inspector_close>` to `rs.delos` closes it.

The Track Inspector always reflects the active track's state.

General Tab



Track Name sets the name of the track.

This name is displayed in the Track menu, so it is possible to switch the tracks from there.

Color sets the color of the track's events

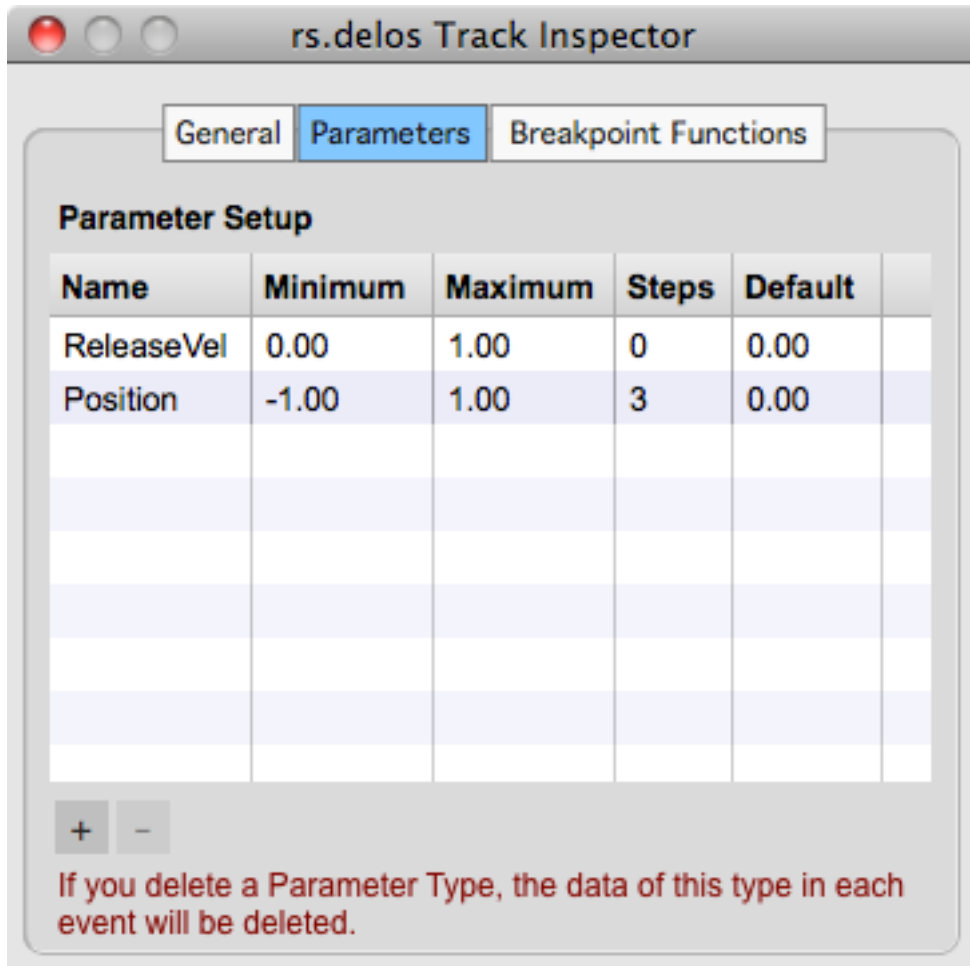
Output

If the name of a receive object is defined under Output, the event content is sent to that receive object rather than sent out from the left outlet during play.

Discard Note Info: if checked, no note info (pitch, velocity) is output from this track while playing.

Discard Default Pitch Bpf: if checked, no default Pitch bpf info is output from this track while playing.

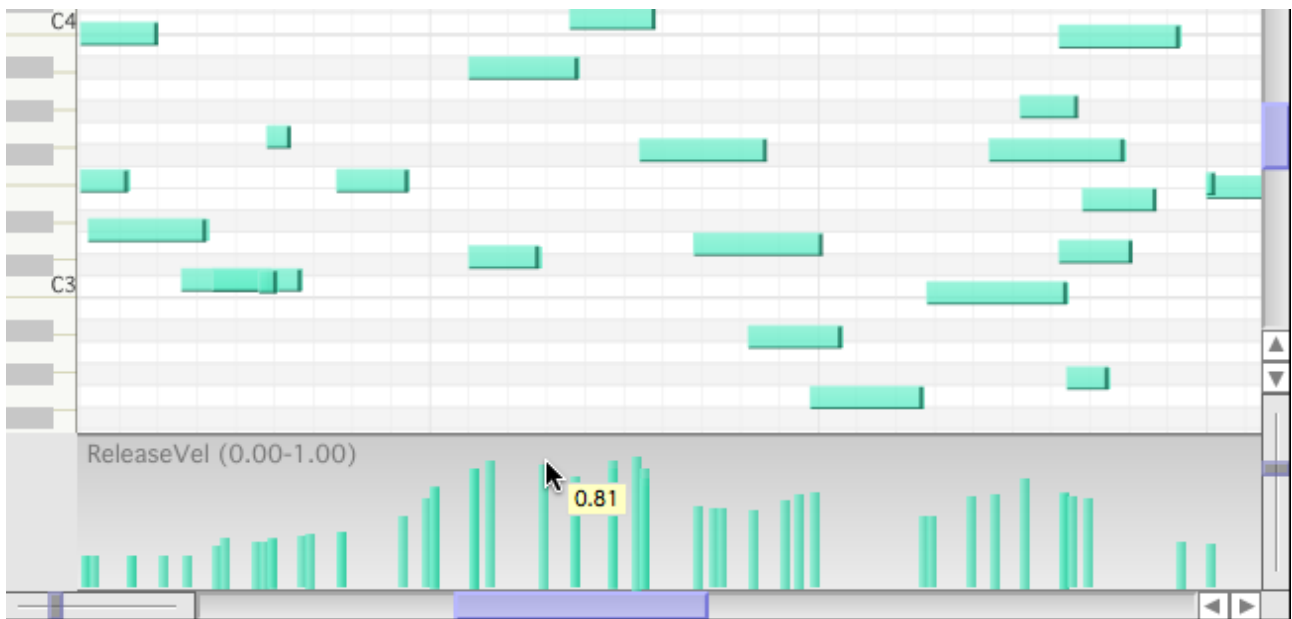
Parameters Tab



In this Tab, Track Parameters with distinct names can be setup.

These Parameters will then be available in each event of that specific track.

You could, for example, define a Release Velocity parameter (called "ReleaseVel" in the example above).



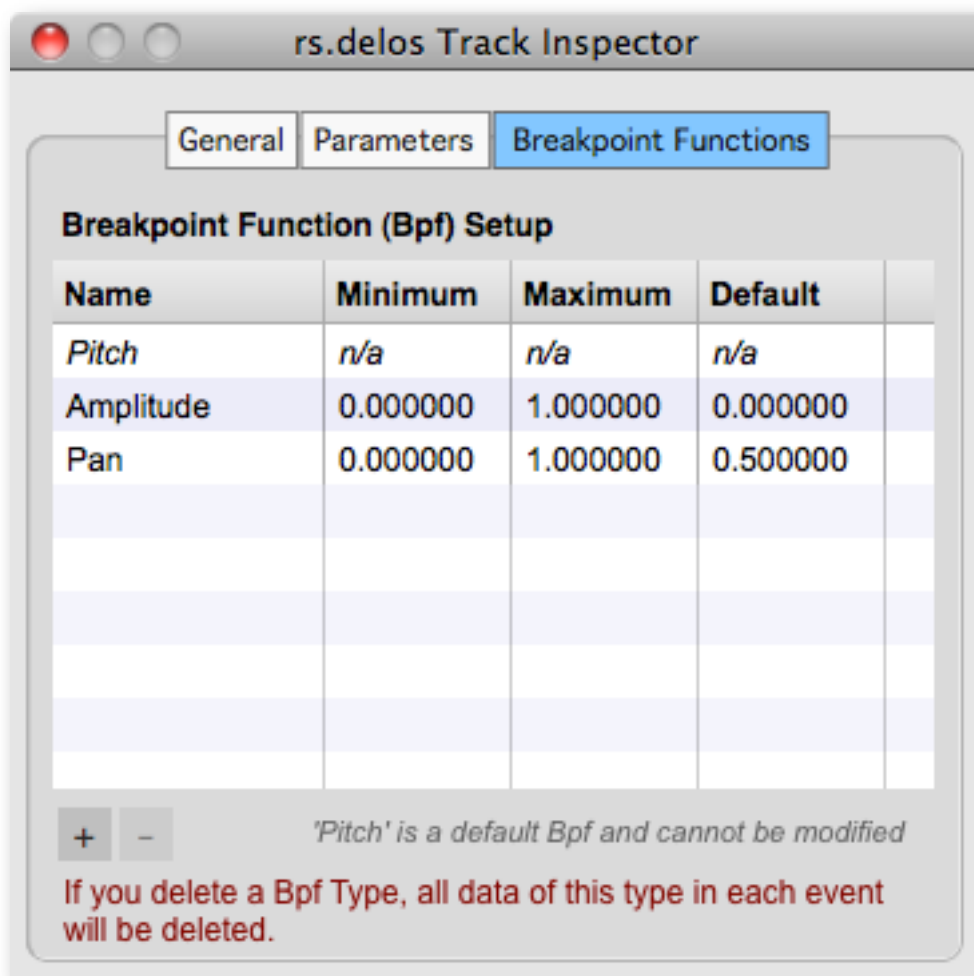
In the “Parameter View” you can now draw a ReleaseVel value for each event in the track.

To switch to another Parameter in the “Parameter View”, right-click (or ctrl-click on Mac) while the Mouse is over the Parameter View.
In the popup menu it is then possible to choose between the available parameters.

Each Parameter type has

- a Minimum value
- a Maximum value
- a Steps value (0 or 1 means no step limitation)
- a Default value (value used when a new event is put into the track)

Breakpoint Functions Tab



Event Inspector

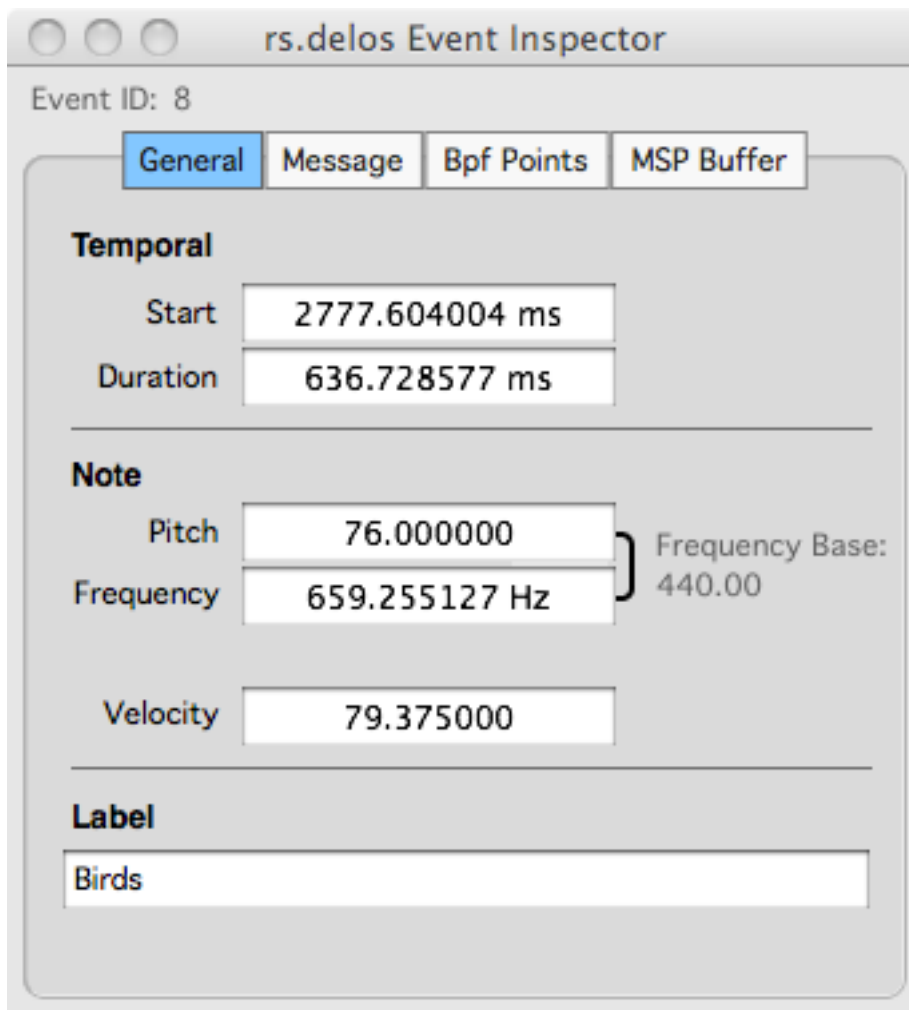
The Event Inspector is opened with the message `<event_inspector_open>` or by selecting “Event Inspector” in the “Events” Menu.

Sending `<event_inspector_close>` to `rs.delos` closes it.

The Event Inspector can only be opened if one and only one event is selected.

There is no such thing as a multiple events Inspector for now.

General Tab

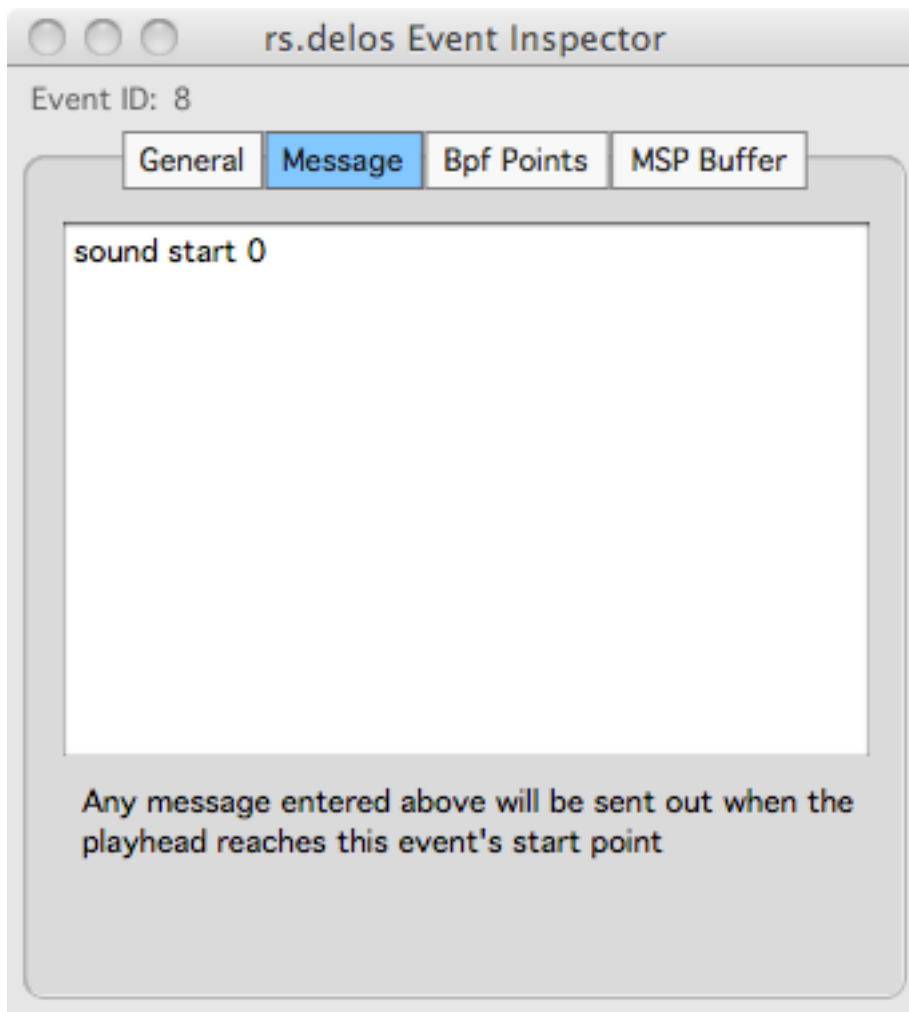


The screenshot shows the 'rs.delos Event Inspector' window. At the top, it says 'Event ID: 8'. Below this are four tabs: 'General' (selected), 'Message', 'Bpf Points', and 'MSP Buffer'. The 'General' tab contains several fields:

- Temporal**
 - Start: 2777.604004 ms
 - Duration: 636.728577 ms
- Note**
 - Pitch: 76.000000
 - Frequency: 659.255127 Hz
 - Velocity: 79.375000
- Label**
 - Birds

On the right side of the 'Note' section, there is a 'Frequency Base: 440.00' label with a bracket indicating it applies to the Pitch and Frequency fields.

Message Tab



'Bpf Points' Tab

rs.delos Event Inspector

Event ID: 8

General Message **Bpf Points** MSP Buffer

Show Type Pitch

Position	Value	
0.000000	76.000000	0 - 132
151.255890	76.335846	0 - 132
173.038849	78.424026	0 - 132
258.276489	74.598122	0 - 132
636.728577	76.000000	0 - 132

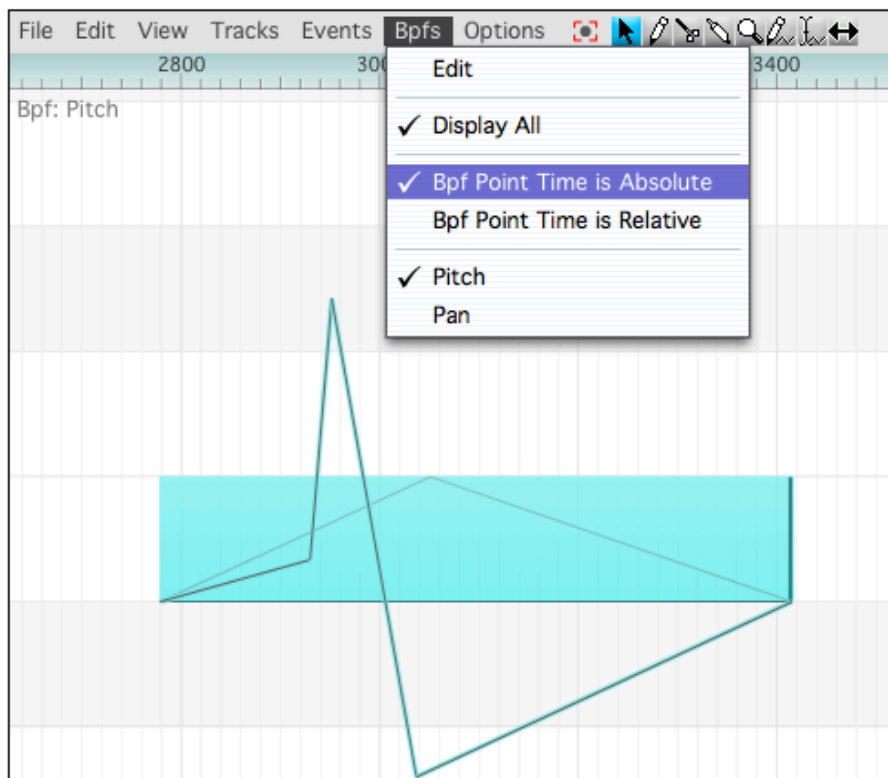
rs.delos Event Inspector

Event ID: 8

General Message **Bpf Points** MSP Buffer

Show Type Pitch

Position	Value	
2778.551025	76.000000	0 - 132
2929.806885	76.335846	0 - 132
2951.589844	78.424026	0 - 132
3036.827637	74.598122	0 - 132
3415.279785	76.000000	0 - 132



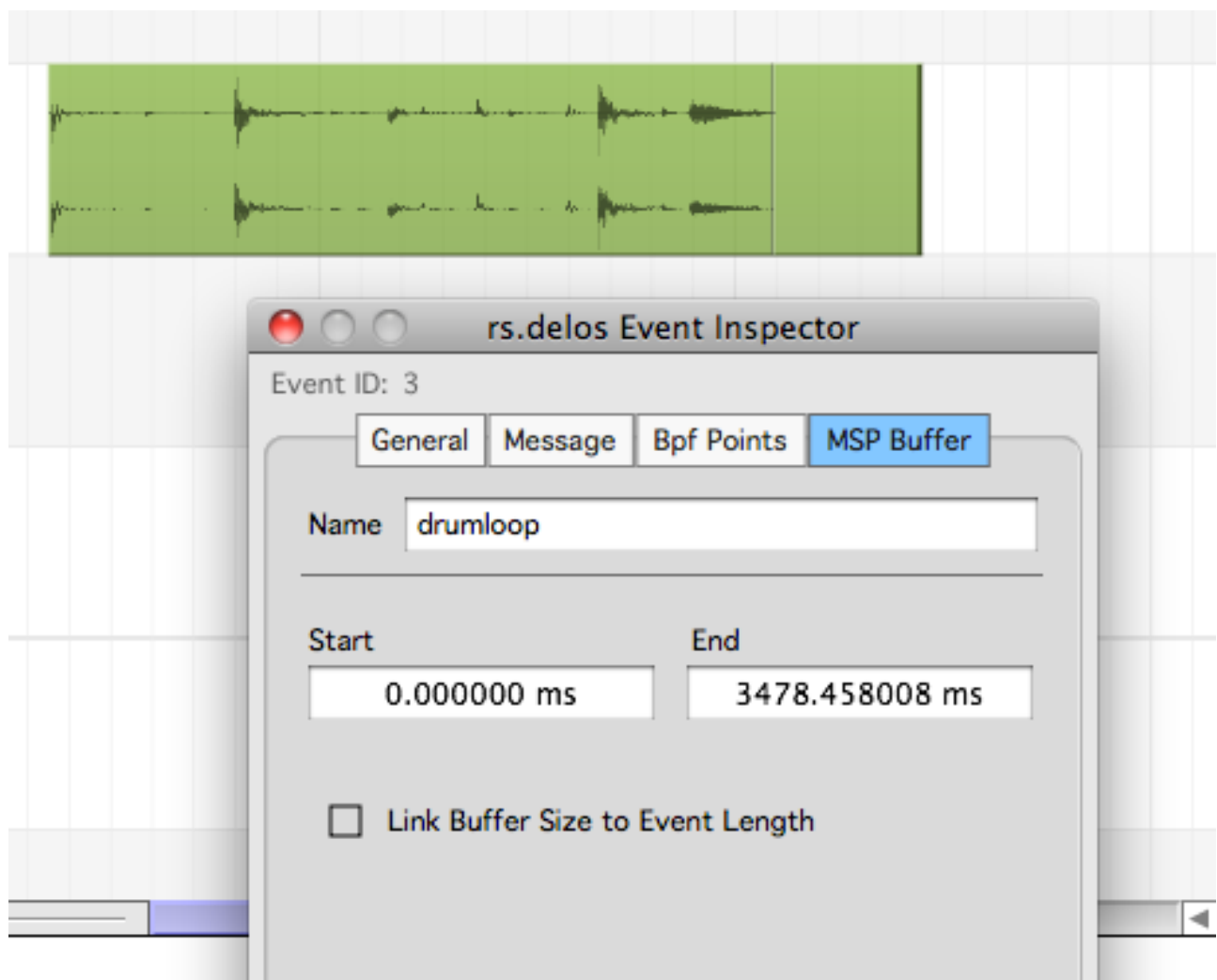
'MSP Buffer' Tab

To each Event can be attached an MSP buffer name.

If that buffer exists the content will displayed inside the Event (Show Buffers must be turned on in the Events Menu), defined by the Start and End Values.

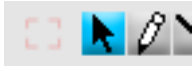
When playing the Start and End values will be sent out.

When "Link Buffer Size to Event Length" is selected, the Buffer display will always stretch to the whole Event's duration and a ratio value different from 1. will be output.



Miscellaneous

In the Menu Display there is a red broken rectangle that gives a visual feedback on the keyboard focus state of the rs.delos object:



object doesn't have focus



object has focus

Furthermore, a black point inside the rectangle informs that the document has been dirtied, i.e, some changes occurred inside the document.



The display of these hints can be turned on / off in the rs.delos object Inspector with

Show / Hide Focus Hint
and
Show / Hide Dirty Hint

Helpers

rs.delos-parser

see the help patcher

rs.delos-bpfparser

see the help patcher

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June 2011