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## News

### SfN 2010

We would like to thank everybody who stopped by the CED booth at the Society for Neuroscience conference in San Diego. The meeting provided an opportunity for the CED software engineers to meet directly with users to get feedback on the current software and to discuss ideas to implement in the future. The dynamic clamp features in the forthcoming Signal version 5 were demonstrated to a number of people with a very positive response and we had some extremely useful feedback on features we should include in this area. There was also much interest in the Spike2 Talker interfaces we demonstrated at the meeting from both users and companies interested in feeding data from their equipment to Spike2.

### Talkers

As mentioned in [CED Enews #53](#) Talkers provide a software interface between Spike2 and other devices without analogue outputs, allowing the system to collect data in addition to that sampled by a 1401 interface. Talkers have to be written specifically for each type of device and therefore a degree of programming is required, preferably by the device manufacturer to whom we can supply comprehensive documentation of the software specifications. If you know of any devices you feel may be good candidates for a talker interface please let us know or contact the manufacturers to see if they may be interested in producing the required software. Typical device types include motion tracking systems, medical devices with a serial line output and telemetry recording systems.

### Future meetings and events

#### [Australian Neuroscience Society](#)

31st Annual Meeting  
Auckland, New Zealand  
31 Jan - 03 Feb, 2011

#### [Experimental Biology 2011](#)

Washington DC  
9-13 April, 2011

#### [Physiology 2011](#) - Main meeting of the Physiological Society

University of Oxford  
11-14 July, 2011

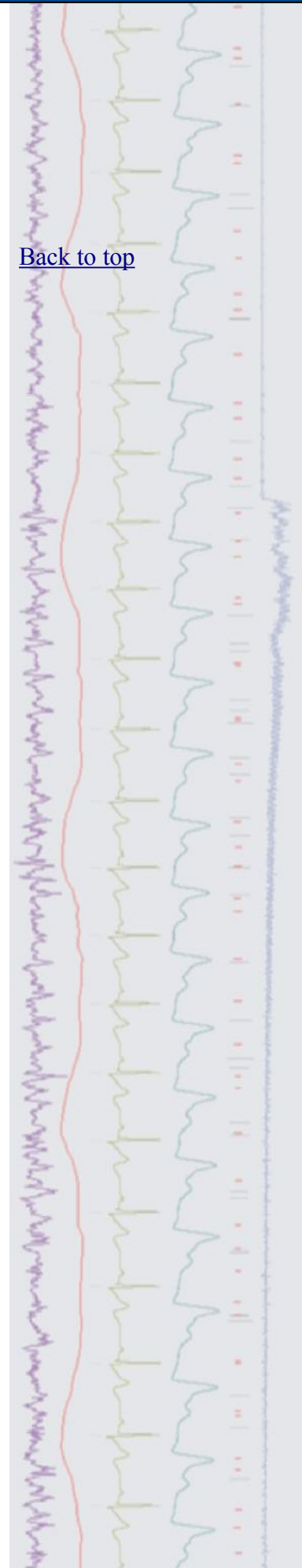
If you are organising or attending a conference at which you feel CED would be interested in exhibiting please let us know about it by notifying [sales@ced.co.uk](mailto:sales@ced.co.uk)

### Latest versions of Spike2 and Signal

Updates for Spike2 and Signal are available from the [CED downloads](#) page, or by clicking on the links in the table below. Demonstration versions of the latest software are also available.

<b>Spike2 downloads</b>	<b>Released</b>	<b>Signal downloads</b>	<b>Released</b>
<a href="#">Spike2 version 7.05</a>	11/10	<a href="#">Signal version 4.08</a>	08/10
<a href="#">Spike2 version 6.15</a>	08/10	<a href="#">Signal version 3.13</a>	05/10
<a href="#">Spike2 demo</a>		<a href="#">Signal demo</a>	

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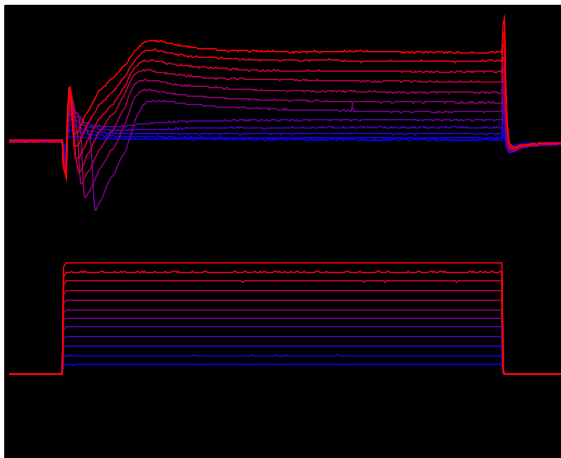
# Spike2

- Q. Can I get the 1401 to generate a pulse when it detects a spike during recording?
- A. This can be set up from the on-line Template Setup dialog with the outputs available in two formats. The first option provides a single pulse from a separate digital bit related to each of up to 8 spike types but is not useful if more than one channel of spikes is recorded. The second option provides coded information on the channel number and spike type using 8 bits of digital outputs. Full details of timing and digital bits used are available in the Spike2 help.

## Signal

- Q. I perform voltage and current clamp recordings using stepping stimulus pulses. I overdraw the sweeps but is there any way to make it clear which response relates to each level of stimulus?
- A. From Signal version 4 the overdraw settings dialog includes a number of options to fade the colour of each overdrawn sweep from the channel primary colour to another. The options available are:
1. Fade to background
  2. Fade to overdraw colour
  3. Fade to secondary colour

With any of these options activated each sweep should be drawn with a slightly different colour making it easier to visualise channels from the same sweep. Fade to secondary also allows you to fade to independent colours per channel.



Overdrawn sweeps using 'Fade to secondary colour'

Scripts: Spike2



- Q. I am looking for a device to generate trains of TTL stimulus pulses but with intervals randomised around a mean value eg 50ms +/- 20%.
- A. You can achieve this in Spike2 using a combination of a script and output sequence. The attached script `Pulse trains with variability.s2s` in combination with the output sequence `Pulse trains with variability.pls` enables generation of this type of pulse train together with some similar and more complex options.

To use this script you must first load the associated output sequence and then run the script. It displays a toolbar from which you control data sampling and stimulus generation. Once sampling has started the various stimulus options are enabled. When you select a stimulus type, a settings dialog will appear in which you specify the pulse train parameter and when you press OK, the trains will be triggered and a textmark describing the parameters saved into the data file.

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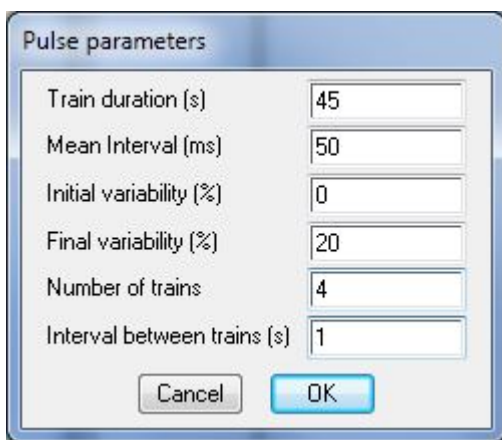
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Right-click the script icon and save to disk. If you have any problems opening the embedded scripts in this newsletter please let us know.



The types of pulse train included are:

- `Random int train` - Number of pulse trains in which you can specify mean interval and percentage of random variation around the mean as well as number of trains and interval between trains.
- `Constant int train` - Single pulse train with constant interval.
- `Random freq train` - Similar to random int train although based on frequency rather than interval.
- `Constant freq train` - Single pulse train with constant frequency.
- `Random int ramp` - Number of pulse trains with mean interval but the amount of random variation ramps linearly through time.
- `Normal dist int` - Number of pulse trains where you specify the mean interval and an amount of variation but this is normally distributed rather than purely random.



*Example pulse train parameter dialog*

**Scripts: Signal**



**Q:** I record single channel patch clamp data and use the SCAN method in Signal to generate idealised traces. I export the idealised trace as text which gives me most of the required information including a flag value, however I would like to know what these flags represent (eg open, closed, first latency etc.).

**A:** The attached script `Open closed event time printout.sgs` prints a text file in a similar format to the standard text export but following the flag value prints the actual meanings of the flag value for each event. To use it, simply open a Signal data file containing idealised trace data then run the script. It currently prints all of the data for each frame but could easily be modified to allow you to select a frame subset and time range if required.

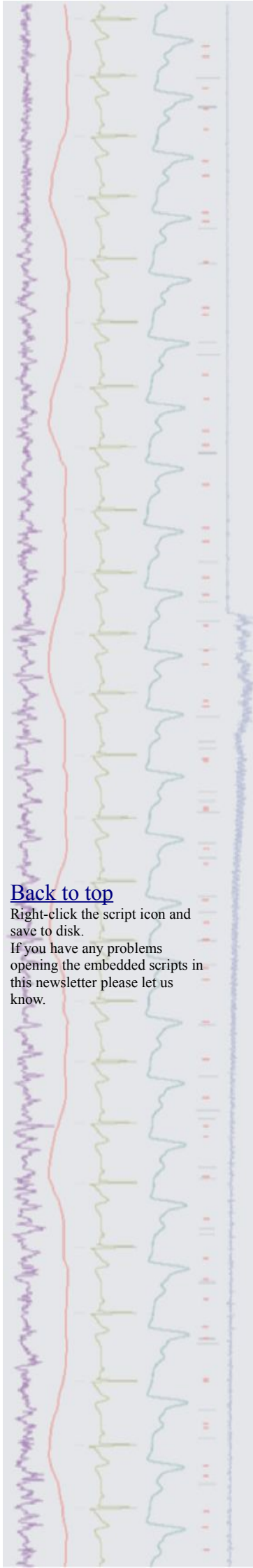
Frame	Time	Dur	Amp	Flags	
1	0.000000	0.017500	-0.137457	80	Closed time. First latency
1	0.017500	0.004100	13.446917	128	Open time.
1	0.021600	0.001300	-0.136150	64	Closed time.
1	0.022900	0.000900	11.865234	128	Open time.

*Typical open/closed time event data*

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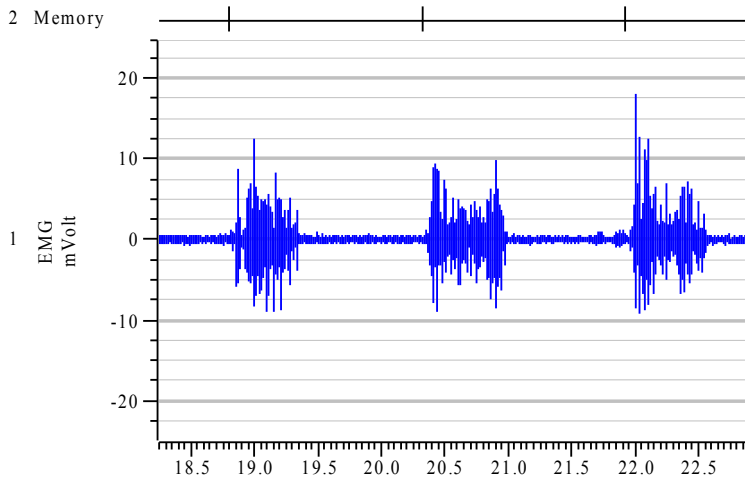
Right-click the script icon and save to disk.

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## Did you know...?

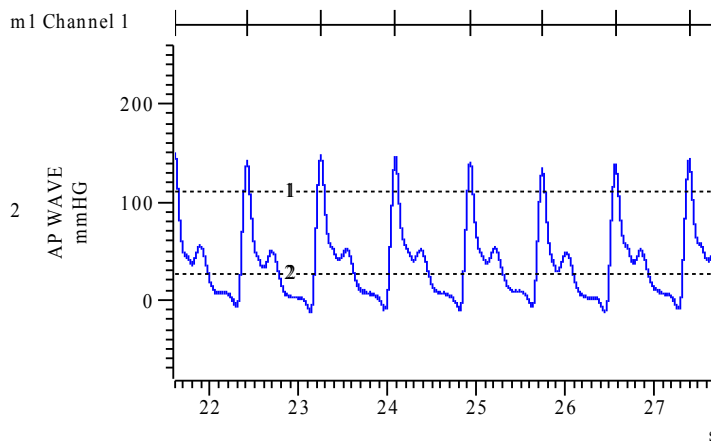
You can control the display of x and y grid lines independently through the Show Hide Channel dialog or with the `Grid()` script command.



Time view with grid displayed only on the y axis

## Recent questions

- Q. I am using the `measure to channel` function to detect times of peaks in a blood pressure channel on-line. The peak detection function for cursor 0 stepping requires an amplitude value but as the pulse pressure (peak to peak amplitude) varies I would like to be able to adjust this during sampling. Is there a way to do this without using a script.
- A. Horizontal cursor positions can be used in this case. If you place two horizontal cursors on the pressure channel trace you can set the amplitude in the peak detection option in Cursor 0 stepping to use the level difference between the cursors. If for example you use horizontal cursor 1 above 2 you can use the notation `H1-H2`. During the recording you can then adjust the cursors to be closer or further apart to compensate for changes in pulse pressure.



Detected arterial pressure peaks using an amplitude set by H1-H2

## User group

You can now find our [eNewsletters](#) archived on the CED website.

Try the [CED Forums](#) bulletin board for software and hardware support

If you have any comments about the newsletter format and content, or wish to un-subscribe from the mailing list for this newsletter, please notify [sales@ced.co.uk](mailto:sales@ced.co.uk).

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