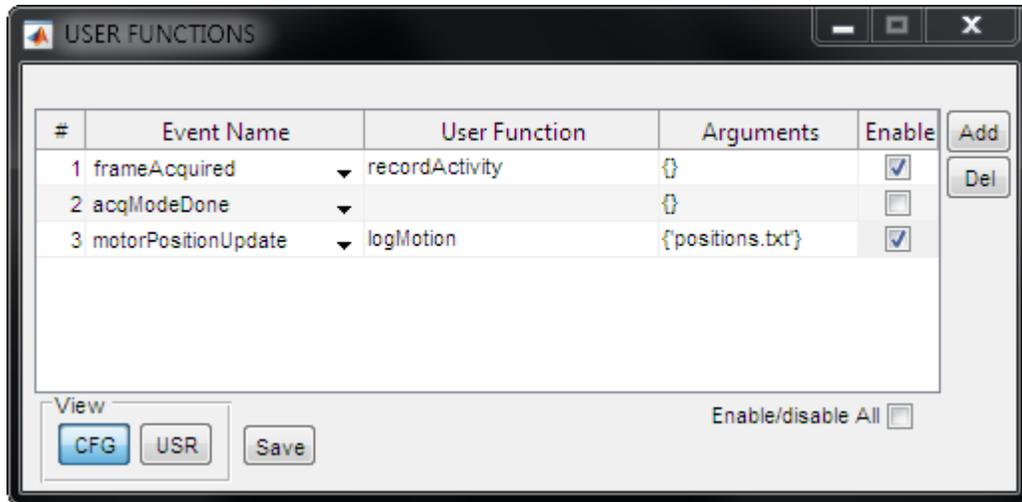


User Functions



USER FUNCTIONS Panel

Review the article [ScanImage API](#) to learn more about automating ScanImage.

Due to the limitations of the MATLAB compiler, Compiled ScanImage is unable to guarantee the full features offered by regular ScanImage. If you're using Compiled ScanImage, please refer to the [Compiled ScanImage Documentation](#).

Description

Assign user-defined functions that will be called in response to acquisition events.

Controls

Table Field	Description
Event Name	Select one of several events of interest.
User Function	The function to call in response to the event. Note that multiple events can be sent to the same function.
Arguments	A cell array with optional arguments to pass to your user function.
Enable	If this is checked, the user function will be called when the event is triggered.

Button	Description
<input type="button" value="Add"/> <input type="button" value="Del"/>	Add or delete a user function. Delete operates on the currently selected row.
View <input type="button" value="CFG"/> <input type="button" value="USR"/>	User functions can be stored in the CFG file or the USR file. Typically USR-defined user functions override those in CFG. The main table view is toggled to show either the CFG or USR set based on these buttons.
<input type="button" value="Save"/>	Saves the current set of user functions to the CFG or USR configuration.

User Functions

A user function has the format:

```
function name(source,event,arguments)
```

Argument	Description
source	At the moment, this is always the current instance of scanimage.SI class. Also known as hSI on the base Matlab workspace.
event	A string with the name of the event that triggered the user function.
arguments	A cell array with optional parameters. Specified in the arguments column of the User Functions table.

A Very Very Brief Example

```
function myUserFcn(src,evt,varargin)
    % in myUserFcn.m somewhere on the matlab path.
    disp(['Got Event: ' evt.EventName]); % prints the event
    disp(src);                          % prints the source object (UserFunctions)
    disp(src.hSI);                       % each source object has access to the main
                                        % ScanImage Model object
    disp(src.hSI.imagingSystem)          % from which we can access ScanImage
                                        % methods and properties
end
```

Events

General Events

Event	Description
acqModeStart	Called just before the start of an Acquisition Mode such as GRAB or LOOP. This may happen before any data is acquired.
acqModeDone	Called just after the last frame at the end of an Acquisition Mode such as GRAB or LOOP.
acqStart	Called just after the first frame gets acquired from an Acquisition .
acqDone	Called just after the last frame gets acquired from an Acquisition .
acqAbort	Called just after an acquisition is aborted. Abort usually happens because the Abort button is pressed in the Main Controls .
sliceDone	Called just after the shutter is closed after acquiring a slice during a Slow Stack acquisition.
focusStart	Called just after the user presses the FOCUS button in the Main Controls .

focusDone	Called just after the FOCUS is aborted. Similar to acqAbort but only in FOCUS mode.
frameAcquired	Called just after a frame is acquired.
overvoltage	Called when the digitizer experiences an overvoltage condition during an acquisition.

Photostimulation-module Events

Event	Description
onDmdStimStart	Fires when command to perform an on demand stim is received, before the trigger is sent.
onDmdStimSingleComplete	Fires when an on demand stim completes if multiple outputs are allowed; more stims can be externally triggered.
onDmdStimComplete	Fires when an on demand stim completes if multiple outputs are not allowed; no more stims will occur until next on demand command.
onDmdStimExtSel	Fires when an external on demand stimulus selection occurs.
seqStimStart	Fires when a sequence stimulation begins.
seqStimAdvance	Fires when a sequence element is complete and sequence advances to the next stim.
seqStimSingleComplete	Fires when a single sequence is complete.
seqStimComplete	Fires when the last sequence is complete.
photostimAbort	Fires when photostimulation module aborts.