Updating Pre-HDx User Protocols to Work with HDx Systems
(v. 2, November 13, 2007)

If you are planning to use a protocol that was created before the HDx upgrade on the newly upgraded HDx scanner, the following modifications are typically needed:

1. BBFSPGR
BBFSPGR is no longer needed in HDx. You can replace BBFSPGR with the GE product FSPGR. For your convenience, we have created a protocol named FSPGR_BROADBAND under the HEAD category, which contains scans that are equivalent to BBFSPGR.

2. DTI
Due to increased gradient heating protection in the HDx system, the maximum number of slices allowed per second in DTI is reduced. Therefore users who have been using the maximum number of slices per second before will now receive an error about TR being too short. The recommended fix for this error is to reduce the number of slices or to increase TR.
Example:
Pre_HDx: bvalue 1500, directions 15, TE min, ***36*** slices x 4mm, TR ***11000*** ms
HDx: use ***34*** slices or increase TR to ***11500***ms.

3. EPI
a) Due to increased gradient heating protection in the HDx system, users who have been acquiring the maximum number of slices per second before will now receive an error about TR being too short. The recommended fix for this error is to reduce the number of slices or to increase TR.
Example:
Pre_HDx: Bandwidth 62.5Khz, matrix 64x64, TE 30ms, ***32*** slices x 4mm, TR ***2000***ms
HDx: use ***31*** slices or increase TR to ***2016***ms.

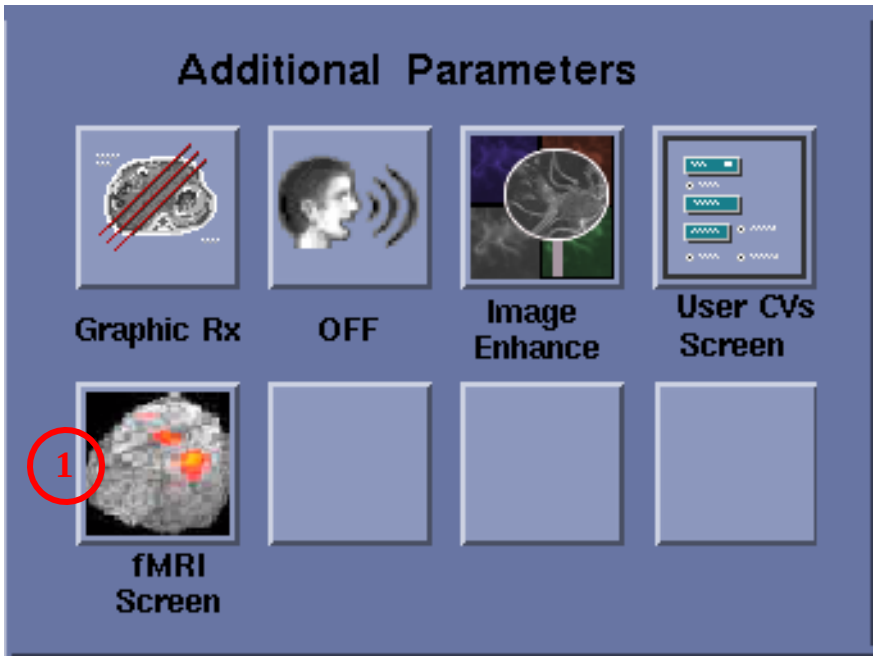
b) The paradigm needs to be re-configured due to changes in the new brainwave software. Instructions on how to use the new brainwave software is attached in the Appendix of this document.

4. ASL Baseline Perfusion:
Click on ***User CVs screen*** icon (in the center portion of the main screen), and set the value of the first field (CV0: number of dummy samples) to:

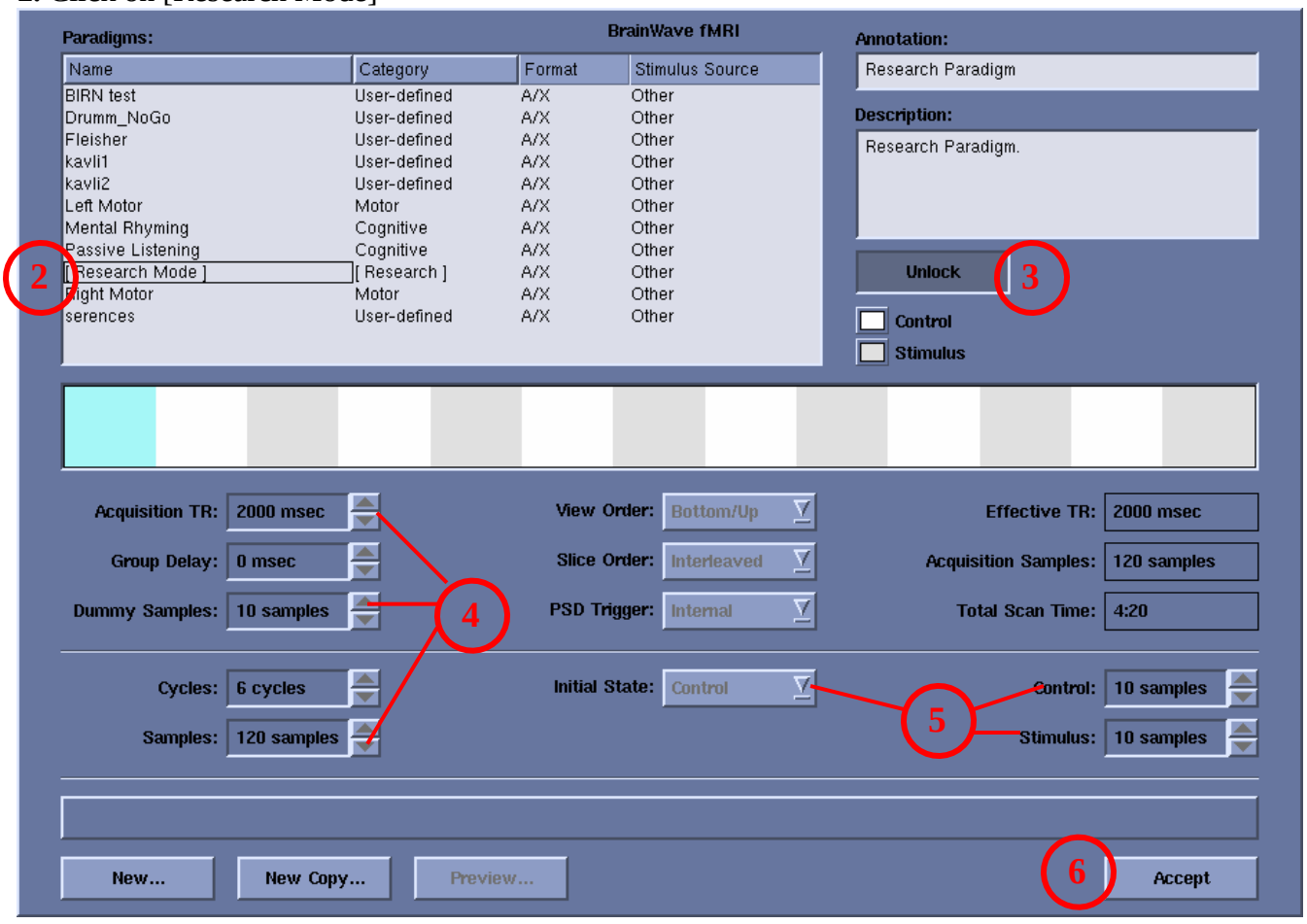
0	ASL-FAIR
-8	CSF (this will increase the CSF scan time to 36 sec, however you do not need to wait 30 sec before pressing the scan. The “Manual prescan and Done” procedure is unchanged.)
0	MinCon (The “Manual prescan and Done” procedure is unchanged.)

APPENDIX: BrainWave in HDx

1. Click fMRI Screen:



2. Click on [Research Mode]



3. Unlock (may have to click twice until all the fields in the lower portion of the screen are enabled)

4. Fill the following fields (required):

Acquisition TR: Repetition time
Dummy Samples: Number of dummy frames to discard
Samples: Total number of frames (TRs) to acquire

5. (Optional, only if you desire TTL pulse output per epoch during the scan)

Initial State: Control or Stimulus
Control: Number of Samples during Control period
Stimulus: Number of Samples during Stimulus period

6. Accept