

# User Manual



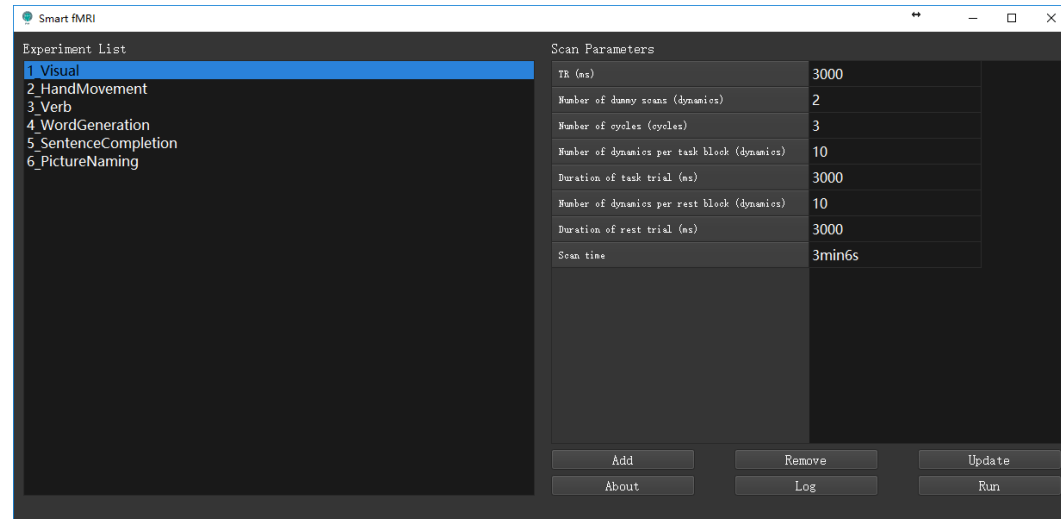
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# 1. Introduction

Smart fMRI is a user-friendly Graphical User Interface for E-prime2. It provides user-friendly UI during running E-Prime2 paradigm (\*.ebs2 file) for an fMRI experiment.

The main window:



It provides following benefits:

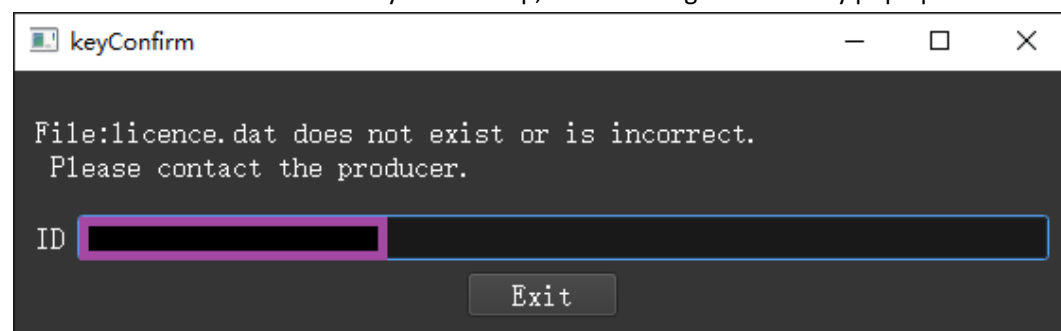
- 1) Experiments can be easily managed. The same experiments can have multiple copy.
- 2) Parameters of each experiment are editable.
- 3) Log files are automatically saved by time sequence with timestamp.
- 4) Background monitoring E-Prime2's output. It is possible to monitor the E-Prime2's output in another screen.

# 2. Installation

2.1. Before using this software, E-Prime 2 should be well installed.

2.2. Follow the Smart fMRI setup wizard to install your Smart fMRI program. The program will be installed in installation path you selected and a shortcut will be placed in the desktop.

2.3. Double click the shortcut on your desktop, the following window may pop up.



This is caused by lack of correct licence.dat, which means users need to use ID to apply a licence.dat to place in their installation path. After that, the whole function should work.

### 3. Adding Experiment

3.1. First of all, it need to add an E-Prime2 paradigm (\*.ebs2) to its storage directory as an experiment. The paradigm it supports to add should have following format:

(1) All resource files need to use should be in the same folder where the paradigm file (\*.ebs2) is.

Verb	2016/9/8 0:23	文件夹	
3_VerbGenerationSmart.ebs2	2016/8/25 23:11	E-Run 2.0 Script ...	408 KB
3_VerbGenerationSmart.es2	2016/8/26 17:35	E-Studio 2.0 Exp...	105 KB
3_VerbGenerationSmart.wndpos	2016/8/26 17:35	WNDPOS 文件	1 KB
3_VerbGenerationSmart-1-1.edat2	2016/8/25 23:15	E-DataAid 2.0 File	59 KB
3_VerbGenerationSmart-1-1.txt	2016/8/26 0:13	文本文档	1 KB
Dummy.JPG	2016/8/15 20:15	JPG 文件	42 KB
myBlockList.txt	2016/8/25 22:16	文本文档	1 KB
myCycleList.txt	2016/8/26 14:49	文本文档	1 KB
myDummy.txt	2016/8/15 20:15	文本文档	1 KB
PreScan.JPG	2016/8/15 20:15	JPG 文件	86 KB

(2) The folder **MUST** contain editable configuration files ('myBlockList.txt' & 'myCycleList.txt' & 'myDummy.txt') whose filenames are restricted.

(3) The configuration files MUST have following format:

The first row is the title which **MUST and ONLY** contain the followings, the second row is parameters. Each column is separated by a 'Tab'.

'myBlockList.txt':

ID	Weight	Procedure	Nested	PracticeMode
1	15	TaskBlockProc	No	
2	15	RestBlockProc	No	

myBlockList.txt - 记事本				
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)				
ID	Weight	Procedure	Nested	PracticeMode
1	15	TaskBlockProc		No
2	15	RestBlockProc		No

'myCycleList.txt':

myCycleList.txt - 记事本				
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)				
ID	Weight	Procedure	Nested	PracticeMode
1	5	CycleProc		No

ID	Weight	Procedure	Nested	PracticeMode
1	5	CycleProc	No	

"myDummy.txt":

ID	Weight	Duration	Procedure	Nested
1	1	6000	DummyProc	

myDummy.txt - 记事本

文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)

ID	Weight	Duration	Procedure	Nested
1	1	6000	DummyProc	

The upper '\*.txt' files should be set in the E-Studio as follows in the design of a paradigm.

**Dummy**

ID	Weight	Nested	Procedure	Duration
1	1		DummyProc	6000

**CycleList**

ID	Weight	Nested	Procedure	PracticeMode
1	1		CycleProc	No

**BlockList**

ID	Weight	Nested	Procedure	PracticeMode
1	15		TaskBlockProc	No
2	15		RestBlockProc	No

**TaskTrialList**

ID	Weight	Nested	Procedure	Stimulus
1	1		TrialProc	Slide2
2	1		TrialProc	Slide3
3	1		TrialProc	Slide4
4	1		TrialProc	Slide5
5	1		TrialProc	Slide6
6	1		TrialProc	Slide7
7	1		TrialProc	Slide8
8	1		TrialProc	Slide9
9	1		TrialProc	Slide10
10	1		TrialProc	Slide11
11	1		TrialProc	Slide12
12	1		TrialProc	Slide13
13	1		TrialProc	Slide14
14	1		TrialProc	Slide15
15	1		TrialProc	Slide16
16	1		TrialProc	Slide17
17	1		TrialProc	Slide18
18	1		TrialProc	Slide19

**TaskTrialList** (Properties)

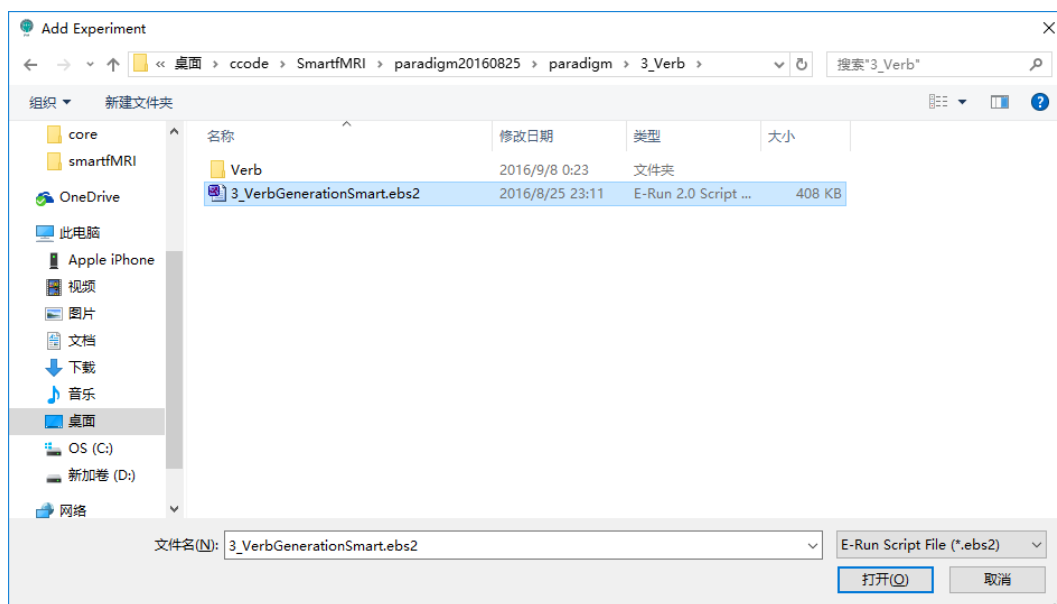
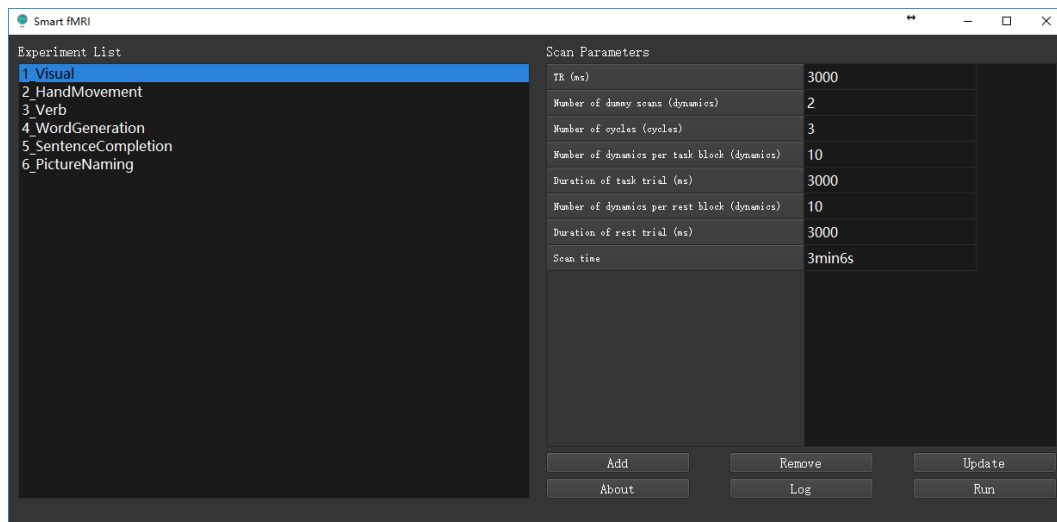
Property	Value
Name	TaskTrialList
HideLevelsWithZeroWeight	No
LoadMethod	Embedded
NoRepeatAfterReset	Yes

'myTrialListParameters.txt':

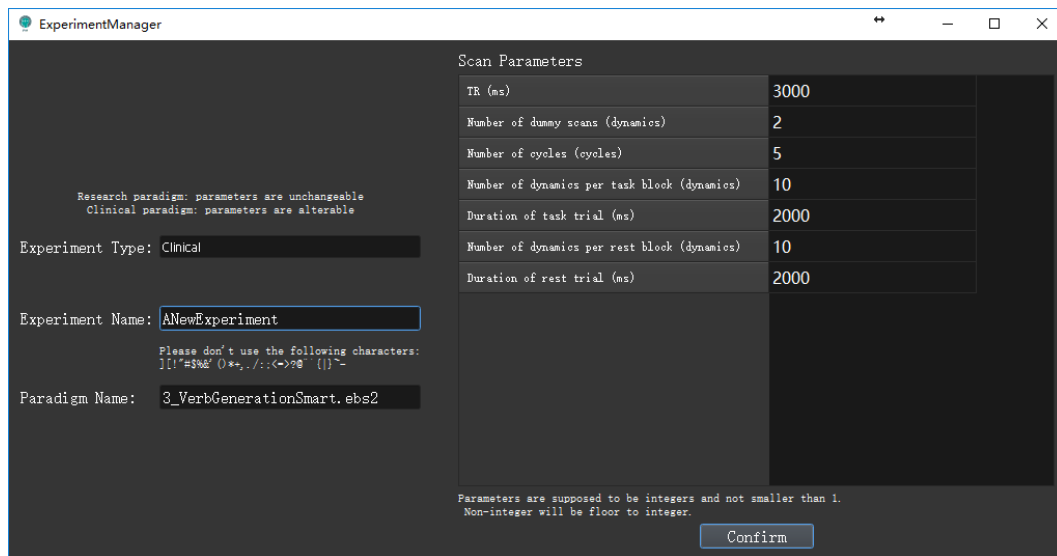
ID	Weight	Procedure	Nested	Stimulus	CorrectAnswer	StimDuration
1	4	TrialProc	RedCar.bmp	1	1000	1000

'myTrialListParameters.txt' should be set in the E-Studio as follows in the design of a paradigm.

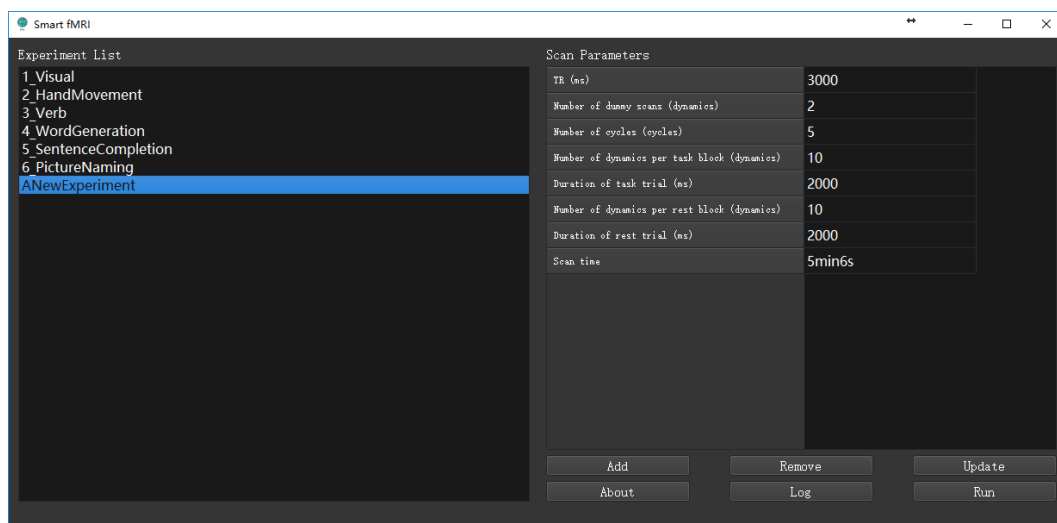
- For adding an experiment, click the 'Add' button of the main window, 'Smart fMRI'. Select the paradigm file (\*.ebs2) in the browser and click 'Open'.



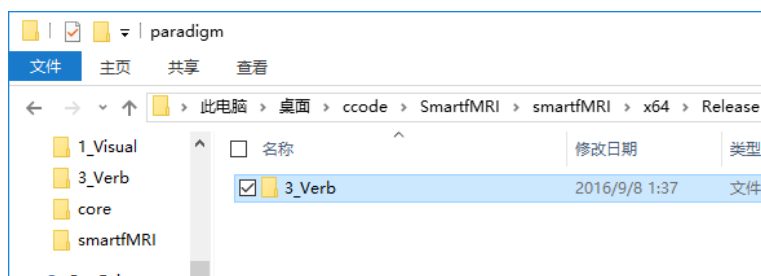
- 3.3. Before a dialog, 'Experiment Manager' pop up, the type of experiment is needed to select.
- For research paradigm: Please be noticed that the timing of research paradigms are not controlled by Smart fMRI. Scan parameters are used in only instructing MR operator.
- For clinical paradigm: The paradigm structure of clinical paradigms need to follow Smart fMRI paradigm structure.
- On the left side of 'Experiment Manager', 'Experiment Name' edit text is the folder name and experiment name. 'Paradigm Name' is the file name of '\*.ebs2' file. On the right is a table of scan parameters. Click 'Confirm' button.



3.4. A new experiment will be added to the list of the main window. The right list is all the added experiments. The right table is the scan parameters of the selected experiments.



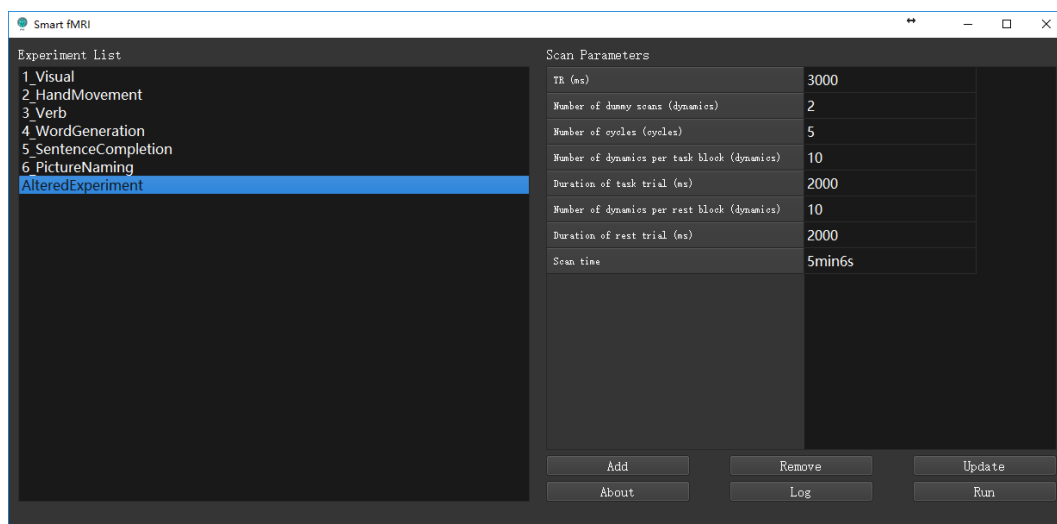
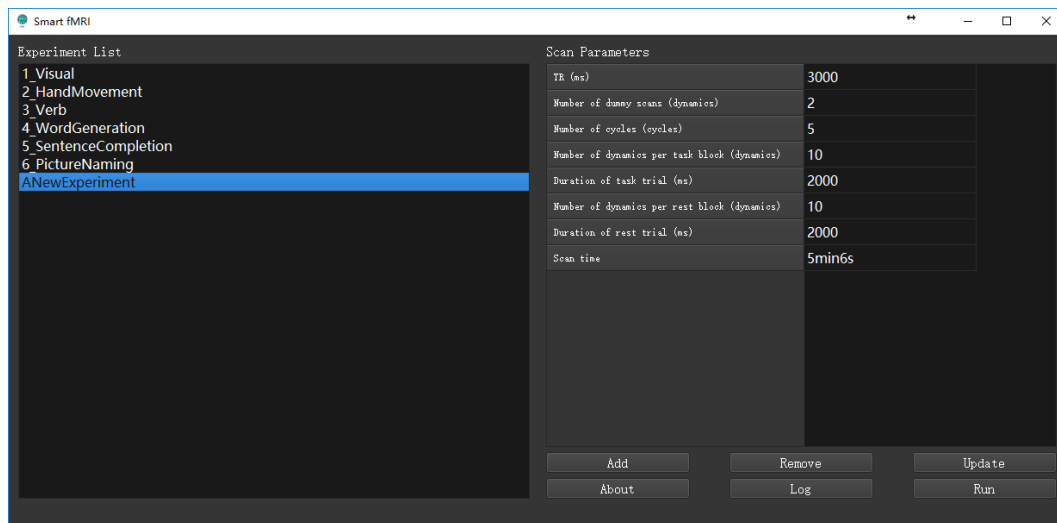
3.5. A new directory is also created in \$Smart fMRI/paradigm/\$Experiment Name. (While it is not suggested to alter directories)



## 4. Updating Experiment

4.1. Select an experiment in 'Experiment List' and click 'Update' button can alter the scan

parameters and Experiment. It is the same as instruction 3.3, while no experiment will be added.

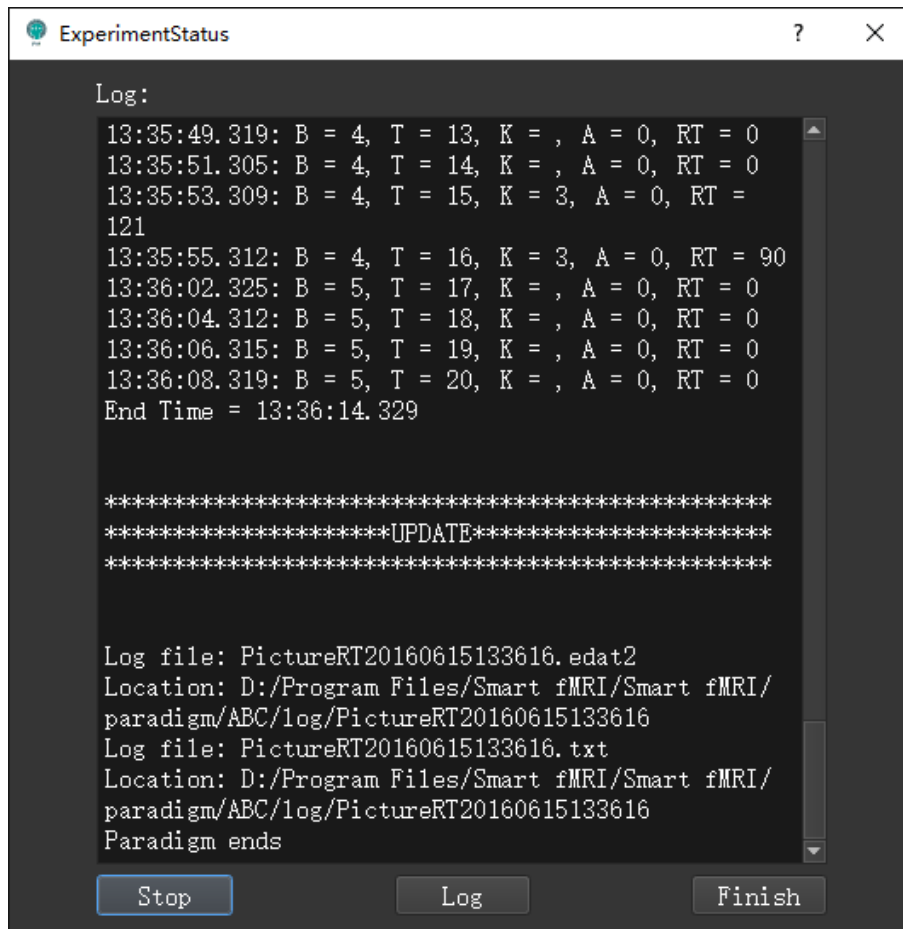


## 5. Removing Experiment

- 5.1. Select an experiment, click 'Remove'. The selected experiment will be removed from the list and **all its related directories, files, data, logs are also removed. It cannot be found in the recycle bin and INDELETABLE.**

## 6. Running Experiment

- 6.1. Select an experiment, click 'Run'. The selected experiment will run immediately.
- 6.2. The Experiment status dialog will display the patient's movement. Experiment date, begin time and end time. B: block, T: trail, K: keyboard response (' ' means no response), A: accuracy, RT: response time ('0' means no response).



6.3. After finishing, it will tell the location of the files.

6.4. If abortion during the experiment, the log files will not be saved.

6.5. Click 'Stop' button and 'Finish' button or click 'Finish' button directly.

## 7. Log Files

7.1. In 6.2., click the 'log' button in the bottom of 'Experiment status' dialog, it will open the log folder of the log files.

7.2. Select an experiment in 4.1 and click 'Log' button, which is the same as 6.2.

## 8. Uninstall

8.1. Double click 'uninstall.bat' in installation path and click 'yes'. The program will be uninstalled right away.

