



aa: magic explained (MEG)

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What you need

Tasklist

- Pipelines describing a series of modules to be executed

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<aap>
```

```
  <tasklist>
```

```
    <initialisation>
```

```
      <module><name>aamod_checkparameters</name></module>
```

```
      <module><name>aamod_evaluatesubjectnames</name></module>
```

```
      <module><name>aamod_study_init</name></module>
```

```
      <module><name>aamod_newsbj_init</name></module>
```

```
    </initialisation>
```

```
    <main>
```

```
      <module><name>aamod_meg_get_fif</name></module>
```

```
      <module><name>aamod_meg_maxfilt</name></module>
```

```
      <module><name>aamod_meg_convert</name></module>
```

```
      <module><name>aamod_meg_denoise_ICA_1</name></module>
```

```
      <module><name>aamod_meg_denoise_ICA_2_applytrajectory</name></module>
```

```
      <module><name>aamod_meg_epochs</name></module>
```

```
      <module><name>aamod_meg_average</name></module>
```

```
    </main>
```

```
  </tasklist>
```

```
</aap>
```



meg_tasklist.xml

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Initialise: setup aa
 - Loads in: default parameters and the tasklist
 - Customises: parameters and tasks
 - Specifies: data and model
 - **Runs and cleans up: the main (p)art**
 - Generates: report

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Initialise: setup aa

```
% Automatic analysis
% User master script example (aa version 5.*.*) - c.a. 1.5h
%
% Tibor Auer, MRC-CBSU
% 01-02-2016

clear

aa_ver5
```

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Loads in: default parameters and the tasklist

```
%% DEFINE SPECIFIC PARAMETERS
```

```
% Default recipe with model
```

```
aap = aarecipe('aap_parameters_defaults_CBSU.xml', '/imaging/xy01/Workshop/Material/4_aa/meg_takslst.xml');
```

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Customises: parameters and tasks

```
% Modify standard recipe module selection here if you'd like
aap.options.wheretoprocess = 'qsub'; % queuing system           % OPTIONS: 'localsingle' | 'qsub' for aa engine, typical value 'qsub'
aap.options.email = 'xy01@mrc-cbu.cam.ac.uk';
aap.tasksettings.aamod_meg_maxfilt.downsampling = 10;
aap.tasksettings.aamod_meg_denoise_ICA_2_applytrajectory.toremove = 'spat';
aap.tasksettings.aamod_meg_epochs.timewindow = [-2000 500];
```

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**

- Specifies: data

% Directory & sub-directory for analysed data:

```
aap.acq_details.root = '/imaging/xy01/Workshop';  
aap.directory_conventions.analysisid = 'aa_MEG';
```

% Add extra files

```
aap = aas_addinitialstream(aap, 'channellabels', {'/imaging/rh01/VectorView_MAG_GRD_EEG_EOG_STI101.mat'});  
aap = aas_addinitialstream(aap, 'topography', {'/imaging/rh01/Methods/MEGEEGArtifactTemplateTopographies.mat'});
```

% Directory for raw data:

```
aap.directory_conventions.rawmegdatadir = '/megdata/cbu/ftd';  
aap.directory_conventions.subject_directory_format = 3;
```

% Add subject (full):

```
aap = aas_addsession(aap, 'run1');  
aap = aas_addsubject(aap, 'S1', {[12 442] []}, 'functional', {'psp_button_press_self_raw.fif'});  
aap = aas_addsubject(aap, 'S2', {[13 133] []}, 'functional', {'ftd_0133_bsp_raw.fif'});
```

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Specifies: model

`% Add conditions`

```
aap = aas_add_meg_event(aap,'aamod_meg_epochs','S1','run1','BP',{'STI101_down' 8192},34);  
aap = aas_add_meg_event(aap,'aamod_meg_epochs','S2','run1','BP',{'STI101_down' 22},34);
```


What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - **Runs and cleans up: the main (p)art**

```
aa_doprocessing(aap);
```

What you need

User Master Script (UMS)

- **Specifies and runs the analysis**
 - Generates: report

```
aa_report(fullfile(aas_getstudypath(aap),aap.directory_conventions.analysisid));
```

Info/Support

GitHub: <https://github.com/rhodricusack/automaticanalysis/wiki>

Our Wiki: <http://imaging.mrc-cbu.cam.ac.uk/imaging/AA>

People ("The AA-team")

