Tutorial 2:
Interfacing from MATLAB/GNU Octave for adaptive measurements

Summary

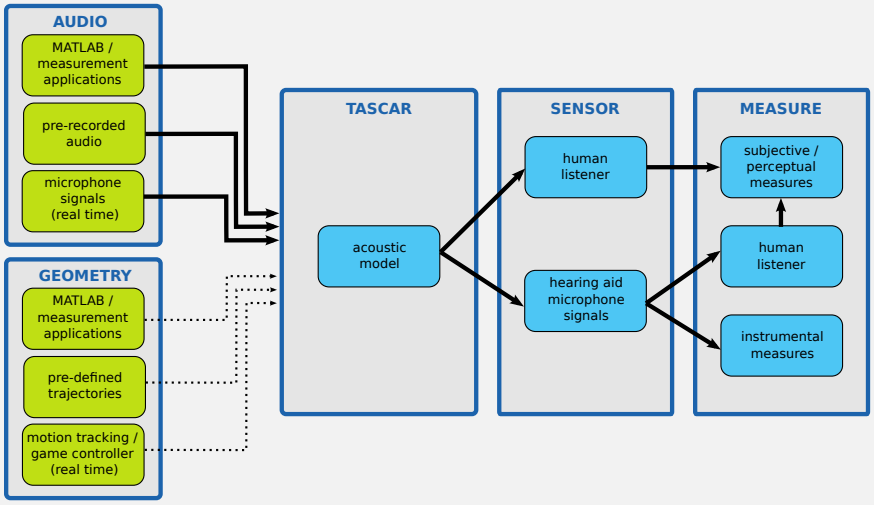
In this tutorial you will learn how to control TASCARpro from MATLAB or GNU Octave. You will learn how to (automatically) change TASCARpro parameters from MATLAB/GNU Octave and how to start, stop or rewind the playing back of a scene. At the end you will have a setup of an adaptive measurement procedure, e.g., minimum audible angle in spatially complex masking environments.

What will I learn?

- Change simulation parameters from MATLAB/GNU Octave
- Control the playback/time line of a scene

What can I use it for?

- Psycho-acoustic measurements in virtual acoustics



Part I: loading, closing, generating a scene, modifying OSC variables

- Open script `task2_example1_1.m` in MATLAB (or GNU Octave) and your own copy of a file `task2_basic1.tsc` in text editor. (To open MATLAB type `matlab &` in a terminal)
- Using `task2_example1_1.m` load `task2_basic1.tsc` in TASCARpro.
- In the TASCARpro window go to `View` → `OSC variables`. What are the OSC variables you can access?
- Using `task2_example1_1.m` play with changing the scene variables and with playing/recording the scene from MATLAB.
- Open script `task2_example1_2.m` in MATLAB.
- Using `task2_example1_2.m` generate a new TASCARpro scene. Open this scene in text editor and load in TASCARpro to see what you have generated.
- Try to modify the osc parameters of the new generated scene from MATLAB, try playing back and recording for this scene.

Part II: modifying xml document, offline rendering

- Load `task2_basic2.tsc` to tascar and have a look at the corresponding scene definition file.
- Using `task2_example2.m` modify scene `task2_basic2.tsc` (Here you learn to modify the xml document offline). Open both unomdified and modified scene definition in text editor and in TASCARpro to see and hear what you have changed.
- Using `task2_example2.m` render the static impulse response and image source model of the modified and unmodified scene - you can compare your rendered signals. heeelp

Part III: AFC experiment

- Design your own AFC experiment with TASCARpro and TASCARpro MATLAB tools. Can you measure MAA in noise as a function of noise direction? Or spatial release from masking?

  You may use our AFC toolbox. Type `afcgui maa subjectid` in MATLAB to start an example measurement (MAA). Modify functions `afccfg_maa.m` and `afc_maa_play_interval.m` to fit your needs.