

Realiser Exchange - a new Virtual Audio Exchange website

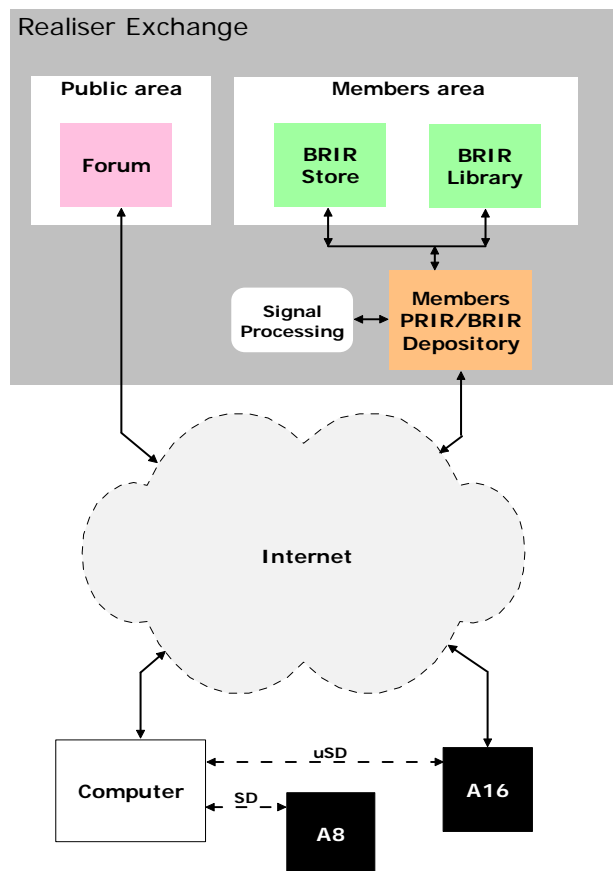
Smyth Research

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Introduction

Smyth Research is pleased to report on the development of their new virtual audio exchange website which is due to go live simultaneous to the launch of the A16 in Q1 2017. Coined the 'Realiser Exchange' the new website will offer a range of services to owners of both A8 and A16 Realiser models. The primary aim of this web service is to facilitate access to good sound rooms for A8 and A16 owners, whether that be in the form of getting measured in local studios and sound

rooms, or being able to personalise a measurement taken by someone else in a good sound room. The website will be divided into three areas. A directory of sound rooms that offer personalised measurement facilities, a members area, access to which will require owners to create an account, and a forum.



For clarity, the term PRIR means a measurement file made using the member's own head. A BRIR means a measurement file made using some other head. In order to make full use of the website services, Realiser owners will be invited to join the exchange website as members. Members will have an account and that account will provide a depository for members to store their measurement files (PRIRs and BRIRs) and this depository can be made visible to their A16 when connected to the internet. The account will also allow members access to a free virtual audio library of non-personalised

measurements (BRIRs) and a virtual audio store where members can buy and sell measurements. In addition, the account will provide back-end signal processing functions that will give members the means to personalise measurements obtained from the library or through the store. Other signal processing functions will allow the room acoustics within their own PRIR files to be improved.

Main Services of Realiser Exchange

Service 1: Depository for PRIR and BRIR files

Members will have an account with sufficient cloud storage to hold 200 PRIR/BRIR files. Members can upload files from their Realiser for backup, for enhancement processing, or for selling on the store. Members can freely download files from this account whether these files be their own, from the library, or purchased. The members A16 Realiser can be configured to access this depository where it has a connection to the internet. The files held will then be displayed in addition to those stored in the Realiser's local memory.

Service 2: Virtual Audio Store

Members can sell or donate, on the Virtual Audio Store, PRIR or BRIR files that have been created on their Realiser. Members can buy PRIR or BRIRs from the virtual audio store but these PRIR/BRIRs will only play on the purchaser's Realiser. The reason for restricting a purchased BRIR to only play on the buyers Realiser is to encourage owners of high end commercial studios and post production houses to get involved in providing high fidelity BRIRs of their studios, listening rooms, dubbing stages etc.

Service 3: Back-end Signal Processing Functions

PRIR/BRIR files held in a members depository can be enhanced using a number of proprietary signal processing functions. This suite of functions will be expanded over time to include other options such as room equalisation.

1. Personalisation of a BRIR

A BRIR of a high fidelity sound room can be personalised using information from a member's PRIR. The algorithm comprises a three step process and has the capability to dramatically improve the localisation of the loudspeakers and suppress unnatural room colouration. It does not alter the nature of the room acoustics nor the reverberation. While personalising a BRIR is unlikely to ever sound superior to a PRIR made by the member in the same room, the improvement can be very useful where this is not an option and will often result in better sounding room than a PRIR made in a regular room. As a result, this option should give members access to a much wider selection of decent sounding files.

The process does require that the member have a PRIR that contains loudspeakers whose positions are similar to those in the BRIR. The enhancement process does not make use of the reverberation portion of the PRIR so the acoustics of the room used to make them are irrelevant. Neither does the enhancement process make use of the lower frequencies of the PRIR and so the loudspeakers used to make the PRIR measurement need not be full range. Indeed, PRIR measurements, for the purpose of enhancing a high quality BRIR, can easily be made at home using only a single tweeter connected to the mono speaker output (A16) and using the ONE measurement with the new head tracking pilot guidance system to establish the appropriate head-to-tweeter orientations. While tedious, measuring a PRIR file for personalising BRIRs would theoretically only need to be made once, provided a good range of different tweeter-to-head positions were included during such a measurement.

We are currently putting together a low cost measurement kit that would include the tweeter driver and adjustable stand as an accessory to the A16 for this purpose. More details will be released in due course.

2. Mimicking a BRIR

Any PRIR a member holds in their account can be modified to sound like any BRIR in their account. Essentially the time and frequency characteristics of the PRIR measurements are altered to match that of the selected BRIR. For example, a user may have a good sounding home theatre, but they prefer the excellent low frequency damping of a certain studio listening room. The process would mimic this reverberation characteristic.

3. Reverberation Modification

Any PRIR or BRIR a member holds in their account can be processed to alter the time-frequency characteristics of the room reverberation to their liking. This is a bit like a graphic equalizer except you are controlling reverberation decay time in frequency bands rather than amplitude. This process can change a PRIR of a not very good room into a PRIR with a very acceptable room, in an instant.

PRIR/BRIR Copyright

Use of the Realiser Exchange services will be conditional on members agreeing to certain copyright terms and conditions. Members will agree;

1. that copyright of PRIR/BRIR files sold or exchanged through the website is always retained by the owner of the room in which the measurements were made, even if such files are subsequently modified by the purchaser.
2. that by purchasing PRIR/BRIR files they are only being granted a license by the copyright holder to use such measurements for their own enjoyment.
3. to copy, record, distribute, or facilitate the copying or recording of any part of such PRIR or BRIR files only with the permission of the copyright owner.

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