

Information on this document

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This document is the first of four application notes on performing jury tests. In addition to a motivation for conducting jury tests, it contains, among other things, a compilation of basic information on the test procedure.

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Target group

This application note is particularly addressed to (potential) users of the ArtemiS SUITE Jury Testing Module SQala who need an introduction to the topic of jury tests and how to perform them.

Questions?

Do you have questions? Your feedback is appreciated!

For questions on the content of this document: Imke.Hauswirth@head-acoustics.com

For technical questions on our products: SVP-Support@head-acoustics.com

Performing Jury Tests – Part 1

1. Why Perform Jury Tests?

What is a jury test?



An acoustic jury test is a study performed with test participants under controllable conditions. During this study, the participants are presented with sounds which they listen to and evaluate. With the help of an instruction, the participants' perception can be focused, for example, on certain partial aspects of the sound.

Since conducting jury tests and evaluating them is time-consuming and cost-intensive, the question often arises as to why perform jury tests at all.

Sound quality – overall quality

A customer's buying decision and satisfaction are highly dependent on perceptual impressions, including acoustic ones. In addition, when evaluating product quality, customers are guided by partial aspects. For example, the sound quality of a slamming car door can have an influence on the perceived quality of the vehicle as a whole. Similarly, customers are more likely to be satisfied with the suction power of their vacuum cleaners if they actually sound "powerful".



Product noise expectations

If a sound does not meet the user's expectations, the product itself may be rejected or the negative sound impression may be interpreted as a malfunction. Therefore, the responsible acoustic engineer has the task of designing an appropriate and suitable product sound. Whether a sound is suitable and meets the customer's expectation cannot usually be determined on the basis of a single acoustic parameter such as the sound pressure level. But how can we check which sound is suitable?

Jury tests as a basis for targeted noise design

Jury tests form the essential basis for answering this question to the customer's satisfaction and for specifically increasing the acceptance of product sounds. Good sound design always focuses on the customer and makes people the center of attention. However, a genuine customer feedback on product sound can only be obtained by means of jury tests. By using suitable tools, such as the ArtemiS SUITE Jury Testing Module SQala, the time and effort for conducting and evaluating the tests can be significantly reduced. Furthermore, performing the jury tests in parallel with the product development process can provide additional potential for time savings.

2. Test Types

Test types for jury tests

Different types of tests are available for jury tests. The choice of test type depends on the requirements and the objectives of the jury test.

The following test types are commonly used for conducting jury tests:

- Ranking
- Paired Comparison
- Semantic Differential
- Category Judgement
- Simultaneous Category Judgement

A detailed description of these test types is compiled in the application note [„Performing Jury Tests – Part 2“](#).

3. Test Procedure

Main parts of a jury test

The following describes the main parts of a jury test:

- Instruction
- Sound demonstration or training
- Jury test
- Interview

Fundamental considerations

All test steps together should not take more than 30-40 minutes to ensure that the participants' concentration does not wane. The duration and the number of test signals should be chosen in a way that this limit is not exceeded. Otherwise, a break should be planned during the test. A test in which participants are exposed to high sound pressure levels must be shortened to prevent exposing participants to any hearing damage. Furthermore, listening to loud and disturbing noise reduces the participants' ability to concentrate. Hardware and software products from HEAD acoustics provide various options for hearing protection (e.g., the limiter of *labP2*). Prior to the test, the test supervisor must check whether and how these functions are to be used.

With SQala, users can define the steps of a jury test in a SQala project (see Figure 1).

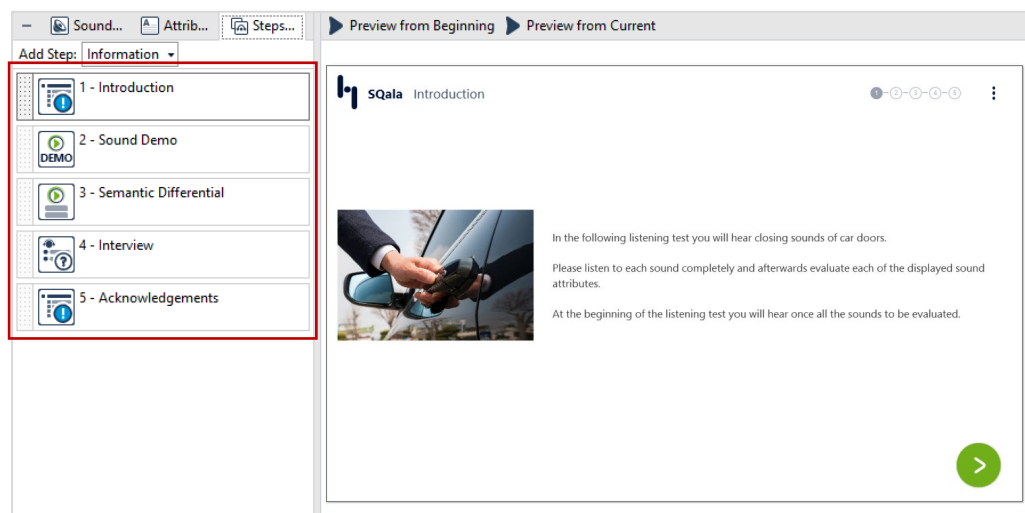


Figure 1: Steps of a jury test in a SQala project

Instruction

Instructing the participants

Prior to the actual jury test, the participants should receive sufficient instruction. This instruction should cover all the details and explanations required for the upcoming test. Depending on the task and procedure of the test, it may also be useful to inform the participants about benefits of the test. Instructions must be given in such a way that the participants are not unintentionally influenced by the explanation. Furthermore, the participants should not feel deceived. It must be ensured that all participants are instructed in the same way. This can be easily achieved by using written instructions. In the case of oral instructions, the test supervisor must take great care to ensure that all participants receive the same instructions.

Various options are available for the presentation of the instructions. With SQala, the written instructions can be displayed on the screen prior to the test (see Figure 2).

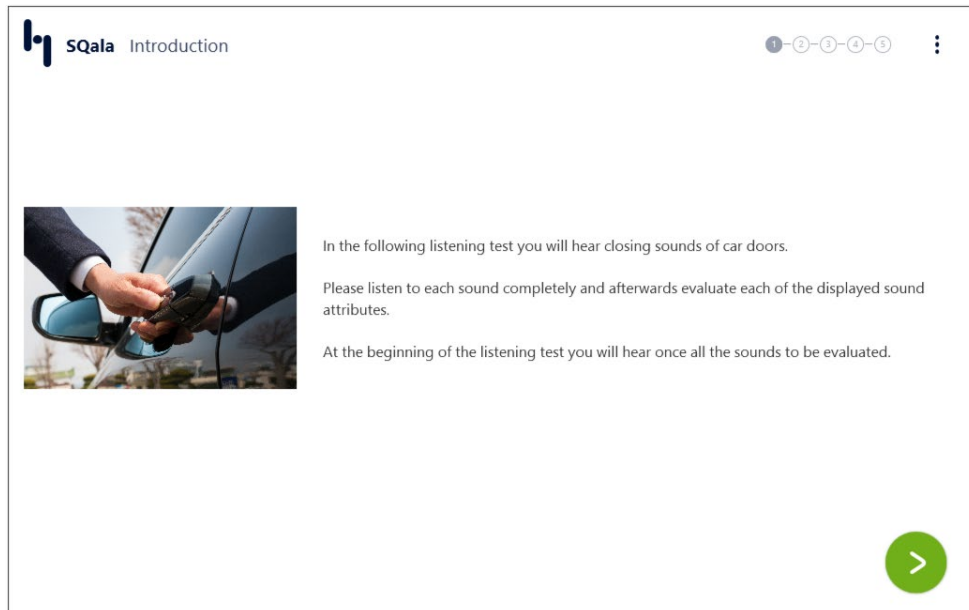


Figure 2: Written instruction for a jury test

Only if the participants have understood the test task will they feel confident during the test and perform the task reliably. When instructing inexperienced participants, it is important to convey that there are no wrong answers in a jury test. The evaluation of the sounds is based on the individual perception of these sounds. A participant's perception cannot be wrong, but only different from that of other participants. In addition, it is advisable to include an indication of the test duration in the instruction, so that the participants know what to expect.

Sound Demo or Training

Training of participants

After the instruction, the participants can be trained. The necessity of training depends on both the difficulty of the task and the experience of the participants. The less experienced the participants and the more difficult the task, the more comprehensive the training must be.

Training with or without rating

The training may or may not include a rating by the participants. In case of a training without rating (sound demo), some or all test sounds may be presented to the participants in advance. If one very good and one very bad sound are presented during the training phase, the participants can familiarize themselves with the spectrum of sounds in the following test. If the participants are not familiar with the rating procedure, it is advisable not only to present the sounds to them, but also to ask them for their rating right away.

Training duration

The training should not be too long in order to avoid a loss of concentration during the actual jury test. In addition, some participants might get bored if the training is too extensive.

Performing jury tests

Jury test



After the participants have been sufficiently informed about the test procedure through appropriate instruction and, if necessary, training, the actual test can begin. During the test, the participants should be undisturbed, but should not feel left alone. The test supervisor should be available during the test, either in person or by phone, for any questions (e.g., technical problems).

Final interview

Interview

After the sounds have been evaluated, the test supervisor should ask for relevant information on the participants in a final interview (e.g., age, gender, participants' profession). This information may provide valuable clues that can help during the evaluation of participants' sound judgements. The interview must be designed to preserve the participants' privacy. To facilitate this, SQala generates a random code for each participant so that the data is stored anonymously.

Figure 3 shows a sample interview form.

In this last step we kindly ask you to answer the following questions:

- Your Age
 - _____ +
- Your sex
☐ male
☐ female
☐ other
- How often do you use a car?
☐ very rarely ☐ once or twice a month ☐ once or twice a week ☐ every day
- Did you have difficulties with the evaluation?
☐ not at all ☐ slightly ☐ moderately ☐ very ☐ extremely
- Do you have any further comments?

Figure 3: Sample interview form for SQala

➔ Proceed to the [second application note on jury tests](#) providing a detailed description of various test types.