

MAESTRO 8.0

Early Market Experience

Introduction

MAESTRO 8.0 builds on the complete redesign that was introduced with MAESTRO 7.0. The software was improved by providing a guided workflow and better usability to clinicians, who have more or less experienced with the MAESTRO software. Feedback from clinicians were considered and integrated into the software to make MAESTRO 8.0 an even more powerful and intuitive software. Shortly after releasing MAESTRO 8.0, we surveyed clinicians worldwide on their perception of the software. The survey process and results will be discussed in this paper. The main enhancements of MAESTRO 8.0 are as follows.

Intuitive Handling

MAESTRO 8.0 was designed to be as accessible and intuitive for both new and experienced clinicians. With a guided workflow (Figure 1), recommended tasks are highlighted, thus the tasks can be easily identified and performed for both intra- and post-operative objective measurements and fitting sessions. The session view provides a comprehensive overview of a current fitting session.

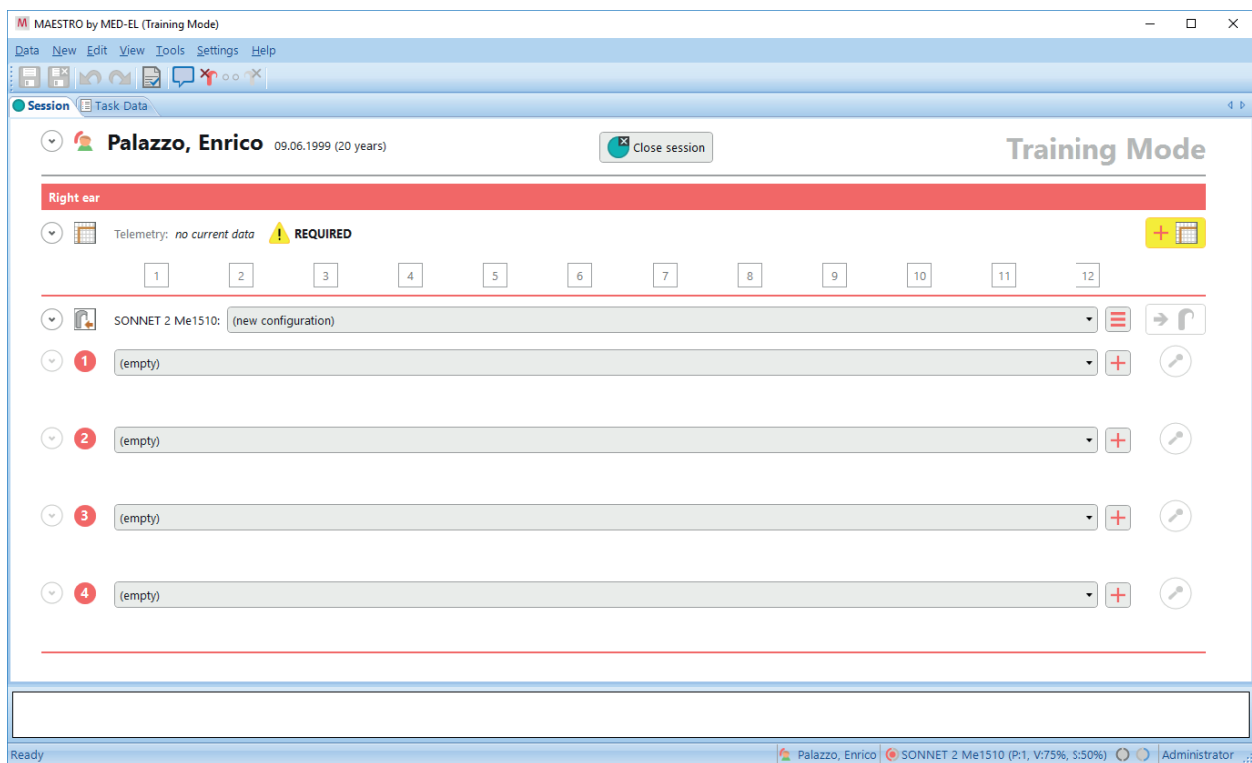


Figure 1: MAESTRO 8.0 Session View with guided workflow

Improved Usability

The enhanced user interface makes it faster and easier to change front-end settings for each map, create progressive maps, increase levels, or perform loudness balancing (Figure 2).

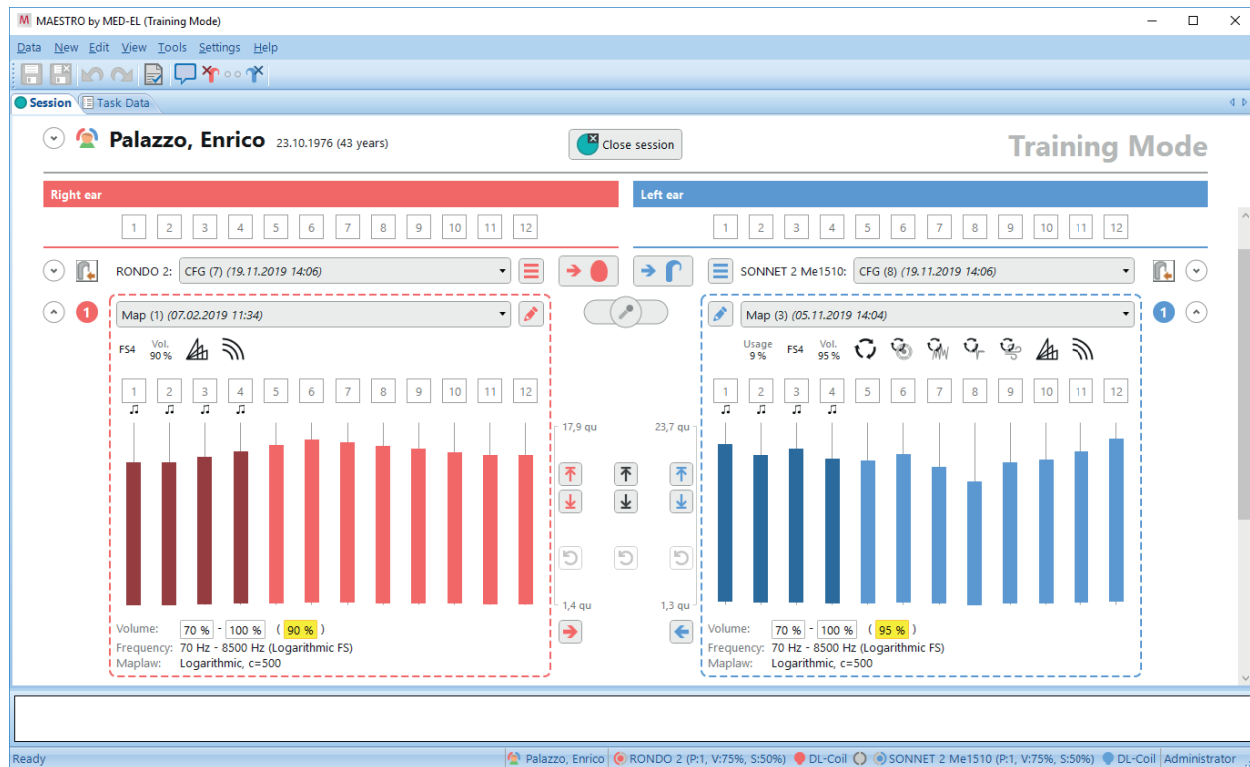


Figure 2: Enhanced user interface, with direct access to volume parameters.

The adjustment of charge levels in the session view for loudness balancing without opening a map is also available. With the new session view, a clinician can easily perform binaural loudness balancing between audio processors.

Map-Specific Settings

Map-specific settings is a new functionality that allows to control settings per map instead of for the whole audio processor configuration. The new Automatic Sound Management (ASM) dialogue in MAESTRO 8.0 allows map-specific front-end processing levels, e.g. strong wind noise reduction for setting for one map and mild setting for another map to be set (Figure 3).

Patient Editor

MAESTRO 8.0 introduced a revised patient editor, to easily set up a new patient or manage patient history, including adding new implants for existing patients (Figure 4).

Figure 3: New ASM dialog with ability to set map specific front-end parameters

Figure 4: MAESTRO 8.0 patient editor

Session View

The session view is a complete dashboard of all data and information a clinician would want to know about a patient's audio processors during a fitting session (Figure 5).

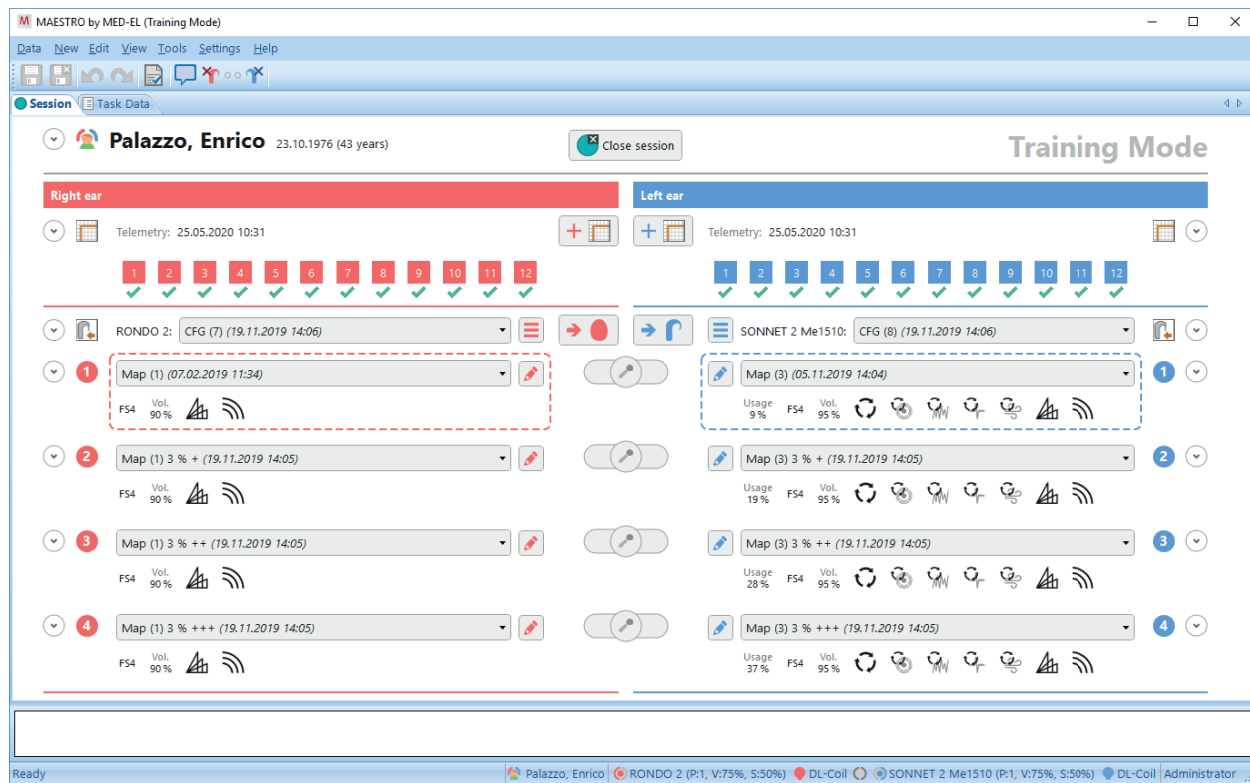


Figure 5: Session View, here for a bilateral CI recipient

For each electrode, telemetry information can be seen, there is full bilateral support, and a processor can be added with one click. The software allows the activation of one processor or bilateral processors.

Powerful Tools

MAESTRO 8.0 makes the workflow more intuitive, but also makes advanced fitting tools more powerful and more accessible. It includes triphasic pulses, integrated electrically evoked stapedius reflex threshold (eSRT) and electrically evoked auditory brainstem response (eABR) tasks, and late-latency cortical objective measures.

The unique triphasic pulse shape helps control current spread, which can be especially useful for patients with non-auditory stimulation.

Method

To evaluate the acceptability of the changes that were made, an online survey was devised, containing questions about the new features and highlights of the MAESTRO 8.0 fitting software. This online survey consisted of 37 questions and was sent to clinicians all over the world. 50 hearing implant professionals were asked to complete the survey. Answers were received from 38 clinicians from the following countries Austria, Belgium, Canada, Germany, Italy, Lebanon, New Zealand, Poland, Spain, Sweden, United Arab Emirates, and Vietnam. All clinicians had previous MAESTRO experience and work as audiologists, engineers or speech and language therapists (Table 1).

The questions were phrased in a way that the participant would provide their rating or answer it with “yes” or “no”. For the purpose of this paper, the focus will be on the user experience of the software, e.g. handling, workflow or fitting tools.

Experience with Cochlear implants	%
Less than 5 years	28.9
Between 5 and 10 years	26.3
More than 10 years	44.7

Sessions with MAESTRO 8.0	%
Less than 30	42.1
Between 30 and 60	34.2
More than 60	23.7

Table 1: Clinician's experience and no. of fittings at time of survey

Results

Intuitive Handling

Survey results showed that clinicians rated the guided workflow as 4.3 on average, indicating that the highlighting of tasks helps in clinical practice (Figure 6). Furthermore, clinicians rated the ease of workflow in MAESTRO at 3.9 on average (Figure 7). This is due to the introduction of a clear structure of the session view.



Figure 6: Rating on Guided Workflow. Average rating: 4.3.

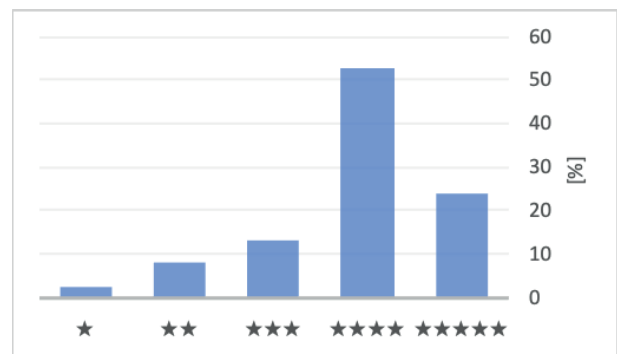


Figure 7: Ratings on Ease of Workflow. Average rating: 3.9.

Improved Usability

In regard to the usability of MAESTRO, clinicians give it an average rating of 4.2 (Figure 8). A specific new feature, the possibility to change basic map parameters within the session view is highly rated, at 4.1 on average (Figure 9) and clinicians also indicated that it is easier to change basic map parameters.

The feature that create progressive maps in one single step was rated as 4.0 on average (Figure 10).



Figure 8: Ratings on usability overall. Average rating: 4.2.



Figure 9: Ratings on Ease of changing basic map settings. Average rating: 4.1.



Figure 10: Usefulness of creating progressive maps in one step. Average rating: 4.0.

Map-Specific Settings

Clinicians rated the new ASM dialog as 3.8 on average (Figure 11).



Figure 11: Rating on ASM dialog. Average rating: 3.8.

Patient Editor

The new patient editor is rated by clinicians as 4.2 (Figure 12).



Figure 12: Rating on Patient editor. Average rating: 4.2.

Session View

The dashboard overview is rated by clinicians as 4.0 (Figure 13).



Figure 13: Rating on Dashboard style overview of session view. Average rating: 4.0.

Being asked more specifically, 63% of participating clinicians responded that loudness balancing was easier with MAESTRO 8.0. Furthermore, 76% of clinicians mentioned that it is easier to adjust volume in the session view.

Powerful Tools

Clinicians rated the usefulness of triphasic pulses as 4.0 on average (Figure 14).



Figure 14: Usefulness of triphasic pulses in non-auditory stimulation cases. Average rating 4.0.

Conclusion

As seen from the results displayed above, all features and improvements in MAESTRO 8.0 have been well accepted by clinicians of various experience levels and areas around the world.

Clinical Considerations

Neither clinicians with previous MAESTRO experience nor clinicians that were new to MAESTRO reported an extensive acclimatization period after the upgrade to the new software. This is an indication that an upgrade of the software does not cause any disruption of the clinical routine. MAESTRO 8.0 supports clinicians in terms of usability and a standardized workflow and tries to integrate into the clinical routine seamlessly. With these improvements, clinical fittings can be performed faster, more convenient and more precise, to the benefit of CI recipients and clinicians of any degree of experience alike.