Glossary of Terms

- **Switch-On** = The turning on of the device done in the third post-operative week, when the implantee perceives hearing through electrical stimulation for the first time.

- **MAP / Mapping** = The process of creating a graphical representation of the range in electrical activity of the electrodes along the cochlea on the programming software, by which the implant is individually fine-tuned to match the auditory requirements of the implantee.

- **Programming Unit (CU / CL / cu / qu)** = The basic current unit of stimulus intensity used in the various testing and programming Software of the implants.

- **Psychophysical / Psychoelectrical Stimulus** = The physical energy perceived as sound stimuli by the implantee when electrical signals are delivered by the programming software via the speech processor onto the electrode array.

- **Threshold Level (T-Level / TL / THR)** = The lowest level of current stimulus at which the implantee consistently identifies sound perception, each time it is presented.

- **Comfort Level (M-Level / MCL / C-Level)** = The maximum allowable stimulation level for each electrode, that does not produce an uncomfortable loudness sensation for the implantee. This is identified by an older implantee as a sound that is loud but tolerable, while in younger children, whose ability to judge the loudness is limited, it is to be identified by behavioural responses like eye blinking, crying and changes in facial expression or activity level during and shortly after stimulus presentation.

- **Dynamic Range (DR)** = The range in current levels within which electrical signals are processed and delivered to the electrodes. It is bounded by the threshold level and the maximum comfort level of electrical stimulation for each electrode channel and has a bearing on the loudness of the sound signals. The dynamic range tends to expand gradually with implant use over time.

- **Map Law** = The MedEl & Advanced Bionics implants follow the law of comfort level based fitting, where programming is based on Comfort levels only, while their Threshold levels are ‘auto-set’ at
approximately 10% of the Comfort levels, which may be re-adjusted as & when required, to suit the implantee. This helps to maintain an optimal Dynamic Range throughout the electrode array. The Cochlear-Nucleus implants follow the law of threshold level based fitting, wherein an individual C-level & T-level needs to be set for each electrode across the array. Thus, here the dynamic range is manually set & gradually increased over time.

- **Program (P1-4)** = The MAP incorporated & stored in the memory of the speech processor, which controls the presentation of encoded sound information through the implant, within the dynamic ranges for stimulation, manually set for a particular sound environment.

- **Impedance Telemetry (IT)** = A technique of testing electrode integrity by measuring the resistance (impedance) to current passage at the electrode interface. It helps in the measurement of the voltage developed across the active electrodes during stimulation to identify electrode anomalies. Electrode impedance is calculated by dividing the voltage at the electrode, by the current flow through the electrode.

- **ECAP Threshold (NRT / NRI / ART)** = The lowest intensity of electrical stimulus which evokes a compound action potential from the auditory nerve, which is recognizable as a typical N1–P2 waveform response on the programming software.

- **ESRT Threshold (ESRT)** = The minimal electrical stimulus level which evokes a recognizable deflection on the reflexometer of the impedance bridge (post-operatively), or which evokes a visually identified contraction of the stapedius muscle in the middle ear (intra-operatively), that occurs through the reflex arc, in response to a direct electrical stimulus delivered to the auditory nerve via the implant software.

- **EABR Threshold (EABR)** = The lowest intensity of electrical stimulus given on any particular electrode across the array, which evokes consistent, clearly recognizable waves eIII / eV, typically occurring with a latency between 2 to 7 milliseconds on the recording software, as an objective confirmation of a response from the auditory brainstem to electrical stimulation via the implant.