

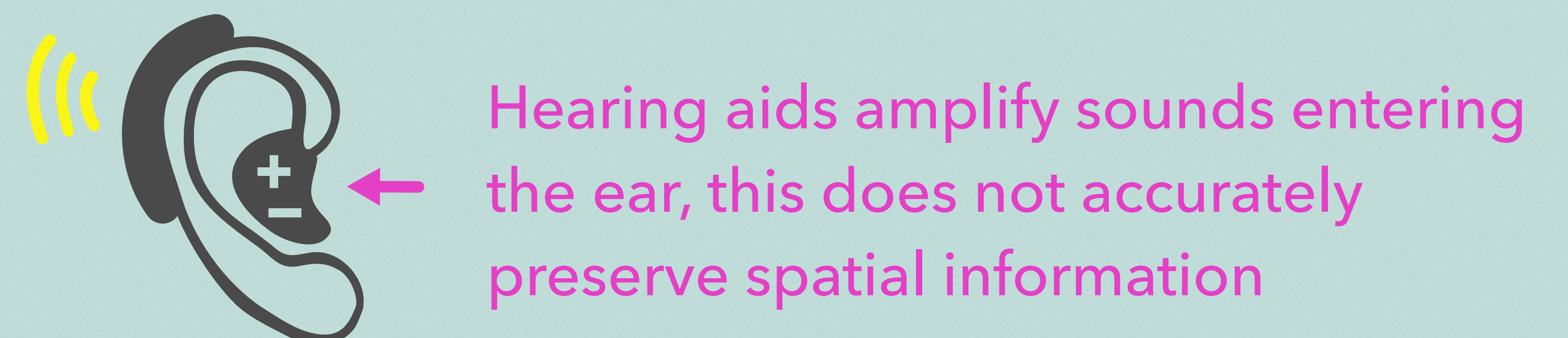
SOUND LOCALISATION

FOR PEOPLE WITH IMPAIRED HEARING



Problem

Our sense of hearing allows us to locate where a sound originates. For a large number of people who have a hearing impairment, the audible signals used to detect everyday events can be inaccurate.

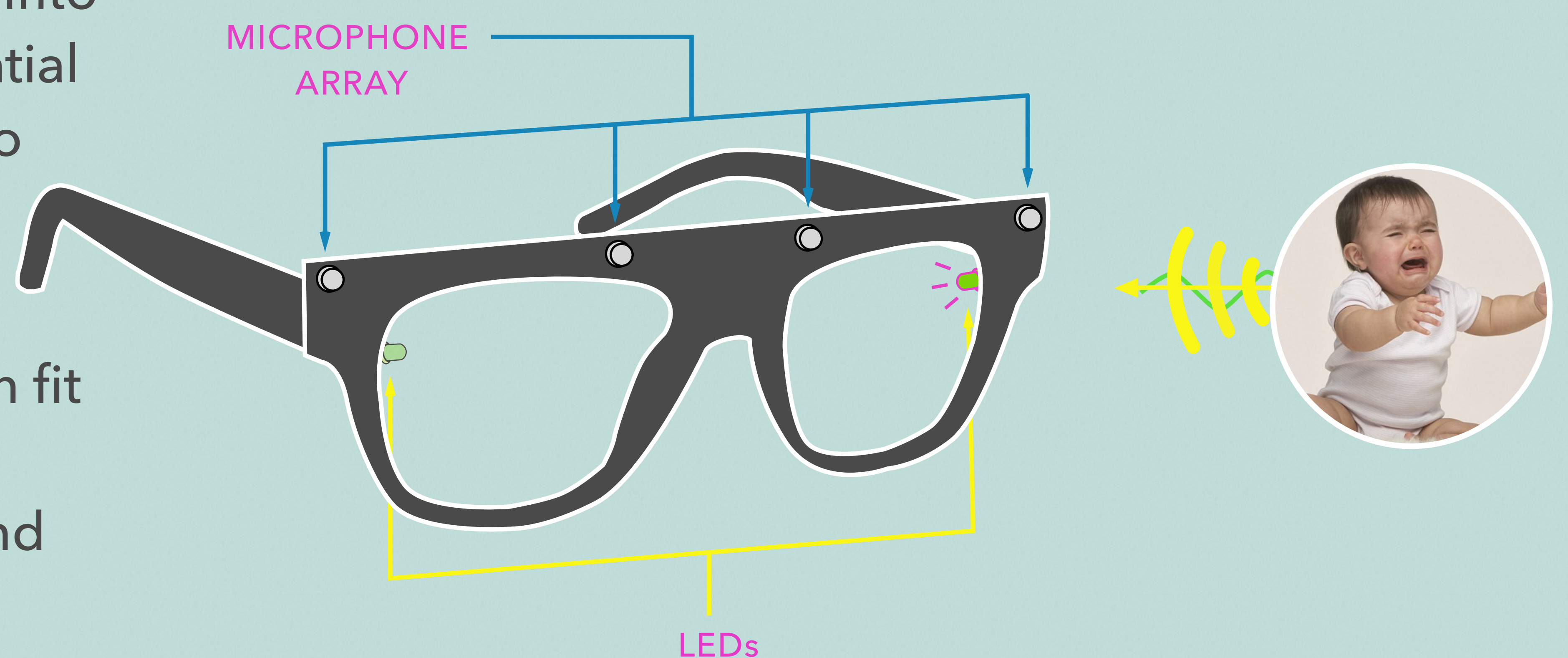


Solution

Our approach is to convert sounds into visual cues in order to preserve spatial information and allow individuals to overcome these challenges.

Using commodity hardware, we can fit this concept into a standard pair of eyeglasses delivering a portable and socially accepted solution.

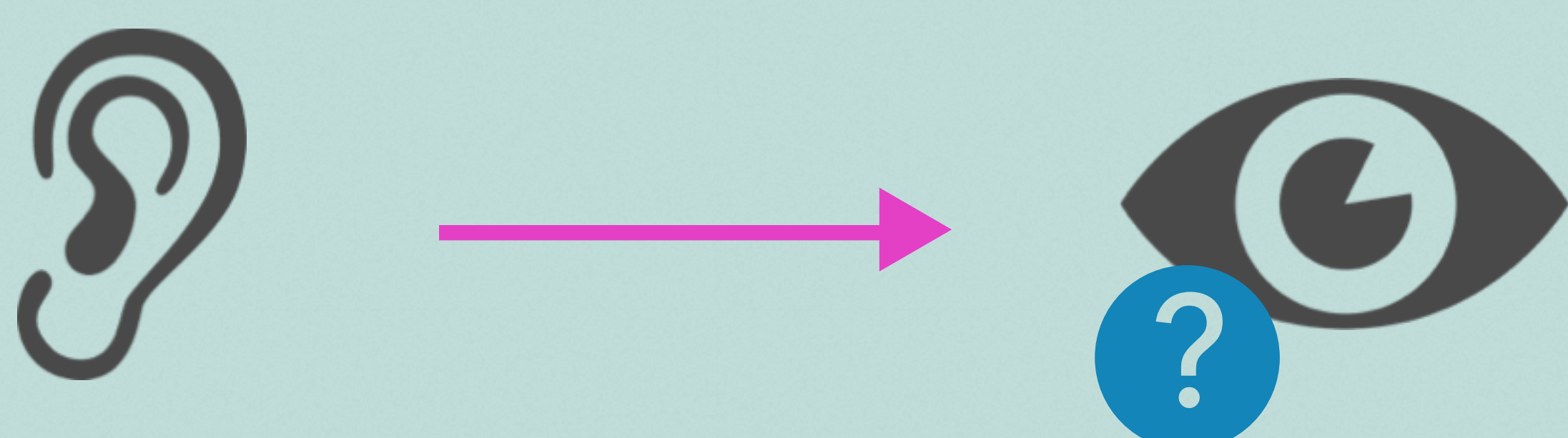
Using a microphone array the difference in arrival time of sound waves to each microphone is processed to estimate the direction of a sound source



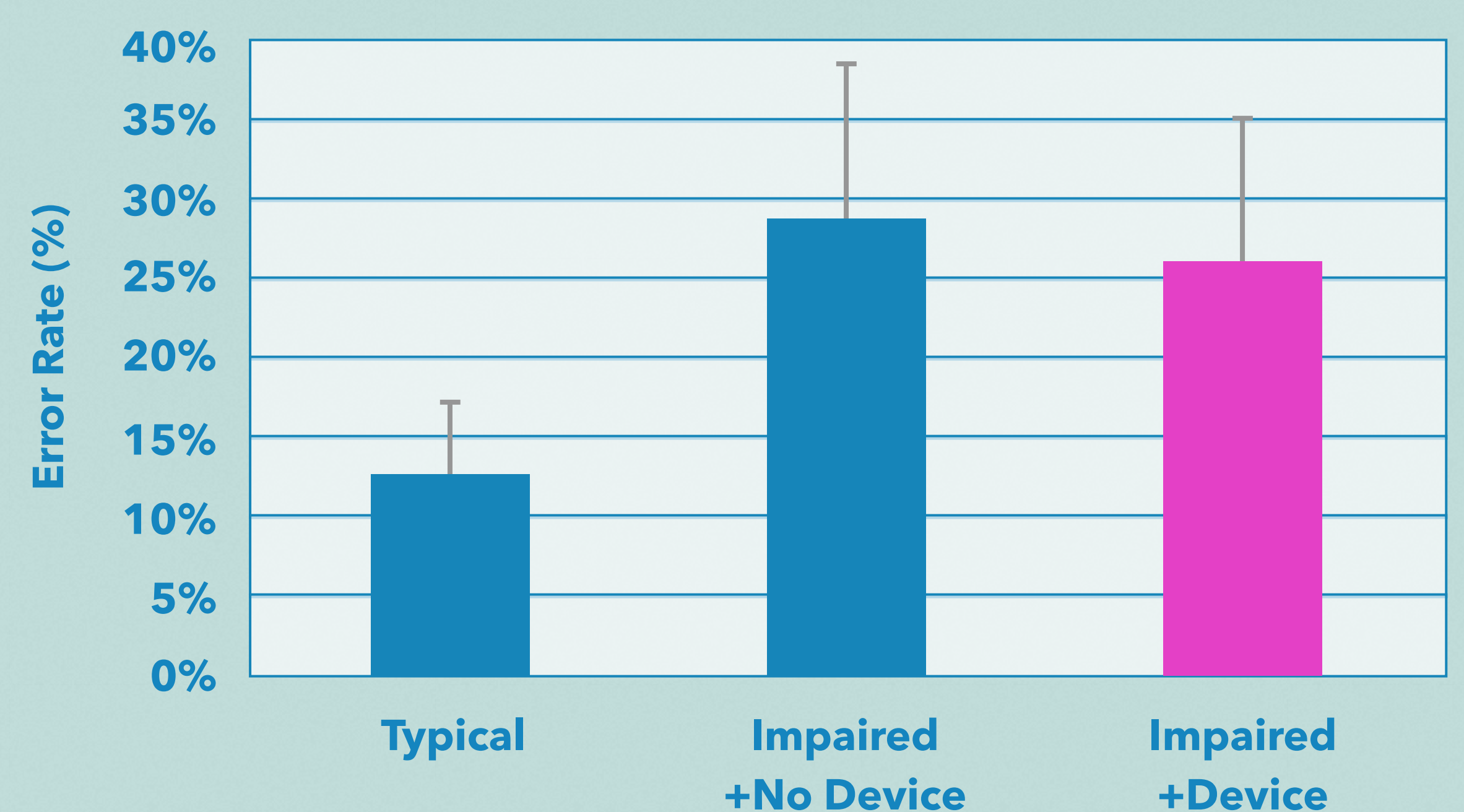
LEDs located in peripheral vision, guide the wearer to the source of a sound

Evaluation

Formative study to confirm moving auditory signals to the visual sense is a valid approach.



Participants took part in a hearing test followed by a localisation task with and without the use of a rough working prototype.



Results from the localisation task were not significant. A follow up questionnaire will inform us of the prototypes limitations and influence the next iteration of our system.