TOWARDS A "RADIO-ACOUSTIC VIRTUAL ENVIRONMENT" IN NOISY WORK ENVIRONMENTS

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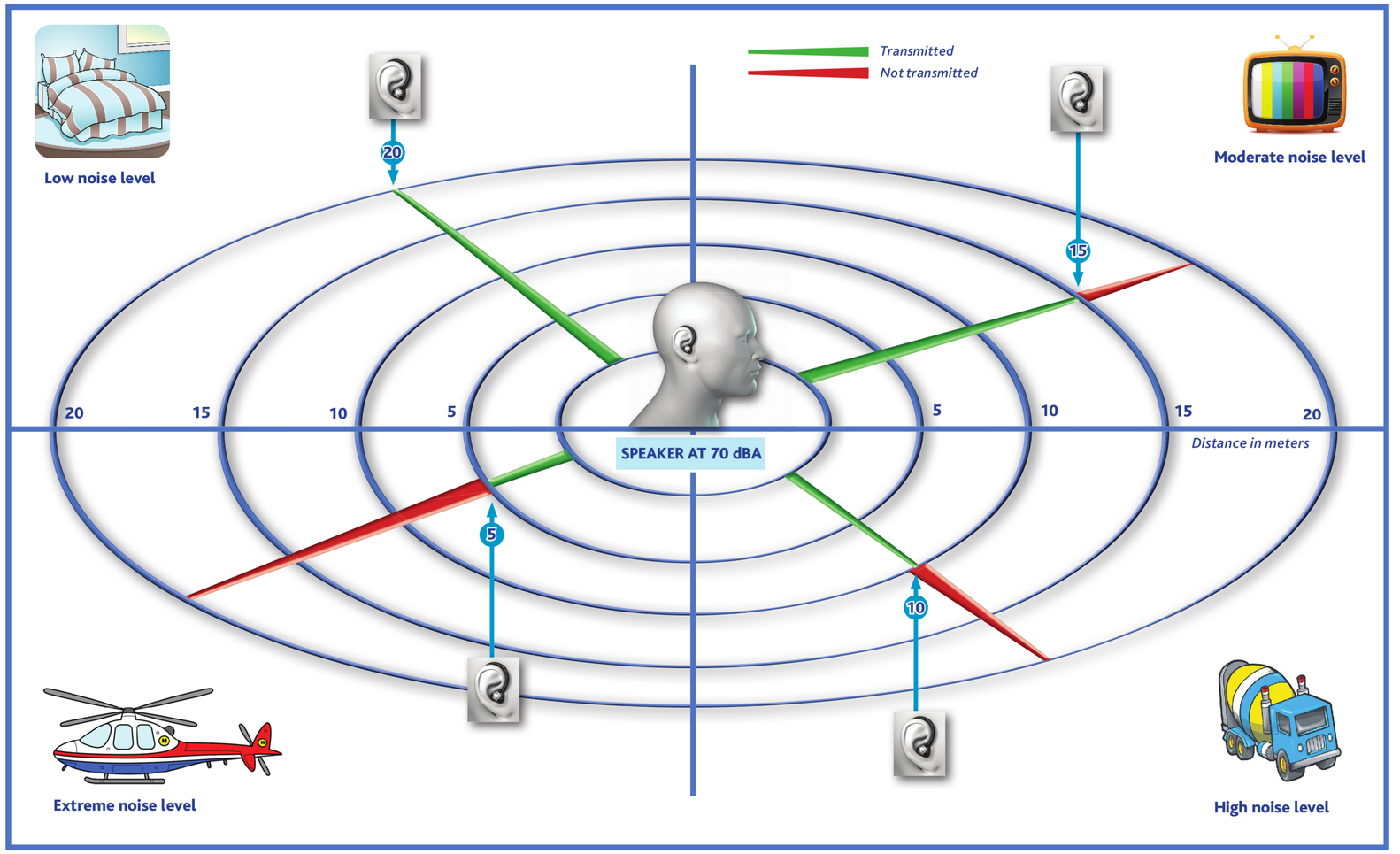

I - MOTIVATION

Workers in noisy environments must be provided with both adequate hearing protection and good communication. Current communication in noise compromises one factor for the other. There is a need for a device that provides intelligible communication for persons wearing hearing protection in noisy environments.

METHOD OF COMMUNICATING NOISE

ISSUES	Removing HPD	Using passively filtered HPD	Using a hand-held radio	Using an HPD with external microphone
Issue 1 Compromising hearing protection	✓		✓	
Issue 2 Proximity when communicating	✓	✓		
Issue 3 The effects of background noise			✓	✓
Issue 4 No designated receiver			✓	✓

II- METHODOLOGY

Capture bandlimited speech from inside the ear with the help of an advanced digital custom earpiece.

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Speech enhancement of bandlimited speech through post processing

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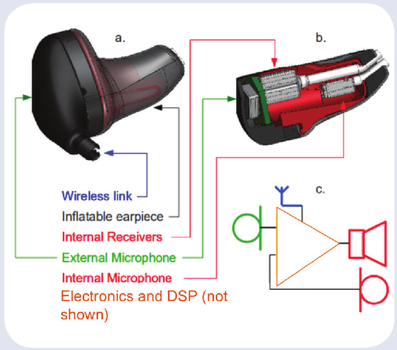
Code the vocal effort and send the speech to appropriate or "intended" receivers.



III- CONCLUSIONS

The "Radio-Acoustical Environment" will allow workers to use a speech signal that is undisturbed, communicate without removing their HPDs and without having to move closer to their listener, while only sending communication to appropriate listeners. Providing workers with such a device will enhance their work experience and hopefully promote the use of HPDs in noisy work environments.

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