

MEO4ALL – MEO Android service accessible to visually impaired users

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For most viewers, using Interactive Television (iTV) services does not involve significant difficulties, however, for visually impaired persons, this task becomes complex or impossible. The MEO4ALL project, funded by AlticeLabs@UA [1], answers this problem because it involves the development of an iTV solution in the MEO Android service that improves the experience of blind and low-vision viewers, benefiting people with low digital literacy or difficulties handling the remote control.

To identify users' needs and expectations to shape the functional and technical requirements of the iTV solution, a questionnaire survey was carried out, which confirmed the need to improve the accessibility of Portuguese iTV services [2]. Results suggest that enhancing accessibility in TV content and technology for visually impaired individuals is crucial to improving their television experience. One of the main weaknesses identified is the lack of a native voice assistant that can efficiently respond to users' voice commands.

Next, the iTV solution was implemented through three strategies: Voice Control (supported by MEO BOTSchool [3] and Natural Language Processing – NLP), Voice Over (integrated with TalkBack [4]), and Contextual Assistance (combined with Voice Control).

To develop this, Kotlin programming language and its packages are used, given their compatibility with the MEO application.

At the same time, a benchmarking analysis was carried out on the three predominant voice assistants on the market, with the aim of evaluating a multitude of core elements in terms of User Interface (UI) and User Experience (UX). The analysis made it possible to catalogue the established practices in the market and identify potential opportunities for innovation.

The MEO4ALL project not only addresses immediate technical challenges, but also contributes to broader advances in the field of digital accessibility by integrating innovative AI solutions.

References

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- [2] Oliveira, R., Júlio, L. & Oliveira, A.P. (2024). https://doi.org/10.1007/978-3-031-61356-2_7
- [3] Altice Labs – Conversational AI. (2024). <https://www.alticelabs.com/products/conversational-ai/>
- [4] Android Accessibility Help. (2024). Talkback: Hear your screen read out loud. <https://support.google.com/accessibility/android/topic/3529932>

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2 – Altice Labs

FIGURE 1
MEO Android remote control: MEO4ALL access key and location of the integrated microphone (a). Voice interaction with the MEO4ALL solution (b).

FIGURE 2
MEO4ALL solution interface (right sidebar) integrated into the MEO Android service (main menu view).

