

Localization of wireless delegate units based on audible sound

Description

Televic Conference provides solutions for moderated meetings based on dedicated devices. Each participant in a meeting has on his desk a unit comprising a microphone, loudspeaker and voting buttons.

It is important for various applications to know the exact positions of the delegate units in the meeting room. This is for example the case for the synoptic - a live, visual representation of the conference room - and for automated camera tracking. Providing the positions of the delegate units takes a lot of manual work in a system setup, especially for ad-hoc meetings with a wireless conference system.

The purpose of this thesis proposal is to automate the procedure of delegate unit localization using the microphone and loudspeaker present in every unit, so with audible sound.

Different techniques will have to be investigated:

- * distance measurement based on principles such as TDOA (Time Difference Of Arrival)
- * digital signal processing
- * localization based on multilateration

The thesis work will involve literature study, simulation, embedded software design and a lot of experimenting.

If you are interested in this topic, please also register this on the Televic website at:

<https://www.televic.com/en/careers/internships-and-students> so we can confirm the topic is still available.

Televic Company/Department:

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With headquarters in Belgium and offices and plants across Europe, Asia and the US, Televic employs nearly 700 people worldwide.

About Televic Conference

Televic Conference manufactures the most innovative systems for moderated meetings. Its complete range of conference solutions simplifies decision-making by improving the meeting experience. With crystal-clear sound, pristine video, and a clear focus, meetings become more efficient. From the largest international institutions over local parliaments and city councils to boardrooms: Televic Conference drives successful meetings, worldwide.

Contact

C.Viaene@TELEVIC.com

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Nature of the work

Level	Specialty	Type of work.	Location	Type of activities	Num of students
Academic Master	AI / Machine Learning, Electronics / Hardware, Embedded Software	Research: 20% Implem.: 30% Experim.: 30%	Televic, University	Experimenting, Implementation, Literature study, Measurements, Programming, Simulation	1 or 2