

## Kortfattet dansksproget projektbeskrivelse egnet til publikation på dansk EMPIR hjemmeside

<b>2015 Health</b>	<b>Metrology for modern hearing assessment and protecting public health from emerging noise sources</b>	
<b>15HLT03</b>	<b>Ears II</b>	
<b>Projektets formål:</b>		
<p>Projektet bygger videre på resultaterne fra EMRP Ears projektet der sluttede med udgangen af april 2015. Formålet er kort fortalt at arbejde med metoder til at viderebearbejde og implementere resultaterne fra Ears og til at karakterisere infralydkilder og ultralydkilder i miljøet, inklusive deres betydning for menneskelig komfort og helbred. Det vil omfatte videre udvikling af et generaliseret koncept for den næste generation af øresimulatorer, metoder til karakterisering af infralyd og ultralyd i miljøet, og af bedre forståelse af infralyds og ultralyds indvirkning på mennesker.</p> <p>Yderligere information kan findes på projektets hjemmeside, <a href="http://www.ears-project.eu">www.ears-project.eu</a></p>		
<b>Projektet er delt op i 7 arbejdsopgaver:</b>		
WP1: Calibration strategies for audiometric equipment exploiting the universal ear simulator		
WP2: Pre-normative and strategic research for establishing the universal ear simulator in clinical practice		
WP3: Qualitative and quantitative characterisation of emerging sound in public and at workplaces		
WP4: Perceptual mechanisms of emerging sound		
WP5: Impact of Emerging noise on humans		
WP6: Creating impact		
WP7: Management and coordination		
Antal deltagere <b>12</b>	Projektets budget <sup>1</sup> <b>1 806 631 EUR</b>	Person-måneder <b>225.1</b>
Dansk deltager <b>DFM</b>	DFM Budget <sup>1</sup> <b>73 590.30</b>	Person-måneder <b>7.1</b>
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<sup>1</sup> Angives som EU finansiering (direct costs + 5 %)

## **DFM's bidrag:**

DFM deltager i WP1, WP2, WP3, WP6 og WP7.

DFM's opgaver er fokuseret på at udvikle og levere de nødvendige metrologiske målereferencer til karakterisering af ultralydkilder, og den næste generation øresimulatorer.

- Identify most authoritative stakeholders in DK for a consultation to validate the final proposed range of ear simulators.
- Participate in the realization (design/manufacturing) of demonstrator samples of each ear simulator design available for further clinical validation
- Carry out a review in DK of the transducer types (including hearing aids) to identify common properties with respect to coupling to ear simulators
- Develop an impulse response calibration method for the universal ear simulator.
- A summary report describing the final concept of the universal ear simulator that covers the whole range of audiological requirements (all age groups and all common transducers) and the new calibration method based on the impulse response.
- Revise the acoustic impedance determination to suit all universal ear simulator configurations available
- participate in an inter-laboratory comparison on the determination of the acoustic impedance and tolerance specifications for all available discrete versions of the universal ear simulator.
- contribute data for the final electro-acoustic specifications and basic design requirements for the universal ear simulator
- design laboratory- and clinical-based measurement trials for determining the degree of equivalence in hearing assessment results based on the IEC 60318 ear simulators and ISO 389 reference data and the part of universal ear simulator protocol that describes the adult group.
- Participate in a laboratory-based demonstration-of-equivalence trials in at least 5 NMIs and accredited calibration laboratories.
- Co-authoring a paper with the findings, including a strategy for handling any differences and maintaining continuity with past hearing test data.
- conduct transfer measurements across different ear simulator types for transducers/stimuli with existing reference thresholds, specifically for insert headphones.
- Co-authoring a paper describing the reference hearing threshold data.
- develop a method for the calibration of a single-microphone system to be used at workplaces and public sites. The system will transfer the accuracy of primary standards to the field devices by means of comparison with primary realisations of the free-field sensitivity of a microphone.
- calibration of the measurement systems that are used to measure sound pressure levels at workplaces and public sites
- Prepare two new proposals to extend the standards for microphones and sound level meters to ultrasound frequencies to IEC TC29/WG5 and TC29/WG17 respectively.
- Organise a workshop relating to the universal ear simulator for around 30 participants.
- develop calibration services for the ear simulator family.