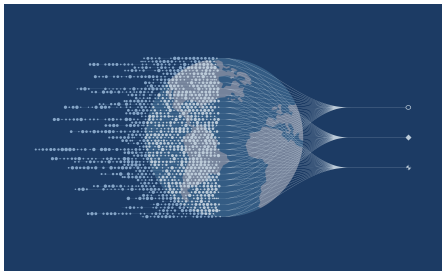

ID: **P3.1-887** Type: **E-poster**

a service for calibration of low frequency transfer standard microphones in the frequency range 10 mHz to 250 Hz

In the EMPIR Infra-AUV project, HBK-DPLA extended the frequency range of the reciprocity calibration technique to achieve reliable primary calibrations to frequencies below 40 mHz. It was also demonstrated that secondary calibration based on HBK's commercially available low frequency calibration system can be made of suitable microphone types down to similar frequencies. After the project, development has continued and now reciprocity calibrations and secondary calibrations can be made with low uncertainty down to 10 mHz. Also, the influence of static pressure on the microphones' sensitivity in the frequency range has been determined, so it is possible to use the microphones as references at all realistic altitudes. In this presentation, the steps in the development, the challenges encountered on the way, and verification of the methods are briefly presented and discussed. Which types of microphones that are suitable for the steps in the traceability chain from the primary calibration to the field measurement station, and how they are characterized with respect to sensitivity to environmental conditions, are also discussed. As a result of the effort, it has been possible to establish a calibration service for transfer standards that can be used in laboratories as well as in the field.

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Session Classification: P3.1 Seismic, Hydroacoustic and Infrasound Technologies and Applications

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.1 Seismic, Hydroacoustic and Infrasound Technologies and Applications