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Infra-AUV project: Metrology for low-frequency sound and vibration

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Infra-AUV is a new EU project that will establish primary measurements standards for low frequency phenomena across the fields of airborne and underwater acoustics and vibration (seismology). Combining expertise from the national measurement institutes and geophysical monitoring station operators, it will develop both high-precision laboratory-based methods of calibration and methods suitable for field use. Infra-AUV will also address requirements for reference sensors that link laboratory calibration capabilities to field requirements for measurement traceability.

To establish standards in the three technical areas, a variety of calibration principles will be employed, including extension of existing techniques such as reciprocity and optical interferometry, and development of new methods. There will also be an investigation of the potential for in-situ calibration methods, including use of both artificially generated and naturally occurring stimuli such as microseisms and microbaroms. The influence of calibration uncertainties on the determination of the measurands required by the monitoring networks will also be studied.

The project was strongly motivated by the CTBTO strategy to drive new metrology capability to underpin IMS data. The intention is to maintain interaction with stakeholders, not only in connection with the IMS, but with the broad range of users of low frequency acoustic and vibration data.