# Classification of services in Acoustics Ultrasound and Vibration

Version 2.0 (new service 7 proposal for CCAUV October 2002)

**Metrology Area: Acoustics, Ultrasound and Vibrations**

**[1]Branch: Sound in Air**

1. Measurement microphones
    - 1.1 Pressure sensitivity level
        - 1.1.1. Modulus: *frequency*
        - 1.1.2. Phase: *frequency*
    - 1.2 Free-field sensitivity level
        - 1.2.1. Modulus: *frequency*
        - 1.2.2. Phase: *frequency*
        - 1.2.3. Directivity: *frequency*
    - 1.3 Diffuse field sensitivity level
        - 1.3.1. Modulus: *frequency*
        - 1.3.2. Phase: *frequency*
2. Sound calibrators
    - 2.1 Single frequency (125 Hz to 1 kHz)
        - 2.1.1. Sound pressure level: *microphone type*
    - 2.2 Multi-frequency
        - 2.2.1. Sound pressure level: *microphone type, frequency*
3. Sound Measuring Instruments
    - 3.1 Response
        - 3.1.1. Sound pressure response level: *frequency*
        - 3.1.2. Free-field response level: *frequency*
        - 3.1.3. Diffuse field response level: *frequency*
        - 3.1.4. Sound intensity response level: *frequency*
4. Ear simulators
    - 4.1 Reference couplers or artificial ears
        - 4.1.1. System response level: *frequency*
        - 4.1.2. Acoustic impedance: *frequency*
    - 4.2 Mechanical couplers
        - 4.2.1. Force response level: *frequency*
        - 4.2.2. Mechanical impedance: *frequency*
5. Reference sound sources
    - 5.1 Output
        - 5.1.1. Sound power level: *frequency*
        - 5.1.2. Directivity: *frequency*
6. Audiometers
    - 6.1 Response
        - 6.1.1. Air-conduction response level: *frequency*
        - 6.1.2. Bone-conduction response level: *frequency*

[1] [1]For each service the measurand is indicated in roman characters, and the parameter(s) in italic characters

7. Impedance heads
    7.1 Force transducer
        7.1.1 Charge sensitivity
            7.1.1.1 Modulus: *frequency*
            7.1.1.2 Phase: *frequency*
        7.1.2 Shock sensitivity
            7.1.2.1 Modulus: *peak value, shock duration*
    7.2 Force measuring chain
        7.2.1 Voltage sensitivity
            7.2.1.1 Modulus: *frequency*
            7.2.1.2 Phase: *frequency*

8. Reserved for future use
9. Reserved for future use
10. Reserved for future use

**[2]Branch: Sound in Water**

11. Hydrophones (ultrasonic)
    11.1 Free-field sensitivity
        11.1.1. Modulus: *frequency*
        11.1.2. Phase: *frequency*
12. Hydrophones (non-ultrasonic)
    12.1 Free-field sensitivity
        12.1.1. Modulus: *frequency*
        12.1.2. Phase: *frequency*
13. Plane piston ultrasound generator
    13.1 Output
        13.1.1. Ultrasonic power: *frequency*
        13.1.2. Directivity: *frequency*
14. Reserved for future use
15. Reserved for future use
16. Reserved for future use
17. Reserved for future use
18. Reserved for future use
19. Reserved for future use
20. Reserved for future use

**Branch: Vibration**

NOTE:
For this branch the CMCs are expressed in terms of the physical quantity of acceleration or
angular acceleration. For sinusoidal vibration (e.g. primary vibration calibration in accordance with ISO 16063-11) the entries may also represent the calibration and

[2] [1]For each service the measurand is indicated in roman characters, and the parameter(s) in italic characters

measurement capabilities for derivatives such as velocity, displacement, angular velocity and rotation angle.

21. Linear vibration
    - 21.1 Acceleration measuring instrument
        - 21.1.1. Frequency response
            - 21.1.1.1. Modulus: *frequency*
        - 21.1.2. Shock response
            - 21.1.2.1. Modulus: *shock duration*
    - 21.2 Acceleration calibrator
        - 21.2.1. Acceleration output (sinusoidal)
            - 21.2.1.1. Modulus: *frequency*
        - 21.2.2. Shock output
            - 21.2.2.1. Modulus: *shock duration*
    - 21.3 Accelerometer
        - 21.3.1. Charge sensitivity
            - 21.3.1.1. Modulus: *frequency*
            - 21.3.1.2. Phase: *frequency*
        - 21.3.2. Shock sensitivity
            - 21.3.2.1. Modulus: *peak value, shock duration*
    - 21.4 Acceleration measuring chain
        - 21.4.1. Voltage sensitivity
            - 21.4.1.1. Modulus: *frequency*
            - 21.4.1.2. Phase: *frequency*
        - 21.4.2. Shock sensitivity
            - 21.4.2.1. Modulus: *peak value, shock duration*
22. Angular vibration
    - 22.1 Angular acceleration measuring instrument
        - 22.1.1. Angular acceleration response
            - 22.1.1.1. Modulus: *frequency*
        - 22.1.2. Shock response
            - 22.1.2.1. Modulus: *shock duration*
    - 22.2 Angular acceleration calibrator
        - 22.2.1. Angular acceleration output (sinusoidal)
            - 22.2.1.1. Modulus: *frequency*
    - 22.3 Angular accelerometer
        - 22.3.1. Charge sensitivity
            - 22.3.1.1. Modulus: *frequency*
            - 22.3.1.2. Phase: *frequency*
    - 22.4 Angular acceleration measuring chain
        - 22.4.1. Voltage sensitivity
            - 22.4.1.1. Modulus: *frequency*
            - 22.4.1.2. Phase: *frequency*