

2023 Report of CCPR-WG-CMC-TG4

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Improved Service categories for fiber optics

Timeline

- Two different solutions for improved service categories were discussed within the TG4 and were presented to the CCPR-WC-CMC in Dec. 2020
- It was agreed to implement solution 1 (the simplest one)
- Based on that, the Classification of Services in Photometry and Radiometry document was iteratively amended and a series of new entries for fibre optics were also added for modal properties
- The updated Classification of Services, together with the Supporting evidence for CMCs document have been approved by the CCPR-WG-CMC Version No. 17, 10 July 2023 is now available
- Implementation in the BIPM Online KCDB CMC structure is ongoing.

Entries for fibre optics (Ve. No. 17 of the Classification of Services in Photometry and Radiometry)

BRANCH: FIBRE OPTICS

7. Fibre optics

7.1 Responsivity

7.1.0 Fibre optic power meter: *wavelength or wavelength range, bandwidth, power level*

7.2 Wavelength

7.2.0 Fibre optic source: *wavelength or wavelength range*

7.2.1 Optical spectrum analyser: *wavelength or wavelength range*

7.2.2 Wavelength meter: *wavelength or wavelength range*

7.2.3 Wavelength standard: *wavelength or wavelength range*

7.3 Modal properties

7.3.0 Encircled flux, fibre optic source or fibre: *wavelength, fibre type*

7.3.1 Encircled flux, measuring instrument: *specification standard used*

7.3.2 Mode field diameter (MFD), optical fibre: *wavelength, fibre type*

7.2.3 Numerical aperture, optical fibre: *wavelength, fibre type*

7.4 Not attributed

7.5 Attenuation

7.5.0 Spectral attenuation, optical fibre: *wavelength range*

7.5.1 Loss, optical fibre component: *wavelength or wavelength range*

7.5.2 Loss, measuring instrument: *wavelength or wavelength range*

7.6 Not attributed

7.7 Chromatic dispersion

7.7.0 Dispersion, optical fibre: *wavelength range*

7.7.1 Zero dispersion wavelength, optical fibre: *wavelength range*

7.7.2 Dispersion slope, optical fibre: *wavelength range*

7.7.3 Dispersion, measuring instrument: *wavelength range*

7.7.4 Zero dispersion wavelength, measuring instrument: *wavelength range*

7.7.5 Dispersion slope, measuring instrument: *wavelength range*

7.8 Polarization Mode Dispersion

7.8.0 Optical fibre: *wavelength range*

7.8.1 Measuring instrument: *wavelength range, specification standard used*

7.8.2 Artefact: *wavelength range, mode coupling*

7.9 Not attributed

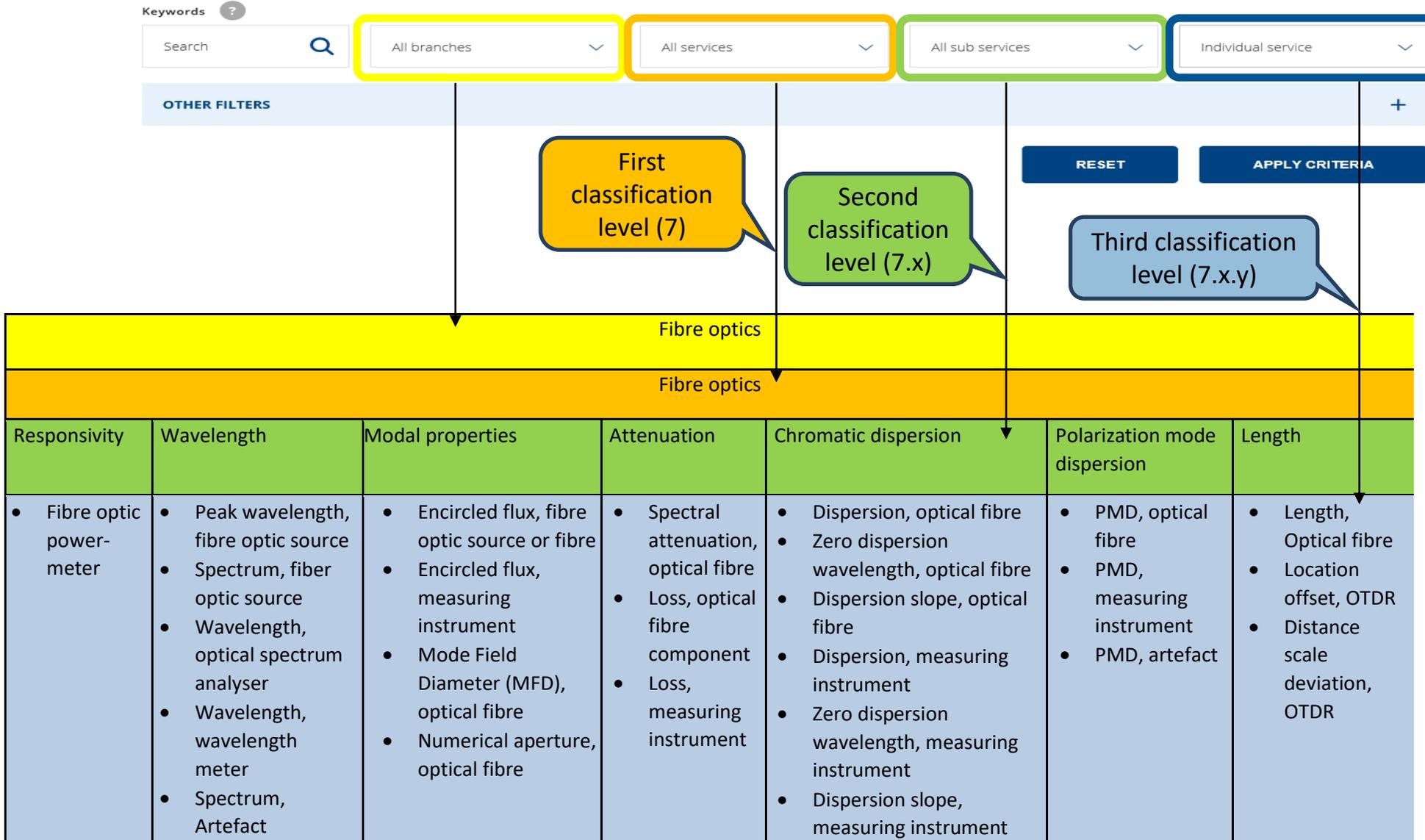
7.10 Length

7.10.0 Length, optical fibre: *wavelength range, index of refraction*

7.10.1 Location offset, OTDR: *wavelength, pulse width, distance range, index of refraction, specification standard used*

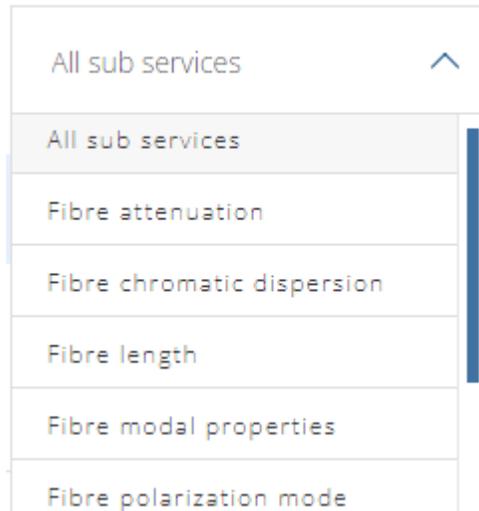
7.10.2 Distance scale deviation, OTDR: *wavelength, pulse width, distance range, index of refraction, specification standard used*

Agreed structure



Current implementation in the CMC Advanced Search

- "Fibre" is currently added before each position in the list of sub-services



- This is not consistent with Ve. 17 of the Classification of Services in Radiometry and Photometry
- This also misleading (e.g. Fibre Responsivity or Fibre wavelength)
- This point is currently under discussion within the WG-CMC and with BIPM and a consensus is almost achieved, to definitely remove "Fibre" from each sub-service in the list
- Next step: to confirm the option without "Fibre" and to implement it.