The long and winding road of CEN/TC264/WG41 developing a standard for validating Instrumental Odour Measurement Systems

Presentation

by

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Standardisation is a slow process…….

- **Timeline**
  - 2015 CEN/TC264/WG41 work item approved by TC264 Air Quality in May, titled: *Air quality – Continuous instrumental odorant monitoring in air to assess risks of odour (nuisance) and safety.*
  - 2015 Timeline allowed 6 years for drafting a standard
  - 2015 First WG41 meeting on October 22nd in Antwerp
  - 2021 After 22 (!) meetings the work item was suspended because the allowed time was exceeded
  - 2021 NEN loses budget for secretariat
  - 2021 On December 1st WG41 will meet to wrap up the work done so far. The current convenor to retire after this meeting.
  - 2022 Possible restart of the Preliminary Work Item with UNI (Italia) acting as secretariat and a new convenor
- **Experts in the working group**
  - Nominated by CEN members > the national standardisation organisations
  - On a volunteer basis (not funded by CEN)
  - On personal title (not representing an entity)
  - National mirror groups can be instated to maintain contact with profession

The task is very challenging

Did you ever measure a smell? Can you tell whether one smell is just twice strong as another? Can you measure the difference between two kinds of smell and another? It is very obvious that we have very many different kinds of smells, all the way from the odour of violets and roses up to asafetida. But until you can measure their likeness and differences, you can have no science of odour. If you are ambitious to find a new science, measure a smell.

What is an odor? Is it an emanation of material particles into the air, or is it a form of vibration like sound? If you can decide that, it might be the starting point for a new investigation. If it is an emanation, you might be able to weigh it; and if it is a vibration, you should be able to reflect it from a mirror.

Alexander Graham Bell, 1914

Main themes represented in dedicated task groups

- Task group 1: Minimum requirements for instrumental odour monitoring
- Task group 2: Validating the relationship odour metric and odour
- Task group 3: Terms and definitions
- Task group 4: Descriptions and review of scope relevant technologies

Progress:

- Terms and definitions provides a consistent conceptual framework
  - IOMS is an Instrumental Odour Monitoring System
  - Terms distinguish between odour (human perception) and associated indicator values produced by IOMS
- Description of IOMS technologies is complete
- Validation methods partially complete:
  - Detecting the absence or presence of the odour under study Done
  - Classifying the presence of multiple odours under study (odour A, odour B, ….., odour X) or the absence of all of these odours Done
  - Measuring the odour stimulus indicator, as a measure of the amount of odour present, an indicator for odour concentration. Ongoing
- Three application areas defined:
  - At source, at fenceline and in ambient air

Current status

- Working draft will be finalised to reflect current consensus
- A new preliminary work item will need to be submitted to TC264
- If vote approves the work item a new development cycle starts
- New secretariat and new convenor will need to be in place for a new work item
- Expert members of WG41 are expected to continue their good works and act as the repository of the work done so far.
- WG41 development is also reflected and documented in about 230 documents distributed within WG41

Concluding observations

1. Working group CEN/TC264/WG41 has not been able to achieve its objective of a standard for validation of continuous measurement of odour using IOMS within the 6-year deadline

2. Significant progress has been made in drawing up the conceptual framework, the terms and definitions and methods to validate the measurement tasks for determining the absence/presence of odours and the classification of odours under study

3. While the statistical approach and the validation protocol in the field in the context of application has been largely defined, the optimisation of the test protocol for validating the olfactory stimulus indicator value of an IOMS as compared to odour concentration remains an unresolved challenge.

4. Once the Work Item is formally reactivated, the optimisation topic needs to have been progressed and an outline of a proof of concept trial for application and validation of the method in a practical setting needs to be defined.

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Thank you for your attention!