The manuscript entitled “Towards a high quality in-situ observation network for oxygenated volatile organic compounds (OVOCs) in Europe: transferring traceability to the International System of Units (SI) to the field” by Iturrate-Garcia et al. presents the developed and assessed protocols to generate two different types of SI-traceable working standards for acetaldehyde, acetone, methanol, and methyl ethyl ketone. This method enables the calibration of OVOCs at lower concentration levels and ensures the comparability of OVOC measurements both within and across monitoring networks. The manuscript would benefit from clearer articulation, particularly in the explanation of the methodology. Additionally, a more thorough discussion of the method's strengths, limitations, and inherent uncertainties is needed to enhance its scientific rigor. The manuscript may be suitable for publication after major revision.

General comments:

1. The manuscript contains an excessive amount of detailed content, making it difficult for readers to grasp the key points. I recommend improving the readability by incorporating structured steps or flowcharts where applicable. For example, provide a flowchart illustrating the process from standard sample preparation to dilution and measurement.
2. Abbreviation Issues
    a) The experiments in the manuscript were conducted across multiple participant laboratories (e.g., VSL, METAS, LNE, IMT, UU, and Empa). The full names of these laboratories should be clearly defined when the abbreviations first appear.
    b) There are inconsistencies in the capitalization of "Empa" throughout the text. Please ensure uniform usage.
    c) Additionally, the description of which laboratories conducted specific experiments using particular methods is somewhat unclear. A brief introduction of this information should be included either at the end of the introduction or at the beginning of Sections 2, 3, and 4 for clarity.
3. The authors provided two different types of SI-traceable working standards, accompanied by two different dilution systems and distinct analytical methods. Although the manuscript outlines the method for calculating uncertainty, it lacks

specific uncertainty values for each OVOC corresponding to each method. It is necessary to supplement the manuscript with detailed uncertainty values, the advantages and limitations of each method, and recommendations on preferred methods, processes, and considerations. This will enhance the applicability of the methods within the atmospheric measurement community.

Specific Comments:

1. Line 5: This sentence contains ambiguity: while ozone has a much lower abundance compared to N2 in the atmosphere, its concentration is still relatively high compared to VOCs, and many countries and cities suffer from ozone pollution. It is recommended to remove the statement about low abundance and rewrite the sentence to emphasize ozone's contribution to OH production.

2. Line 67: Typo on “play and important role”.

3. Line 255: The description and quantity of "cylinders and canisters" in Table C2 differ from those provided in the main text and Appendix C. Please review and verify for consistency.

4. Line 388: The tables in the Appendix B should be presented in order in the manuscript.

5. Line 412-418: In some cases, images can be more vivid and readable than tables. Moreover, the manuscript emphasizes the assessment of four species: acetaldehyde, acetone, methanol, and methyl ethyl ketone (MEK). However, Figure 1 only presents data for acetone. Please include the results for the other species as well.

6. Line 427: Please specify the data source for this paragraph and list it in the Appendix.

7. Line 441: In the manuscript, the authors state that "certification results obtained for whole air samples contained in pressurised 10 L aluminium cylinders showed good consistency between the two laboratories performing the certification (i.e., VSL, METAS)." However, there is no data provided to support this claim. Please include the relevant data that demonstrates this consistency and add it to the Appendix for verification.

8. Line 608：The conclusions should be drawn cautiously. Based on Figures 2 through

6, it appears that the two different types of SI-traceable working standards may be more suitable for OVOC amount fractions in the range of 4–20 nmol mol^{-1}.