

Protocol Development Committee Invitation  
**ADED Controlled Testing Protocol Development**

PI: Daniel Zimmerle, 970-581-9945, [dan.zimmerle@colostate.edu](mailto:dan.zimmerle@colostate.edu)

Lead Scientist: Ethan Emerson, ([ethan.emerson@colostate.edu](mailto:ethan.emerson@colostate.edu))

**Introduction**

Colorado State University (CSU, PI Zimmerle) has been running the Advancing Development of Emissions Detection (ADED) funded by the U.S. Department of Energy for the past several years. The results of these efforts have led to several publications on the performance of continuous emissions monitoring systems and survey systems for identifying and locating fugitive emissions in a controlled test environment (METEC) and field trials in several oil and gas basins. These efforts have shown substantial disparity in performance between controlled test environments relative to observed testing in field environments. The disagreement between controlled and field testing remains a significant issue that needs to be addressed. Observations indicate that it is likely that both controlled and field testing protocols need to be reviewed and improved, and research may be required, to close the gap between the two types of testing.

**Proposal**

The ADED program includes work to revise testing protocols. As part of this effort, we propose to address the following questions:

- *How should current field test programs be modified to produce results to evaluate the performance of next-generation LDAQ systems?*
- *Are test results / metrics from controlled testing appropriate for evaluating field performance?*
- *How should controlled testing be updated to better reflect field performance, without interfering with positive aspects of controlled testing?*

What we would like is input on the following points to guide how METEC can work with operators to test solution performance and provide data that informs decision-making and implementation of these systems.

- Define the *essential* metrics that continuous emission monitoring systems need to provide. We anticipate metrics may need modifications to better address deployment modes which were considered lower priority when the original test protocols were developed.
- Refine and improve testing processes to address the modified metrics for continuous emission monitoring systems.

With your input, based on your experience evaluating systems and your knowledge of upcoming regulations that require more direct measurement, it is imperative to better test these systems. If a revision can be completed in a timely fashion, the ADED project may be able to support additional controlled testing at METEC and/or field testing at operational facilities in the next year. These testing programs could be focused on specific experiments to better characterize the primary causes of the difference between controlled and field testing.

Protocol development will be led by the *Methods Core Team* which consists of researchers at CSU (PI Zimmerle, Emerson), University of Texas at Austin (co-PI Ravikumar), Southern Methodist University (co-PI Smits) and University of Texas at Austin (co-PI Allen). Since outreach to all stakeholder groups is a key

to project success, draft protocols will be circulated to a *Protocol Development Committee* (PDC) for review and comment. **This protocol revision will occur in the next three months (November '23 -January '24).**

**The role of the PDC will be to review draft protocols and return comments to the Methods Core Team during defined comment periods.** This review cycle will provide the opportunity for all stakeholder groups including natural gas facility operators, service providers, technology companies, NGOs, academic institutions, and regulatory agencies to provide feedback on the proposed protocols for controlled testing.

## **Participation Requirements**

To achieve broad engagement across stakeholders, there are no restrictions on who may participate, however, interested participants must register with CSU to become a PDC member. Participation in the PDC will be restricted to one member per company or major operating division of a company. Comments from additional reviewers within the same organization must be incorporated into a single response submitted by the PDC member. There will be no confidentiality agreements required, so participants should not disclose confidential information or intellectual property regarding their technology or operations in their review comments.

The PDC will be engaged in review cycles during the course of the project. Each protocol is expected to go through at least two review cycles. Review cycles will be operated as follows:

- 1) Several **initial meetings will be held virtually the week of November 13<sup>th</sup>** to outline the protocol revision process, requirements, and timeline. During this meeting, an overview of solution performance under controlled test conditions and field test conditions will be presented by the Method Core Team. Please complete the meeting poll [here](#) for available times.
- 2) In-person meetings will be hosted by the METEC Team in Fort Collins, as well as other locations, to engage directly with operators, solution developers, and regulators.
- 3) PDC members may provide written comments to the Methods Core Team during the established comment period. Note, PDC members who do not wish to review a particular protocol are not required to provide comments. For example, a PDC member from a technology company developing continuous monitoring solutions may choose to not review draft protocols for survey methods.
- 4) The Methods Core Team will collect comments and incorporate revisions to the draft protocol. The team *will not* respond individually to each comment.
- 5) A finalized protocol will be utilized in controlled testing at METEC immediately after development.

Although participation is not restricted by affiliation or experience, comments during the protocol review cycles should be restricted to constructive remarks.

## **To Register:**

To register as a PDC member, please complete the registration form [here](#) and provide the following:

- Name (First & Last)
- Affiliation (Company/Agency/NGO)
- Role at Company
- Email address