# Deliberating performance targets workshop: Potential paths for emerging $PM_{2.5}$ and $O_3$ air sensor progress

## Abstract

The United States Environmental Protection Agency held an international two-day workshop in June 2018 to deliberate possible performance targets for non-regulatory fine particulate matter ($PM_{2.5}$) and ozone ($O_3$) air sensors. The need for a workshop arose from the lack of any market-wide manufacturer requirement for documented sensor performance evaluations, the lack of any independent third party or government-based sensor performance certification program, and uncertainty among all users as to the general usability of air sensor data. A multi-sector subject matter expert panel was assembled to facilitate an open discussion on these issues with multiple stakeholders. This summary provides an overview of the workshop purpose, key findings from the deliberations, and considerations for future actions specific to sensors. Important findings concerning $PM_{2.5}$ and $O_3$ sensors included the lack of consistent performance indicators and statistical metrics as well as highly variable data quality requirements depending on the intended use. While the workshop did not attempt to yield consensus on any topic, a key message was that a number of possible future actions would be beneficial to all stakeholders regarding sensor technologies. These included documentation of best practices, sharing quality assurance results along with sensor data, and the development of a common performance target lexicon, performance targets, and test protocols.