

Needs and Challenges in the Field Detection and Identification of Military Chemical Threats

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The Joint Project Manager for Nuclear, Biological, and Chemical Contamination Avoidance (JPM NBC CA) is tasked with developing, testing, and fielding chemical and biological detection systems which meet the capability needs of the Joint Services, for varied missions and tasks. Effectively addressing user needs requires the deployment of a suite of complementary systems, which leverages the technical trade space to provide the appropriate level of capability (detection, classification, and identification), at the required level of detection (bulk, less-than-bulk, and trace), and within the physical profile necessary for user operations.

The inclusion of mass spectrometers into this suite as means to provide trace or near-trace level, high-confidence, chemical identification has long been an objective of the Department of Defense's (DoD) Chemical and Biological Defense Program (CBDP); however, limitations in size & weight, performance, "ruggedness," consumables, and user technical expertise have constrained tactical employment. In this talk, we will discuss field applications of a mass spectrometer to support DoD missions toward continued evolution of useful mass spectrometric hardware.