

## **Chemical, Biological, Radiological, Nuclear and Explosive Consequence Management Assessment Method Synthesis**

**Alex Fumerelle, Marshall Malone, Mack Ohlinger, Madison Oliver, and Dr. Kenneth  
McDonald**

United States Military Academy

Email: [Kenneth.McDonald@usma.edu](mailto:Kenneth.McDonald@usma.edu)

*The views expressed herein are those of the author and do not reflect the position of the United States Military Academy, the Department of the Army, or the Department of Defense.*

**Authors Note:** The authors are associated with the Center for National Reconstruction and Capacity Development, Department of Systems Engineering. Special thanks LTC Robert Prins, Nuclear Science and Engineering Research Center and the Defense Threat Reduction Agency for the support to complete the project and allow us to provide an applicable tool to help assess CBRNE preparedness on multiple levels control around the globe.

**Abstract:** One of the most important roles that the US fulfills in the global war on terror and their integration with Partner Nations (PNs) is minimizing the threats and effects of weapons of mass destruction (WMD) as well as Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) attacks by enemy nations, rogue elements, or terrorist groups around the world. The Defense Threat Reduction Agency (DTRA) currently implements an assessment framework for determining a PN's state of CBRNE readiness, but it is unable to conceptualize that assessment at a regional or Combatant Command (CCMD) level. This research uses the Systems Decision Process (SDP) to create an assessment metric that is capable of synchronizing PN CBRNE readiness across a CCMD into a single assessment. This research is focused on developing an effective and flexible Microsoft (MS) Access database, which evaluates all global PNs across a wide array of metrics and then synthesizes them through multi-purpose objectives in order to develop an encompassing assessment framework at the CCMD level.

**Keywords:** Metric Assessment, Decision Analysis, DTRA, CBRNE, Consequence Management, CCMD, Partner Nation, NSERC