

## EXTENDED REALITY AND HUMANOID ROBOTICS: NEXTGEN ASSETS FOR REMOTE CB RESPONSE AND OPERATION

### Extended Reality for Chemical, Biological, Radiological, and Nuclear (CBRN) Training

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Present day conflicts around the globe have the capability to be drawn out and exhaust the smaller specialized groups, such as chemical, biological, radiological, and nuclear (CBRN), resulting in the immediate and rapid need to train and deploy larger numbers. Using extended reality (XR) platforms allows for a cost effective and controlled training environment that can be rapidly deployed with remote networking to connect trainees with subject matter experts.

Warfighters, emergency responders and consequence management responders need to access a wide variety of training scenarios that are hazardous and expensive to produce. Noblis is creating a virtual and augmented reality application prototype as a sustainable and safe training solution.

The XR for CBRN training project entails the incorporation of hazard prediction models and the synthesis of sensor responses to the simulated contaminant fields. The flexible incorporation of CBRN characteristics and modeling capabilities in a virtual environment provides the end user with relevant training experiences without exposure to hazardous materials. With remote networking, a trainer can work with a trainee in real time, even when not physically collocated. All user actions are recorded to enable thorough after-action reporting and feedback to the trainee.