

FACT SHEET: Stadium Evacuation and Security

Overview:

The US Department of Homeland Security puts priority on protecting the American public in large capacity facilities from natural and man-made threats by developing technologies, solutions, and methods for improved preparedness, planning, training, and operational capabilities before and during emergency situations. Large venues with great American iconic value such as National Football League stadiums call for the planning of evacuations to ensure the safety of patrons should an event occur.

Stadium Evacuation:

CCICADA partner Regal Decision Systems Inc. has developed sophisticated tools for simulating evacuation of stadiums. This work has been applied to five NFL stadiums, in collaboration with stadium security and management. Evacuation analyses have been conducted to determine the best evacuation routes from different stadium sections, where to locate security personnel during an evacuation, and different responses to different crowd distributions and physical obstacles. The simulation tools calculate time required to move people to a safe location and also the infrastructure capabilities should the patrons need to be sheltered inside. CCICADA has collaborated with US DHS in developing training materials to aid stadium operators in developing and implementing evacuation plans. The results of this work have already been found useful in a lightning storm emergency at the new MetLife Stadium in New Jersey

Stadium Evacuation



AP Photo/New Meadowlands Stadium

Behavioral Aspects of Stadium Evacuation:

CCICADA has also been working toward understanding behavioral aspects and their related potential impact within the evacuation modeling and planning process. The basic evacuation models don't take into account the desire to wait for friends, the possibility of getting lost, deliberate movement in a direction other than the one a fan is pointed to, the incomplete understanding of instructions in a situation of chaos, etc. Fans at a game possess unique characteristics that determine their behavior in evacuation situations, and this behavior can depend on multiple factors such as alcohol consumption and the emotion of game situations (e.g., winning vs. losing) and CCICADA is working to take these factors into account to increase the realism of the initial evacuation simulation tools.

Expanding the Project:

Because of this work, DHS is interested in expanding the project to other venues, for example hockey and basketball arenas and the Republican and Democratic national conventions. In particular, DHS has been working with the 2012 SuperBowl to make use of project results. Recently, the evacuation project has led us to work with stadium operators and the SuperBowl on other aspects of stadium security. CCICADA also participates in the meetings of the Sports Security Directors' Subgroup under the NJ Office of Homeland Security and Preparedness.