

# Engage to Excel (E2E) — Maintaining Business Continuity and Performing Risk Management During an Animal Disease Outbreak

## IMPACT STATEMENT

Engage to Excel (E2E) offers an approach to mitigating the impact of commerce disruption for livestock, poultry and associated products that is likely to occur during an outbreak of a high-consequence animal disease in the United States.

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## THE CHALLENGE

The impact of an animal disease outbreak involves a complex array of stakeholders and their individual and collective interests. When faced with the uncertainties of a major disease outbreak, early responders and decision makers at all levels require tools to help them sort reality from chaos, and to select the strategies that will minimize the damage to human health, livestock health and the economy. The direct and immediate response must include both the engagement of emergency management professionals and the coordinated stakeholder involvement from other impacted communities. Other associated areas supporting continuity of business that are impacted during a disease outbreak include the agricultural and allied industries, bio-surveillance programs, and veterinary diagnostic laboratories. Information generated and managed by one group of stakeholders is likely to have value to the others by promoting shared situational awareness and contributing to the formulation and execution of better decisions by all in less time.

## THE SOLUTION

Researchers from the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD) have been heavily engaged in the use of information technology and the implementation of decision support tools in each of these stakeholder communities for some time. These investigators are suitably positioned to address the requirements for exchange of information/data across each of the communities from both a domain and technical perspective, especially focusing on business continuity planning and operations. This understanding is critical in the creation of risk management tools supporting the decision-making process. The connections between the FAZD Center and state and federal emergency responders provide the required interface with the respective stakeholder communities to promote integrated incident command. The E2E project applies proven technology developed for the U.S. Department of Homeland Security and the U.S. Department of Agriculture, and engages a rich network of stakeholder relationships in government, industry and academia.

## APPLICATIONS

### Secure Food Supply Plans

The FAZD Center has established a partnership with Iowa State University's Center for Food Safety and Public Health to leverage its ongoing efforts to develop secure food supply plans for the egg, turkey, milk and pork industries. Each plan has the need for real-time integration and display of emergency data. The FAZD Center will facilitate the development of data-sharing technology that can provide this integration and display in an outbreak situation.

### Characterizing Business Continuity as It Relates to Livestock, Poultry and Associated Products

A disease outbreak could result in significant economic loss to pork producers. Recognizing this vulnerability, the pork industry is working with the U.S. Department of Agriculture (USDA) and other stakeholders to improve the animal health infrastructure to a level that would support rapid response and business continuity. USDA has funded the Secure Pork Supply Plan, which will develop the standards to allow the safe movement of animals with no evidence of infection from swine operations in a disease control zone to a pork processing plant or to other sites to accommodate different stages of production. The plan will require key pieces of data from multiple federal, state and private sources (such as premises locations, livestock census information, disease surveillance results and animal movements) to be readily available for analysis. Many of the databases exist. However, the data must be collated and synthesized into information that can be used to support business continuity. The FAZD Center is working with government and industry to develop the capability to securely collect, share and synthesize this sensitive business practice information for decision makers.

### Data-Integration and Data-Visualization Technology

Researchers at the FAZD Center will leverage the center's technology for data integration and data visualization to produce a common integrated display that supports shared situational awareness and that provides access to tools that facilitate risk management. The data-integration technology will support data aggregation and grouping, information searching and filtering, information synthesis, alerts, notifications, data security, access control, plug-in components, and component management. The data-visualization technology will provide enhanced visualization and analysis of complex data. By incorporating these technologies, situational awareness can be improved by promoting vertical and horizontal information sharing in a manner demonstrated in other highly dynamic decision-making environments such as the military and emergency responder communities.

### Technology Transition

FAZD Center researchers strongly promote the "spiral development" process, which puts stakeholders in the loop and promotes frequent interaction throughout the development cycle. The first implementation will go to a small group of stakeholders who are direct collaborators with this research effort. Through the National Pork Board, the FAZD Center will use verified data to demonstrate proof of concept for information integration to pork producers and other stakeholders. Feedback from these stakeholders will be integrated into the technology toward a larger deployment. Throughout the entire span of the program, analysis will continue to refine/expand the overall requirements. Training for all deployments will be accomplished through the use of training videos, webinars and printed reference material.

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