The IDSS Engine - Connecting Partners with Critical Decision-Making Information

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The Impact-Based Decision Support Services (IDSS) Engine is an advanced decision support platform being developed by NOAA's Global Systems Laboratory (GSL). It is planned to be integrated into NWS Connect at the beginning of FY26, where it will be the foundation for data processing that couples partner thresholds with weather forecast data. The system will focus on providing probability information - both in magnitude and timing - and enhancing NWS meteorologists' communication of impacts to partners.

The IDSS Engine is designed as a collection of microservices that facilitate meeting the needs of the many Decision Support Services provided by the NWS and a graphical dashboard for visualizing the information. The microservice architecture enables scalability and extensibility, and allows the services to be deployed on various infrastructures, including the cloud. There are core services that are internal to the system, such as managing the acquisition of data, evaluating data against real-time user-defined multi-conditional criteria, and storing event space characteristics such as time and uncertainty, communication recommendations, and verification. There are also external services that support the user interactions, and connection/translation to other systems, including a seamless integration with the Dynamic Ensemble-based Scenarios for IDSS (DESI) application.

User experience design, testing, and feedback with users is an integral part of the development process. Ultimately, the weather information that matters to decision-making will be delivered to NWS meteorologists, decision-makers, and end-users to assess how and when the weather will impact events, places, and people. This talk will discuss the design and functionality of the system and the planned capabilities scheduled for integration with NWS Connect.