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Information Communication using Knowledge Engine on Flood Issues

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The Iowa Flood Information System (IFIS) is a web-based platform developed by the Iowa Flood Center (IFC) to provide access to and visualization of flood inundation maps, real-time flood conditions, flood forecasts both short-term and seasonal, and other flood-related data for communities in Iowa. The system is designed for use by general public, often people with no domain knowledge and poor general science background. To improve effective communication with such audience, we have introduced a new way in IFIS to get information on flood related issues – instead of by navigating within hundreds of features and interfaces of the information system and web-based sources– by providing dynamic computations based on a collection of built-in data, analysis, and methods. The IFIS Knowledge Engine connects to distributed sources of real-time stream gauges, and in-house data sources, analysis and visualization tools to answer questions grouped into several categories. Users will be able to provide input based on the query within the categories of rainfall, flood conditions, forecast, inundation maps, flood risk and data sensors. Our goal is the systematization of knowledge on flood related issues, and to provide a single source for definitive answers to factual queries. Long-term goal of this knowledge engine is to make all flood related knowledge easily accessible to everyone, and provide educational geoinformatics tool. The future implementation of the system will be able to accept free-form input and voice recognition capabilities within browser and mobile applications. We intend to deliver increasing capabilities for the system over the coming releases of IFIS. This presentation provides an overview of our Knowledge Engine, its unique information interface and functionality as an educational tool, and discusses the future plans for providing knowledge on flood related issues and resources.