

Hazard Services - Probabilistic Hazard Information (HS-PHI)

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Forecasting a Continuum of Environmental Threats (FACETs) is a proposed next-generation severe weather watch and warning framework that is modern, flexible, and designed to communicate clear and simple hazardous weather information to serve the public. One of the underlying aspects of FACETs is rapidly-updating probabilistic hazard grids, known as Probabilistic Hazard Information (PHI). PHI can be used to provide custom user-specific products that can be tailored to adapt to a variety of needs – for example, providing longer lead times, at lower confidence, for more vulnerable populations with a lower tolerance for risk.

The National Severe Storms Laboratory has developed a prototype PHI tool which allows forecasters to integrate probabilistic guidance and their own interpretations of the atmosphere to issue PHI for severe convective hazards - hail, wind, and tornadoes. This prototype tool was tested in the NOAA Hazardous Weather Testbed (HWT) in the springs of 2014-2017 in order to facilitate its transfer to National Weather Service (NWS) operations.

We are adapting an experimental version of the NWS Advanced Weather Information Processing System (AWIPS) Hazard Services (HS) software to include the capabilities for forecasters to provide PHI at the 0-2 hour “warning” scale (known as HS-PHI). HS-PHI development is in its third year. The process by which research is transitioned to operations (R2O) is such that the capabilities of the PHI Prototype are evaluated and vetted within the NOAA Hazardous Weather Testbed (HWT). This process of initially developing capabilities within the PHI Prototype, vetting them via HWT evaluation, and choosing new functionality for transition to the operational HS-PHI, is intended to occur on a regular basis, at least once every few years. We follow this model of research transition to operations (R2O) in the development of HS-PHI.