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Flood Foresight: Near real-time and forecast flood information for proactive flood management.

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Forecast and real-time flood data underpins early warning systems, allowing proactive decisions before and during peak flood. The spatio-temporal progression of the flood and associated impacts to population and assets is invaluable for targeting and financing mitigation measures to reduce loss and speed-up relief and recovery efforts.

In this session, we will show the developments over the last year of Flood Foresight (www.floodforesight.com), an innovative operational system that provides flood inundation, depth and impact data. Updates include an enhanced flood monitoring tool that produces flood inundation footprints every 3 hours based on real-time measurements of telemetry river gauges of over 1,500 sites across England, Wales and Scotland. The Monitoring tool now includes the spatio-temporal coverage of telemetry river gauge data within the system which enables better understanding of the flood information. In addition, in mid-2017 a flood forecasting tool that provides daily flood inundation footprints up to 10 days in advance was released for UK and Ireland based on the EHYPE model forecasts. Both tools are implemented using a simulation library approach, which integrates forecast or real-time streamflow data and state of the art global flood hazard maps on a 30 meters resolution inundation outputs. Current flood inundation footprints are undefended. However, a new dynamic layer can now be overlaid on the flood footprints to identify areas benefiting from defences where flood severity is estimated to be below or exceed standard of protection of those defences.

In summer 2017, to demonstrate the global applicability of the Flood Foresight framework and in response to the devastating monsoon flooding of the Brahmaputra river in South Asia, an offline Flood Foresight pilot system was configured and deployed in India and Bangladesh. It provided probabilistic ensemble flood footprints based on the Global Flood Awareness System (GloFAS) system forecasts and the outputs were validated against Earth Observation data. Within the real-time Flood Foresight tools, progress has also been done to move from hazard to impact mapping. In the UK, the potential impact to roads, network rail, and urban areas before and during flooding is now provided through a web widget application. Free and commercial data are available across the UK and Ireland through an enhanced project website, providing a shared understanding of flooding across the civil contingencies, infrastructure and (re)insurance sectors.

For more information contact: info@floodforesight.com