Seamless Probabilistic Forecasts from IMPROVER

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IMPROVER is a new post-processing system under development by the Met Office to provide seamless probabilistic forecasts from 15 min to 2 weeks ahead blending different NWP inputs including nowcasts, convective-scale UK deterministic and ensemble forecasts and the ECMWF ENS. (For more details of IMPROVER see the EMS presentation, Mylne, Roberts and Flowerdew, EMS 2019). These forecasts are updated up to every 15 mins to incorporate frequent model update cycles into the blend and present forecasters and users with a single blended forecast picture at all times incorporating the latest data. IMPROVER also provides comprehensive verification at each stage of processing, both in real-time and trial forecast modes. IMPROVER software is open source and available for other centres to use and contribute to, and data are managed on standard grid formats (Global and UK) stored in NetCDF format to facilitate model blending and to decouple end users from multiple model grids. IMPROVER forecast outputs are presented as probability distributions, as probabilities or percentiles depending on the variable, on standard grids or as site extractions. This poster will describe aspects of these standard data formats and the delivery of the data through the Met Office's cloud-based Service Hub with a view to stimulating discussion on wider data sharing and blending approaches. The Met Office is already collaborating on IMPROVER development with another major National Met Service, and is working closely with ECMWF to enable ECMWF data to be incorporated into IMPROVER - there is great potential for collaboration across Europe and beyond on harmonisation of data formats to ease data sharing and facilitate greater use of multi-model ensemble blending which has been consistently shown to provide improved probabilistic forecasts.