Towards the transformation of the forecasting system at Meteorological Service of Canada

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With the coming of science & technology innovations and an increasing amount of data and information generated by our centre, the current forecasting system must adapt and respond to evolving client needs. Information from high resolution numerical prediction systems, ensemble prediction systems and environmental prediction systems are currently poorly integrated into the forecast production system. Furthermore, in certain cases information is diluted in the production chain due to aging technologies and specifications historically defined by Services. This leads to the fact that, for example, details from high resolution models, uncertainty estimated from ensemble systems and information from environmental prediction systems are all underused and difficult to access by external users.

In this presentation we will present the transformation of the weather elements production system. Weather elements needed for forecast production (public, marine and aviation) will soon be available on a grid instead of only being available at points aiming to represent specific regions. Amongst other benefits, this will allow forecast to be produced anywhere on a grid and will also provide a production system to which new information will be more easily integrated and available in the forecast products distributed to users.

In addition, as part of the warning production reengineering project, it was decided that the MetObject approach will be used to generate and transmit weather and environmental warnings in the coming years. This has led us to innovate by implementing a system that generates diagnostics of high impact weather derived from NWP models at all time scales. These products will be transformed into a HIMO: High Impact Met Objects. We will describe this innovative system and explain how these diagnostic Met Objects will be used within the future warning production system that is currently being developed.