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Does more frequent Very Short-Range Forecast provide more useful information?

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The Very Short-Range Forecast (VSRF) for precipitation from the Korea Meteorological Administration (KMA) is released every 10 minutes, providing forecasts for the next 6 hours at 10-minute intervals. However, when the forecast is provided to the public, it is updated at 10-minute interval, but only provides up to 6 hours at every hour. Consequently, from the public's perspective, forecasts for specific times may change every 10 minutes. While this allows users to access the latest updates, it also poses a challenge in terms of reduced reliability due to constantly changing predictions.

This study aims to assess the prediction performance and variability between forecasts released at 10-minute intervals and those at 1-hour intervals. We evaluated with the Very Short-Range Forecast numerical model KLAPS in VSRF and seek to determine which approach offers more valuable information from the public's standpoint. The assessment focuses on two distinct types of precipitation. The first involves convective showers, which sporadically appear over short durations, driven by atmospheric instability during the Korean Peninsula's summer. The second relates to systematic precipitation associated with a frontal boundary accompanying a medium-scale low-pressure system. For convective showers, the 1-hour interval exhibits better performance and continuity, particularly as the forecast time extends. In the case of systematic precipitation, the 1-hour interval remains superior, though the skill is not as prominent as with convective showers. This highlights that an abundance of information doesn't always equate to high-quality information.