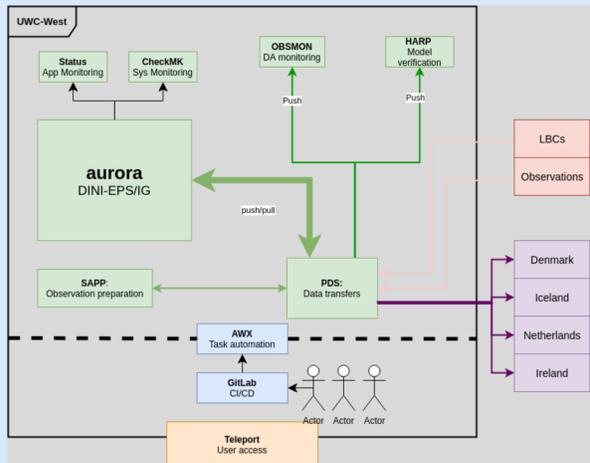


Collaboration

- United Weather Centres is an operational NWP collaboration between 11 countries
- The cooperation between DMI, IMO, Met Éireann and KNMI is called UWC West.

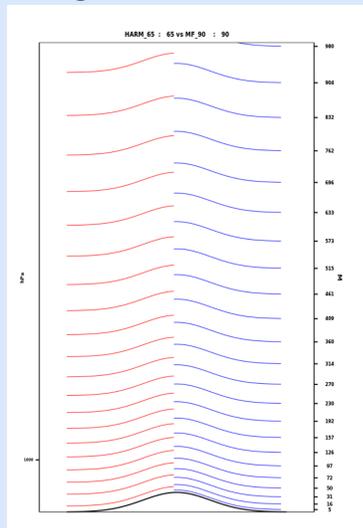
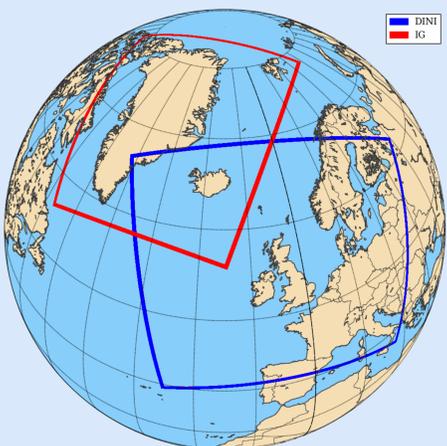
Infrastructure

- All changes managed using CI/CD pipelines
- HPE Cray systems installed at IMO for production



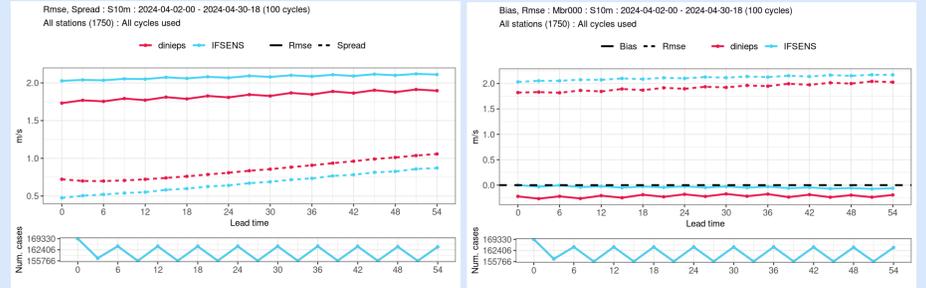
Common Operations

- Continuous EPS on DINI domain and deterministic configuration for IG domain
 - Harmonie-Arome 43h2.2
 - 2.0 km grid-spacing
 - 90 vertical levels (L90)
 - Single precision for forecast
- 60 h forecast each hour for DINI-EPS
- 72 h forecast every three hours for IG
- 1+5 continuous EPS with hourly updates
 - IFS-ENS LBCs, surface perturbations and SPP – five parameters
- 3D-Var using three-hour window
- Observations assimilated:
 - Conventional, Mode-S EHS (EMADDC), AMV, Scatterometer, AMSU-A, MHS, MWHS2, ATMS, IASI, Radar (OIFS)
- gridPP used for EPS product generation

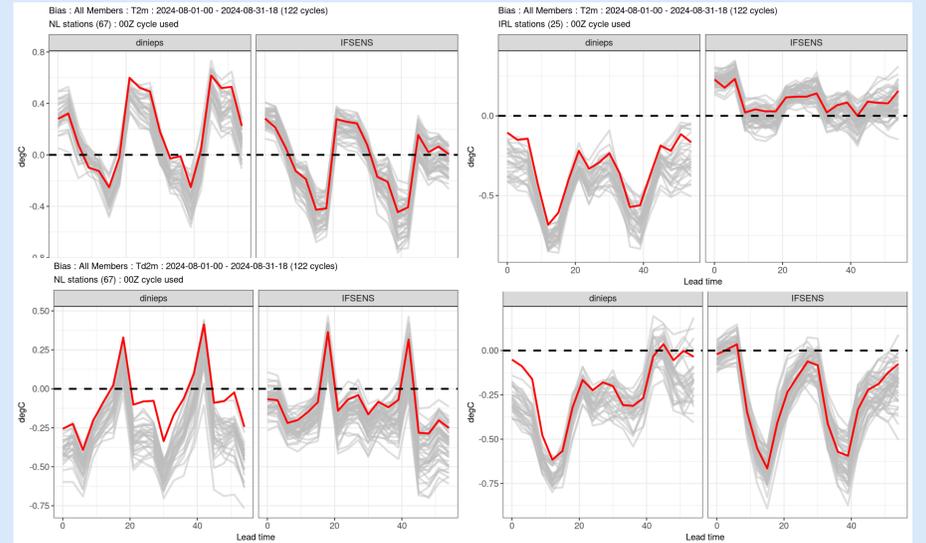


Model verification

- Operational since March 19th, 2024
- Real-time (weekly) and monthly verification
- Weekly *Forecaster Feedback* meetings



- Spread-skill good relative to IFSENS (left). Negative bias for 10 m winds (right).



- T2m/Td2m bias opposite behaviour in NL (too cold/moist during day, left). Too cold and dry in Ireland (right).

NWP Issues

- Recent issues
 - Different biases in different regions
 - Low T/high Td at screen level in spring
 - Roughness lengths and summer winds
- Previously known issues:
 - Frontal clouds optically too thick
 - Overestimation of Sc in open cell convection
 - Underestimation of Sc in strong inversion
 - Shadowing effect on precipitation too strong
 - Shallow showers missing $0^{\circ}\text{C} > T_{\text{cltop}} > -15^{\circ}\text{C}$

Recent development & plans

- Recently
 - 4D-Var (development) DINI real-time suite
 - Verification by Screening – see presentation
- Plans
 - Mode-S data thinning
 - Hourly SST updates from IFS LBCs
 - Evaluate technical feasibility of 4D-Var
 - Next upgrade to CY46h1 autumn 2025