

Foreign, Commonwealth  
& Development Office

# SOUTH ASIA HYDROMET FORUM III

SESSION 5

OBSERVATIONAL SYSTEMS AND REGIONAL DATA EXCHANGE FOR MONITORING AND PREDICTION OF EXTREMES

Contribution of RIMES regional data sharing mechanisms by harnessing state of art data analytics technologies and innovative institutional practices to address SAHF priorities

Itesh Dash  
Lead, System Research and Development Team  
RIMES

17<sup>th</sup> November 2021

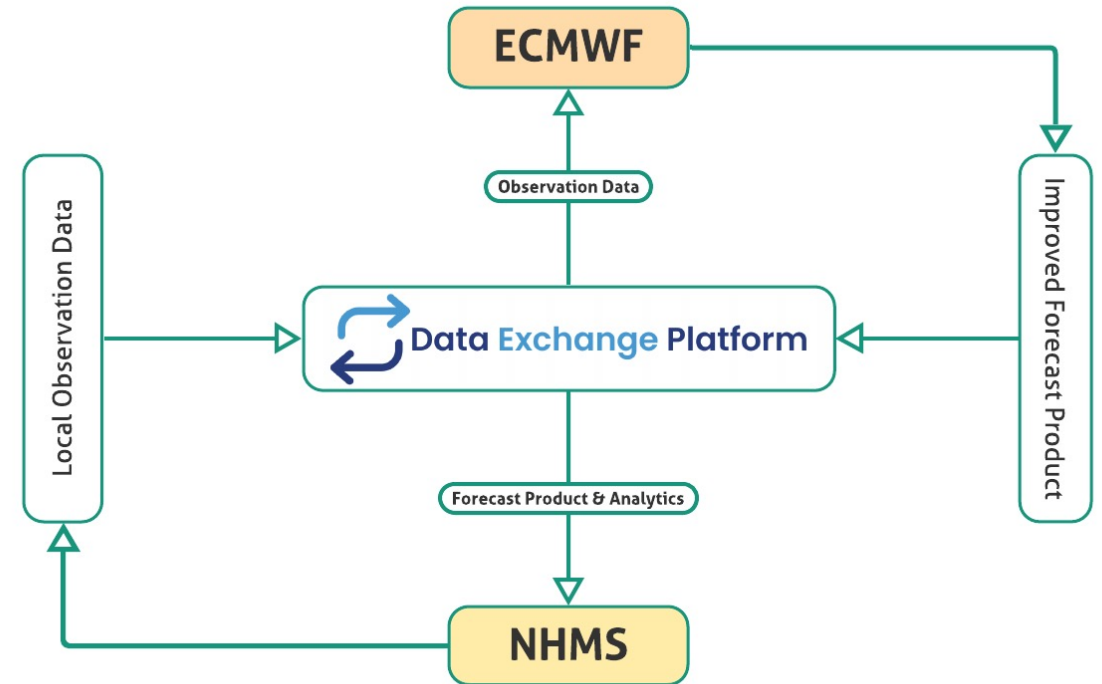
November 15-18, 2021  
Annual Event- Virtual

# THE NHMS-ECMWF-RIMES INITIATIVE

- ECMWF-RIMES service agreement entails exchanging country-specific meteorological datasets otherwise not available in the WMO network (GTS)
- Data shared by the member country through DEX platform will not be used for any commercial purposes.
- Data will be shared only with ECMWF and not with any third party
- Data will be used only for forecast verification and assimilation into models for improving forecasts
- Data security will be ensured through secured password protected access



Data Exchange Platform



# SYSTEM FEATURES

Upload or provide access to the datasets

Visualize the time series data

Automated Quality Control System (AQCS)

Subset **forecast datasets** for a preferred **domain** and parameter and export the NetCDF data

**Realtime** forecast verification using (WMO) **standard** verification tools  
**Climate Indices** computation

Observation Data

Visualization

Access to digital Data

Basin and location specific

Verification and Analysis

Visualize the most recent forecast products and generate Simulations for all critical parameters and for **deterministic** and **ensemble** products

Process and compute **basin** (MAP) and **point** Data

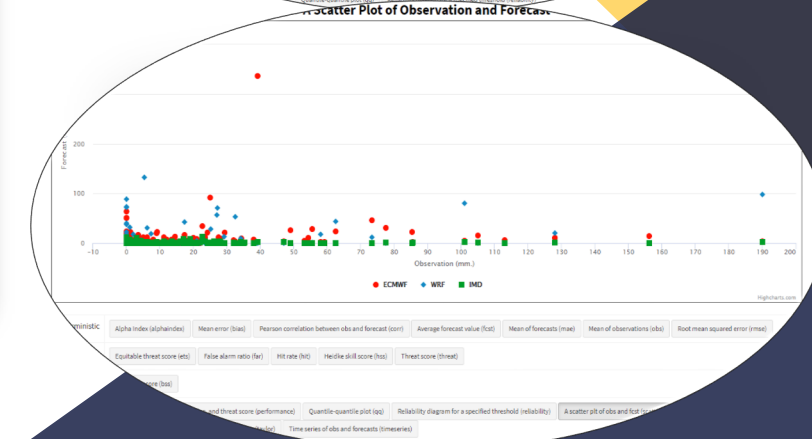
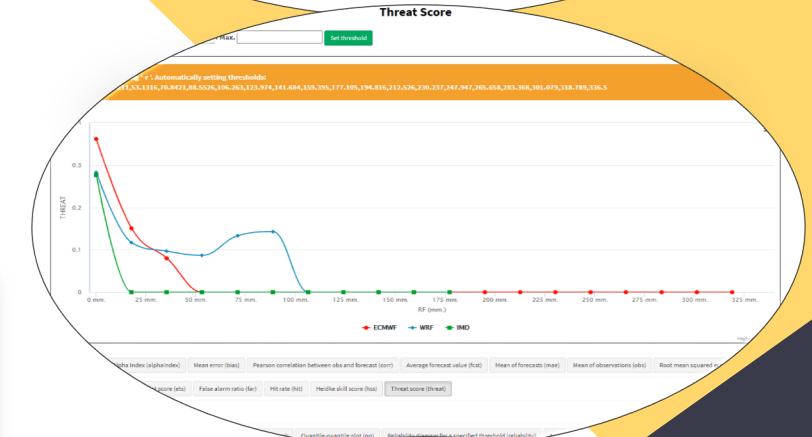
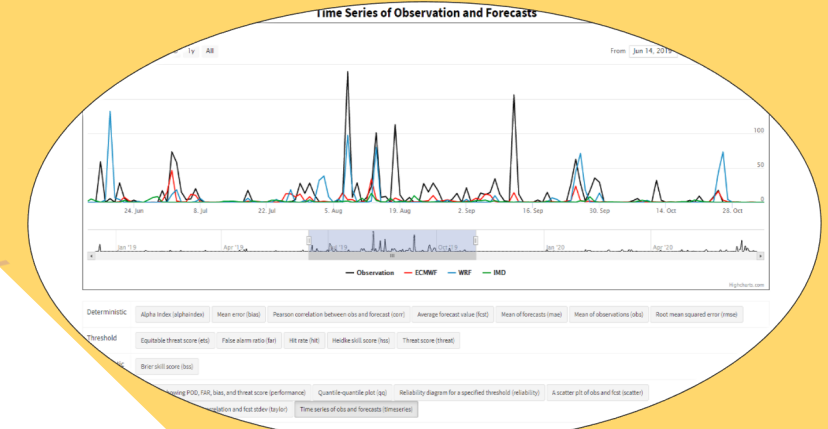
Access raw and computed data like weighted average, trends



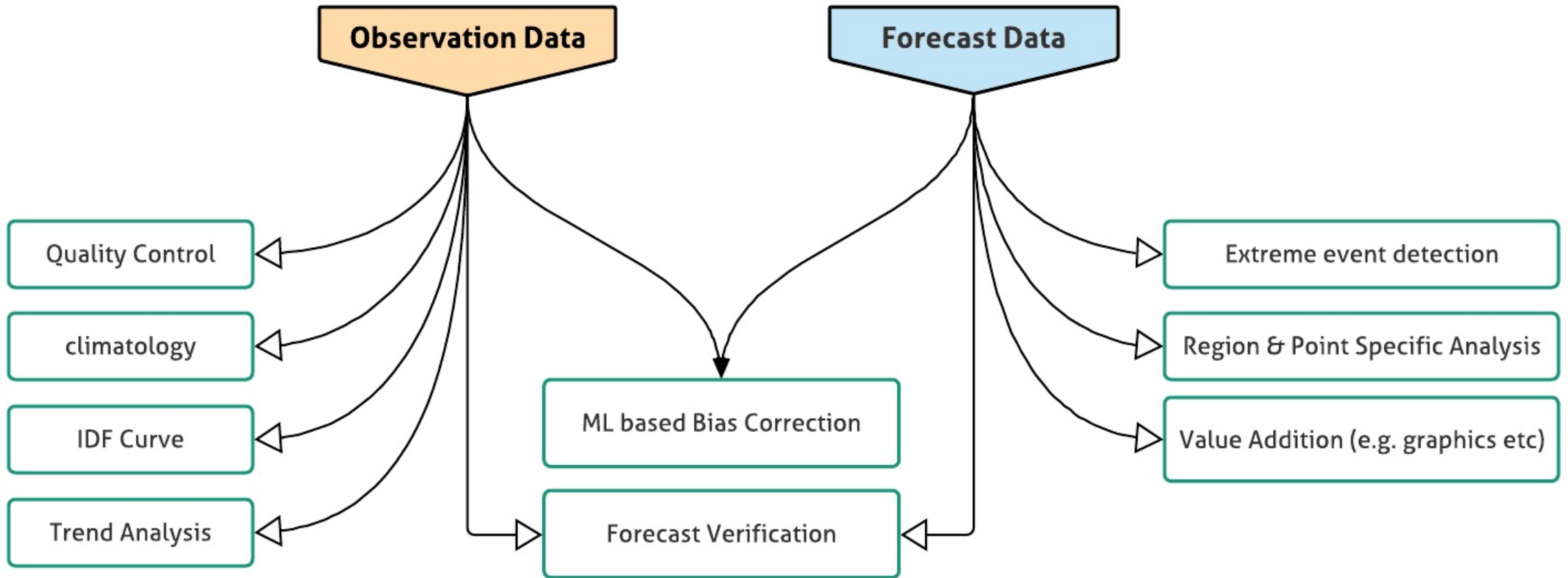
# WMOS STANDARD VERIFICATION

- Real time Forecast performance evaluation at point, polygon or
  - Deterministic
  - Threshold based
  - Probabilistic Forecast (Skill, ROC, Reliability)
  - Spatial

Deterministic	Alpha Index (alphaindex)	Mean error (bias)	Pearson correlation between obs and forecast (corr)	Average forecast value (fcst)	Mean of forecasts (mae)
	Mean of observations (obs)	Root mean squared error (rmse)			
Threshold	Equitable threat score (ets)	False alarm ratio (far)	Hit rate (hit)	Heidke skill score (hss)	Threat score (threat)
Probabilistic	Brier skill score (bss)				
Special plots	Diagram showing POD, FAR, bias, and threat score (performance)	Quantile-quantile plot (qq)	Reliability diagram for a specified threshold (reliability)		
	A scatter plot of obs and fcst (scatter)	Taylor diagram showing correlation and fcst stdev (taylor)	Time series of obs and forecasts (timeseries)		

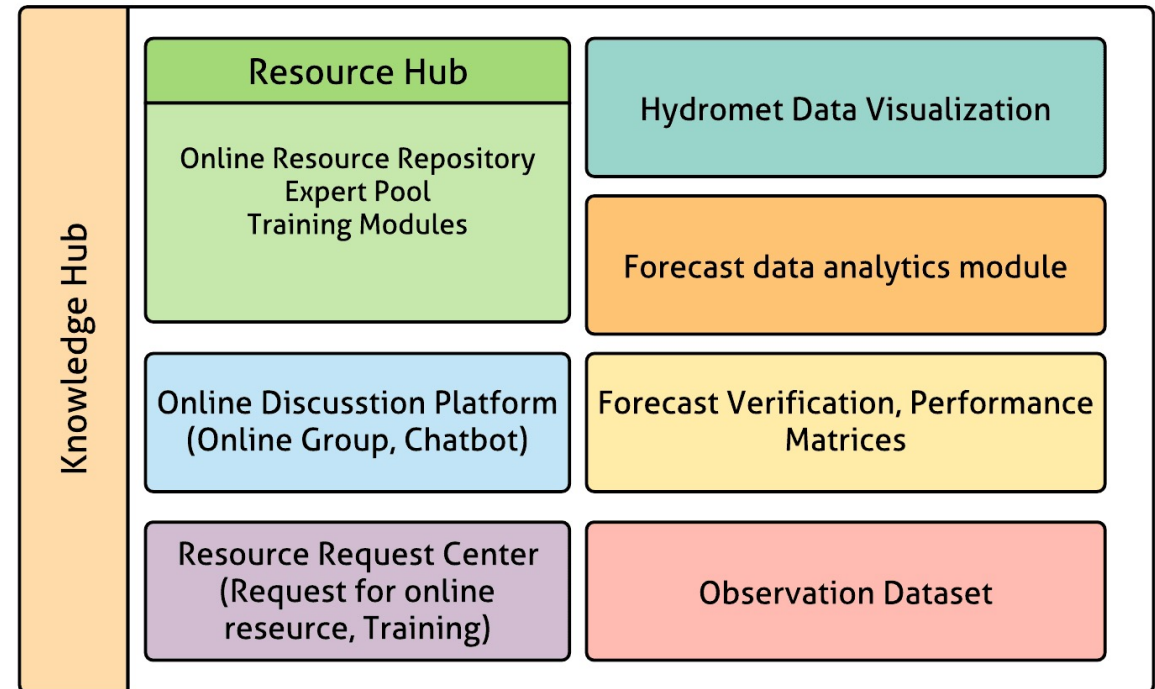


# BUILD-IN ANALYTICS



# NOT JUST A VISUALIZATION PLATFORM

- Dynamic and Instant access to all present past forecast and observation data using a single API keys and access the Graphix engine online or download the plots
- Access data/graphics without visiting the platform and export to other visual platforms and Generate comparative plots for forecast and observation for chosen period
- Embedded into SAHF Knowledge Hub
  - Integrated with the Forecasters Forum
  - Resource repository
  - Capacity Development



## PRIORITIZING REGIONAL COLLABORATIONS

A REGIONAL INITIATIVE AND COLLABORATION SUPPORT TO BRING SYNERGY TO NATIONAL-LEVEL MODERNIZATION EFFORTS

[READ MORE](#)

MANAGING A REGIONAL INFORMATION AND COMMUNICATION PLATFORM

Forecaster's Workbench

AN INTERACTIVE PLATFORM FOR ACCESSING METEOROLOGICAL PRODUCTS

Visualization Platform



**Thank You!**

**PROGRAM TO SUPPORT SOUTH ASIA REGIONAL DEVELOPMENT IN  
OPERATIONAL FORECASTING AND SERVICE DELIVERY**

**SAHF Website:** <https://sahf3event.rimes.int/>

**YouTube Broadcast:**  
<https://youtu.be/QAAf326wP00>