Communication of TT outcomes

- **What are the products/knowledge/advances generated by the TT?** (data, reports, events, etc.? – please highlight)
  - Standardisation on metrics and intercomparison tools and data
  - Effective best effort and alive intercomparison dataset based on Class4/1 metrics since 2013 among more than 5 global operational centres + other initiatives (e.g. HYCOM hindcasts)
  - Contributions to other intercomparison initiatives (e.g. Monthly Ocean Bulletin by NOAA/NCEP ; CMEMS product quality assessment)
  - Exchanges about validation/verification with other OP TT (e.g. COSS-TT)
  - Recent linkage with the atmospheric verification experts: participation to JWGFVR meetings
- **How are these advances communicated to the science community, to operational systems, to the public …** (where feasible please provide examples)
  - Publications (2015) (methods, results from intercomparisons), conferences, workshops, summer schools → new TT publication on Op. System Performance based on Class 4, late 2021?
- **What steps could be taken to increase the information and communication flow on TT and OP advances?**
  - Transfer NRT intercomparisons activities to operational bodies (eg, ETOOFS)
  - Get more short scales observations
  - Focus on methodologies toward validation/verification for users: process and user's oriented metrics

TT community interactions

- **Please provide information about who uses TT output?**
  - The IV-TT participants
  - Other TT projects (e.g. COSS-TT)
  - Scientific community via use of standardized metrics

- **What groups does the TT collaborate with?**
  - Other OP TT
  - Regional operational bodies through the participants of the IV-TT intercomparison tasks (e.g. CMEMS)
  - Atmospheric verification experts: JWGFVR
  - Ideally, ETOOFS.. But in practice not….

TT future plans in UN decade context

- **What gaps in knowledge/expertise need to be filled from your TT perspective?**
  - User oriented metrics dedicated to monitor the upper ocean / short scales dynamics
  - Metrics dedicated to measure improvements along time of Operational Forecast, and Observing system efficiency
- **What do you see as challenges for the TT in the next 3-5 years?**
  - Adapted transfer and implementation of ongoing intercomparison activities to more operational bodies – need for strategic plan among the TT (late 2021)
  - Focus on state-of-art approaches (user oriented metrics, and big data based methods)
  - Unresolved and not observed scales: the unconstrained range
  - Development of uncertainty estimates
- **If available, what is the longer-term outlook in the TT field of expertise (next 10 years)?**
  - Seamless verification approaches fit for Coastal Global Prediction projects
- **Where do you anticipate benefit in the Decade?**
  - Data integration, big data methods, allowing broader assessment on operational oceanography products in relation with user's needs
- **How do you plan to engage with SynObs and/or CoastPredict?**
  - Propose intercomparison focusing on upper ocean / shorter scales
  - Intercomparison for uncertainty estimations on key variables (e.g., Sea Level, Currents)