austro CONTROL

NEW MET-SERVICE FOR AVIATION
TAF VERIFICATION
TERMINAL AERODROME FORECAST

SAFETY IS IN THE AIR

TAF verification:

In ICAO Annex 3, the implementation of a quality management system is recommended. In this context, the assessment of the quality of TAFs is of key importance. Verification results are of interest for management, forecasters and users. The target is to improve meteorological forecasts!

The method: The Austro Control TAF verification system is operational since 2005. You can find a detailed description in Mahringer, 2008: Terminal aerodrome forecast verification in Austro Control using time windows and ranges of forecast conditions. Meteorol. Appl. 15; p. 113-123.

The verification method is tailor-made in respect to the properties of TAFs. In a TAF, the forecaster gives a range of possible meteorological conditions by using different types of change groups. These conditions are valid for time intervals, the shortest being 1 hour. A TAF thus contains a range of forecast conditions for each hour. This implies that point verification is difficult for TAFs. To ease these difficulties, two conditions for each hour of the TAF are compared: The highest (or most favourable) observed value is used to score the highest forecast value, and the lowest (or most adverse) observed value is used to score the lowest forecast value. All available observations within the respective hour are used.

This method avoids the need of assumptions about probabilities for conditions forecast by TEMPO and PROB TEMPO, or ambiguous conditions during a BECMG period.

Visibility, ceiling height, and present weather are verified in categories delimited by the TAF amendment criteria of Annex 3. For wind parameters, deviations between observations and forecasts are used for verification.

Setting standards: The MET Alliance, at this time formed by the national aeronautical meteorological service providers from Austria, Belgium, Ireland, the Netherlands, Switzerland and Germany, has agreed to use this method as common standard. You are invited to profit from this standard and have your forecasts verified by this system.

Verification as you need it: The TAF verification system is set up according to ICAO Annex 3 amendment criteria. Additionally, it is able to handle criteria based on local agreements – just tell us. TAF verification results can be produced just as you need them: monthly, for seasons, for half years, for years. The result files are MS EXCEL workbooks. They are provided on a web page for download.

Data, tables and graphics are targeted for 3 groups interested in verification results: management, forecast users and forecasters / developers.

Management can track the development of forecast quality over the years by looking at carefully selected performance indicators.
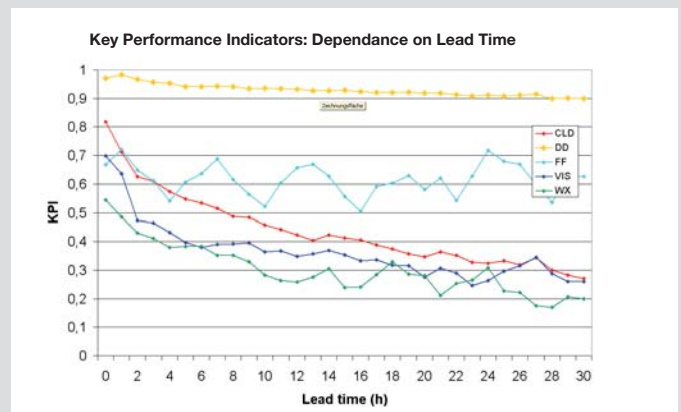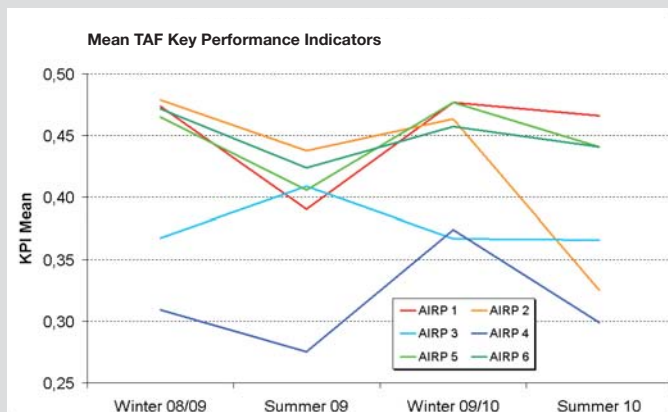
Developers and Forecasters are able to improve their forecasts and learn more about strengths and weaknesses from contingency tables. Data is ready for any further processing you might want to do.

Your **customers** can see how good your forecasts are in respect to their individual criteria and needs.

Real time analysis: When data is provided via OPMET data links, you can look at the performance of single TAFs

in real time by using our online verification tool. You can also use this tool for online syntax checking.

Comparisons: Many weather services use automatic TAF production systems, mostly as a guidance for forecasters. We can also check the quality of the AUTOTAFs so that you can find out how the forecaster is able to add quality to guidance products.

Coding errors: Correct coding is important as automatic processing of messa-

ges becomes more widespread. TAFs are therefore checked for correct syntax. You can receive records of incorrectly coded TAFs which will help you improve the quality of coded TAFs.

For more details and examples see:
**http://www.austrocontrol.at/
verification**

For more information and orders please contact:
verification@austrocontrol.at
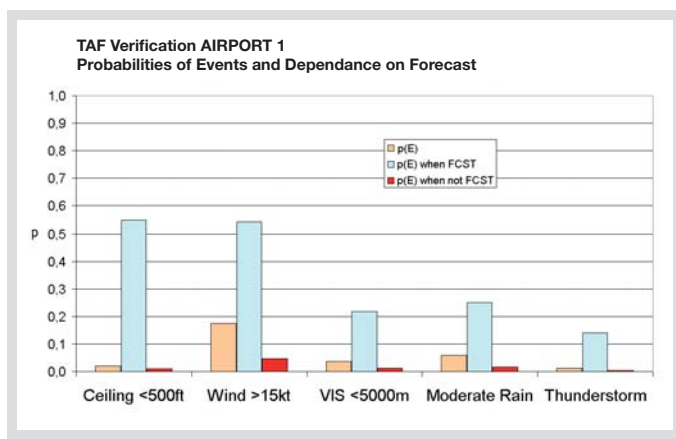
*5*5 Contingency Table for Minimum Visibility*

FCST \ OBS	<350	350 - <800	800 - <1500	1500 - <3000	≥3000	SUM
<350	357	98	42	147	395	1039
350 - <800	37	30	35	73	98	273
800 - <1500	14	19	53	103	124	313
1500 - <3000	33	13	42	186	576	850
>=3000	60	39	31	146	4012	4288
SUM	501	199	203	655	5205	6763

TAF Online Check: Example