

Product Description Document

Experimental Extended Traffic Flow Management (TFM) Convective Forecast (TCF)

Part 1 – Mission Connection

1. Product Description:

The Experimental Extended Traffic Flow Management (TFM) Convective Forecast (TCF) is a high resolution model blend denoting a high confidence graphical representation of forecasted convection meeting specific criteria of model echo top and convective precipitation fields. The Experimental Extended TCF graphics are produced every 2 hours and valid at 2 hour increments from 10 to 24-hours after issuance time. The Experimental Extended TCF potential polygons are derived from looking at agreement between the model solutions in a common location.

The Experimental Extended TCF domain is the Flight Information Regions (FIR) covering the 48 contiguous states and adjacent coastal waters.

2. Purpose/Intended Use:

Government and airline industry Air Traffic Management (ATM) decision makers need timely delivery of high-confidence, high-relevance forecasts of convection across the Continental United States and adjacent coastal waters. These forecasts will allow ATM decision makers to proactively and collaboratively initiate, amend, or terminate planned or active TFM initiatives, resulting in safe and efficient use of the National Airspace System (NAS).

Specifically, the Experimental Extended TCF requirements are designed to address three major purposes:

1. To provide an accurate representation of the convection of most significance for strategic planning/decisions for extended (10-24 hour) time of air traffic flow management;
2. To provide a common forecast baseline, as consistent as possible and shared among all meteorological organizations responsible for providing forecasts of convection to ATM extended (10-24 hour) planning within the Federal Aviation Administration (FAA)/Industry Collaborative Decision Making (CDM) processes and/or within commercial aviation organizations; and
3. To use as the authoritative source of convective weather forecast information for TFM strategic and extended (10-24 hour) planning and decisions which are collaborated between the government and industry.

3. Audience/Users:

The Experimental Extended TCF is used by ATM decision-makers in support of convective weather mitigation strategies within the NAS. It is designed to meet the needs of TFM decision makers at the FAA Air Traffic Control System Command Center (ATCSCC), FAA Air Route

Traffic Control Center (ARTCC) Traffic Management Units (TMU), and airline and corporate Flight Operations Centers (FOC).

4. Presentation Format:

The Experimental Extended TCF is available in graphical format at <http://testbed.aviationweather.gov/tcf/extended>.

5. Feedback Method:

The National Weather Service (NWS) is accepting comments through May 15, 2018, via the online survey below:

<http://www.nws.noaa.gov/survey/nws-survey.php?code=ETFMTCF>

Opportunities for face-to-face responses will occasionally occur in the context of media workshops, public outreach events, etc.

For further information please contact:

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Part 2 – Technical Description

1. Format and Science Basis:

The Experimental Extended TCF is a high-confidence forecast of convection produced through an automated process.

The graphics available at <http://testbed.aviationweather.gov/tcf/extended> have the following format.



COVERAGE		HEIGHT	
SPARSE 25-39%		TOPS: 100's OF FEET MSL	
MEDIUM 40-74%		25000 - 29000	290
		30000 - 34000	340
		35000 - 39000	390
		40000+	>400

Areas of convection are identified by blue polygons in the Experimental Extended TCF 10-24 hour forecasts at 2 hour increments. Coverage is indicated by broken hatching (25-39%) and striped hatching (40-74%). Within each Experimental Extended TCF polygon, echo tops are assigned by the maximum 75th percentile echo tops in the polygon from four High Resolution models. The echo tops are denoted as :

1. 25,000 - 29,000 feet MSL are identified as 290
2. 30,000 - 34,000 feet MSL are identified as 340
3. 35,000 - 39,000 feet MSL are identified as 390
4. 40,000 feet MSL and above are identified as >400

The echo tops classification is incorporated inside the polygon. If the shape or size of the polygon does not allow for inclusion of this data inside the polygon, a line will be drawn in a convenient location extending from the interior of the polygon to the label.

2. Training:

FAA conducts Experimental Extended TCF training with industry. This training package may be found at <http://tfmlearning.fly.faa.gov/>. NWS conducts training with the Center Weather Service Units and Aviation Weather Center.

3. Availability:

The Experimental Extended TCF is an automated 10-24 hour TCF product issued in 2 hour forecast increments by the Aviation Weather Center (AWC) in Kansas City, Missouri. It is available as web graphics 24 x 7.