

Product Description Document

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

Part 1 – Mission Connection

1. Product Description:

The 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 Extended TCF graphics are produced every 2 hours and valid at 2 hour increments from 10 to 30 hours after issuance time. The Extended TCF potential polygons are derived from agreement between the model solutions in a common location.

The 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 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 (10-30 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 (10-30 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 (10-30 hour) planning and decisions which are collaborated between the government and industry.

3. Audience/Users:

The 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, FAA Air Route Traffic Control Center Traffic Management Units, and airline and corporate Flight Operations Centers.

4. Presentation Format:

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

5. Feedback Method:

For further information or to provide feedback, please contact:

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Part 2 – Technical Description

1. Format and Science Basis:

The Extended TCF is a high-confidence convective forecast produced by an automated process. The graphics available at <http://aviationweather.gov/tcf/extended> have the following format.

Areas of convection expected to be indicated by composite radar reflectivity values of at least 40 dBZ are identified by blue polygons in 2 hour increments for 10-30 hour forecasts from the issuance time. Coverage is indicated by broken hatching (25-39%) and striped hatching (40-74%). Within each Extended TCF polygon, echo tops are assigned by the maximum 75th percentile echo tops in the polygon derived 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. An example of the Extended TCF product is depicted below.

Extended TCF INFO

Issuance: << 20181024_1700 >>
 Valid time: << 20181025_1300 >>

Extended TFM Convective Forecast

Valid: 1300 UTC Thu 25 Oct 2018



Aviation Weather Center (NOAA/NWS/NCEP)

Issued: 1700 UTC Wed 24 Oct 2018

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

2. Training:

The FAA conducts annual TCF training with industry. This training package may be found at <http://tfmlearning.faa.gov/>. The NWS conducts annual TCF training with the Aviation Weather Center (AWC) and Center Weather Service Units.

3. Availability:

The Extended TCF is available as an automated 10-30 hour TCF product issued every 2 hours in 2-hour forecast increments by AWC in Kansas City, Missouri.