

# **Product Description Document**

## **Experimental Collaborative Decision Making (CDM) Convective Forecast Planning (CCFP) Guidance**

### **Part 1 – Mission Connection**

#### **1. Product Description:**

The experimental Collaborative Decision Making (CDM) Convective Forecast Planning (CCFP) guidance is a graphical representation of convection meeting specific criteria of coverage, intensity, echo height, and confidence. The experimental CDM Convective Forecast Planning (CCFP) graphics are produced every 2 hours and valid at 2-, 4-, 6-, and 8-hours after issuance time.

The new experimental CDM Convective Forecast Planning (CCFP) will be automatically produced from the NOAA Short Range Ensemble Forecast (SREF), High Resolution Rapid Refresh (HRRR), HIRES ARW models, and will share the same format and dissemination method as the current, forecaster-produced Collaborated Convective Forecast Product (CCFP). The current CCFP guidance product is not produced during the period from November 1 through February 28. The experimental CDM will be made available during this period for user feedback.

#### **2. Purpose/Intended Use:**

The purpose of the experimental CDM CCFP guidance is to aid in the reduction of air traffic delays, reroutes, and cancellations influenced by significant convective events. From a user's perspective the experimental CDM CCFP guidance is designed to be used for strategic planning of air traffic flow management during the en route phase of flight. It is not intended to be used for traffic flow control in the airport terminal environment, nor for tactical traffic flow decisions. Specifically the experimental CDM Convective Forecast Planning (CCFP) guidance is used to support Federal Aviation Administration (FAA) -Airline CDM planning teleconferences which occur every two hours. It is a general strategic planning forecast baseline, as consistent as possible, shared among all meteorological organizations responsible for providing forecasts of convection to the air traffic managers within the FAA and/or within commercial aviation organizations.

As part of a larger effort to improve FAA and CDM decision making, the FAA has asked the NWS to experimentally produce the CDM Convective Forecast Planning (CCFP) guidance on two points. The first is to evaluate the need for convective weather information during the Collaborated Convective Forecast Product "off months" of November – February. The second is to evaluate the suitability of the experimental CDM Convective Forecast Planning (CCFP) in support of NAS strategic planning. The FAA/CDM vision is to supplement CDM Convective Forecast Planning (CCFP) with an event-driven, impact-based Collaborated Aviation Weather Statement and a continual meteorological collaboration between NWS and industry meteorologists.

### 3. Audience/Users:

The primary users of the experimental CDM Convective Forecast Planning (CCFP) guidance are FAA Traffic Flow Management and its CDM airline industry partners. The experimental CDM Convective Forecast Planning (CCFP) guidance is the primary convective weather forecast product for collaboratively developing a Strategic Plan of Operations (SPO). The SPO is finalized during the collaborative TELCONS hosted by the FAA Air Traffic Control System Command Center Strategic Planning Team and conducted approximately every 2 hours immediately after the issuance of the experimental CDM Convective Forecast Planning (CCFP) guidance.

### 4. Presentation Format:

The experimental CDM Convective Forecast Planning (CCFP) guidance is available via the National Weather Service Telecommunications Gateway (NWSTG) circuit in an ASCII coded text format. An example of the experimental CDM Convective Forecast Planning (CCFP) guidance ASCII coded text product is shown in the following graphic:

The format of the fields in the above graphic are described below.

#### General Format

```
CCFP ISSUED VALID  
AREA COVERAGE CONFIDENCE GROWTH TOPS SPEED DIRECTION VERT# LAT[1]  
LON[1] .... LAT[VERT#] LON[VERT#] LATT LONT  
LINE COVERAGE VERT# LAT[1] LON[1] .... LAT[VERT#] LON[VERT#]  
CANADA_FLAG {ON/OFF}
```

#### Forecast Header Format

CCFP	CCFP Forecast Header (UTC)	4 Characters
ISSUED	Forecast Issuance Time (UTC)	CCYYMMDD_hhmm
VALID	Forecast Valid Time (UTC)	CCYYMMDD_hhmm

#### Forecast Area Format

AREA	AREA Type Header	4 Characters
AREAL COVERAGE	Convective Coverage Code	
High	= 1	75-100%
Medium	= 2	40-74%
Low	= 3	25-39%

CONFIDENCE Confidence

High = 1 50-100%  
Low = 3 25-49%

GROWTH Convective Growth Code

This field will always = 3 (No Growth) (Convective Growth Code is not used in this CCFP)

TOPS Storm Height Code

FL400 = 1  
FL350-FL390 = 2  
FL300-FL340 = 3  
FL250-FL290 = 4

SPEED Speed = 0 Knots = 0

DIRECTION = 0  
(CCFP polygon movement including speed and direction is not depicted in this CCFP)

VERT# Number of LAT / LON Pairs Integer

LAT[x] LON[x] Vertical Latitude and Longitude Coverage Polygon

Latitude = LAT \* 10.0 degrees  
Longitude = LON \* -1 \* 10.0 degrees

LATT LONT Longitude and Latitude of Left Center of Box

Latitude = LATT \* 10.0 degrees  
Longitude = LONT \* -1 \* 10.0 degrees

Forecast Line Format

LINE LINE Type Header 4 Characters

LINE COVERAGE Convective Coverage Code

This field will not be used (Line is not used in this CCFP)

VERT# Number of Lat / Lon Pairs Integer



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## **Part 2 – Technical Description**

### **1. Format and Science Basis:**

Convection for the purposes of the experimental CDM Convective Forecast Planning (CCFP) guidance is defined as a polygon of at least 3000 square miles that contains:

- A coverage of at least 25% with echoes of at least 40 dBZ composite reflectivity; and
- A coverage of at least 25% with echo tops of FL250, or greater; and
- A forecaster confidence of at least 25%.

All three of these threshold criteria combined are required for any area of convection of 3000 square miles or greater to be included in a CCFP forecast. This is defined as the minimum CCFP criteria. Any area of convection which is forecasted NOT to meet all three of these criteria will NOT be included in a CCFP forecast.

### **2. Training:**

No additional training is required to generate or use the product.

### **3. Availability:**

The experimental CDM Convective Forecast Planning (CCFP) guidance will be available 7 days a week during the period from November 1, 2014 through February 28, 2015. The experimental CDM Convective Forecast Planning (CCFP) guidance is updated every 2 hours.

The CCFP will be available at: <http://www.aviationweather.gov/ccfp>

The ASCII files will be available to users via National Weather Service Telecommunications Gateway Under the following WMO Headers:

FAUS27 KKCI - 2 Hour Forecast

FAUS28 KKCI - 4 Hour Forecast

FAUS29 KKCI - 6 Hour Forecast

FAUS30 KKCI - 8 Hour Forecast