

# CDM Plugin

## 1. General

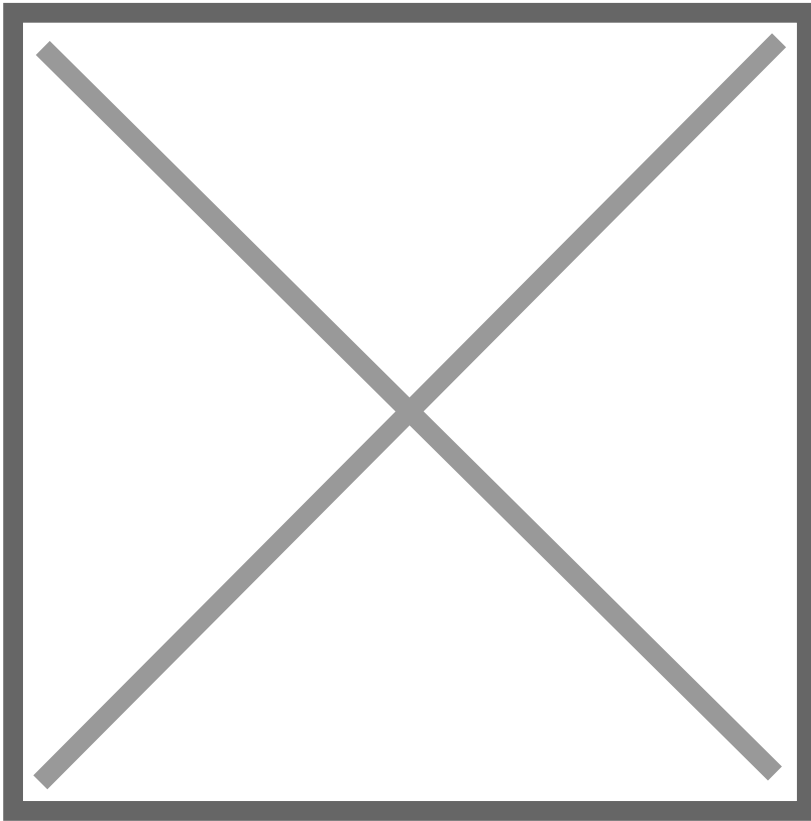
The CDM plugin simulates a version of the **Airport Collaborative Decision Making (A-CDM)** process, which is commonly implemented in real-world aviation. This process is designed to optimize the calculation of departure slots for aircraft while they are at their parking positions, aiming to reduce delays at the runway holding points.

In real life, (GMMN) and (GMMX) are the only airports with A-CDM implementation planned, but since we get more traffic in some of our events and to simplify/reduce workload on our ATCO's, we decided to implement it.

The station responsible for running the plugin is XXXX\_DEL. XXXX\_GND or XXXX\_TWR can run it if the latter is not available.

## 2. Setup and Connection

The plugin is implemented in the start-up list of Euroscope by default.



To connect to the plugin use this command: **.cdm master XXXX**

Note: **XXXX** refers to the airport's ICAO code

Below, you can find the explanation of the time codes:

**EOBT:** Estimated Off-Block Time. Time filed by the pilot in the flight plan.

(Only relevant on events with bookings)

**TOBT:** Target Off-Block Time Time. The pilot will be ready for pushback.

(will be set by ATC when the pilot calls ready)

**TSAT:** Target Start-Up Approval Time. The pilot can expect start-up approval from ATC.

**CTOT:** Calculated Take-Off Time Time. The pilot shall take-off at this time.

(Valid for -5/+10 minutes from **CTOT**)

### 3. Explanation of A-CDM process

## 4.1 IFR Clearance

When using CDM, ATCO's shall not issue Start-up clearance. After the IFR clearance, the controller should say "Report ready".

During events with allocated slots, we use EVCTOT to manage departure timing efficiently. In this setup, a TOBT is predefined for the pilot based on their slot position, and this TOBT is automatically transmitted to generate a TSAT.

### **Example:**

"RAM201 cleared to KJFK, ODAXA1D, initial FL050, squawk 6343."

~pilot readback~

“RAM201 readback correct, report ready.”

Now we wait for the pilot to call ATC again when ready for start-up (and pushback).

#### 4.2 Issuing **TSAT** and Start-Up Approval

As soon as the pilot calls ready on the Delivery frequency, the responsible ATC shall set the **TOBT** to the current time. This shall be done by left clicking on the **TOBT** column of the aircraft. Alternatively, you can do this by left clicking the **TSAT** of the Aircraft, this will automatically set the **TOBT** time to current.

image.png

Now ATC needs to check if the pilot can be issued a start-up approval or not. This can be done by checking the validity of the **TSAT**.

- TSAT within -5 and +5 minutes from current time → **TSAT dark green** → issue start-up
- TSAT not within -5 and +5 minutes from current time → **TSAT light green** → no start-up

If no start-up can be approved yet, ATC needs to inform the pilot about the **TSAT**:

“RAM924, your **TSAT** is 1605, standby and hold position.”

As soon as the **TSAT** turns into dark green the start-up can be approved.

“RAM201, hold position, contact Mohammed V ground on 130,600”

~pilot readback, contacts ground~

“RAM201, push and start approved facing South, 35R”

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~pilot readback~

When start-up is approved, the ATC shall set the start-up state in the Euroscope list. This will turn all A-CDM times of the aircraft to gray:

In case the pilot misses the TSAT window, a new TSAT has to be generated.

#### 4.3 CTOTs

All **TSATs** are calculated according to the **CTOTs**. **CTOTs** are valid for -5 and +10 minutes.

An aircraft is not allowed to depart if the **CTOT** is invalid.

During events with allocated slots, we use EVCTOT to manage departure timing efficiently. In this setup, a TOBT is predefined for the pilot based on their slot position, and this TOBT is automatically transmitted to generate a TSAT.

Outside of events, we operate in "real mode," where the default setting aligns EOBT with TOBT. This means the pilot's filed EOBT automatically becomes their TOBT, and the system calculates TSAT accordingly. If there's no congestion, TOBT and TSAT will align (indicating no delay), and controllers can issue startup (STUP) at their discretion. In such cases, CDM might not even be required. However, for real mode to function smoothly, pilots need to file accurate EOBTs, which often isn't the case. Many pilots don't follow their SimBrief EOBTs and deviate significantly.

In scenarios where adjustments are necessary:

- **Scenario A:** The EOBT is unrealistic (e.g., hours ahead or behind), and the TOBT must be manually corrected.

- **Scenario B:** The pilot calls ready before or after their TOBT, requiring the controller to update the TOBT to the current time to reflect their readiness.

If a pilot's TSAT is expected to differ from their TOBT, it's good practice to inform them in advance. This makes them aware of potential delays, allowing them to adjust their planning accordingly.

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Revision #3

Created 26 December 2024 22:09:59

Updated 5 February 2025 12:22:37 by Dhiaeddine