1. **Purpose of This Order.** This order defines and establishes procedures using the Converging Runway Display Aid (CRDA) tool or its enhancements for merging, converging, or parallel route sequencing.

2. **Background.** CRDA was originally designed as a planning or reference tool for use during Dependent Converging Instrument Approaches (DCIA). CRDA can also help plan an aircraft sequence on several types of merging routes, including curved path approaches merging with straight-in approaches, dual Standard Terminal Arrival Routes (STARs) that merge into one route, crossing/merging arrival routes, parallel runway operations, and departure routes from different airports that merge over a common fix.

   This order provides for the use of CRDA as a planning or reference tool when applying separation. CRDA is not a form of separation.

3. **Audience.** This order applies to the Air Traffic Organization (ATO) service units: Air Traffic Services, Mission Support Services, and System Operations Services.


5. **Cancellation.** FAA Order JO 7110.663, Merging, Converging, Parallel Route Sequencing (MCPRS) with Converging Runway Display Aid (CRDA), dated November 4, 2022, is canceled.

6. **Explanation of Policy Changes.**
   a. Section 7 (old) removed. Previously fielded system does not require additional approval(s).
   b. Section 8 (new), Subparagraph b clarifies CRDA as a reference tool, and adds “but not limited to.”

7. **Definitions.**
a. **Ghost Target Data Block.** Limited data block associated with the ghost target (see Figure 1).

b. **Ghost Target.** An artificial aircraft symbol (see Figure 1) whose position is the translated (x, y) position of an aircraft with respect to a reference point and a reference line (or path) onto another reference point and reference line (or path).

Note: The position symbol of the ghost target is site adaptable and will not be a slant.

c. **Parent Aircraft.** Aircraft used to generate ghost target.

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**Figure 1. Ghost Target and Data Block Information**

- **Ground Speed**
  - The speed shown is an exact match to the parent aircraft's data-block ground speed.

- **Weight Class or Wake Turbulence Category**
  - The letter will correspond to the one in the parent aircraft's data-block.

- **Position Indicator**
  - The virgule depicts the position of the ghost target on the extended runway centerline correlated with the position of the parent aircraft on the curved path approach, relative to the threshold of the assigned runway.

- **Parent Aircraft Call Sign**
  - The aircraft's call-sign will appear if the controller clicks (slew-enter) on the ghost target data-block. A second click on the data-block will hide the call-sign.

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8. **Allowable uses of CRDA during sequencing of flights on merging, converging, or parallel routes.**

   a. CRDA is a planning or reference tool for use when applying separation. The provisions of FAA Order JO 7110.65, Air Traffic Control, or orders establishing separation (such as FAA Order JO 7110.110 for DCIAs), or orders or waivers for use during Established on RNP (EoR) operations, apply during the use of CRDA.

   b. CRDA may be used on any merging, converging, or parallel route, including, but not limited to:

      (1) Between a curved path approach (or conventional downwind) and the same runway straight-in approach (Fig 2).

      (2) Between merging/crossing arrival routes, e.g. STARs (Fig 3).
(3) Between merging approach transitions to the same and/or parallel runways (Fig 4).
(4) Between departure routes from different airports that merge at the same fix (Fig 5).
(5) Between crossing routes (Fig 6).

**Figure 2. Example of a Merge on Final - Curved Path (RNP)**

- A 'slew enter' on the ghost target brings up the full call sign
- The speed in the ghost target identically matches the speed of the actual parent aircraft
Figure 3. Example of Arrival Routes – STAR to STAR

Figure 4. Example of Parallel Runways – ‘Tie-Ghosting’
Figure 5. Example of Merging Departure Routes – SID to SID

- A 'slew enter' on the ghost target brings up the full call sign.
- The speed in the ghost target identically matches the speed of the actual parent aircraft.

Figure 6. Example of Crossing Routes

This order is distributed to ATO Service Units: Air Traffic Services (AJT), Mission Support Services (AJV), and System Operations Services (AJR); ATO Safety and Technical Training (AJI); Air Traffic Safety Oversight Service (AOV); the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.

For Michael R. Beckles
Director, Policy, AJV-P
Mission Support Services