

Procedural separation

With procedural separation, two aircraft can fall below the 3 NM required for radar separation under certain circumstances .

Procedural separation is used in the following examples:

Independent parallel approaches (IPA)

In Frankfurt, Munich and Berlin, under certain conditions so-called **independent parallel approaches** (IPA) are possible. This means that two aircraft may approach the respective north and south runway in parallel. At this point, they have neither 3 NM nor 1,000 feet of separation. Nevertheless, the procedure is legal, as both aircraft are on non-overlapping flight paths. As the aircraft come relatively close to each other at comparatively high speeds, certain **conditions** must be met. These include the following:

- Both aircraft must perform a precision approach (ILS, GLS, RNP*)
- The final course is intercepted by an angle of maximum 30 degrees
- Before turning on the final course, the aircraft shall fly at least 1 NM straight and in level flight
- Before intercepting the glide path, the aircraft shall fly at least 2 NM in level flight on the final course
- Both aircraft must be established on the LOC **before** falling below 3 NM or 1,000 feet
- An NTZ (non-transgression zone) must be displayed on the radar - if an aircraft enters this zone, the parallel aircraft must go around
- A controller must monitor compliance with the procedure for each runway
- There must be no meteorological conditions that could cause aircraft to deviate from their track (e.g. thunderstorms)

*RNP approaches only when locally permitted - details may be found in the SOPs

Details and exceptions can be found in the SOPs of the respective airports.

Dependent parallel approaches (DPA)

In addition to independent parallel approaches, there are also **dependent parallel approaches** (DPA). Here, too, two aircraft may fly with less than 3 NM separation, but not completely parallel. In Frankfurt, for example, 1.5 NM must still be maintained between the aircraft. The requirements for this are less strict than for IPAs.

Details can be found in the SOPs of the respective airports.

Independent parallel departures

In Berlin and Munich, there are departure routes with non-intersecting flight paths and obstacle protection areas which are far enough apart to use the departure routes simultaneously. This is why they are referred to as **independent parallel departures**. Here too, the aircraft come closer to each other than 3 NM and/or 1,000 feet. As with independent parallel approaches, the controllers must strictly monitor compliance with the routes in order to be able to react immediately with traffic information and avoidance instructions in the event of a deviation.

Details can be found in the SOPs of the respective airports.

Geographical separation

At certain airfields, special VFR aircraft are considered separated to IFR if they are located above a geographically defined point (e.g. a roundabout, a highway intersection, a sports facility, etc.). Even then, the distance may be less than 3 NM. This procedure is often only permitted for certain SVFR pilots (e.g. police and rescue helicopters).

The use of geographical separation on Vatsim must be explicitly regulated in the SOPs, otherwise it is not permitted.

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