NATS

NAV CANADA

Reduced Longitudinal Separation Minimum

RLONG OVERVIEW

- RLongSM (Reduced Longitudinal Separation Minimum) is a reduction in the longitudinal separation standard which is achieved by utilising ADS-C (ADS-Contract) periodic position reports. It is anticipated that the use of RLongSM will enhance the provision of fuel efficient profiles, by accommodating mid-ocean altitude changes.

- Initially RLONG will be introduced in the Shanwick and Gander Oceanic Control Areas, for eastbound and westbound flights that do not subsequently enter another Oceanic Control Area.

RLONG CRITERIA

- RLong separation is only to be applied when both the aircraft in question meet the following RLongSM criteria;
- Flights are MNPS certified
- Periodic contracts suitable for RLongSM have been acknowledged
- CPDLC connection
- The oceanic route remains within the Shanwick and Gander OCAs, with the flight subsequently exiting into domestic airspace

LIMITATIONS ON RLONG

- The use of the RLongSM shall be limited to;
- Flights within, or above, MNPS airspace
- The following aircraft is no greater than Mach 0.04 faster than the preceding one.
- Where the following aircraft is faster, the en-route controller shall ensure the speed difference is at or less than Mach 0.04, otherwise an alternative form of separation must be applied.
- A maximum of **four** aircraft in trail, flying along the same track to exit point, when the longitudinal separation is **greater** than 5 minutes between each aircraft at the exit point.
- A maximum of **three** aircraft in trail, flying along the same track to exit point, when the longitudinal separation **is** 5 minutes between each aircraft at the exit point.

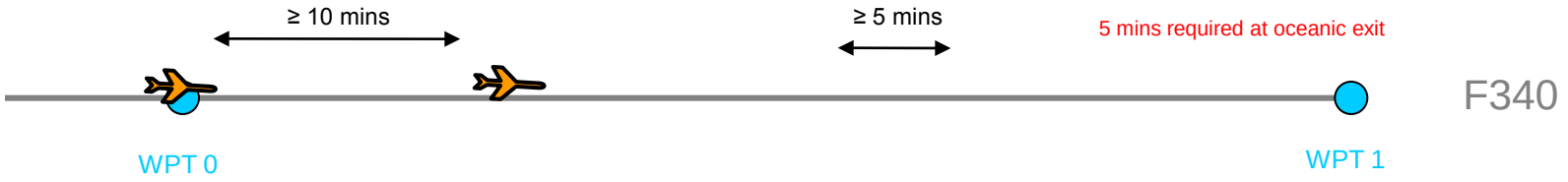
RLONG USEAGE

- In Trail – A RLongSM will be used by oceanic en-route controllers to clear flights to follow one another with reduced longitudinal separation.
- Climb Through / Descend Through – A RLongSM will be used in the en route phase of oceanic flight to allow a flight to climb or descend through the level of at least one other flight without standard longitudinal separation being maintained during the climb or decent.
- Climb To / Descend To – A RLongSM will be used in the en route phase of oceanic flight to allow a flight to climb or descend to the level of at least one other flight where standard longitudinal separation will not exist.

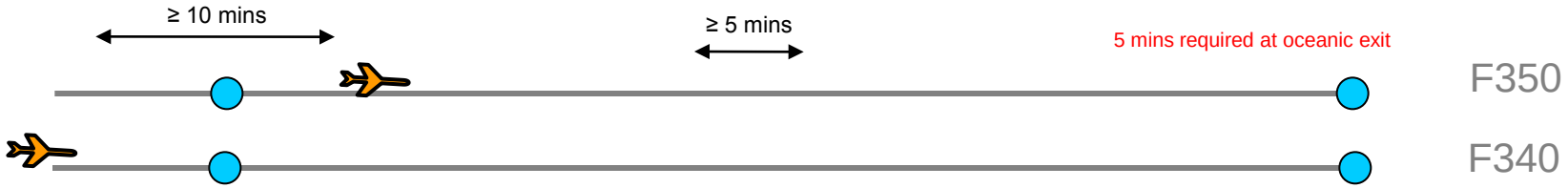
RLongSM Operational Scenarios

Examples of the uses of RLongSM 5 minute separation

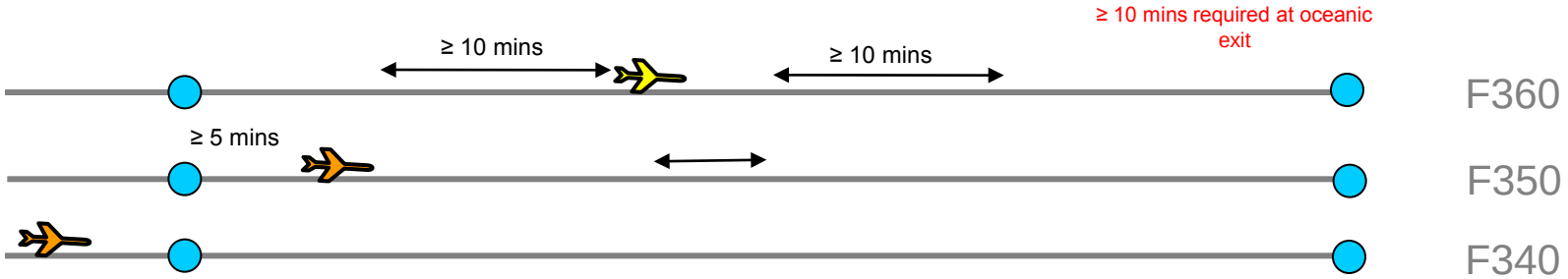
RLongSM In-trail - both aircraft ADS-C, CPDLC at the same level with ≥ 5 mins sep



RLongSM Climb-to - both aircraft ADS-C, CPDLC and end up at the same level with ≥ 5 mins sep

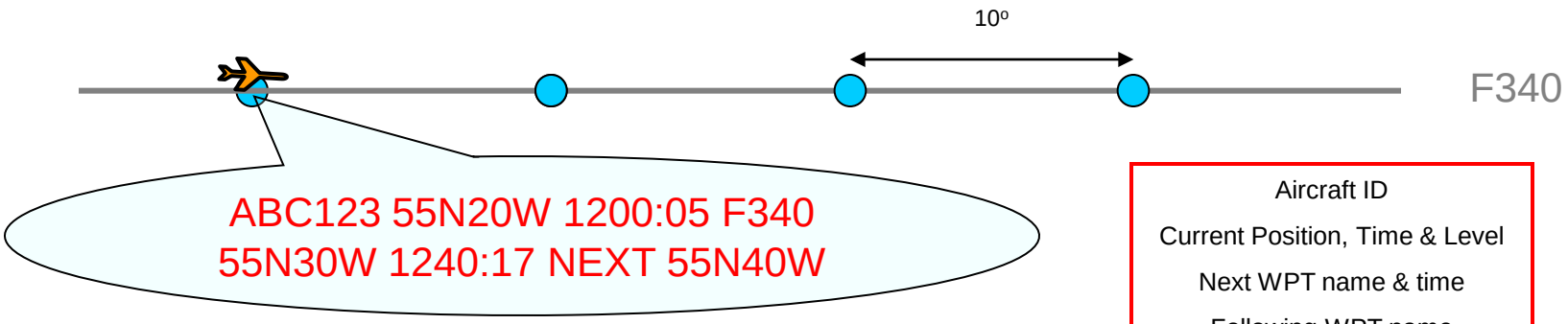


RLongSM Climb-through - both aircraft ADS-C, CPDLC share same level momentarily, (with ≥ 5 mins) but aircraft end with ≥ 10 mins sep at final level, with Non RLong flight

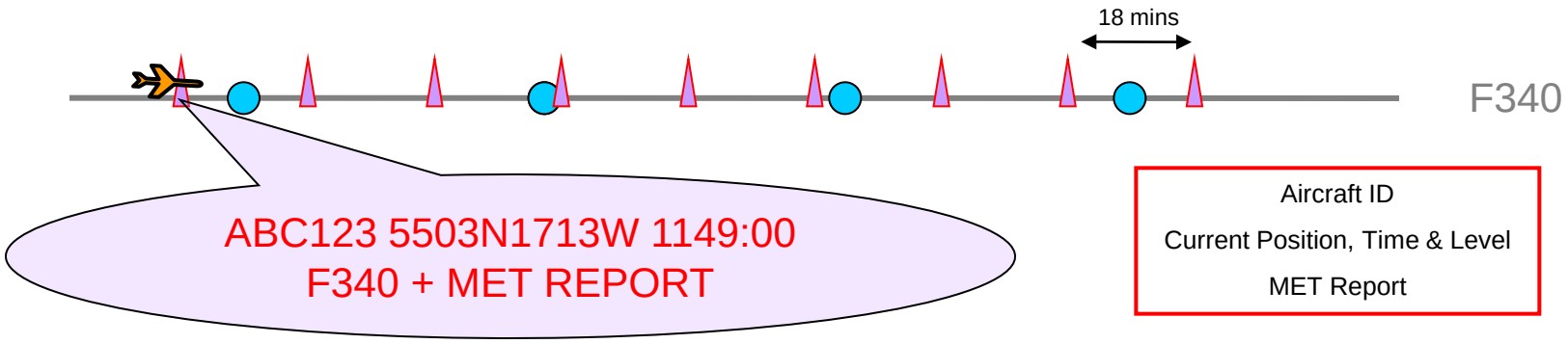


Current and RLong ADS-C Position reporting on the NAT

Current NAT **Waypoint Contract** **distance-based reporting at 10º**



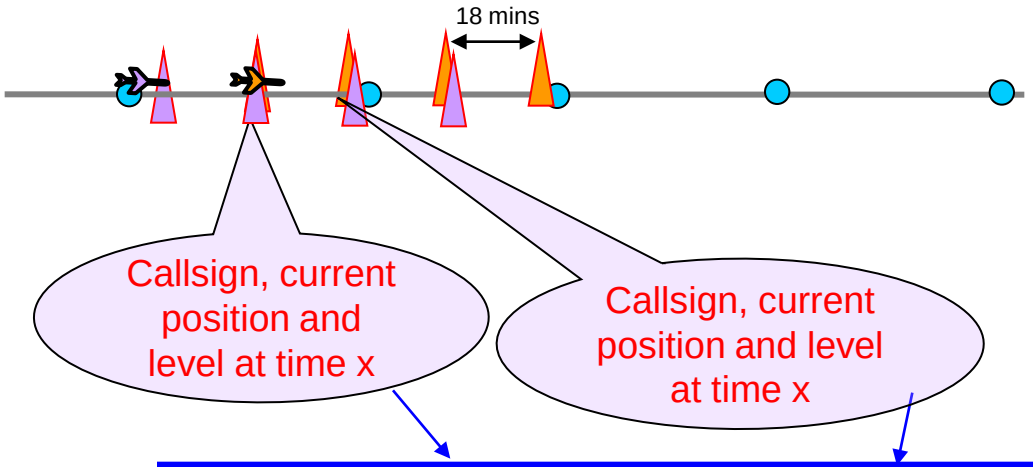
RLong NAT **RLongSM Periodic Contract** **18 minute reporting (additional to above)**



RLongSM conformance checking

Periodic report received every 18 minutes

Periodic reports are used to check that a flight is conforming to the expected elapsed times between reporting points. If the elapsed times are monitored, then the RLongSM time separation is also checked.



- The System will check that the position in the RLongSM report is within the conformance limits of where it was expected to be.
- It does this by comparing the actual position received in the RLongSM periodic report, with the System calculated position that it believes (based on previous reports, System Met, and Mach number) that the flight should be at.