

**NATS**



# **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, without changing basic
- Initially RLONG will be introduced unilaterally – eastbound only

# RLONG CRITERIA

- For eastbound aircraft within the Shanwick area, RLong separation is only to be applied when both the intruder and cleared conflicting flight(s) meet the following Unilateral RLongSM criteria;
- Flights are MNPS certified
- Periodic contracts suitable for RLongSM have been acknowledged
- Active CPDLC connection
- Eastbound route remains south of 61N and at or north of 45N within Shanwick 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 USAGE

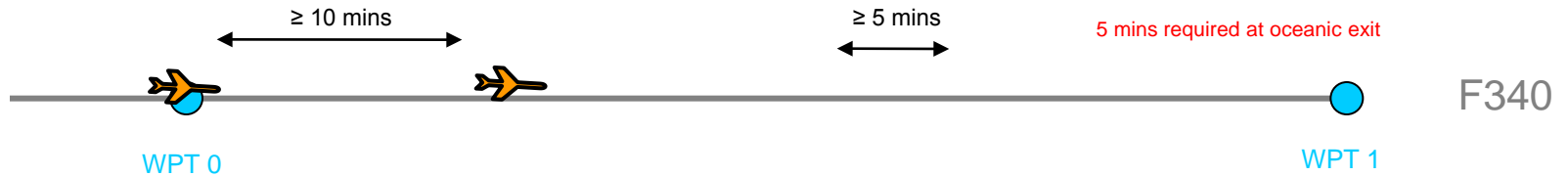
- In Trail – A RLongSM will be used by oceanic en-route controllers to clear flights to follow one another with reduced longitudinal separation.
- Climb Through / Descend Through – A RLongSM will be used in the en route phase of oceanic flight to allow a flight to climb or descend through the level of 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.

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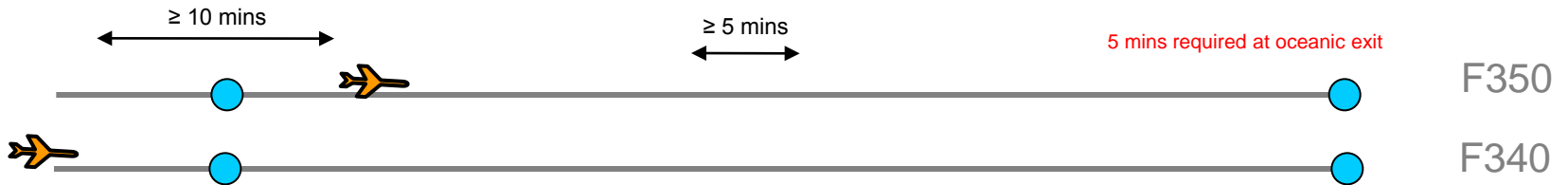
# RLongSM Operational Scenarios

Examples of the uses of RLongSM 5 minute separation

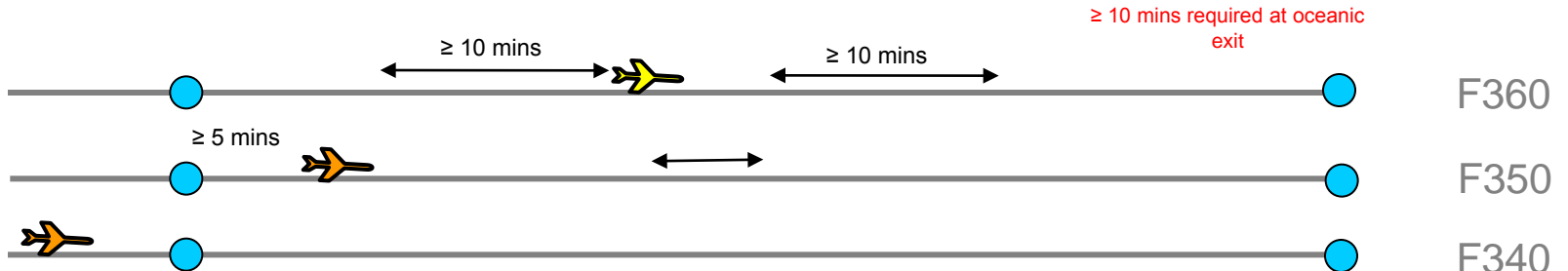
**RLongSM In-trail** - both aircraft ADS-C, CPDLC at the same level with  $\geq 5$  mins sep



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



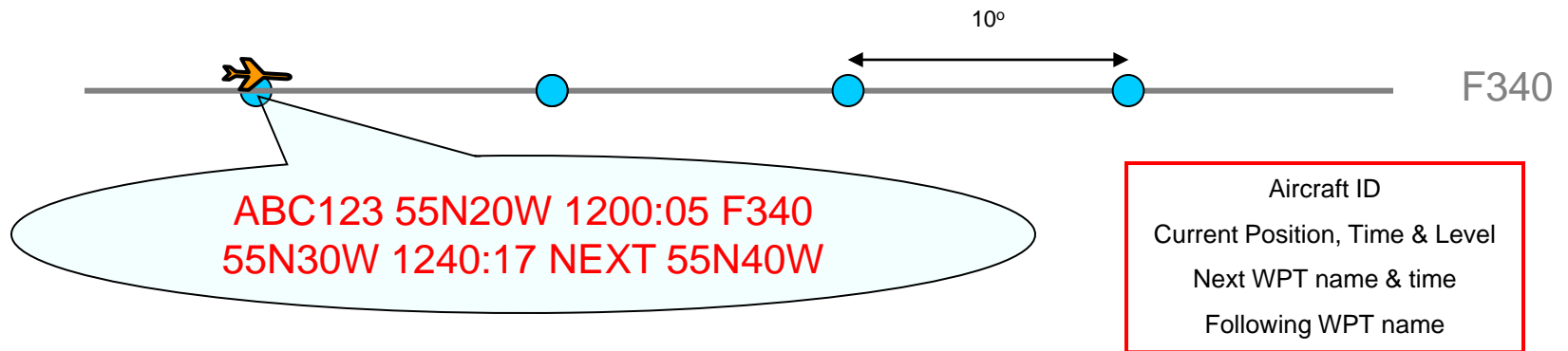
**RLongSM Climb-through** - both aircraft ADS-C, CPDLC share same level momentarily, (with  $\geq 5$  mins) but aircraft end with  $\geq 10$  mins sep at final level, with Non RLong flight



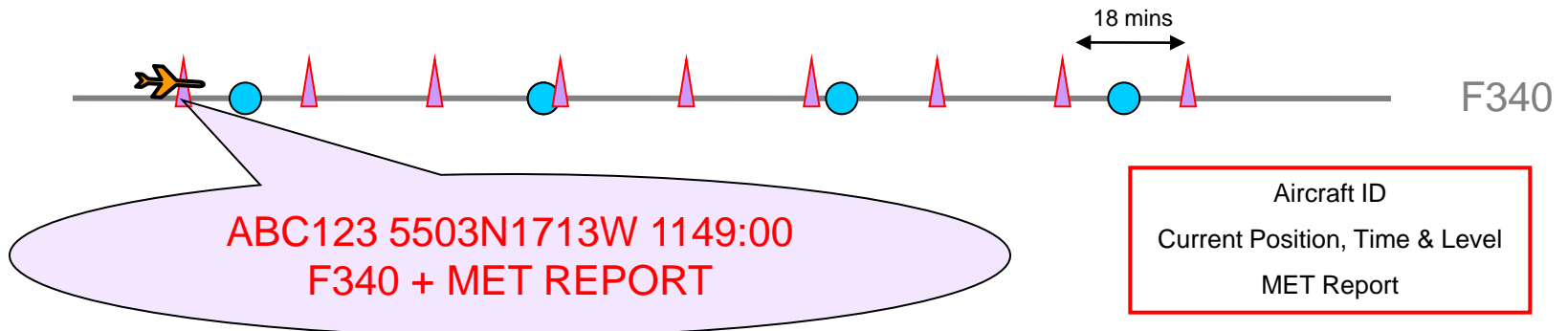
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# Current and RLong ADS-C Position reporting on the NAT

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



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



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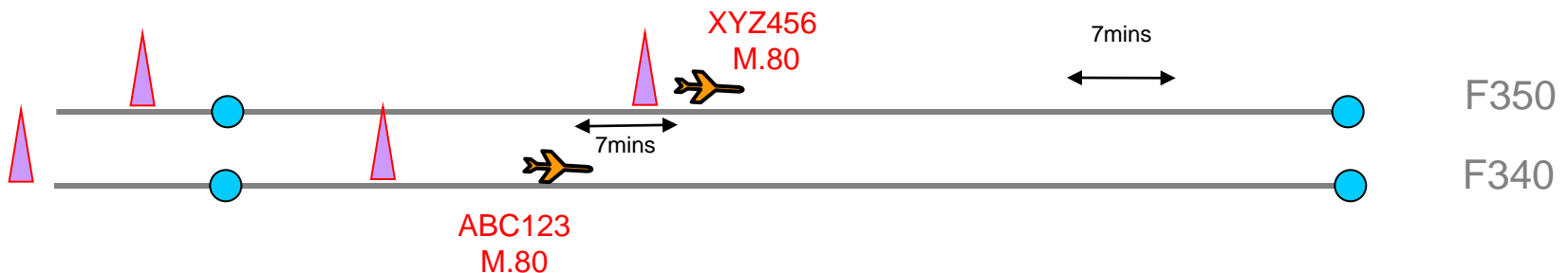
# RLongSM Operational Set up

When the controller Conflict Probes ABC123's request for F350, SAATS first checks to see if Standard (i.e. Non RLong separation) exists.

Standard (i.e. Non RLong separation) does not exist.

Because the Intruder flight has RLong periodic, SAATS then Conflict probes to see if RLong separation exists. (All flights without periodic contracts are Conflict probed using standard longitudinal separation parameters.)

No conflict is found.



RLong separation does exist, therefore SAATS checks to see

- All flights have established CPDLC connection.
- All flights have periodic contract that meet the RLong criteria (reports every 18 minutes).

Conflict Window opens to display the results of the Conflict probe.

RLong separation can be used.



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**THE END**