Airbus altitude capture enhancement to prevent TCAS RAs

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In a context of continuously increasing traffic, analysis of EUROCONTROL reports and airline feedback leads to the finding that more than half of RAs triggered by TCAS systems in RVSM airspace are due to current tuning of altitude capture control laws.

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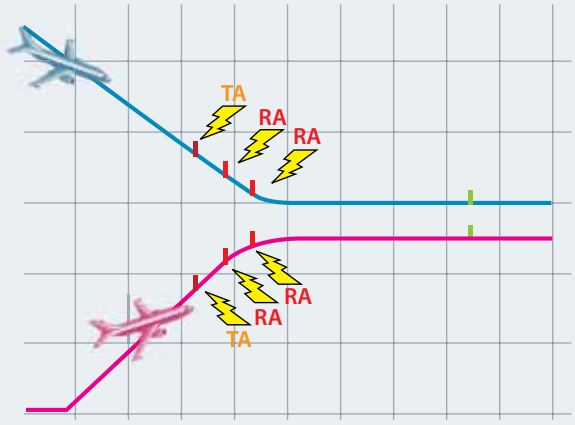
Indeed, in a situation of level-off encounter (i.e. an aircraft capturing with another one levelled 1000ft beyond the intended capture level), the TCAS system ignores aircraft objectives. It anticipates conflicted trajectories in a timescale which is less than RA-triggering thresholds due to the high vertical speed rates reached with current altitude capture control laws. Those RAs are judged operationally "nuisance", since from a crew's viewpoint, the job has been done correctly.

Although considered a nuisance, those RAs have to be followed, leading to traffic perturbations and stressful situations.

A new safety initiative has been launched by Airbus in response to airline requests to resolve this issue of nuisance RAs occurring during level-off manoeuvres. The objective of the so-called "TCAP" developed function is to reduce the number of these RAs by providing a new altitude capture control law, which "softens" aircraft arrival at a selected flight level in the presence of air traffic.

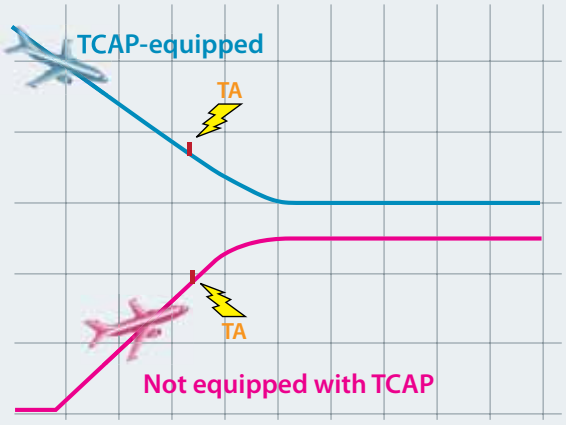
The expected benefit from the new Airbus solution is a prevention of almost 100% of nuisance RAs occurring during level-off manoeuvres for TCAP-equipped aircraft.

This new altitude capture enhancement will be available on the A380, A350 and other Airbus fly-by-wire aircraft in the near future.



Classical ALT → 2 RAs

BEFORE



New ALT → No more RA

Benefit for the non-equipped a/c also!

AFTER