



Toulouse, March 5th, 2003

Subject: Airbus position on VDL mode 4 in the NUP 2 programme.

1 Airbus position on ADS-B datalink

Airbus supports the FAA, Eurocontrol and JAFTI recommendations for use of the 1090 ES medium for the implementation of initial ASAS Package I applications on Air Transport Aircraft. 1090 ES capability will be available on Airbus aircraft from 2003.

Later on, the implementation of future ASAS applications in high-density airspace will likely justify a second link.

The first results from different studies performed by FAA/Eurocontrol, Honeywell... and our antenna isolation evaluation based on the ARINC 716 and 750 requirements, show many constraints due to VDL mode 4 radio interference issues with other VHF transceivers (voice, mode A, mode 2...) installed on the aircraft.

Based on these constraints, the installation study made by Airbus in NUP 2 did not yet allow finding an acceptable solution from an industrial standpoint (antenna installation, new VHF transceivers installation and avionics architecture).

The RFP issued by Airbus beginning of 2002 for the development of a VDL mode 4 ARINC transceiver for installation on-board an Airbus single aisle aircraft did not allow finding an acceptable solution that could fit into the available budget.

In addition, we know that the VHF frequency band is already congested and that an allocation for VDL mode 4 channels should be difficult to obtain, with a short expected life before the industry needs to find a more durable solution.

It should be noted that the study so far has showed difficulties with repetitive VHF transmitters but not difficulties with the STDMA protocols of VDL mode 4.

As a conclusion, if the performance requirements studies demonstrate that the implementation of ASAS applications require a second link, the known airborne architecture and cost installation issues lead Airbus to envisage the second link in the L-band (better interference situation for antennae installation, possible integration of the L-band transceivers...).

Therefore, Airbus recommends that studies should be performed to evaluate an eventual second link in the L-band using "time-synchronised" TDMA protocol.

2 Airbus position on NUP 2 activities

Therefore, Airbus will not pursue the development of an ARINC VDL mode 4 transceiver in NUP 2. This implies that no service bulletin for ADS-B out through VDL mode 4 will be issued and consequently no installation onboard revenue aircraft will be performed.

Obviously, Airbus remains deeply involved in the development and implementation of ASAS applications with the objective to validate airborne ASAS Package I applications in terms of flight crew acceptance, operational benefits, safety and performance assessment, interoperability, technical feasibility and impacts on the airborne architecture.

Airborne ATSAW applications will be validated on an A320 integration test bench through real equipment whereas more advanced airborne ASAS Spacing applications will be evaluated on a software cockpit simulator.



For the validation of airborne ATSAW applications, a Traffic Computer equipment needs to be developed. This equipment will be based on the current TCAS equipment and will incorporate among others the capability of fusing and correlating traffic data received through TCAS, ADS-B and TIS-B.

Taking into account that the budget associated to that development is not yet identified in the overall budget picture of the NUP 2 consortium, we propose to use Airbus budget corresponding to the cancelled part associated to VDL mode 4 activities to fund the development of that equipment.
