International Civil Aviation Organization
Automatic Dependent Surveillance – Broadcast (ADS-B)
Study and Implementation Task Force

Brisbane, Australia, 24-26 March 2003

Agenda Item 3: Evaluate information available on the selection of link technology as the preferred technology for Asia/pacific Region

OVERVIEW OF CANDIDATE ADS-B LINK CHARACTERISTICS

SUMMARY

This paper compares various features/capabilities of the 3 candidate links

(Presented by Australia)

1. Some link characteristics

The attached paper compares some characteristics of the 3 proposed data links proposed for ADS-B.

2. Recommendation

It is recommended that the meeting note the listed characteristics of the candidate links.

Contact: Greg Dunstone
Senior Engineering Specialist
Airservices Australia
Email: greg.dunstone@airservicesaustralia.com

	1090Mhz Mode S	UAT	VDL Mode 4
Operating Frequency	1090Mhz. Frequency is available worldwide by international frequency assignment, including protection from military allocation.	Proposed in DME band No worldwide standard agreed In USA ~978 Mhz in USA.	Proposed in aeronautical VHF band. Multiple channels required. No worldwide standard or allocation agreed.
Data rate	1 megabit per second	1.041667 megabit per second	9.600 bps, 19.200 or 38,400 bits per second
Channel access	Pseudo random transmission	Pseudo random within allocated ADS-B Block for downlink. Fixed allocation for uplink.	Self organising time slots. Slots synchronised by GPS reception.
Air-Ground range	> 200 Nm depending on ground system antenna gain & ground system sensitivity.	> 200 Nm depending on ground system antenna gain & ground system sensitivity.	> 200 Nm depending on ground system antenna gain & ground system sensitivity.
ICAO standards	Mode S SARPS Annex 10 Amendement 77 via SCRSP	No ICAO SARPS exist at this time	Annex 10 via AMCP
RTCA/Eurocae	DO260, DO260A, DO181C, ED73A, ED86	DO282	Eurocae ED108 “Interim MOPS for VDL Mode 4 Aircraft Transceiver for ADS-B”
Form Fit	AEEC 718A	Not available at this time	Eurocae ED108
TSO	JAA 2C112, FAA C112 partially	Not available at this time	Not available at this time
Implémentations	Software modification to existing transponder or standalone transmitter using existing antennas. Needs wiring to FMS/GPS/IRS. New avionics typically required for General aviation.	New avionics. Transmitter and receiver required. New antenna may be required.	New avionics. Transmitter and receiver required.