

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

**Agenda Item 7 Aeronautical air-ground and air-to-air
: communications**

IATA POSITION ON AERONAUTICAL AIR GROUND COMMUNICATIONS NEEDS

(Presented by the International Air Transport Association (IATA))

SUMMARY

Future development of the VHF air-ground infrastructure should converge to a single globally harmonized, compatible and interoperable system to reduce the proliferation of solutions based on national or regional priorities.

IATA Member airlines do not support the implementation of VDL Mode 3 considering the uncertain benefits and limited capacity gain. They also do not support implementation of VDL Mode 4 as it would add to the proliferation of VHF system alternatives and delay the needed overhaul of the VHF system.

States should closely cooperate in research and development towards the future air-ground communication infrastructure before requesting development of ICAO provisions and before proceeding with local and regional solutions.

To accommodate traffic growth and increasing data link services there is an urgent need to establish a single scenario for the development of the future aeronautical communication infrastructure. States, organizations and industry are encouraged to work in unison towards this solution.

Action by the conference is in paragraph 2.

¹ Arabic, English, French and Spanish versions provided by IATA.

1. INTRODUCTION

1.1 Information management is the cornerstone of a global air traffic management system that is safe, secure and efficient. Information has the power to bind air traffic management (ATM) services into a cohesive global system, which serves the common goal of creating airspace capacity to sustain an economically viable air transport infrastructure.

1.2 To ensure that information is available at the right time and place, an evolutionary communication infrastructure is required. Considering the fundamental role of communications in aviation, commitment and synergy needs to be established with all stakeholders. This synergy can only be obtained when there is an agreed, common road map on the air-ground communication system.

1.3 This working paper introduces the IATA Member airlines' position on the use of the very high frequency (VHF) spectrum allocated to aviation safety communications and addresses the international airline community's concern about the proliferation of air-ground data link solutions. It encourages States and organizations to closely co-operate to reach a globally harmonized, compatible and interoperable infrastructure.

2. PRESENT SITUATION

2.1 International airlines are concerned by increasing regional disparities that require multiple equipment carriage for similar air traffic control (ATC) services. The ICAO Special COM/OPS Divisional Meeting in 1995 agreed that 8.33 kHz channel spacing would be the immediate solution to VHF congestion in Europe and recommended that ICAO provisions be developed for VDL Mode 3.

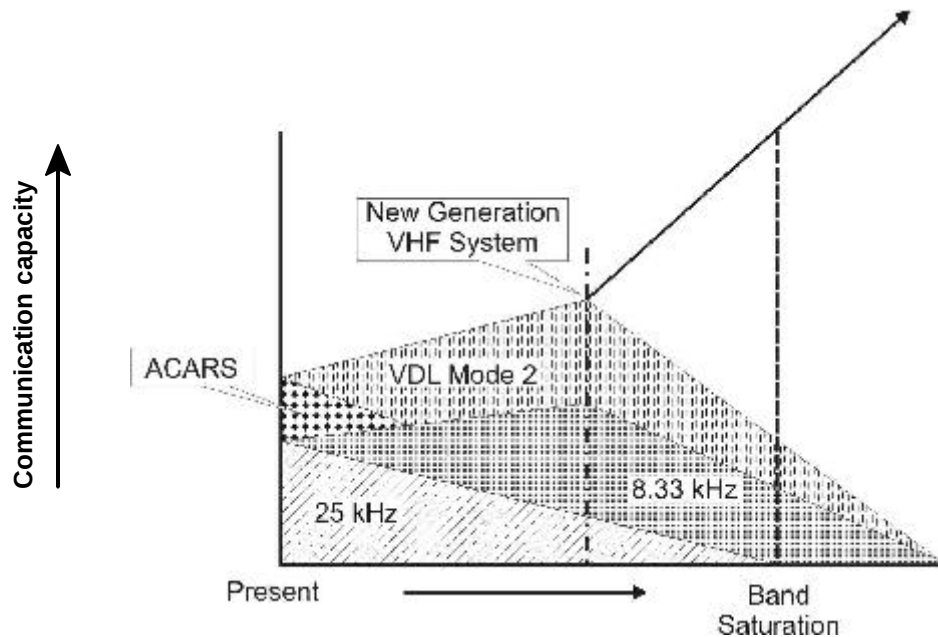
2.2 Deployment of the 8.33 kHz channel spacing in Europe has provided a substantial low cost option to increase the number of voice channels. Therefore the introduction of VDL Mode 3 for voice communications is highly unlikely in Europe.

2.3 Following the COM/OPS Divisional in 1995, the United States actively pursued the development of VDL Mode 3 integrated voice and data link system to solve forecast United States VHF voice congestion. The result is that the present VHF communication implementation road maps for United States and European airspace differ, imposing additional cost to users.

2.4 IATA Member airlines in 1995 supported the COM/OPS Divisional Meeting decision. They fully cooperated with implementation of 8.33 kHz channel spacing in European airspace and diligently worked on implementation of an aeronautical telecommunication network (ATN) compliant VDL Mode 2 subnetwork to initiate ATC data services in continental airspace. Monitoring the implementation of 8.33 kHz and the introduction of controller-pilot data link communications (CPDLC) over VDL Mode 2, the IATA position was established at the end of 2002 to support 8.33 kHz rather than VDL Mode 3 to relieve voice congestion where needed. Meanwhile there is growing consensus that capacity in the VHF band will reach its limit due to the need to continue operation of the present systems.

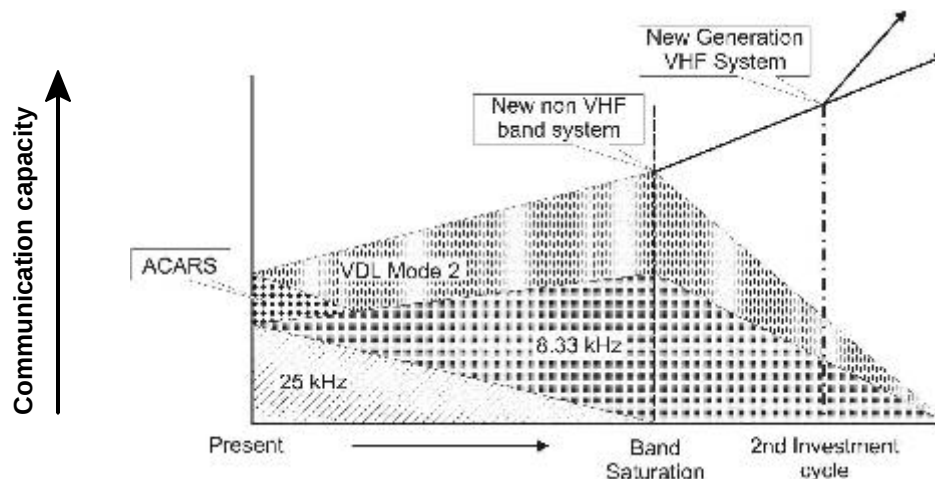
3. LONG TERM

3.1 In order to ensure capacity, improve services and cost effectiveness, and increase spectrum efficiency in the VHF band, a new generation system should be developed. The new system should be implemented well before band saturation occurs so that adequate bandwidth can be allocated, thereby preventing the present systems operating in the VHF band from constraining the newer system.



3.2 Implementation of VDL Mode 3 and/or VDL Mode 4 would add to the proliferation of VHF system alternatives and delay the needed overhaul of the VHF system. The implementation of VDL Mode 2 will improve the speed and data capacity over the aircraft communications addressing and reporting system (ACARS) to sustain the growth in data link communication without increasing band congestion. The lifetime of VDL Mode 3 and/or 4 and return on investment would be rather short as these systems are not likely to provide much additional capacity. To justify the investment in VDL Mode 3 and/or VDL Mode 4 it would be essential to assess whether they can act as the platform to transition to a state of the art common VHF air-ground communication system in all ICAO regions.

3.3 Considering the high risk of VHF band saturation in the scenario under 3.1, alternative systems operating in other frequency bands may be required to handle additional required capacity and to free VHF spectrum for implementation of a new VHF system without constraints. To accommodate the anticipated high volume of data communication in the new ATM operating concept it is preferable that broadband systems be considered.



3.4 The time element plays an essential role as a lack of air-ground communication capacity could hamper the successful implementation of the new ATM operational concept accommodating the needed growth in ATM capacity. Hence both options as described in 3.1 and 3.3 should be urgently assessed for need and feasibility before standardization or implementation can be pursued.

4. ACTION BY THE CONFERENCE

4.1 To ensure an efficient use of the VHF radio spectrum and development of a single globally harmonised, compatible and interoperable future communication infrastructure, the Conference is invited to:

- a) recognize the urgent need to establish air-ground communication capacity for the long term on the basis of the ICAO Global ATM Operational Concept;
- b) recommend that ICAO study the feasibility of options under Section 3 of this paper;
- c) encourage States to closely cooperate in research and development towards the future air-ground communication infrastructure before requesting development of ICAO provisions and before proceeding with local and regional solutions;
- d) urge States and regions to provide a forecast of anticipated VHF band congestion.

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