**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
FIFTEENTH MEETING (APIRG/15)**

(Nairobi, Kenya, 26 – 30 September 2005)

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**Agenda Item 4.2:**   **Communications, Navigation and Surveillance**

**USE OF DATALINK SERVICES AND APPLICATIONS TO ENHANCE SAFETY AND
EFFICIENCY OF AIR TRAFFIC SERVICES**

(Presented by SITA)

—This paper presents a summary of global developments in
the use of Datalink Services to enable the delivery of Digital-
ATIS and Departure Clearance Services.  The paper
references related ICAO recommendations in other regions
and recommends that the APIRG adopts a similar
recommendation.

**1.        Introduction**

The use of the ACARS air/ground data link to enable the exchange of air traffic service
application data has been steadily increasing in many regions of the world.  This paper presents a
high level summary of the current implementation status of the Digital-ATIS and Departure
Clearance services, references ICAO recommendations in other regions and finally recommends
that the APIRG adopts a similar recommendation in order to realize the safety and efficiency
benefits that have been proven in other regions.

**2.        Context and Current Global Implementation Status**

It has been over twenty years since SITA introduced the VHF datalink service (based on the
ACARS protocols operating over analogue radios) in Australia to enable the initial customer
airline to exchange Aeronautical Operational Communications (AOC) between it's data link
equipped aircraft and operations centres.  Since that time the SITA VHF network has expanded to
provide coverage in over 166 countries around the world to meet the requirements of the airlines
as they became increasingly convinced of the benefits of air/ground data link.  It is estimated that

approximately 10,000 aircraft are today equipped with VHF data link avionics. The VHF data link services was complemented in 1991 by the availability of the global Satellite data-link and voice service that is provided via the INMARSAT satellites. Today there are approximately 2,000 air transport aircraft that are equipped with satellite avionics.

Recognizing the increasing numbers of aircraft equipped with data link avionics a number of Air Navigation Service Providers (ANSPs) initiated trials in the early 1990's to evaluate the use of data link technology for initial data link applications such as Oceanic Clearance Messages (e.g. NavCanada in 1989), Digital-ATIS (DSNA France in 1995) and Departure Clearance (DSNA France in 1993). These evaluations proved to be so successful and popular with both Air Traffic Controllers and Pilots that they have, over time, evolved to become standard operational services. Today there are many ANSPs that are either providing operational services or conducting/planning trials as per annex 1.

3.　　　　**Benefits of Digital-ATIS and Departure Clearance**

　　　　a.　**Digital-ATIS**
- D-ATIS implementation enables to significantly improve ATS efficiency by reducing controllers workload: Meteorological data is automatically retrieved and updated on the user interface, while a synthesized voice automatically generates the ATIS message at the controller's request or fully automatically.
- With D-ATIS, the ATIS information is made available to the pilot in written format, removing the need to transcribe broadcast information from the ATIS frequency.
- The data link D-ATIS service eliminates the risk of misunderstandings due to poor VHF voice quality, hence improving safety.
- As well, the D-ATIS information can be accessed via satellite datalink in areas outside VHF coverage, providing worldwide coverage.
- Finally, the ATIS voice messages can be updated more frequently, while the "update contract" of the data link service enables pilots to receive ATIS information at each update.

　　　　b.　**Departure Clearance**
- The implementation of Datalink Departure Clearance (DCL) eliminates potential misunderstandings due to VHF voice, hence enabling the ATC to provide a safer and more efficient service to their users.
- DCL also enables to reduce controllers' workload, as DCL requests can be handled in sequence, and processed by a single keystroke, as convenient.
- On the pilot side, the use of a data link service provides de-synchronization of the DCL procedure: the pilot can request his clearance and then continue to prepare for the flight instead of monitoring the ATC frequency.
- For busy airports, the use of DCL data link results in a significant decrease in ATC tower frequency congestion.

　　　　D-ATIS and DCL data link services have been implemented, or are in the process to be implemented, by some states of the APIRG region. SITA is of course strongly supporting these initiatives, and is available to provide any further information or support to regional ATS Providers willing to develop D-ATIS or/and DCL demonstrations or operational deployment.

**4.**     **ICAO Recommendations for D-ATIS and Departure Clearance for other Regions**

**a.  ASIA/PACIFIC Planning and Implementation Group (APANPIRG)**

The 14<sup>th</sup> meeting of the APANPIRG (August 2003) identified the need to include the implementation of Digital-ATIS and Departure Clearance services via data link into the list of key priorities for CNS/ATM implementation based on the benefits identified.  APANPIRG15/WP21 refers.

**b.  Middle-East Planning and Implementation Group (MIDANPIRG)**

The MIDANPIRG CNS/ATM/IC-SG/2 meeting (March 2005) drafted a conclusion (2/1) as follows:  "That MID States, not having done so, and where needs justify, are urged to implement in their international airports the dissemination of the ATIS and Pre-Departure Clearance via data link (D-ATIS and PDC).

**c.  CAR/SAM Regional Planning and Implementation Group (GREPECAS)**

The Twelfth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), held in June/2004, has concluded that the CAR/SAM States/territories/international organizations and users, based on ICAO existing recommendations, to the cost/benefit aspects and considering the existence of technology installed in ground and on board aircraft, should continue with the implementation of the applications feasible to be used with ACARS data and FANS 1/A during the transition towards the implementation of ATN. (Conclusion 12/42 – Final Report)

**5.     Recommended Action**

5.1 The meeting is invited to:

a)  note the safety and efficiency benefits that the Digital-ATIS and Departure Clearance services bring to Air Traffic Service Providers and airlines alike;

b)  develop a recommendation covering the implementation of these services in the regions international airports taking into account the recommendations developed in other regions;

c)  note that SITA is willing to support the establishment of funded  trials in order to enable the Air Traffic Service providers to acquire experience with the delivery of these services.

**ANNEX 1 – States where Digital-ATIS and Departure Clearance Services are operational, pre-operational or planned in the near term**

| Departure Clearance<br>118+ Airports in 19 States | Digital ATIS<br>210+ Airports in 31 States |
|---|---|
| Australia | South Africa |
| China | Egypt |
| Korea | Nambibia |
| Singapore | Kuwait |
| Belgium | Australia |
| Denmark | New Zealand |
| France | Canada |
| Germany | USA |
| Ireland | China |
| Netherlands | Japan |
| Norway | Korea |
| Spain | Philipinnes |
| Sweden | Singapore |
| Switzerland | Taiwain |
| Spain | Thailand |
| United Kingdom | Bahrain |
| Brasil | UAE (Dubai) |
| Canada | Austria |
| USA | Belgium |
| | Denmark |
| | France |
| | Finland |
| | Germany |
| | Greece |
| | Ireland |
| | Netherlands |
| | Norway |
| | Portugal |
| | Spain |
| | Sweden |
| | Switzerland |
| | United Kingdom |

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