CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

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A description of the changes introduced by each supplement is included on Goldenrod paper at the end of this document.

FOREWORD

Aeronautical Radio, Inc., the AEEC, and ARINC Standards

Aeronautical Radio, Inc. (ARINC) was incorporated in 1929 by four fledgling airlines in the United States as a privately-owned company dedicated to serving the communications needs of the air transport industry. Today, the major U.S. airlines remain the Company's principal shareholders. Other shareholders include a number of non-U.S. airlines and other aircraft operators.

ARINC sponsors aviation industry committees and participates in related industry activities that benefit aviation at large by providing technical leadership and guidance and frequency management. These activities directly support airline goals: promote safety, efficiency, regularity, and cost-effectiveness in aircraft operations.

The Airlines Electronic Engineering Committee (AEEC) is an international body of airline technical professionals that leads the development of technical standards for airborne electronic equipment-including avionics and in-flight entertainment equipment-used in commercial, military, and business aviation. The AEEC establishes consensus-based, voluntary form, fit, function, and interface standards that are published by ARINC and are known as ARINC Standards. The use of ARINC Standards results in substantial benefits to airlines by allowing avionics interchangeability and commonality and reducing avionics cost by promoting competition.

There are three classes of ARINC Standards:

a) ARINC Characteristics – Define the form, fit, function, and interfaces of avionics and other airline electronic equipment. ARINC Characteristics indicate to prospective manufacturers of airline electronic equipment the considered and coordinated opinion of the airline technical community concerning the requisites of new equipment including standardized physical and electrical characteristics to foster interchangeability and competition.

b) ARINC Specifications – Are principally used to define either the physical packaging or mounting of avionics equipment, data communication standards, or a high-level computer language.

c) ARINC Reports – Provide guidelines or general information found by the airlines to be good practices, often related to avionics maintenance and support.

The release of an ARINC Standard does not obligate any airline or ARINC to purchase equipment so described, nor does it establish or indicate recognition or the existence of an operational requirement for such equipment, nor does it constitute endorsement of any manufacturer's product designed or built to meet the ARINC Standard.

In order to facilitate the continuous product improvement of this ARINC Standard, two items are included in the back of this volume:

An Errata Report solicits any corrections to the text or diagrams in this ARINC Standard.

An ARINC IA Project Initiation/Modification (APIM) form solicits any recommendations for addition of substantive material to this volume which would be the subject of a new Supplement.

ATTACHMENTS

APPENDICES

1.0 CHARACTER-ORIENTED ATS APPLICATIONS

1.1 Introduction

This document defines the application text formats for character-oriented Air Traffic Services (ATS) messages that can be transmitted over the Aircraft Communications Addressing and Reporting System (ACARS) data link. Several ACARS data links are available, including but not limited to, VHF, HF and satellite. The messages defined in this document are not specific to any data link.

This document is limited in scope to character-oriented applications. Bit-oriented applications are defined in a number of documents. See ARINC Specification 622 for references to these applications. The format/content of character-oriented messages is not consistent with bit-oriented messages.

COMMENTARY

Equivalent bit-oriented applications have been defined by the RTCA and acknowledged by the International Civil Aviation Organization (ICAO).

ATS applications involve a single ground agency such as a the Civil Aviation Authority (CAA) communicating with aircraft belonging to multiple users. Therefore, uniform worldwide message formats are necessary.

COMMENTARY

The ACARS data link was originally conceived to provide a user, typically an airline, with a link between the user's ground-based computer systems and those on-board the user's aircraft. Although the air-ground protocol is common to all users, the message content for a given application was not standardized since the user controlled the application at each end.

The airlines have expressed a strong desire for a single implementation in the avionics to support Air Traffic Services (ATS) via the ACARS data link. To enable a single software application to be appropriate for airspace worldwide, the users have recommended that all CAAs implement the provisions of Chapter 5 of ARINC Specification 622 when installing ATS applications. Specifically, ARINC Specification 622 calls for the addition of an Imbedded Message Identifier and an end-to-end Cyclical Redundancy Check (CRC) with the message.

Other data link media may become available in the future, including an IEEE 802.11–based wireless LAN that is referred to as Gatelink.

1.2 Relationship to Other Documents

Character-oriented messages may be transmitted directly over the ACARS network. However, where the additional functionality described in ARINC Specification 622 is required, then the messages generated by these applications can be processed using the techniques described in ARINC Specification 622.

COMMENTARY

ARINC Specification 622 provides a number of functions which may be needed by the ATS applications, i.e., a CRC integrity check and a means of addressing downlink messages to the relevant ATS ground agency.

For transmission over the ACARS network, the message formats given in this document must be enveloped according to the processes described in ARINC Specification 620.

ARINC Specification 620 does not duplicate any of the text formats specified in this document as it only describes the envelope.

COMMENTARY

ARINC Specifications 620 and 622 also provide necessary information on the use of Labels/sub-Labels/Message Function Identifier (MFIs) and Imbedded Message Identifier (IMIs).

1.3 Annunciations

The avionics may be required to activate various alerts in response to specific ATS uplinks depending upon such things as aircraft configuration, airline policy and certifying authority mandates. The alert may be aural, visual, or both. The annunciation may differ depending upon the type of ATS uplink (e.g., Automatic Terminal Information Service (ATIS) compared to Departure Clearance).

1.4 Documents Referenced

This Specification refers to a number of other documents. Reference to such documents should be interpreted as the most recent version unless a specific issue is cited.

ARINC Specification 620: *Data Link Ground System Standard and Interface Specification*

ARINC Specification 622: *Data Link Applications Over ACARS Air/Ground Network*

EUROCAE ED-85A: *Data Link Application System Document (DLASD) for the "Departure Clearance" Data Link-Service*

EUROCAE ED-89A: *Data Link Application System Document (DLASD) for the "ATIS" Data-Link Service*

EUROCAE ED-106A: *Data Link Application System Document (DLASD) for the "Oceanic Clearance" Data-Link Service*

2.0 RESERVED

Information for ATIS Version 1 and 2 uplink and downlink messages, formerly Section 2.0, AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS), has been integrated with Attachment 2, and moved to Appendix B.

3.0 RESERVED

Information for Oceanic Clearance, formerly in Section 3.0, OCEANIC CLEARANCE, has been integrated with Attachments 3, 4, and 5 and moved to Appendix C.

4.0 RESERVED

Information for Departure Clearance, formerly in Section 4.0, DEPARTURE CLEARANCE, has been integrated with Attachments 6, 7, and 8 and moved to Appendix D.

5.1 Flight System Message

The Flight System Message (FSM) application is used in conjunction with the ATS messages defined in this document. The FSM message provides a means to extend the range of information transfer between controller and pilot. The FSM message set, illustrated in Table 5.1-1, defines a number of possible response messages that augment the ATC Clearance applications defined in other sections of this document.

COMMENTARY

The FSM application was established to extend the options for providing information concerning clearances to the aircraft. Since this function, the FSM, is generic, its utility may be expanded to other message types as they evolve and are defined in this document.

Table 5.1-1 – FSM Set Definition

Message	Up/Down	IMI	Message Type Identifier	MFI/ Label
Flight System Message	Up	FSx	FSM	A4

In Table 5.1-1, the IMI of FSx, the value of the third character, x, should be filled with the version number of the message.

5.2 Flight System Uplink

The Flight System Message is prepared by the Flight System application on the ground and sent to appropriate ATC application the aircraft.

COMMENTARY

The location of the destination on-board the aircraft is dependent upon the application to which the Flight System application communicates. Candidate applications are the interactive applications identified in this Specification, i.e., Departure and Oceanic Clearances.

5.2.1 Flight System Uplink, Version 1

The FSM message set includes information concerning the status of a clearance request and instructions to the pilot concerning what action to take.

COMMENTARY

For example, if the received downlink Oceanic Clearance Readback message fails the verification checks performed in the ground ATC system, the FSM application provides a mechanism to inform the pilot that an error has occurred. The clearance is canceled and reversion to Voice Procedures is necessary.

5.2.1.1 Message Text

Table 9-1 of Attachment 9 defines the format of the Version 1 FSM uplink message. The FSM message consists of a Message Type Identifier field, Time and Date field, ATCC Identifier field, Message Text field and an optional Free Text field.

The message text should be formatted according to the Avionics Indicator value in the downlink that triggered the FSM message. A default Avionics Indicator value of 024 is used to format an FSM uplink sent in response to a downlink which does not contain an Avionics Indicator, such as an ATIS request.

The Message Text field is comprised of subfields that include the following.

5.2.1.1.1 Message Type Identifier

This three-character field contains the Message Type Identifier of a preceding received message to which the FSM application is responding.

The ATIS Request downlink message does not contain a Message Type Identifier field. Therefore the FSM uplink messages responding to an ATIS request should use the value defined in Section 2.2.

5.2.1.1.2 Base Message

This field provides an indication of whether the preceding message has been received or rejected. The phraseology is taken from standard responses listed in Table 9-1 of Attachment 9.

5.2.1.3 Supplemental Message

This field provides additional information to the originator of the preceding received message.

The FSM message may be used by ATC to advise pilots that their request for service will be handled after a short delay, or that the ground system is unable to provide the requested ATIS via data link. In the case of the ATIS Request, a response of “REQUEST BEING PROCESSED” followed by ‘STANDBY” or “REVERT TO VOICE PROCEDURES” should be used.

6.1 Terminal Weather Information for Pilots

To support the delivery of Terminal Weather Information for Pilots (TWIP) reports via data link, two messages have been defined as illustrated in Table 6.1-1.

Table 6.1-1 – Messages for TWIP Reports

Message	Up/Down	IMI	Message Type Identifier	MFI/ Label
Request for TWIP Report	Down	TWx	TWR	BB
TWIP Report	Up	TWx	TWI	AB

For Table 6.1-1, in the IMI of TWx, the value of the third character, x, should be filled with the version number of the message.

6.2 Requesting TWIP Information

The Request for TWIP downlink is a message prepared by an End System on the aircraft and sent to the ground DSP that forwards the message to the appropriate TWIP database.

The expected TWIP uplink response by the ATS facility, as forwarded by the DSP, is presented in Section 6.3 of this Specification.

6.2.1 Request for TWIP Downlink, Version 1

6.2.1.1 Message Text

The Message Text field of the TWIP Request Downlink message is comprised of the Message Type Identifier, AI and Application Text fields. The Request for TWIP Application Text fields include the Airport ID, Request Mode, and Text/Graphics Indicator. Table 10-1 of Attachment 10 defines the format of the TWIP Request Downlink message.

6.2.1.1.1 Message Type Identifier

This three-character field contains the Message Type Identifier of function desired from the ground based TWIP application. The assignment for the Request for TWIP Downlink is TWR.

6.2.1.1.2 Avionics Indicator

The three-character Avionics Indicator identifies the preferred length of a row of the uplink message when displayed or printed. The TWIP application on the ground should use this information to preclude sending a line of text that exceeds the capacity of the display in the aircraft. The Avionics Indicator is used to enable the TWIP report uplink message to be formatted to match the display size (number of characters per display line) used by the aircraft requesting TWIP information.

If it is not necessary for the ground-based TWIP application to limit the line length, the Avionics Indicator field should be set to “000.”

6.2.1.1.3 Airport ID

The Airport ID is a four-character field used to identify the airport for which TWIP is requested. The Airport ID can be either the four-character ICAO code or the three character IATA code followed by a space.

6.2.1.1.4 Request Mode

The Request Mode identifies if the aircraft wants automatic updates to its request. It is assumed that there is one TWIP message per airport. If the aircraft only wants a single TWIP report, then it would use a request mode of “N.” To request automatic update, the aircraft would use a request mode of “C.” With this request mode, each time a new TWIP information is available for the airport, it will be automatically forwarded to the aircraft.

To terminate the automatic request mode, the aircraft would send a request with a request mode of “T.” In this case, the aircraft would receive one final update for the airport, but future updates to the TWIP information are not forwarded to the aircraft.

6.2.1.1.5 Text/Graphics Indicator

The one-character Text/Graphics Indicator can be used by the aircraft to request Text-only or Graphics TWIP information. To request graphical TWIP information, this field will be set to “G.” To request only text TWIP information, this field should be set to “T.”

6.3 Delivery of the TWIP Report

The TWIP Report message is prepared on the ground by the TWIP application and is uplinked to the aircraft on request.

6.3.1 TWIP Report Uplink, Version 1

The ground TWIP application will respond with a TWIP uplink when it receives a TWIP Request from the aircraft.

6.3.1.1 Message Text

The Message Text field of the TWIP Report Uplink message is comprised of the Message Type Identifier and Application Text fields. The TWIP Report Uplink message text should be constructed in the format MTI ‘Application text’.

Table 10-2 of Attachment 10 defines the format of the TWIP Report Uplink.

6.3.1.1.1 Message Type Identifier

The Message Type Identifier assignment of the TWIP uplink is TWI.

6.3.1.1.2 Airport ID

The four-character Airport ID field identifies the airport for which TWIP is being reported. The airport ID can be either four-character ICAO code or the three-character IATA code followed by a space.

6.3.1.1.3 TWIP Identifier

The TWIP Identifier field is a fixed text field provided to facilitate the avionics job of creating and displaying a meaningful title on an avionics display device such as an MCDU or CDU.

6.3.1.1.4 TWIP Time

The TWIP Time field contains the time when the TWIP weather data observation was made.

6.3.1.1.5 TWIP Information

The TWIP Information field contains the TWIP data formatted to comply with the value of the Avionics Indicator and the Text/Graphics Indicator fields in the TWIP Request downlink from the aircraft.

7.0 RESERVED

This section was formerly Waypoint Position Report.

8.1 Data Link Delivery of Taxi Clearance

To support the delivery of Pushback and Taxi Clearance requests and their associated response messages via data link; five messages have been defined in Table 8.1-1.

Table 8.1-1 – Pushback and Taxi Clearance Messages

Message	Up/Down	IMI	Message Type Identifier	MFI/ Label
Pushback Clearance Request	Down	PCx	PBR	BC
Pushback Clearance Response	Up	PCx	PBC	AC
Expected Taxi Clearance Request	Down	ETx	ETR	BD
Expected Taxi Clearance Response	Up	ETx	ETC	AD

For Table 8.1-1, in the IMIs of PCx and ETx, the value of the third character, x, should be filled with the version number of the message.

8.2 Requesting Pushback Clearance

The Pushback Clearance Request downlink is a message prepared by an End System on the aircraft and sent to the ground DSP which forwards the message to the ATS facility designated within the message.

The anticipated Pushback Clearance Request Acknowledgment and expected Pushback Clearance Response uplink messages are responses sent from the ATS facility and forwarded to the aircraft via the DSP. These messages are presented in Sections 8.3 and 8.4, respectively, of this document.

8.2.1 Message Text, Version 1

Table 12-1 of Attachment 12 defines the format of the Pushback Clearance Request message.

8.2.1.1 Message Type Identifier

The Message Type Identifier is a three-character field used to identify the function the downlink is requesting. The assignment for a Pushback Clearance Request Downlink is PBR.

8.2.1.2 Avionics Indicator

The three-character Avionics Indicator identifies the preferred length of a row of the uplink message when displayed or printed. The Taxi Clearance application on the ground will use this information to preclude sending a line of text that exceeds the capacity of the display in the aircraft. The Avionics Indicator is used to enable the clearance uplink message to be formatted to match the display size (number of characters per display line) used by the aircraft requesting the clearance.

If it is not necessary for the ground-based Taxi Clearance application to limit the line length, the Avionics Indicator field should be set to “000”.

8.3 Delivering a Pushback Clearance Request Acknowledgment

After a Pushback Request downlink is received by the ATS facility, an Acknowledgment of the Pushback Clearance Request is sent to the message originator using the Flight System Message (FSM). See Chapter 5 and Attachment 9.

COMMENTARY

The Pushback Clearance Request needs an FSM Acknowledgment uplink due to the potential delay in the delivery of the Pushback Clearance.

8.4 Delivering a Pushback Clearance Response

When a Pushback Clearance Request downlink is received by the ATS facility following the transmission of the Pushback Clearance Request Acknowledgment message, a Pushback Clearance Response is sent to the message originator.

Table 12-2 of Attachment 12 defines the format of the Pushback Clearance Response message.

The Message Type Identifier assignment of the Pushback Clearance uplink is PBC.

8.5 Requesting Expected Taxi Clearance

The expected Taxi Clearance Request downlink is a message prepared by the End System on the aircraft and sent to the ground DSP which forwards the message to the ATC facility designated within the message.

The anticipated Expected Taxi Clearance Response uplink message is sent from the ATS facility and forwarded to the aircraft via the DSP. See Section 8.6 of this document.

Table 13-1 of Attachment 13 defines the format of the Expected Taxi Clearance Response message.

The Message Type Identifier assignment of the Expected Taxi Clearance Request downlink is ETR.

8.6 Delivering an Expected Taxi Clearance

When an Expected Taxi Clearance Request downlink is received by the ATS facility, an Expected Taxi Clearance Response is sent to the message originator in response to the request message.

Table 13-2 of Attachment 13 defines the format of the Expected Taxi Clearance Response message.

The Message Type Identifier assignment of the Expected Taxi Clearance uplink is ETC.

9.1 Controller-to-Pilot Communications (CPC) Applications

One of the actions of the Free Flight Steering Committee has been the development of ATS applications and message sets that are referred to as “NOW” applications. One of these applications is Controller-to-Pilot Communications (CPC). This application is intended to provide early benefits to CAAs and the airline community by using the ACARS data link as the communications media for ATS applications. Early CPC applications are expected to support the development of operational concepts that are applicable to future systems. This section defines the message set intended for the CPC application. The CPC application includes Initial Contact (IC), Transfer of Communications (TOC), Barometric Altimeter Setting (ASM), and several Pre-Defined Messages (PDM).

COMMENTARY

This section also provides a general description of the CPC process and procedures relating to the man-machine interface and crew procedures. While these descriptions are useful in understanding the rationale for the specified messages and formats, they do not fully define all CPC interface and operational requirements such as chimes, annunciators, display/crew interface, and other human-factor requirements for CPC. Examples outlining these procedures and the man/machine interface are expected to be included in an appendix of future supplements to this document.

To support enroute CPC via ACARS data link, two downlink and one uplink message have been defined as follows:

- CPC Aircraft Log-On/Log-Off Request (D/L)
- CPC WILCO/UNABLE Response (D/L)
- CPC Command/Response Uplink (U/L)

9.2 CPC Aircraft Log-On/Log-Off Request

Upon occurrence of the “OFF” (or airborne) event, avionics supporting CPC should downlink the Log-On/Log-Off Request indicating that the aircraft is ready to begin the enroute CPC service. The DSP will direct the downlink to the ATS facility identified in the downlink Supplementary Address field. See ARINC Specification 622.

The avionics may permit, via single menu selection, manual initiation of the CPC Aircraft Log-On/Log-Off Request downlink while the aircraft is enroute. Manual initiation will permit the aircraft to obtain CPC service as it departs a region where CPC is not supported and begins operation in a region where CPC is supported. When no address is provided in a CPC log-on response uplink then the departure airport (ICAO) code can be used as the default value for the supplemental address. See ARINC Specification 622.

On occurrence of the “ON” (or other on-ground) event, the avionics supporting CPC should downlink the Log-On/Log-Off Request indicating the aircraft should be removed from the ground CPC Application.

On receipt of the CPC Aircraft Log-On/Log-Off Request, the DSP will use the Supplemental Address to route the downlink message to the proper ATS system that hosts the CPC Application. This report permits the ATS facility to correlate an aircraft ready to begin or terminate CPC with other information, such as filed flight plan and secondary surveillance radar data.

9.2.1 Message Text

The message text of the Log-on/Log-off Request is provided in Table 14-1 of Attachment 14 and consists of the following fields: Message Type Identifier, Avionics Indicator, Date & Time sequence, Aircraft Identifier (Flight Identifer), Message Identification Number, Message Reference Number, Departure Airport, and Destination Airport fields.

9.2.2 Message Type Identifier

The Message Type Identifier (MTI) field for the CPC Log-On/Log-Off Request will have one of two values based on the type of request shown in Table 9.2.2-1.

Table 9.2.2-1 – Message Type Identifier

Message	Up/ Down	Message Type Identifier	MFI/ Label
CPC Log-On Request	Down	CPL	BE
CPC Log-Off Request	Down	COF	BE

9.2.3 Avionics Indicator

The three-character, Avionics Indicator identifies the preferred length of a row of characters in CPC uplink messages when displayed or printed. The CPC application on the ground will use this information to preclude sending a line of text that exceeds the capacity of the display in the avionics. Subsequent CPC uplinks will be formatted to match the display size (number of characters per line) used by the aircraft. The ground ATS application and compliant avionics system will support a formatting range between 20 and 80 characters per line of text.

If it is not necessary for the ground-based CPC application to limit the line length, the Avionics Indicator characters should be set to ‘000’.

9.2.4 Message Identification Number

The avionics should maintain a unique CPC Message Identification Number that is initiated with a value of 01 and is incremented once each time a CPC message is queued for downlink transmission. The valid range of Message Identification Numbers is from 01 to 99. If the number of CPC messages exceeds 99, the avionics will reset the counter to a value of 01 and continue incrementing the Message Identification Number for each queued CPC downlink. One Message Identification Number counter is shared by all CPC downlink types. The avionics will be able to unambiguously correlate responses from the ground with downlink messages because the uplink response will contain the Message Identification Number of the downlinks to which it is responding.

The Message Identification Number will be used by the ground CPC End System for the identification of unique CPC downlinks and correlation of uplink responses to the downlink message.

9.2.5 Message Reference Number

The avionics should return the Message Identification Number, contained in all CPC Command/Response uplinks, in the Message Reference Number field of a CPC downlink sent in response to that uplink. CPC downlinks, which are not sent in response to a CPC uplink, should fill the Message Reference Number field with a value of 00. The Message Reference Number permits the ground CPC system to correlate a response to a specific CPC uplink message. The Message Reference Number has a valid range of 00 to 99.

COMMENTARY

CPC Aircraft Log-On/Log-Off messages will typically contain 00 in the Message Reference Number field because they are not sent in response to a CPC uplink.

9.2.6 Departure and Destination Airport IDs

The Departure Airport and Destination Airport Identifiers are 4-character fields that can be either the four-character ICAO code or the 3-character IATA Airport code followed by a space.

9.2.7 Optional Free Talk

The Free Talk field is optional for current CPC definitions. Based on airline, vendor, and CAA requirements, additional text could be appended to the end of the message.

9.3 CPC WILCO/UNABLE Response

The CPC WILCO/UNABLE Response downlink is sent in reply to a CPC Command/Response Uplink. The specific application text within the downlink is dependent on both the Message Type (MTI) of the CPC uplink and the crew response to the uplink.

Upon receipt and review of a CPC Command/Response uplink, the crew is presented with both positive and negative response options. The response options are:

- WILCO/UNABLE
- ROGER/UNABLE
- AFFIRM/NEGATIVE

based on the MTI of the CPC uplink (See Section 9.4). The process is described in the following:

- If the crew select the negative response (NEGATIVE or UNABLE) option, a CPC WILCO/UNABLE Response is automatically created and downlinked. The downlink response will include the appropriate negative response within the Acknowledgment field
- If the crew select the positive response (AFFIRM, ROGER, or WILCO) option, one of two actions will occur:
  - If the CPC Command/Response uplink has a Message Type Identifier (MTI) that requires optional (supplemental) data as input from the crew,

then the crew will be prompted with a subsequent field or screen for data entry. Selection of a WILCO response will not result in a downlink response until the supplemental data has been entered. Upon crew input and confirmation of this data, the crew will be permitted to send the CPC WILCO/UNABLE Response message. The downlink will contain a positive (WILCO) within the Acknowledgment field and the supplemental data within the Applications Text field.

- If the CPC uplink MTI does not require crew entry of supplemental data, the CPC WILCO/UNABLE response should be created. The downlink should include the appropriate positive response within the Acknowledgment field and the supplemental data field should be omitted.

In all cases, CPC WILCO/UNABLE Response downlink should include the ATS address contained in the uplink. The DSP will direct the downlink response to the ATS facility identified in the downlink Supplementary Address field. See ARINC Specification 622.

9.3.1 Message Text

The message text of the WILCO/UNABLE Response is identified in Table 15-1 of Attachment 15 and consists of the following fields: Message Type Identifier (MTI), Date & Time sequence, Aircraft Identifier (Flight Identifer), Message Identification Number, Message Reference Number, Acknowledgment, and the Optional (or Supplemental) data.

The Message Type Identifier field for the CPC WILCO/UNABLE Response should be identified as ‘CWR’.

9.3.2 Message Identification Number

The avionics should maintain a unique CPC Message Identification Number that is initiated with a value of 01 and is incremented once each time a CPC message is queued for downlink transmission. The valid range of Message Identification Numbers is from 01 to 99. If the number of CPC messages exceeds 99, the avionics should reset the counter to a value of 1 incrementing the Message Identification Number for each queued CPC downlink. The Message Identification Number should be used by the ground CPC end system for the identification and correlation of unique CPC downlinks.

9.3.3 Message Reference Number

The avionics should return the Message Identification Number, contained in all CPC Command/Response uplinks, in the Message Reference Number field of all downlink responses. The Message Reference Number permits the ground CPC system to correlate a response to a specific CPC uplink message. The Message Reference Number has a valid range of 00 to 99; however, the reference number of 00 is reserved for use when the downlink message is not intended to acknowledge a CPC uplink.

9.3.4 Supplemental CPC Data

The inclusion of the optional supplemental data should be identified by the use of a dash <-> character as shown in Table 15-1 in Attachment 15. A CPC WILCO/UNABLE Response downlink that does not include a dash <-> character indicates that the response does not include optional supplemental data.

Currently, Transfer for Communications/Initial Contact (MTI of MFC) is the only CPC application requiring crew input of optional data.

9.3.4.1 Supplemental Data: Assigned Altitude

The Assigned Altitude will be entered by the crew and reported in either hundreds of feet or tens of meters. A 3-character, numeric field is used when the value is entered in feet and a 4-character numeric field is used when the value is entered in meters. The numeric value is followed by a units character. The valid range is 030..700 for hundreds of feet and 0100..2500 for tens of meters. A units character of F indicates units of feet and the character M indicates units of meters.

9.4 CPC Command/Response Uplink

The CPC Command/Response Uplink is initiated by the ground CAAs supporting the CPC ATS application for aircraft that support CPC (See Section 9.2 of this document). Upon receipt of a CPC Command/Response Uplink, a unique annunciator and/or chime is required. The following CPC uplink applications have been defined:

Log-On/Confirm SQUAWK Ident: After receipt of a CPC log-on request downlink (see Section 9.2), the CPC ATS provider will send a Log-On confirmation uplink which includes the beacon SQUAWK Identifier for that Flight Identifier. Crew confirmation (AFFIRM) of the SQUAWK Identifier will permit initiation of the CPC service. A negative crew response (NEGATIVE), for whatever reason, will terminate CPC service for that flight.

COMMENTARY

While the LCS uplink will be used as standard procedure by the FAA, other CAAs have indicated that the LCS would not be included in a CPC Log-On process.

Change of Communications Frequency: Upon receipt and crew selection, the avionics displays the Communication Frequency data that includes a Facility Identification and Communications Frequency. A ‘WILCO’ or ‘UNABLE’ crew response is required.

Barometric Altimeter Setting: Upon receipt and crew selection, the avionics provides the Reporting Station, Time of Report, and Reported Altimeter setting. A ‘ROGER’ or ‘UNABLE’ crew response is required.

Transfer of Communications/Initial Contact: Similar to the Change of Communications Frequency (TOC) application, the avionics will display a Monitor Facility Identification and Communications Frequency to the crew. In addition, the avionics end-system will automatically prompt the crew to enter an assigned altitude. If the crew selects the ‘UNABLE’ response, an UNABLE downlink response is

automatically initiated without the inclusion of supplemental altitude data. Crew entry of an assigned altitude value is required before the avionics will accept a crew selection of a 'WILCO' response. Once a entry of an altitude value has been made, selection of the 'WILCO' option will initiate a WILCO downlink response that includes the assigned altitude as supplemental data.

CPC Pre-Defined Messages: Upon receipt and crew selection, the avionics end-system provides data for currently undefined future CPC applications. One application is the request for the crew to check for a stuck microphone condition. Based on the particular Pre-Defined Message type, the crew positive and negative response set will consist of either:

- WILCO/UNABLE
- ROGER/UNABLE"
- AFFIRM/NEGATIVE
- no-response, respectively

A summary of the positive and negative responses that are applicable for each of the defined CPC applications is provided in Table 9.4-1.

Table 9.4-1 Responses for CPC Applications

TYPE OF CPC CMD/RESPONSE UPLINK	POSITIVE RESPONSE	NEGATIVE RESPONSE
Log-On/Confirm SQUAWK Identifier	AFFIRM	NEGATIVE
Change of Comm Freq	WILCO	UNABLE
Baro Altimeter Setting	ROGER	UNABLE
Initial Contact/Transfer of Communications	WILCO	UNABLE
CPC Pre-Defined Message: Type 1	WILCO	UNABLE
CPC Pre-Defined Message: Type 2	ROGER	UNABLE
CPC Pre-Defined Message: Type 3	AFFIRM	NEGATIVE
CPC Pre-Defined Message: Type 4 (See Note)	None	None

Some ATS providers have expressed a future need for the CPC Pre-Defined Message: Type 4. The Type 4 message is not included in the minimum "NOW" CPC message set and should be considered optional.

Based on the MTI of the CPC Command/Response Uplink, a positive response (WILCO, ROGER, or AFFIRM) with or without supplemental (crew entered data) or a negative (UNABLE or NEGATIVE) response should be required in the downlink response. See Section 9.3 of this document.

9.4.1 Message Text

The uplink message text is identified in Table 16-1 of Attachment 16, and consists of the following fields:

- Message Type Identifier
- Message Source (ARTCC), Message Identification Number
- Message Reference Number
- Date and Time
- Summary Information
- Message Source (ARTCC)

- Aircraft Identifier (Flight Identifier)
- CPC Application Text

9.4.2 Message Type Identifier

The Message Type Identifier (MTI) field for the CPC Application Command/Response will have one of the following values based on the type of CPC Command/Response Uplink shown in Table 9.4.2-1.

Table 9.4.2-1 MTI For Types of CPC Command/Response Uplink

MTI	TYPE OF CPC COMMAND/RESPONSE UPLINK
LCS	Log-On/Confirm SQUAWK Ident
TOC	Change of Communications Frequency
ASM	Barometric Altimeter Setting
MFC	Initial Contact/Transfer of Communications
PD1	CPC Pre-Defined Message: Type 1
PD2	CPC Pre-Defined Message: Type 2
PD3	CPC Pre-Defined Message: Type 3
PD4	CPC Pre-Defined Message: Type 4

9.4.3 Message Identification Number

As in the avionics, the ground CPC system should maintain a unique CPC Message Identification Number. The ground -based CPC system should maintain a unique CPC Message Identification Number for each logged-on aircraft that is initiated with a value of 01 and is incremented once each time a CPC message is queued for uplink transmission. The valid range of Message Identification Numbers is from 01 to 99. If the number of CPC messages exceeds 99, the ground CPC system should reset the counter to a value of 01 and continue incrementing the Message Identification Number for each queued CPC uplink. The Message Identification Number should be used by the avionics end system for the identification and correlation of messages.

9.4.4 Message Reference Number

Like the avionics segment, the ground CPC system should return the Message Identification Number, contained in all CPC downlinks, by placing this value in the uplink Message Reference Number field. The Message Reference Number permits the avionics to correlate a response to a specific CPC downlink message. The Message Reference Number has a valid range of 00 to 99; however, the value of 00 is reserved for use when the CPC uplink is not in response or acknowledgment to CPC downlink.

9.4.5 Summary Information

Summary Information, shown in Table 16-1 of Attachment 16, will vary based on the particular Message Type Identifier (MTI) of the CPC Command/Response uplink.

9.4.6 CPC Application Text

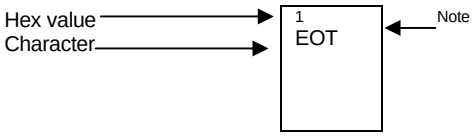
CPC Application Text Field shown in Table 16-1 of Attachment 16, should vary based on the particular Message Type Identifier (MTI) of the CPC Command/Response uplink. The Time, Summary Information, Message Source, Aircraft Identifier (Flight Identifer), and the CPC Application Text information should always be displayed to the crew. All other fields of this message are intended for internal use by the avionics CPC end-system and should not be displayed. Specific examples of the CPC Applications Text are included in Tables 16-1A through 16-1E.

ATTACHMENT 1
ENCODING - SYMBOLOGY AND USE

Table 1-1 illustrates the subset of ISO-5 characters that can be universally printed by a cockpit printer and displayed on a cockpit display (CDU or MCDU).

Table 1-1 Useable Character Set

BIT 7 ---------->	0	0	0	0	1	1	1	1
BIT 6 ---------->	0	0	1	1	0	0	1	1
BIT 5 ---------->	0	1	0	1	0	1	0	1
BIT 4 ↓ / BIT 3 ↓ / BIT 2 ↓ / BIT 1 ↓ / Column → / Row ↓	0	1	2	3	4	5	6	7
0 0 0 0 / 0	00 NUL	10 DLE	20 **SP**	30 **0**	40 @	50 **P**	60 `	70 **p**
0 0 0 1 / 1	01 SOH	11 DC1	21 **!**	31 **1**	41 **A**	51 **Q**	61 **a**	71 **q**
0 0 1 0 / 2	02 STX	12 DC2	22 **"**	32 **2**	42 **B**	52 **R**	62 **b**	72 **r**
0 0 1 1 / 3	03 ETX	13 DC3	23 **#**	33 **3**	43 **C**	53 **S**	63 **c**	73 **s**
0 1 0 0 / 4	04 EOT	14 DC4	24 **$**	34 **4**	44 **D**	54 **T**	64 **d**	74 **t**
0 1 0 1 / 5	05 ENQ	15 NAK	25 **%**	35 **5**	45 **E**	55 **U**	65 **e**	75 **u**
0 1 1 0 / 6	06 ACK	16 SYN	26 **&**	36 **6**	46 **F**	56 **V**	66 **f**	76 **v**
0 1 1 1 / 7	07 BEL	17 ETB	27 **'**	37 **7**	47 **G**	57 **W**	67 **g**	77 **w**
1 0 0 0 / 8	08 BS	18 CAN	28 **(**	38 **8**	48 **H**	58 **X**	68 **h**	78 **x**
1 0 0 1 / 9	09 HT	19 EM	29 **)**	39 **9**	49 **I**	59 **Y**	69 **i**	79 **y**
1 0 1 0 / 10	0A **LF**	1A SUB	2A *****	3A **:**	4A **J**	5A **Z**	6A **j**	7A **z**
1 0 1 1 / 11	0B VT	1B ESC	2B **+**	3B **;**	4B **K**	5B **[**	6B **k**	7B **{**
1 1 0 0 / 12	0C FF	1C FS	2C **,**	3C **<**	4C **L**	5C \	6C **l**	7C |
1 1 0 1 / 13	OD **CR**	1D GS	2D **-**	3D **=**	4D **M**	5D **]**	6D **m**	7D **}**
1 1 1 0 / 14	0E SO	1E RS	2E **.**	3E **>**	4E **N**	5E **^**	6E **n**	7E ~
1 1 1 1 / 15	0F SI	1F US	2F **/**	3F **?**	4F **O**	5F _	6F **o**	7F **DEL**



Shading indicates that the character is displayable on an ARINC 739 MCDU and printable on an ARINC 740 printer and therefore is acceptable in the "Text" portion of uplink messages and downlink readback messages. Some of these characters can not be entered on an ARINC 739 MCDU because there is no button assigned to that character.

NUL L	Null, or all zeros	DC1	Device control 1
SOH	Start of heading	DC2	Device control 2
STX	Start of text	DC3	Device control 3
ETX	End of text	DC4	Device control 4
BPT	End of transmission	NAK	Negative acknowledge
ENQ	Enquiry	SYN	Synchronous idle
ACK	Acknowledge	ETB	End of transmission block
BEL	Bell, or alarm	CAN	Cancel
BS	Backspace	EM	End of medium
HT	Horizontal tabulation	SUB	Substitute
LF	Line feed	ESC	Escape
VT	Vertical tabulation	FS	File separator
FF	Form feed	GS	Group separator
CR	Carriage return	RS	Record separator
SO	Shift out	US	Unit Separator
SI	Shift in	SP	Space
DLE	Data link escape	DEL	Delete

1.2 Encoding Principles

The following field data elements should be coded in accordance with ICAO document 4444, Appendix 2:

- ATC Identifier, e.g. EGGX
- Aircraft Type
- Flight Identifier (Flight ID)
- Flight Level
- Mach Number or True Air Speed.
- Departure and Destination Airfield Identifiers, e.g.; EGKK.
- Time (UTC), or abbreviated UTC, i.e., hhmm.
- Date
- Wind Direction and Wind Velocity
- Fuel Quantity

In addition, when entered into a message, the Flight-Identifier must be entered in exactly the same form as it was in the filed flight plan. Aircraft Address is used instead of Flight Identifier to uniquely identify business aircraft. The Flight Identifier field of business aircraft is generally encoded with a fixed value (e.g. UV0000).

The contents of the variable data within messages defined in this specification are typically entered in abbreviated format.

In most applications, the aircraft has the capability to indicate display line length or printer line length. While formatting the uplink message for uplink, the message line length should be set according to the received Avionics Indicator (AI). The ATS ground application should utilize the Avionics Indicator value to perform an “intelligent” wrapping of the text to the next line. If the AI field is not present or the ATC facility is unable to encode the message for proper display using the requested AI length, the default value of 24 should be used.

ATTACHMENT 1
ENCODING - SYMBOLOGY AND USE

COMMENTARY

One approach to intelligent wrapping is to pre-define data elements into separate pieces for line wrap presentation to prevent misinterpretation by the aircrew. The “default” 24 character formatting covers most display and printer limits of existing airborne systems (most Mult-Purpose Control and Display Unit (MCDU) display at least 24 character lines, while most printers print out 40 character lines).

Regarding the transmitted format, the ATS ground application may insert more spaces or carriage return and line feed characters than those defined in this specification in order to promote readability.

Table 1-2 defines the use of case (upper and lower), underlining and italics to identify the interpretation of entities in the message text shown in the definition of ATS messages e.g., ATIS.

Table 1-2 Encoding Descriptions

Entry	Interpretation	Example		
		Coding Example	**Example Represen-tation (this Spec)**	**Actual Text In Message**
UPPER CASE character(s) (without underline)	Contents are entered in an abbreviated form. See Table 1-3 for encoding rules.	AAXXXX	UA1234	UA1234
UPPER CASE character(s) (with underline)	Fixed text to be entered into the message exactly as printed (less the underline)	ATIS	ATIS	ATIS
lower case characters (shown in normal font)	Abbreviation of variable text to be displayed or printed. See Table 1-4 for encoding rules.	hhmm	1455	1455
lower case characters (shown in italics) Representations are shown enclosed within angle brackets	Description of *a* fixed text punctuation mark that is to be displayed/printed.	*slash*	</>	/
	Description of a non-printing character	*space*	<sp>	
	Description of a non-printing display/printer control character	*carriage return*	<cr>	
Free Text	Any combination of characters permitted for use on the air-ground link (see Table 1-1 above).	Free Text	STANDBY	STANDBY

1.3 Encoding Abbreviations – Upper Case

The range of the contents of this field is entered in an abbreviated and symbolic format using one or more upper case alphabetic characters for the abbreviation. The conventions used to describe the contents are as follows:

Table 1-3 Message Code Sets and Abbreviations – Upper Case

Information	Code	Range	Notes
Format	A	Upper Case Alphabetic (A .. Z)	
	B	Boolean (0, 1)	
	C	Upper Case Alphanumeric plus specific punctuation (A .. Z) + (0 .. 9) + <.> + <-> + <sp>	
	DD or DDD	Degrees (00 .. 90) or (000 .. 180)	
	F	Upper Case Alphanumeric (A…Z) + (0…9) plus the dash <-> character	
	J	Hexadecimal (0 ... 9) + (A … F)	
	R	Radar (Mode A/C transponder) Code	1
	X	Upper Case Alphanumeric (A ... Z) + (0 ... 9)	
	Q	Plus Sign <+> or Minus Sign <->	
	Y	Compass Direction (N, S)	
	Z	Compass Direction (E, W)	
	Free Text	All characters highlighted in Table 1-1.	

Note: The four digits of the Air Traffic Control Transponder Beacon System (ATCRBS) “Squawk” code (also known as the 4096 code) represent octal assignments and therefore have decimal values that range from 0 to 7.

1.3.1 Encoding Geographical Position

The POS (position) field may be displayed in any one of the following formats:

	Code	Example
a.	DDYDDDZ	53N054W
b.	DDNNYDDDNNZ	5305N05405W
c.	AAA or AAAA or AAAAA	CARPE

For example b, in the position format DDNNYDDDNNZ, the range of values are shown in Table 1-3A

Table 1-3A Clarification of Latitude and Longitude

DD	NN	Y	DDD	NN	Z
00-90 Degrees	00-59 Minutes	N (North) or S (South)	000-180 Degrees	00-59 Minutes	E (East) or W (West)

When the first DD reads 90 Degrees, the following NN must be zero minutes**.** When DDD reads 180 degrees, the following NN must be zero minutes.

1.4 Encoding Abbreviations – Lower Case

The range of the contents of this field is entered in an abbreviated and symbolic format using one or more lower case alphabetic characters for the abbreviation. The conventions used to describe the contents are as follows:

Table 1-4 Message Code Sets and Abbreviations – Lower Case

Information	Code	Range	Notes
Time	hhmm	Hours (00 .. 23), Minutes (00 .. 59)	
	hh	Hours (00 .. 23),	
	mm	Minutes (00 .. 59)	
	mss	Minutes (0 .. 9), Seconds (00 .. 59)	
	mmss	Minutes (00 .. 59), Seconds (00 .. 59)	
	ss	Seconds (00 .. 59)	
Date	yymmdd	yy: Year (00 .. 99)	
		mm: Month (01 .. 12)	
		dd: Day (01 .. 31)	

1.5 Message Encapsulation

The message text is surrounded by the header which carries the start of text indicator (STX) followed by address information (for both the aircraft and the ATS ground entity) at the beginning (then the Application Text of which the ATS Application Data is a subset) and closes with an end of text indicator (ETX) at the end. The information defined in this specification constitutes the ATS Application Data as shown in Figure 1-1 below. The content of the message may be identified interchangeably by the terms “ATS Application Data” and “Message Text” in this specification. Observe that the ATS Application Data, when enveloped by the IMI and slash characters at the beginning and the CRC at the end, becomes the Application Text.

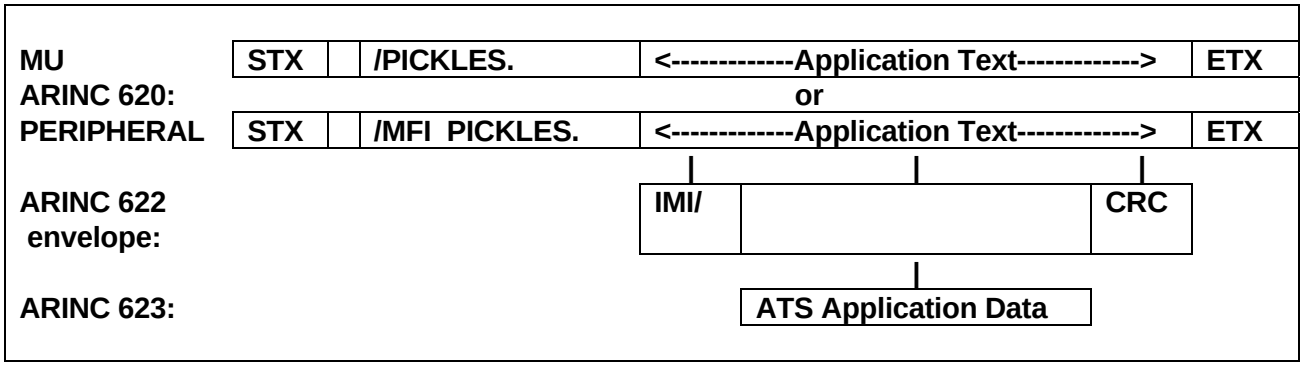


Figure 1-1 ATS MESSAGE ENCAPSULATION FOR CHARACTER-ORIENTED APPLICATIONS

Notes: Typically, the ATS Application Data (Message Text) has the format of:

- Message Type Identifier,
- Avionics Indicator,
- character-based text fields containing the ATS information.

ATTACHMENT 2
RESERVED

This attachment, formerly entitled ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMAT, has been integrated with Chapter 2 and moved to Appendix B.

ATTACHMENT 3
RESERVED

This attachment, formerly entitled REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT, has been integrated with Chapter 3, and moved to Appendix C.

ATTACHMENT 4
RESERVED

This attachment, formerly entitled OCEANIC CLEARANCE UPLINK FORMAT, has been integrated with Chapter 3 and moved to Appendix C.

ATTACHMENT 5
RESERVED

This attachment, formerly entitled OCEANIC CLEARANCE READBACK DOWNLINK FORMAT, has been integrated with Chapter 3, and moved to Appendix C.

ATTACHMENT 6
RESERVED

This attachment, formerly entitled REQUEST FOR DEPARTURE CLEARANCE DOWNLINK FORMAT, has been integrated with Chapter 4, and moved to Appendix D.

ATTACHMENT 7
RESERVED

This attachment, formerly entitled DEPARTURE CLEARANCE UPLINK FORMAT, has been integrated with Chapter 4, and moved to Appendix D.

ATTACHMENT 8
RESERVED

This attachment, formerly entitled DEPARTURE CLEARANCE READBACK DOWNLINK FORMAT, has been integrated with Chapter 4, and moved to Appendix D.

ATTACHMENT 9
FLIGHT SYSTEM MESSAGE (FSM) UPLINK FORMAT

9.1 Flight System Message (FSM)

Generally, the Flight System Message (FSM) uplink will be generated by the Flight System application at the ATC in response to the receipt of a message associated with an application which does not have the necessary range of responses available to fully service the message. The messages that have been identified for association with the Flight System Message are: Departure Clearance Requests, ATIS Requests, Oceanic Clearance Requests and Pushback Clearance Requests.

COMMENTARY

Eurocae ED-85A, ED-89A, and ED-106A, which define Departure Clearance, ATIS and Oceanic Clearance respectively, include coding of the Flight System Message individually for these applications. They are therefore stand-alone with response messages that are unique to each application. The definition in this specification is more generic. In the event that there is a conflict among definitions, the Eurocae document will have precedence**.**

The example Flight Service ground/ground information shown in Figure 9-1 should result in the uplink air/ground message, illustrated in Table 9-1, to the aircraft.

FSM 1523 031126 EGGX
BAW123 RCL REJECTED
ERROR IN MESSAGE
REVERT TO VOICE PROCEDURES

Figure 9-1 – Example of Flight Service Ground-Ground Information

ATTACHMENT 9
FLIGHT SYSTEM MESSAGE (FSM) UPLINK FORMAT

Table 9-1 Message Text of Flight System Message Uplink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	FSM		FSM	
	Word Separator	1	*space*		<sp>	
Time and Date	Time	4		hhmm	1523	
	Word Separator	1	*space*		<sp>	
	Date	6		yymmdd	031126	
	Word Separator	1	*space*		<sp>	
ATCC Identifier	ICAO Designator	4		AAAA	EGGX	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Message Text	Flight Identifier	2-7		XXXXXXX	BAW123	
	Word Separator	1	*space*		<sp>	
	Message Type Response Identifier	3		AAA	RCL	
	Word Separator	1	*space*		<sp>	
	Base Message	8		RECEIVED or REJECTED	REJECTED	
Optional Supplemental Message	Line Separator	2	*carriage return-line feed*		<cr/lf>	
	Optional Supplemental Message Part 1	Variable up to 80		CCCC…… …CCCC	ERROR IN MESSAGE -	4, 5
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
	Optional Supplemental Message Part 2	Variable up to 80		CCCC…….. CCCCC	REVERT TO VOICE PROCEDURES	4, 6
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
	Optional Supplemental Message Part 3	Variable up to 80		CCCC……. CCCCC		4, 7
Optional Additional Free Text Information	Line Separator	2	*carriage return-line feed*		<cr/lf>	4, 8
	Free Text	Variable *up* to 80		CCCC……. CCCC		

ATTACHMENT 9
FLIGHT SYSTEM MESSAGE (FSM) UPLINK FORMAT

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field is optional, but if present, it must be formatted as shown.

5. Refer to Table 9-1A for a listing of the optional phrases defined for use in the Supplemental Message Part 1 Subfield.

6. Refer to Table 9-1B for a listing of the optional phrases defined for use in the Supplemental Message Part 2 Subfield.

7. Refer to Table 9-1C for a listing of the optional phrases defined for use in the Supplemental Message Part 3 Subfield.

8. Although the Free Text field is available for any arrangement of characters, some phrases have been recommended for use and are included here to encourage uniformity in structure and grammar. Refer to Table 9-1D for a listing of the optional pre-defined phrases and subjects identified for use in the Free Text Subfield.

9. Variable length fields are individually constrained in length. There is also a total message length constraint of message characters that should be observed (including characters needed for Specifications 618 and 622) to keep the message to one block in length.

ATTACHMENT 9
FLIGHT SYSTEM MESSAGE (FSM) UPLINK FORMAT

Table 9-1A Message Text Options for Supplemental Message Part 1

SUB-FIELD NAME	CONTENT OPTIONS [1]	NOTES
Supplemental Message Part 1	REQUEST BEING PROCESSED or	
	REQUEST ALREADY RECEIVED or	
	CLEARANCE CONFIRMED or	
	IF NO CLEARANCE WITHIN nn MINUTES or	
	FLIGHT PLAN NOT HELD or	
	ERROR IN MESSAGE or	
	CLEARANCE CANCELED or	
	CLEARANCE REJECT ACKNOWLEDGED	
	Other phrases may be defined in the future	

Note:

1. The range of the contents of this field *may be* entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

Table 9-1B Message Text Options for Supplemental Message Part 2

SUB-FIELD NAME	CONTENT OPTIONS	NOTES
Supplemental Message Part 2		
	STANDBY or	
	REVERT TO VOICE PROCEDURES	
	Other phrases may be defined in the future	

Table 9-1C Message Text Options for Pushback Clearance Acknowledgment

SUB-FIELD NAME	CONTENT OPTIONS	NOTES
Pushback Clearance Acknowledgment		
	PUSHBACK REQUEST RECEIVED	
	Other phrases may be defined in the future	

Table 9-1D Pre-defined and Undefined Message Text Options for Free Text

SUB-FIELD NAME	CONTENT OPTIONS	NOTES
Free Text		
	CONTACT (ATC Center Name) BY VOICE	
	SIGMET information - text variable	
	Other topics and phrases may be defined in the future	

ATTACHMENT 10
TERMINAL WEATHER INFORMATION FOR PILOTS

10.1 TWIP Request

The Terminal Weather Information for Pilots Request downlink message is initiated by the pilot. The form of an example air-ground message is shown in Table 10-1.

Table 10-1 Example, TWIP Downlink Request Format Version 1

FIELD NAME	FIELD LENGTH (in Chars)	CONTENT [1]		EXAMPLE	NOTES
		Fixed Text [2]	Variable Text [3]		
Message Type Identifier	3	TWR		TWR	
	1	*space*		<sp>	
Avionics Indicator	3		NNN	080	
ICAO Airport ID	4		XXXX	KPIT	4
Request Mode	1		N, or C, or T	N	N = single (normal) request C = request auto-update T = terminate auto-update
Text/Graphics Indicator	1		T, or G	T	T = Text presentation G = Graphics presentation Graphics presentations are made up of text characters (ISO-5) arranged in a pattern on the display.

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

The example Terminal Weather Information for Pilots (TWIP) Request information shown in the air/ground message of Table 10-1 above should result in a TWIP

Request ground/ground message delivered to the ATC TWIP application on the ground as:

TWR 080KPITNT

10.2 TWIP Uplink

TWI KPIT TWIP 1452Z
TWIP Information

An example TWIP uplink ground-ground message is shown below. The associated air-ground message is shown in Table 10-2. The example TWIP uplink would appear in the air-ground form shown in Table 10-2.

Table 10-2 Example, TWIP Uplink Response Version 1

FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
		Fixed Text [2]	Variable Text [3]		
Message Type Identifier	3	TWI		TWI	
	1	*space*		<sp>	
ICAO Airport ID	4		XXXX	KPIT	4
Word Separator	1	*space*		$<_{sp}>$	
TWIP Ident	4	TWIP		TWIP	
Space	1	*space*		$<_{sp}>$	
TWIP Time	5		hhmm	1452Z	
		Z			
New Line	2	*carriage return-line feed*		<cr/lf>	
TWIP Information			TWIP Information		Text or Graphics. Graphics presentations are made up of text (ISO-5) characters arranged in a pattern on the display.

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

ATTACHMENT 11
RESERVED

This attachment was formerly entitled WAYPOINT POSITION REPORT DOWNLINK FORMAT.

ATTACHMENT 12
DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

12.1 Pushback Request Downlink

The Pushback Request downlink is initiated by the aircrew. The format and content of the air-ground message is shown in Table 12-1.

Table 12-1 Air-Ground Message Text of Pushback Clearance Request Downlink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [1]	Variable Text [2]		
Message Type	Message Type	3	PBR		PBR	
	Word Separator	1	*space*		<sp>	
Avionics Display Format	Avionics Indicator	3		NNN	080	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Flight and ICAO Aircraft Identifier	Flight Identifier	2-7		XXXXXXX	NW3456	
	Field Separator	1	*slash*		</>	
	Registration Number	2-7		XXXXXXX	N552US	
	Field Separator	1	*slash*		</>	
Scheduled Flight Time	Scheduled Flight Date	2		dd	11	
	Scheduled Flight Time	4		hhmm	2359	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
ICAO Departure Airport	Departure Airport	4		XXXX	KDTW	*4*
	Word Separator	1	*space*		<sp>	
ICAO Destination Airport	Destination Airport	4		XXXX	KBWI	4
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Gate	Gate Identifier	1-5 (or 0)		XXXXX	F100A	5
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Pushback Request Remarks	Remarks	Variable ≤ 148		CCCC……. CCCC	PUSH APPROVED INTO THE CIRCLE	

ATTACHMENT 12
DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Table**s** 1-2**,** 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. This field is optional. If not used, the length is zero (0). If used, Gate *or* Stand information can be one to five characters.

In the example shown in Table 12-1 above, the following Pushback Clearance Request ground-ground message would be sent to the ATC Taxi Clearance application on the ground as:

PBR 080

NW3456/N552US/112359

KDTW KBWI

F100A

PUSH APPROVED INTO THE CIRCLE

12.2 Pushback Clearance Uplink

In the example shown below, the following ground-ground Pushback Clearance Response would be sent to the Taxi Clearance application in the aircraft as:

PBC

NW1560/10/N8934E/KDTW/KBWI

PUSH APPROVED

The associated air-ground message would have the form listed in Table 12-2.

Table 12-2 Air-Ground Message Text of Pushback Clearance Uplink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	PBC		PBC	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Flight Identifier	Flight Identifier	2-7		XXXXXXX	NW1560	
	Field Separator	1	*slash*		</>	
Scheduled Flight Date	Scheduled Flight Date	2		dd	10	
	Field Separator	1	*slash*		</>	
Registration Number	Registration Number	2-7		XXXXXXX	N8934E	
	Field Separator	1	*slash*		</>	
ICAO Departure Airport	Departure Airport	4		XXXX	KDTW	4
	Field Separator	1	*slash*		</>	
ICAO Destination Airport	Destination Airport	4		XXXX	KBWI	4
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Pushback Clearance Remarks	Remarks	Variable ≤ 150		CCCC….CCCC	PUSH APPROVED	5

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Table**s** 1-2**,** 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. Refer to Table 12-2A for Free Text options.

Table 12-2A Typical Pushback Clearance Free Text Options

REMARKS	EXAMPLE [1]	NOTES
Pushback Clearance Approved	PUSH APPROVED	
	PUSH APPROVED - BEHIND THE B747 IN THE ALLEY	
	PUSH APPROVED - INTO THE CIRCLE	
	PUSH APPROVED - UNHOOK SHORT OF THE CIRCLE	
	PUSH APPROVED - TAKE IT TO THE TOP OF THE CIRCLE	
	PUSH APPROVED - HOLD DEEP - THE B747 OUT OF GATE B5 WILL PUSH IN FRONT OF YOU	
	PUSH APPROVED - HOLD SHORT OF GATE B5 TO ALLOW THE B747 ONTO THE TAXIWAY	
	PUSH APPROVED - HOLD SHORT OF GATE B5 FOR AN INBOUND B747	
	PUSH APPROVED -BEHIND 2ND A310 IN ALLEY	
	PUSH APPROVED - TAIL TO THE CIRCLE, CONTACT ATC FOR APPROVAL TO ACTIVATE	
Hold Push	HOLD PUSH - WILL ADVISE	
Cancel Push	CANCEL PUSH - WILL ADVISE	

Notes:

1. The content of the Free Text field is not restricted to the examples shown in this table.

ATTACHMENT 13
DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

13.1 Expected Taxi Clearance Request

In Table 13-1 below, the Expected Taxi Clearance Request air-ground message would be sent to the ATC Taxi Clearance application on the ground.

Table 13-1 Air-Ground Message Text of Expected Taxi Clearance Request Downlink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [1]	Variable Text [2]		
Message Type Identifier	Message Type	3	ETR		ETR	
	Word Separator	1	*space*		<sp>	
Avionic Display Format	Avionics Indicator	3		NNN	080	
	Line Separator	2	*carriage return-line feed*		<crlf>	
Flight and Aircraft Identifier	Flight Identifier	2-7		XXXXXXX	NW3456	
	Field Separator	1	*slash*		</>	
	Registration Number	2-7		XXXXXXX	N552US	
	Field Separator	1	*slash*		</>	
Scheduled Flight Time	Flight Date	2		dd	11	
	UTC	4		hhmm	2359	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
ICAO Departure Airport	Departure Airport	4		XXXX	KBWI	4
	Word Separator	1	*space*		<sp>	
ICAO Destination Airport	Destination Airport	4		XXXX	KDTW	4
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Location Characters	Location Characters	1-5 (or 0)		XXXXX	G00C7	5
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Expected Taxi Clearance Request Remarks	Remarks	Variable ≤ 100		Free Text	READY FOR CLEARANCE	

ATTACHMENT 13
DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. This field is optional. If not used, the length is zero (0). If used, Gate or Stand information can be one to five characters.

   The word GATE may be open to differing interpretations in different regions of the world. In some cases the term STAND may be more appropriate. The fixed text “GATE” was used in the initial definition of the Departure Clearance Request message. The term GATE has been retained throughout this document in the interest of consistency. For the purposes of Departure Clearance messages, GATE is intended to mean the identifier of the location of the aircraft at the airport during the pre-flight phase. The data to be entered is therefore the information needed to unambiguously define this location to air traffic control, and would therefore be as published in the national Aeronautical Information Publication (AIP), and used in exactly the same way as it would be for the equivalent voice communication. Eurocae standards do not specify the screen formats to be used for the Departure Clearance Request message and therefore implementers are at liberty to use whatever terminology they choose, given that they remain within the constraints of Eurocae ED-85A, when completing the field.

In the example of Table 13-1, the following Expected Taxi Clearance Request ground-ground message would be printed on the ground as:

ETR 080

NW3456/N552US/112359

KBWI KDTW

G00C7

READY FOR CLEARANCE

13.2 Expected Taxi Clearance Uplink

In the example shown below, the following Expected Taxi Clearance ground-ground uplink response would be sent to the Taxi Clearance application in the aircraft as:

ETC

NW1560/N8934E/10/KDTW/KBWI/21R/118.50/119.45/RED1/D

DEICE PRIOR TO TAXI

The associated air-ground message would have the form listed in Table 13-2.

ATTACHMENT 13
DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

Table 13-2 Air-Ground Message Text of Expected Taxi Clearance Uplink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS		EXAMPLE	NOTES
			Fixed Text [1]	Variable Text [2]		
Message Type Identifier	Message Type	3	ETC		ETC	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Flight and Aircraft Identifier	Flight Identifier	2-7		XXXXXXX	NW1560	
	Field Separator	1	*slash*		</>	
	Registration Number	2-7		XXXXXXX	N8934E	
	Field Separator	1	*slash*		</>	
Scheduled Flight Date	Scheduled Flight Date	2		dd	10	
	Field Separator	1	*slash*		</>	
ICAO Departure Airport	Departure Airport	4		XXXX	KDTW	4
	Field Separator	1	*slash*		</>	
ICAO Destination Airport	Destination Airport	4		XXXX	KBWI	4
	Field Separator	1	*slash*		</>	
Expected Runway	Expected Runway	3		XXX	21R	
	Field Separator	1	*slash*		</>	
Contact Frequency	Contact Frequency	7 (or 0)		NNN.NNN	118.500	5
	Field Separator	1	*slash*		</>	
Monitor Frequency	Monitor Frequency	7		NNN.NNN	119.450	
	Field Separator	1	*slash*		</>	
Expected Taxi Route	Expected Taxi Route (Coded)	Variable (2-20)		XXX…	RED1	
	Field Separator	1	*slash*		</>	
ATIS	ATIS Code	1		A	D	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Request Response	Remarks	Variable ≤100		Additional Free Text	DEICE PRIOR TO TAXI	6

ATTACHMENT 13
DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. This field is left empty (length = zero) if the frequency is not entered.

6. The content of the message is not restricted to the example included above.

ATTACHMENT 14
AIRCRAFT LOG-ON/LOG-OFF MESSAGE

14.1 CPC Aircraft Log-on/Log-off Request Downlink

In the example below, the following CPC Log-On Request air-ground message would be sent to the ATS system that hosts the CPC Application as shown in Table 14-1.

Table 14-1 Message Text For CPC Aircraft Log-On/Log-Off Request (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3		CPL or COF	CPL	5
	Word Separator	1	*space*		<sp>	
Avionics Indicator	Avionics Indicator	3		*NNN*	020	
	Word Separator	1	*space*		<sp>	
Date and Time	Date	6		yymmdd	960930	
	Word Separator	1	*space*		<sp>	
	Time	6		hhmmss	123235	
	Word Separator	1	*space*		<sp>	
Aircraft ID	Flight Identifier	2-7		XXXXXXX	VAL1234	6
	Word Separator	1	*space*		<sp>	
Message Identification Number	Message Identification Number	2		NN	12	
	Word Separator	1	*space*		<sp>	
Message Reference Number	Message Reference Number	2		NN	00	7
	Word Separator	1	*space*		<sp>	
ICAO Departure Airport	ICAO Departure Airport	4		XXXX	KLAX	4
	Word Separator	1	*space*		<sp>	
ICAO Destination Airport	ICAO Destination Airport	4		XXXX	KPHL	4
Optional Free Text	Field Separator	1	*slash*		</>	
	Free Text	Variable (1-100)		Free Text	NEW USER	8

ATTACHMENT 14
AIRCRAFT LOG-ON/LOG-OFF MESSAGE

In the example CPC Long-on Request downlink, the ground-ground message would be:

CPL 020 960930 123235 VAL1234 12 00 KLAX KPHL/NEW USER

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in uplink messages. The application may insert more carriage return and line feed characters to optimize readability.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO Document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. Per Section 9.2.2, a MTI of CPL indicates an automatic or a manual CPC Log-On Request, and a MTI of COF indicates an automatic CPC Log-Off Request

6. The Flight Identifier should be defined exactly as in the filed flight plan and conform to ICAO format.

7. The Message Reference Number field of a CPC Log-On/Log-Off message will usually contain a value of 00 because the message is not responding to a CPC uplink.

8. A Free Text field is not needed in the current CPC implementation. It has been included in the format for future.

ATTACHMENT 15
AIRCREW RESPONSE DOWNLINK MESSAGE

15.1 CPC WILCO/UNABLE Response

In the example below, the following CPC WILCO/UNABLE Response air-ground downlink message would be sent to the ATS system that hosts the CPC Application as shown in Table 15-1.

Table 15-1 Air-Ground Message Text For CPC WILCO/UNABLE Response (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLE	NOTES
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type		CWR		CWR	
	Word Separator	1	*space*		<sp>	
Date and Time	Date	6		yymmdd	960930	
	Word Separator	1	*space*		<sp>	
	Time	6		hhmmss	123235	
	Word Separator	1	*space*		<sp>	
Aircraft ID	Flight Identifier	2-7		XXXXXXX	VAL1234	4
	Word Separator	1	*space*		<sp>	
Message Identification Number	Message Identification Number	2		NN	13	
	Word Separator	1	*space*		<sp>	
Message Reference Number	Message Reference Number	2		NN	42	
	Word Separator	1	*space*		<sp>	
Acknowledge	Response	Variable: (5-8)		WILCO or ROGER or AFFIRM or UNABLE or NEGATIVE	WILCO	5
	Word Separator	1	*space*		<sp>	
Supplemental CPC Data (Optional Based on Uplink)	Data ID	1	hyphen		<->	
	Assigned Altitude	3-4		NNN or NNNN	170	6
	Units	1		F or M	F	7

ATTACHMENT 15
AIRCREW RESPONSE DOWNLINK MESSAGE

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. The Flight Identifier should be defined exactly as in the filed flight plan and conform to ICAO format.

5. A positive response from the crew will be represented as either a “WILCO,” “ROGER,” or “AFFIRM;” as appropriate, based on the specific type (MTI) of CPC uplink. A negative response will be represented as either a “UNABLE” or a “NEGATIVE.” (Refer to Section 9.4.) Only one response is permitted in the Acknowledgment field of a CPC WILCO/UNABLE Response.

6. Assigned altitude is entered by the crew in either units of hundreds of feet or tens of meters. A three- character numeric value is used for an entry in units of feet while a four-character, numeric entry is used for an entry in units of meters. The valid range is 030..700 for hundreds of feet and 0100..2500 for tens of meters.

7. “Units” identifies the Assigned Altitude in units of feet (F) or meters (M).

In the example Table 15-1 above, the following CPC WILCO/UNABLE Response ground-ground message would be sent to the ATS system that hosts the CPC Application as:

CWR 960930 123235 VAL1234 13 42 WILCO -170F

ATTACHMENT 16
CPC UPLINK MESSAGE

16.1 CPC Command/Response Uplink

Table 16-1 Message Text For CPC Command/Response Uplink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS		EXAMPLE	NOTES
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3		LCS or TOC or ASM or MFC or PD1 or PD2 or PD3 or PD4	TOC	4
	Word Separator	1	*space*		<sp>	
Message Identification Number	Message Identification Number	2		NN	42	
	Word Separator	1	*space*		<sp>	
Message Reference Number	Message Reference Number	2		NN	00	
	Word Separator	1	*space*		<sp>	
Date	Date	6		yymmdd	960930	5
	Word Separator	1	*space*		<sp>	
Time	Time	6		hhmmss	123235	5
	Time ID	1	*Z*		Z	
	Word Separator	1	*space*		<sp>	
Summary Information	Summary Info	12		Refer to Tables 16-1, A-E for Examples	KLAX 118.000	5,6
	Word Separator	2	*carriage return-line feed*		<cr/lf>	
Message Source	ATS Facility	4		XXXX	KZMP	5
	Word Separator	1	*space*		<sp>	
Aircraft Identifier	Flight Identifier	2-7		XXXXXXX	VAL1234	3,5
	Word Separator	1	*space*		<sp>	
CPC Application Text	Fixed Text Options Defined for LCS, TOC, ASM, MFC, PD1, PD2, PD3, PD4	Variable ≤ 80		Refer to Tables 16-1, A-E for Examples	CONTACT LOS ANGELES APPROACH ONE ONE EIGHT ZERO ZERO ZERO	5,7

ATTACHMENT 16
CPC UPLINK MESSAGE

In the example below, the following ground-ground CPC Command/ResponseUplink would be sent to the airborne CPC Application as:

TOC 42 00 960930 123235Z KLAX 118.000

KZLA VAL1234 CONTACT LOS ANGELES

APPROACH ONE ONE EIGHT ZERO ZERO ZERO

In Table 16-1, the following air-ground CPC Command/ResponseUplink would be sent to the airborne CPC Application as dhown:

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in ATIS uplink messages. The application may insert more carriage return and line fee characters to optimize readability.

2. Contents in the Fixed Text column entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of the characters available for use.

4. Section 9.4 and Section 9.4.2 provides a detailed description and definition of the CPC Message Type Identifiers. PD4 is considered an optional implementation.

5. This field should be encoded in accordance with ICAO Document 4444, Appendix 2.

6. Summary Information will be provided by the ground CPC application. The Summary Information will provide enough information to indicate the content of the uplinked message for a one line display intended for use in a received messages log. If the data content is less than 12 characters, the field should be left justified. Unfilled characters should be filled with the space <sp> character.

7. The carriage return-line feed combination is expected to be displayed as a carriage return-line feed and not substituted with any other character or characters.

ATTACHMENT 16
CPC UPLINK MESSAGE

Table 16-1A Example - LCS CPC Application Text

CONTENTS	EXAMPLE	NOTES
[FacilityName] [FacilityFunction] CONFIRM SQUAWK [Code] [warningtext]	ATLANTA CENTER CONFIRM SQUAWK 0673 ZERO SIX SEVEN THREE WARNING: DO NOT CHANGE BEACON CODE	

Table 16-1B Example - TOC CPC Application Text

CONTENTS	EXAMPLE	NOTES
CONTACT [FacilityName] [FacilityFunction] [Frequency]	CONTACT ATLANTA APPROACH ONE ONE EIGHT ZERO ZERO ZERO	MONITOR may be used in place of CONTACT

Table 16-1C Example - ASM CPC Application Text

CONTENTS	EXAMPLE	NOTES
[FacilityName] ALTIMETER [Altimeter] TIME [Time]	ATLANTA ALTIMETER TWO NINE NINE EIGHT TIME 1232	

Table 16-1D Example - MFC CPC Application Text

CONTENTS	EXAMPLE	NOTES
MONITOR [FacilityName] [FacilityFunction] [Frequency] CONFIRM ASSIGNED LEVEL	MONITOR ATLANTA CENTER ONE ONE EIGHT ZERO ZERO ZERO CONFIRM ASSIGNED LEVEL	Use MONITOR only

Table 16-1E: Example - CPC Application Text for PD1, PD2, PD3 or PD4

CONTENTS	EXAMPLE	NOTES
Pre-Defined “Freetalk” (PD1, PD2, PD3, or PD4)	CHECK STUCK MICROPHONE 118.000	Future CPC Service

Table 16-2A Example - LCS Summary Information

CONTENTS	EXAMPLE	NOTES
CNFRM SQUAWK	CNFRM SQUAWK	

Table 16-2B Example - TOC Summary Information

CONTENTS	EXAMPLE	NOTES
[FacilityName] [Frequency]	KLAX 118.000	FacilityName is the ICAO identifier for the receiving ATS facility

Table 16-2C Example - ASM Summary Information

CONTENTS	EXAMPLE	NOTES
[FacilityName] [Altimeter]	W99 2982IN	FacilityName is the Altimeter Reporting Airport identifier; Altimeter is inches of mercury (IN) or millibars (MB)

Table 16-2D Example - MFC Summary Information

CONTENTS	EXAMPLE	NOTES
[FacilityName] [Frequency]	KLAX 118.000	FacilityName is the ICAO identifier for the receiving ATS facility

Table 16-2E Example - Summary Information for PD1, PD2, PD3 or PD4

CONTENTS	EXAMPLE	NOTES
XXXXXXXXXXXX	STUCK MIC	

APPENDIX A
LIST OF ACRONYMS

ACARS	Aircraft Communication Addressing and Reporting System
ACK	Data Received OK
ACMS	Airplane Condition Monitoring System
ADT	Approved Departure Time
AI	Avionics Indicator
ASM	MTI for Barometric Altimeter Setting
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
ATS	Air Traffic Services
CDU	Control Display Unit
CFDIU	Central Fault Display Indicator Unit
CMC	Central Maintenance Computer
CMU	Communications Management Unit
CPC	Controller-to-Pilot Communications
CRC	Cyclic Redundancy Check
CT	Command Type
CTOT	Calculated Take-Off Time
CTS	Clear To Send
DF	Data Follows
DFDAU	Digital Flight Data Acquisition Unit
DGSS/IS	Data Link Ground System Standard and Interface Specification
DITS	Mark 33 Digital Transfer Information System
DMU	Digital Management Unit
DSP	Digital Signal Processor, Display Select Panel, Domain Specific Part
ELC	Engine Life Computer
EOBT	Estimated Off-Block Time

APPENDIX A
LIST OF ACRONYMS

EOF	End of Field
EOT	End of Transmission
ES	End System
ETOT	Estimated Take-Off Time
FMC	Flight Management Computer
FSM	Flight System Messae
GFI	General Format Identifier
GPBOP	General Purpose Bit Oriented Protocol
IATA	International Airline Transport Association
ICAO	International Civil Aviation Association
IMI	Imbedded Message Identifier
LCS	MTI for Long-On/Confirm SQUAWK Ident.
LDU	Link Data Units
LRU	Line Replacement Unit
LSB	Least Significant Bit
MAC	Media Access Control
MCDU	Multifunctional Control Display Unit
MDI	Minimum Departure Interval
MFC	MTI for Initial Contact/Transfer of Communication
MFI	Message Function Identifier
MICP	Multi Input Cockpit Printer
MSB	Most Significant Bit
MSN	Message Sequence Number
MTI	Moving Target Indicator Message Type Identifier
MU	Management Unit
NAK	Data Received Not Ok
NCTS	Not Clear to Send

APPENDIX A
LIST OF ACRONYMS

OAT	Optional Auxiliary Terminal
RTCA	Radio Technical Commission for Aeronautics
RTS	Request to Send
SAL	System Address Label
SATCOM	Satellite Communications
SDU	Satellite Data Unit
SOF	Start of Field
SOT	Start of Text
TIS	Traffic Information Service
TWIP	Terminal Weather Information for Pilots
VHF	Very High Frequency

APPENDIX B
ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

Information for ATIS Version 1 and 2 uplink and downlink messages, formerly in Section 2.0, has been integrated with format information, formerly in Attachment 2, and moved to this appendix.

Document Precedence:

Eurocae ED-89A, which defines the D-ATIS message format and use, has precedence over this specification and should be consulted for any design or implementation. ED-89A combines the use of Automatic Entroute Information Service with Meteorological Information for Aircraft in Flight, known as VOLMET. This appendix documents the initial definition of D-ATIS.

B1.0 Automatic Terminal Information Service (ATIS)

To support the delivery of ATIS messages via data link two message types may be used:

Message	Up/Down	IMI	Message Type Identifier	MFI/Label
Automatic Terminal Information Service (ATIS) Request	Down	TIx	TIS	B9
Deliver Automatic Terminal Information	Up	TIx	---	A9

Note: In the IMI of TIx, the value of the third character (x) should be filled with the version number of the message.

B2.0 Requesting an ATIS Report

The Automatic Terminal Information Service (ATIS) Request is a message prepared by an End System on the aircraft and sent to the ground in order to request ATIS information.

The format of the Request for ATIS provides specific parameters to clearly indicate what information is being requested. Two versions have been defined. Version 1 is defined in Section B2.1 and Version 2 is defined in Section B2.2. Version 2 is the preferred implementation.

The MTI value of TIS has been assigned to the TIS Request downlink even though it is not contained in Version 1 or 2.

Version 1 of the Digital Automatic Terminal Information Service (D-ATIS) Request downlink contained a Version Number field that enabled the aircraft to indicate the most recent version of the D-ATIS application that it was capable of processing. In Version 1, the ground system uplink also contained a Version Number field that enabled it to indicate the actual format used in its response. In Version 2, the version information was encoded into the IMI and thus not included as a Version Number field in the message text. See Table B-1.

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ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

Table B-1 D-ATIS Report Version Numbers

Version Number	IMI/Version Code	Table		Notes
		Request	Report	
Reserved	00	---	---	
1	01	B-2	B-4	Obsolete
2	TI2	B-3	B-5	Preferred

B2.1 Request for ATIS Report, Version 1

Version 1 of the request for an ATIS report uplink message has been declared obsolete. A copy of Version 1 has been retained in Table B-2 for historical purposes.

The Version 1 format has been declared obsolete. Table B-2 has been retained in this Specification as a historical record. Generally, the highest version number format is the preferred implementation

The format for Version 1 of the Request for an ATIS Report is shown in Table B-2.

Table B-2 Message Text of Request (Downlink) For ATIS Report (Version 1)

Character Number	Field Name	Field Length (In Chars)	Contents[1]	Example	Notes
1 to 2	Version Number	2	01	01	
3 to 6	Airport ID	4	XXXC	KSEA	2
7	Arrival/Departure Indicator	1	A,D,C,T or E	A	Per Note 5 of Table B-3
8 to 10	Avionics Indicator	3	NNN	132	

Notes:

1. The range of the contents of this field are entered in an abbreviated format. See Table 1-2 of Attachment 1 for the range of the parameters listed.

2. Four-character ICAO code or Three-character IATA code plus a space character.

B2.2 Request for ATIS Report, Version 2

The format of Version 2 of the request for an ATIS report is shown below in Table *B-3*. It contains the following fields: Avionics Indicator, Airport ID, and Arrival/Departure Indicator. A downlink containing a Version 2 request for an ATIS report should result in a Version 2 ATIS report uplink from the ground ATIS application.

This definition is included for the reader's convenience. Eurocae ED-89A has precedence over Version 2 of the ATIS message.

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ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

The format for Version 2 of the ATIS Request (Downlink) is shown in Table B-3.

Table B-3 Air-Ground Message Text of Request for ATIS Report Downlink (Version 2)

Field Name	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
Avionics Indicator		3		NNN	080	
ICAO Airport ID		4		XXXX	KPIT	4
Arrival/Departure Indicator		1		A or D or C or E or T	A	5

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2**,** 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. Major carriers typically use airports that would be covered by ICAO 4444 or IATA designation in the form of AAAA. This indicates that only alphabetical characters appear in the Airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of both alphabetical and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. Arrival/Departure Indicator Codes

The ATIS Request contains a request field for designating the type of ATIS message to be delivered. The field is encoded in an abbreviated format to minimize the length of the message.

Symbol	Range of Characters/Assignment
A	Arrival ATIS
D	Departure ATIS
C	Arrival ATIS with automatic update
E	Automatic Enroute Information Service (AEIS) *or* VOLMET
T	Terminate automatic update of ATIS

6. The MTI is not included in the text of the downlink message, but is used as the Message Type Response Identifier in any

Flight System Message uplinked in response to the ATIS Request.

In the example Version 2 message shown in Table B-3 above, the following ATIS Request ground-ground message sent to the ATC application on the ground would be:

080KPITA

B2.2.1 Avionics Indicator

The three-character Avionics Indicator identifies the preferred length of a row of the uplink message when displayed or printed. The ATIS application on the ground will use this information to preclude sending a line of text which exceeds the capacity of the display in the aircraft. The Avionics Indicator is used to enable the ATIS report uplink message to be formatted to match the display size (number of characters per display line) used by the aircraft requesting the ATIS information.

If it is not necessary for the ground-based ATIS application to limit line length, the avionics indicator characters should be set to 000.

B2.2.2 Airport ID

The Airport ID is a four-character field used to identify the airport (or enroute sector) for which ATIS is requested. The airport ID is the four-character code and should be consistent with ICAO document 4444.

B2.2.3 Arrival/Departure Indicator

The Arrival/Departure Indicator is used to specify the type of ATIS information that is being requested.

For those airports which have separate arrival and departure ATIS messages, only the requested ATIS information (i.e. Arrival ATIS is A and departure ATIS is D) will be delivered to the aircraft. For airports which have a single ATIS message which contains both arrival and departure information the single ATIS message will be delivered in response to either a departure (D) or arrival (A) ATIS request.

The ATIS Request message format also contains a provision for an Arrival ATIS request with automatic update (C). It is envisioned that when an aircraft requests an ATIS message with an Arrival/Departure indicator of C the aircraft would automatically receive the latest ATIS message and would also receive any subsequent updates to the ATIS message of interest. The aircraft would have the ability to terminate the automatic updates by delivering an ATIS request message with an Arrival/Departure Indicator of T.

Enroute service may be requested using an Arrival/Departure Indicator code of E. Eurocae ED-89A calls for the alternate use of this field to deliver Meteorological Information for Aircraft in Flight (VOLMET).

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ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

B3.0 Delivery of the ATIS Report Uplink

The ATIS report message is prepared on the ground by the ATIS application and uplinked to the aircraft on request.

If the usual response is inappropriate, the ATC facility may choose to send a Flight Systems message per Section 5.2 to inform the aircrew of the status of the ATIS Request.

B3.1 ATIS Report Uplink Message, Version 1

Version 1 of the ATIS Request uplink message has been declared obsolete. A copy of Version 1 has been retained in Table B-4 for historical purposes.

The Version 1 format has been declared obsolete. This table has been retained in this Specification as a historical record

In the example shown below, the following ATIS Uplink would be sent to the ATC ATIS application on the ground as:

01KPITD08010SCT E28 BKN

The format for Version 1 of the ATIS Uplink is shown in Table B-4.

Table B-4 Message Text of ATIS Report Uplink (Version 1

Char Number	Field Name	Field Length (In Chars)	Contents [1]	Example	Notes
1 - 2	Version Number	2	01	01	3
3 - 6	Airport ID	4	XXXC	KPIT	
7	Arrival/Departure Indicator	1	per Table 1-2	D (Departure)	2
8 - 10	Avionics Indicator	3	NNN	080	3
11 - n	ATIS Information	≤ n	ATIS Info (C .. C)	10 SCT E28 BKN	

Notes:

1. The range of the contents of this field is entered in an abbreviated format. See Table 1-2 of Attachment 1 for the range of the parameters available. There may be more carriage return and line feed characters for formatting reasons.

2. See note 5 of Table B-3 for the list of assignments.

3. The information in this field is NOT intended to be presented on the display/printout of the message.

B3.2 ATIS Uplink Report Message, Version 2

The ground ATIS application will respond with a Version 2, ATIS uplink message when it receives a Version 2, ATIS Request (see Section *B2.2*). The Version 2 ATIS

APPENDIX B
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Uplink format is given in Table B-5. It contains the following fields; Airport ID, Arrival/Departure Indicator, ATIS Identifier, ATIS Version, ATIS Time and ATIS Information.

This definition is included for the reader's convenience. Eurocae ED-89A has precedence over Version 2 of the ATIS message

In the example shown below, the following ATIS Report uplink would be generated by the ATIS application on the ground as:

KPIT ARR ATIS E
1452Z 10 SCT E28 BKN...

The format for Version 2 of the ATIS air-ground uplink is shown in Table B-5.

Table B-5 Message Text of ATIS Report Uplink (Version 2)

Field Name	Sub Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
AIRPORT ID	ICAO Airport ID	4		XXXX	KPIT	4
	Word Separator	1	*space*		<sp>	
ARR/DEP	Arrival/Departure	3		ARR DEP ENR	ARR	5
	Word Separator	1	*space*		<sp>	
ATIS Identifier	ATIS Identifier	4	ATIS		ATIS	
	Word Separator	1	*space*		<sp>	
ATIS Version	ATIS Version	1		A	*E*	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
ATIS Time	ATIS Time	4		hhmm	1452Z	6
	Zulu Reference		Z			
	Word Separator	1	*space*		<sp>	
ATIS Information	ATIS Information	<800		Free Text	10 SCT E28 BKN...	7, 8

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. For any field, contents in the Fixed Text Column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Table 1-2 of Attachment 1 for the range of the characters available for use. There may be more carriage return and line feed characters for formatting reasons.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. Arrival/Departure Indicator Codes

   The ATIS Uplink contains a content identifier field for designating the type of ATIS message that is being delivered. The field is encoded in an abbreviated format to minimize the length of the message, but longer than the abbreviation used in the downlink request message to make the information readable by the aircrew.

Symbol	Range Of Characters/Assignment
ARR	Arrival
DEP	Departure
ENR	Enroute/VOLMET

6. This field should be encoded in accordance with ICAO document 4444, Appendix 2.

7. EUROCAE Document ED-89A specifies that ATIS messages are no longer than 800 characters. Lengthy ATIS uplinks have demonstrated an associated reduction in delivery success rate. The DLK Users Forum recommends that Notice to Airmen (NOTAM) information NOT be appended to digital ATIS uplink messages. Concise text and reasoned content is encouraged. Specifically, the message will be delivered most efficiently and effectively when its length is held to one block.

8. A list of information elements that can be used in the ATIS Information field has been developed for educational purposes. This list is not comprehensive. See Table B-6.

Table B-6 Typical Text Contents of the Version 2 ATIS Report Uplink Message

Content	Example	Note
Approach Type	ILS	
Runway in use	15R	
Runway Surface Conditions	RSCD/WET	
Braking Action	BA/MEDIUM	
Holding Delay		
Transition Level	TRL/35	
Other Operational Information	BIRD ACTIVITY	
Surface Wind	2010KT	1
Visibility	0800	1
Runway Visual Range (RVR)		1
Present Weather	+SNSH	1
Cloud Sky Cover Group	BKN025	1
Air Temperature	M04	1
Dew Point Temperature	M05	1
Altimeter Setting	QNH 1002	
Significant Meteorological Phenomena	TURBULENCE	
Trend Type Landing Forecast		1, 2
Specific ATS Instructions		
Free Text	MESSAGE IN FULL	

Notes:

1. Relevant guidance material is given in ICAO Annex 3.

2. Not applicable to Departure ATIS.

B3.2.1 Airport ID

The four-character Airport ID field identifies the airport for which ATIS is being reported. The airport ID is the four-character ICAO code per document 4444.

B3.2.2 Arrival/Departure Indicator

The Arrival/Departure Indicator indicates the type of ATIS information that is being reported. Arrival information is indicated by ARR. Departure information is indicated by DEP. En-route information is indicated by ENR. Eurocae ED-89A calls for the alternate use of this field to deliver Meteorological Information for Aircraft in Flight (VOLMET).

B3.2.3 ATIS Identifier

The ATIS identifier field is a fixed text field provided to facilitate the avionics job of creating and displaying a meaningful title on an avionics display device such as an MCDU or CDU.

B3.2.4 ATIS Version

The ATIS Version field contains a*n alphabetic* character that identifies the version of the ATIS data contained in the uplink. The ATIS version field should not be confused with the IMI/Version Number field.

COMMENTARY

Automatic Terminal Information Service (ATIS) is a service that was implemented by CAAs as an analog-recorded voice message in which airport conditions were reported to arriving aircraft. The message is broadcast continually on a VHF voice uplink from airport control towers to nearby aircraft. The introduction of ATIS extended the access of aircraft (the ATIS information can be queried from a greater distance) and increased the accuracy of message delivery (the information is delivered in printed form rather than requiring the pilot to write down what he has heard). The ATIS information is updated periodically, typically on an hourly basis. The incremental updates are identified with an alphabetical character, e.g., This is information Juliet (J).

B3.2.5 ATIS Time

The ATIS Time field contains the time when the ATIS uplink message was created by the ground application.

B3.2.6 ATIS Information

The ATIS Information field contains the ATIS data formatted to comply with the value of the Avionics Indicator in the ATIS Request downlink.

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OCEANIC CLEARANCE FORMATS

The description of Oceanic Clearance is included for the reader's convenience. Eurocae ED-106A has precedence over the Oceanic Clearance message in this Specification. ED-106A should be consulted and used as the basis for implementation.

C1.0 Oceanic Clearance

To support the delivery of Oceanic Clearances (OCL) via data link, three messages have been defined:

Message	Up/Down	IMI	Message Type Identifier	MFI/Label
Oceanic Clearance Request	Down	OCx	RCL	B1
Oceanic Clearance	Up	OCx	CLX	A1
Oceanic Clearance Read-back	Down	OCx	CLA	B2

Note: In the IMI of OCx, the value of the third character (x) should be filled with the version number of the message.

C2.0 Requesting an Oceanic Clearance

The Request for an Oceanic Clearance is a message prepared by an End System on the aircraft and sent to the ground DSP which then forwards the message to the ATC facility designated within the message.

C2.1 Oceanic Clearance Request Downlink, Version

The format of the Request for Oceanic Clearance allows specific clearance preferences; e.g., Flight Level, Mach Number, etc. to be requested, and is shown in Table C-1

The expected Oceanic Clearance response (uplink) by the ATC facility is presented in Section C3.1 of this Specification.

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Table C-1 Message Text of Oceanic Clearance Request (RCL) Downlink (Version 1)

Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Note
			Fixed Text [*2*]	Variable Text [*3*]		
Message Type Identifier	Message Type	3	RCL		RCL	
	Word Separator	1	*space*		<sp>	
Avionic display/printer capability	Avionics Indicator	3		NNN	080	4
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Requested Entry-Point, Time, Speed and Flight Level	Aircraft Identification	2-7		XXXXXXX	BAW123	5
	Field Separator	1	*hyphen*		<->	
	Requested Entry-Point	3 to 11		POS	55N010W	*6*
	Sub-field Divider	1	*slash*		</>	
	Requested Time	4		hhmm	1234	
	Word Separator	1	*space*		<sp>	
	Requested Mach No.	*1*	M		M084	
		3		NNN		
	Requested Flight Level	*1*	F		F350	
		3		NNN		
Optional Additional Free Text Information	Line Separator	2	*carriage return - line feed*		<cr/lf>	7
	Field Separator	1	*hyphen*		<->	
	Fixed Text	3	RMK		RMK	
	Sub-field Divider	1	*slash*		</>	
	Free Text Options	Variable (max 120 characters)		Free Text	ABLE F370 ...	

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in ATIS uplink messages. The application may insert more carriage return and line feed characters to optimize readability.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1for the range of characters available for use

4. This is the preferred length of the line in characters for uplink messages when displayed or printed by the airborne system.

5. The Flight Identifier should be defined exactly as in the filed flight plan and conform to ICAO format.

6. Refer to Tables 1-3 and 1-3A for the proper encoding of this field.

7. This field is optional, but if it is used, it should be encoded as shown.

The example Oceanic Clearance Request information illustrated in Table C1-1 should appear in the air/ground format and result in the ground/ground format shown below.

RCL 080

BAW123-55N010W/1234 M084F350

-RMK/ABLE F370

C2.1.1 Message Text

The Message Text field of the Request for Oceanic Clearance downlink message is comprised of the Avionics Indicator (AI) and Application Text. The Oceanic Clearance Request Message Text field should be constructed in the format: 'AI-application text-'.

C2.1.1.1 Message Type Identifier

The Message Type Identifier is a 3 character field used to identify the function the downlink is requesting. The assignment for the Oceanic Clearance Request Downlink is RCL.

C2.1.1.2 Avionics Indicator (Formerly Section 3.2.1.1.2)

The three-character Avionics Indicator (AI) field is used to enable the Oceanic Clearance uplink message to be formatted to match the display size (number of characters per display line) used by the aircraft requesting the Oceanic Clearance. If it is not necessary for the ground-based application to limit line length, the Avionics Indicator value should be set to '000'.

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C3.0 Oceanic Clearance Uplink

The Oceanic Clearance uplink message is generated by the ATC Oceanic Clearance application and delivered to the Oceanic Clearance application on the aircraft when initiated by controller action. The example Oceanic Clearance information is illustrated below.

CLX 1254 930331 EGGX CLRNCE 103

UAL915 CLRD TO KIAD VIA 53N015W

NAT FOXTROT

53/15 53/20 52/30 51/40 50/50 YQX

FM 53N015W/1335 MNTN F370 M080

ATC/LEVEL CHANGE NOT BEFORE 1426 AT 53N015W

RECLEARANCE 1

SHANWICK TEST CLEARANCE - CONFIRM ON VOICE

C3.1 Oceanic Clearance Uplink, Version 1

The Oceanic Clearance Application on the ground should format the message to be compatible with the Avionics Indicator value in the downlink; i.e. the ground ATS application if necessary will insert additional CR/LF characters to take account of the display size used in the aircraft.

Oceanic Clearance uplink messages may also be used to provide revisions to a previously received and acknowledged clearance request, in accordance with local ATC procedures. In this case, the text RECLEARANCE ‘n’, where ‘n’ represents a numeric indication of the reclearance sequence, will be included at the first part of the “Free Text” portion of the CLX message.

The expected Oceanic Clearance Readback downlink response by aircraft is presented in Section 3.4 of this Specification.

C3.1.1 Message Text

Table C-2 defines the format of the Message Text field for the Oceanic Clearance Uplink message, Version 1.

The Message Type Identifier assignment for the Oceanic Clearance Uplink is CLX.

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Table C-2 Air-Ground Message Text of Oceanic Clearance Uplink (Version 1)

Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	CLX		CLX	
	Word Separator	1	*space*		<sp>	
Time and	Time	4		hhmm	1254	
	Word Separator	1	*space*		<sp>	
Date	Date	6		yymmdd	930331	
	Word Separator	1	*space*		<sp>	
ATCC Identifier	ICAO Designator	4		AAAA	EGGX	
	Word Separator	1	*space*		<sp>	
	Key Word	6	CLRNCE		CLRNCE	
Clearance Indicator and Number	Word Separator	1	space		<sp>	
	Clearance Number	3		NNN	103	
New Line	Line Separator	2	carriage return-line feed		<cr/lf>	
Cleared Destination and Entry-Point	Aircraft Identification	2-7		XXXXXXX	UAL915	
	Word Separator	1	*space*		<sp>	
	Fixed Text	7	CLRD TO		CLRD TO	
	Word Separator	1	*space*		<sp>	
	ICAO Designator	4		AAAA	KIAD	*4*
	Word Separator	*1*	*space*		<sp>	
	Fixed Text	3	VIA		VIA	
	Word Separator	*1*	*space*		<sp>	
	Entry-Point	*1*-11		POS	53N015W	*5*
New Line	Line Separator	*2*	*carriage return-line feed*		<cr/lf>	
Route Detail	Route Identifier	12 or less	NAT space AAAAAAAA or RANDOM ROUTE		NAT <sp> FOXTROT	
	Field Separator	*2*	*carriage-return-line feed*		<cr/lf>	
	Route Expansion	Variable (1-80)		NNslashNNspace NNslashNN..... POS or POSspace POS POS…..	53/15 53/20 52/30 51/40 50/50 YQX	4, *5*

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Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
				POS		
New Line	Line Separator	*2*		*carriage-return-line feed*	<cr/lf>	
	Fixed Text	2	FM		FM	
Cleared Time Flight Level and Speed from Entry-Point	Word Separator	*1*	*space*		<sp>	
	Entry-Point	1-11		POS	53N015W	*5*
	Sub-field Divider	1	*slash*		</>	
	Time	4		hhmm	1335	
	Word Separator	1	*space*		<sp>	
	Fixed Text	4	MNTN		MNTN	
	Word Separator	*1*	*space*		<sp>	
	Flight Level	4	F	NNN	F370	
	Word Separator	*1*	*space*		<sp>	
	Mach No.	4	M	NNN	M080	
New Line	Line Separator	*2*	*carriage return-line feed*		<cr/lf>	
Additional ATC Information	Fixed Text	3	ATC		ATC	
	Sub-field Divider	1	*slash*		</>	
	Fixed Text Options	Variable (up to 80)		LEVEL CHANGE and/or MACH CHANGE and/or CLEARANCE LIMIT and/or UNABLE TO APPROVE REQUEST etc.	LEVEL CHANGE NOT BEFORE 1426 AT 53N015W	*6*
New Line	Line Separator	*2*	*carriage return-line feed*		<cr/lf>	7
Reclearance Notification	Fixed Text	11	RECLEARANCE		RECLEARANCE	
	Word Separator	1	*space*		<sp>	
	Reclearance No.	1		N	1	
Optional Additional Free Text Information	Line Separator	*2*	*carriage return-line feed*		<cr/lf>	8
	Free Text	Variable (up to 80)		Free Text	SHANWICK TEST CLEARANCE - CONFIRM ON VOICE	

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Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. This field should be encoded in accordance with ICAO document 4444, Appendix 2. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This indicates that only letters appear in the airport ID. Business aircraft in North America frequently fly into secondary airports that can have an ID consisting of letter and numeric characters. Using the range of characters designated by XXXX will cover all cases.

5. Refer to Tables 1-3 and 1-3A for the proper encoding of this field.

6. This field is optional, but if it is used, it should be encoded as shown. See Table C-2A.

7. This field is optional, but if it is used, it should be encoded as shown. The Re-Clearance field will only be present if more than one clearance was issued. The Re-Clearance value may be 1 through 7. The Re-Clearance is always incremented by the ground ATS application when a new Re-Clearance is sent.

8. This optional Free Test field may or may not be present.

The data entry options for the Additional ATC Information field of the Oceanic Clearance uplink message are listed below. These entries can be used individually or in combination as desired by the controller.

Table C-2A Additional ATC Information Message Text Options

TEXT OPTIONS [1]	NOTES
<LEVEL CHANGE> and/or <MACH CHANGE> and <NOT BEFORE hhmm AT POS > and/or <NOT LATER THAN hhmm AT POS > and/or	2
<REQUEST LEVEL CHANGE EN-ROUTE POS > and/or	2
<LEAVE LEVEL AT POS or <time>> and/or <BE LEVEL AT POS or <time>> and/or	2
<ROUTE CHANGE AT POS > or <ROUTE CHANGE AT MULTIPLE ROUTE POINTS> and/or	2
<ENTRY POINT CHANGE> and/or <TIME INTERVAL REQUIRED <flight identifier> + mm> and/or	
<CLEARANCE LIMIT> and/or	
<UNABLE TO APPROVE REQUEST>	

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Refer to Tables 1-3 and 1-3A for the proper encoding of POS (position) in this field.

Oceanic Clearance uplink messages may also be used to provide revisions to a previously received and acknowledged clearance request, in accordance with local ATC procedures. In this case, the text RECLEARANCE ‘n’, where ‘n’ represents a numeric indication of the reclearance sequence, will be included at the first part of the “Free Text” portion of the CLX message.

C4.0 Oceanic Clearance Readback Downlink

The Oceanic Clearance Readback message is prepared by an End System on the aircraft at the direction of the pilot and sent to the ground DSP who then forwards it to the ATC facility designated within the message.

C4.1 Oceanic Clearance Readback Downlink, Version 1

The Oceanic Clearance Readback message provides a full echo of the Oceanic Clearance uplink message text. Should the uplink message text contain any additional CR/LF characters (inserted by the ground application to take account of

the airborne display capability) then these must be duplicated exactly in the Readback message.

The MU and/or the receiving end systems are not required to examine or verify the individual data fields of the uplink ATS messages. The downlink readback messages are expected to echo back the contents of their associated uplink messages exactly as received, without regard to data field contents or format.

C4.1.1 Message Text

Table *C-3* defines the format of the Message Text field of the Oceanic Clearance Read-back downlink, Version 1.

The example air/ground Oceanic Clearance Readback information is included in Table C-3 by reference. The resulting ground/ground format is shown in Table C-3.

Table C-3 Message Text of Oceanic Clearance Readback Downlink (Version 1)

Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
Message Type	Message Type	3	CLA		CLA	
	Word Separator	1	*space*		<sp>	
Message Text	Same as Oceanic Clearance Uplink See Table C-2					

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link text elements that may be used by CAAs in ATIS uplink messages. The application may insert more carriage return and line feed characters to optimize readability.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use

APPENDIX C
OCEANIC CLEARANCE FORMATS

The example Oceanic Clearance Readback information illustrated in Table C-3 should appear in the air/ground format and result in the ground/ground format shown below.

CLA 1254 930331 EGGX CLRNCE 103

UAL915 CLRD TO KIAD VIA 53N015W

NAT FOXTROT

53/15 53/20 52/30 51/40 50/50 YQX

FM 53N015W/1335 MNTN F370 M080

ATC/LEVEL CHANGE NOT BEFORE 1426 AT 53N015W

RECLEARANCE 1

SHANWICK TEST CLEARANCE - CONFIRM ON VOICE

APPENDIX D
DEPARTURE CLEARANCE FORMATS

A description of Departure Clearance is included for the convenience of the reader. Eurocae ED-85A has precedence over the Departure Clearance message in this Specification. ED-85A should be consulted and used as a basis for implementation.

D1.0 Departure Clearance (DCL)

To support the delivery of Departure Clearances (DCL) via data link, four messages have been defined:

Message	Up/Down	IMI	Message Type Identifier	MFI/ Label
Departure Clearance Request	Down	DCx	RCD	B3
Departure Clearance Response	Up	DCx	CLD	A3
Departure Clearance Readback	Down	DCx	CDA	B4
Flight System Message	Up	FSx	FSM	A4

Note: In the IMIs of DCx and FSx, the value of the third character (x) should be filled with the version number of the message.

COMMENTARY

An attempt will be made to maintain the currency of the message formats defined in this Specification with ED-85A, however, the reader should not assume that the two documents are identical.

D2.0 Departure Clearance (DCL) Request Downlink

The Departure Clearance Request message is generated by the airborne Departure Clearance application on the aircraft when initiated by pilot action and delivered to the ATC Departure Clearance application on the ground by the DSP. The example Departure Clearance Request information illustrated in Table D-1 should appear in the air/ground format.

D2.1 Request for Departure Clearance Downlink, Version 1

The Request for Departure Clearance downlink contains Message Text and Avionics Indicator (AI) fields.

D2.1.1 Message Text

The Message Text field of the Departure Clearance Request downlink message is comprised of the AI and Application Text fields. The Departure Clearance Request Message Text should be constructed in the format: AI-application text.

Table D-1 defines the format of the Departure Clearance Downlink Request message.

D2.1.2 Message Type Identifier

The Message Type Identifier is a 3 character field used to identify the function the downlink is requesting. The assignment for a Departure Clearance Request Downlink is RCD.

D2.1.3 Avionics Indicator

The three-character Avionics Indicator (AI) field is used to enable the Departure Clearance uplink response message to be formatted to match the display size (number of characters per display line) used by the aircraft requesting the Departure Clearance. If it is not necessary for the ground-based application to limit line length, the Avionics Indicator characters should be set to 000.

APPENDIX D
DEPARTURE CLEARANCE FORMATS

Table D-1 Air-Ground Message Text For Departure Clearance Request Downlink (Version 1)

Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	RCD		RCD	
	Word Separator	1	*space*		<sp>	
Avionic Display/Printer Capability	Avionics Indicator	3		NNN	080	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Flight Information and Gate Identifier	Aircraft Identification	2-7		XXXXXXX	BAW123	4
	Field Separator	1	*hyphen*		<->	
	Departure Airport	4		XXXX	EGKK	5
	Field Separator	1	*hyphen*		<->	
	Fixed Text	4	GATE		GATE	6
	Word Separator	1	*space*		<sp>	
	Gate No.	1-5		XXXXX	A34	
	Field Separator	1	*hyphen*		<->	
	ICAO Destination Airport	4		*XXXX*	KJFK	5
ATIS Identifier	Line Separator	2	*carriage return-line feed*		<cr/lf>	
	Fixed text	4	ATIS		ATIS	
	Word Separator	1	*space*		<sp>	
	ATIS ID	1		A	J	
Aircraft Type Notification	Line Separator	2	*carriage return-line feed*		<cr/lf>	
	Field Separator	1	*hyphen*		<->	
	Fixed Text	3	TYP		TYP	
	Sub-field Divider	1	*slash*		</>	
	Aircraft Type	2-4		XXXX	B744	7
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Optional Additional Free Text Information	Field Separator	1	*hyphen*		<->	8
	Fixed Text	3	RMK		RMK	
	Sub-field Divider	1	*slash*		</>	
	Free Text	Variable (1 to 80)		Free Text	REQ 23L	

APPENDIX D
DEPARTURE CLEARANCE FORMATS

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

4. The Flight Identifier should be defined exactly as in the filed flight plan and conform to ICAO format. The Flight Identifier should be entered in accordance with ICAO document 4444, Appendix 2: ICAO Call Sign field as used in the filed flight plan.

5. Major carriers typically use airports that would be covered by ICAO 4444 designation in the form of AAAA. This would suggest that only alphabetic characters appear in the airport ID. However, business aircraft in North America frequently fly into secondary airports that can have an ID consisting of both alphabetic and numeric characters. Using the range of characters designated by XXXX will cover all cases.

6. The word GATE may be open to differing interpretations in different regions of the world. In some cases the term STAND may be more appropriate. The fixed text GATE was used in the initial definition of the Departure Clearance Request message. The term GATE has been retained throughout this document in the interest of consistency. For the purposes of Departure Clearance messages, GATE is intended to mean the identifier of the location of the aircraft at the airport during the pre-flight phase. The data to be entered is therefore the information needed to unambiguously define this location to air traffic control, and would therefore be as published in the national Aeronautical Information Publication (AIP), and used in exactly the same way as it would be for the equivalent voice communication. Eurocae standards do not specify the screen formats to be used for the Departure Clearance Request message and therefore implementers are at liberty to use whatever terminology they choose, given that they remain within the constraints of Eurocae ED-85A, when completing the field.

7. The aircraft type and subtype should be encoded in this field (e.g., B737-400 is encoded as B734) in accordance with ICAO document 4444 Appendix 2 using the appropriate designator as specified in ICAO 8643, Aircraft Type designators. If no such designator has been assigned, as a default insert the alphabetic characters ZZZZ in this field. Not all aircraft are capable of

encoding the subtype as specified here. Also, the possibility exists that the subtype coding can change with equipment or software updates.

8. This field is optional. As with Free Text, all characters that can pass across the air-ground link (refer to Table 1-1 of Attachment 1) may be used in this field.

In the example Version 1 message shown above, the Departure Clearance Request downlink message is sent to the ground-based Departure Clearance application in the following ground-ground format:

RCD 080

BAW123-EGKK-GATE A34-KJFK

ATIS H

-TYP/B744

-RMK/REQ 23L

D3.0 Deliver Departure Clearance Uplink

When a Request for Departure Clearance downlink is passed to the ATC facility, a Departure Clearance uplink message will normally be uplinked in response.

Departure Clearance uplink messages may also be used to provide revisions to a previously received and acknowledged clearance, in accordance with local ATC procedures. In this case, the text RECLEARANCE n, where n represents a

numeric indication of the re-clearance sequence, will be included at the first part of the Free Text portion of the CLD message.

If the usual response is inappropriate, the ATC facility may choose to send a Flight Systems message per Section 5.2 to inform the aircrew of the status of the Departure Clearance.

D3.1 Departure Clearance (DCL) (Version 1)

The Departure Clearance uplink message is generated by the ground-based ATC Departure Clearance application and delivered to the Departure Clearance application on the aircraft when initiated by controller action. When created by the ground ATS application, the example Departure Clearance information should appear in the ground/ground format as:

CLD 1035 030625 EGKK PDC 146

BAW123 CLRD TO KJFK OFF 26R VIA DTY5V

SQUAWK 5023 MDI 300 NEXT FREQ 134.550 ATIS J

CTOT 1435

TAXIWAY K IS CLOSED

The example ground-ground Departure Clearance message depicted above should result in the air/ground format illustrated in Table D-2.

D3.2 Message Type Identifier

The Message Type Identifier is a three-character field used to identify the information the uplink is supplying. The Message Type Identifier assignment for a Departure Clearance Uplink is CLD.

APPENDIX D
DEPARTURE CLEARANCE FORMATS

Table D-2 Message Text of Departure Clearance Uplink (Version 1)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLES	*NOTES*
			Fixed Text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	CLD		CLD	
	Word Separator	1	*space*		<sp>	
Time and Date	Time	4		hhmm	1035	
	Word Separator	1	*space*		<sp>	
	Date	6		yymmdd	030625	
	Word Separator	1	*space*		<sp>	
Departure Airport	Departure Airport	4		XXXX	EGKK	*4*
	Word Separator	1	*space*		<sp>	
Clearance Indicator and Number	Key Word	3	PDC		PDC	
	Word Separator	1	*space*		<sp>	
	Clearance Number	3		NNN	146	
	Line Separator	2	*carriage return-line feed*		<cr/lf>	
Cleared Destination	Aircraft Identification	2-7		XXXXXXX	BAW123	*5*
	Word Separator	1	*space*		<sp>	
	Fixed Text	7	CLRD TO		CLRD TO	
	Word Separator	1	*space*		<sp>	
	Destination Airport	4		XXXX	KJFK	*4*
	Word Separator	1	*space*		<sp>	
Cleared Runway Departure and Route	Fixed Text	3	OFF		OFF	
	Word Separator	1	*space*		<sp>	
	Runway	2 or 3		NN or NNR or NNL or NNC	26R	
	Word Separator	1	*space*		<sp>	
	Fixed Text	3	VIA		VIA	
	Word Separator	1	*space*		<sp>	
	SID	Variable >1		XXXXXXX	DTY5V	
ATCRBS Squawk Notification	Line Separator	2	*carriage return-line feed*		<cr/lf>	*8*
	Fixed Text	6	SQUAWK		SQUAWK	

APPENDIX D
DEPARTURE CLEARANCE FORMATS

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]		EXAMPLES	*NOTES*
			Fixed Text [2]	Variable Text [3]		
	Word Separator	1	*space*		<sp>	
	SSR Code	4		RRRR	5023	
	Word Separator	1	*space*		<sp>	
Departure Time Notification	Fixed Text	4	ADT or MDI		MDI 300	*6, 7, 8*
	Separator	1	*space*			
	Approved Departure Time	3, 4 or 9		mss or hhmm or hhmm/hhmm		
	Word Separator	1	*space*		<sp>	
Next Frequency Notification	Fixed Text	9	NEXT FREQ		NEXT FREQ	*8*
	Word Separator	1	*space*		<sp>	
	Next Frequency	7		NNN.NNN	134.550	
	Word Separator	1	*space*		<sp>	
Current ATIS Notification	Fixed Text	4	ATIS		ATIS	*8*
	Word Separator	1	*space*		<sp>	
	ATIS Identifier	1		A	J	
Optional Additional Free Text Information	Line Separator	2	*carriage return-line feed*		<cr/lf>	*9*
	Free Text	*Variable (1 to 80)*		*Free Text*	*CTOT 1435 TAXIWAY K IS CLOSED*	

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3, and 1-4 of Attachment 1 for the range of characters available for use.

4 Major carriers typically use airports that are identified by four alphabetic characters, per ICAO document 4444 that would be coded in the form of AAAA. However, business aircraft in North America frequently fly into secondary airports that can have an Airport identifier consisting of both alphabetic and numeric characters. The range of characters designated by XXXX cover all cases.

5. The Flight Identifier should be defined exactly as in the filed flight plan and conform to ICAO format. The flight identifier should be entered in accordance with ICAO document 4444, Appendix 2: ICAO Call Sign field as used in the filed flight plan.

6. The term Approved Departure Time (ADT) is considered to be ambiguous because it does not have a uniform interpretation in all regions of the world. For this reason, ADT is not used in some regions, e.g., Europe. Instead, other time parameters that are more clearly understood in common by pilots and controllers, such as Estimated Off-Block Time (EOBT) or Calculated Take-Off Time (CTOT) are used. New terms that include Calculated Off-Block Time (COBT) and Estimated Take-Off Time (ETOT) are being considered for future use. Since Departure Time Notification is an optional field, in order to avoid confusion about the uplinked time parameter, it is recommended that the coding of ADT not be used in regions where ADT is not a clearly understood term. The preferred entry method is to omit the Departure Time Notification field and utilize the optional Free Text field at the end of the message to communicate time information. In the Free Test field, it is recommended that the exact acronym of the time parameter be stated with its value e.g., CTOT 1435. This example is not chosen randomly. ICAO Supp – doc 7030/4 EUR Region, Item 17.6, Table 7 states the CTOT shall be communicated to the pilot at the first contact with the ATC.

7. Minimum Departure Interval (MDI) can be used by ATC instead of Approved Departure Time (ADT) in the Departure Time Notification field. MDI is used to identify the minimum time spacing of aircraft departures, e.g., 3 minutes, on specific routes. If the Departure Clearance message contains the MDI, the pilot should check to determine if there are any MDI delays when reading back the Departure Clearance.

8. This field is optional.

9. This field is optional. All characters that can pass across the air-ground link (refer to Table 1-1 of Attachment 1) may be used in this field. See Note 6 for recommendations regarding the use of this field to contain Departure Time Information.

The ground ATS Application should format the message to be compatible with the AI value in the downlink, i.e., the ground ATS application may insert additional CR/LF characters to take account of the display size used in the aircraft.

D4.0 Departure Clearance Readback Downlink

The Departure Clearance Readback message is prepared by an End System on the aircraft at the direction of the pilot and sent to the ground DSP which then forwards it to the ATC facility designated within the message.

D4.1 Departure Clearance Readback, Version 1

The Acceptance message provides a full echo of the Deliver Departure Clearance uplink message text. Should the uplink message text contain any additional CR/LF characters (inserted by the ground application to take account of the airborne capability) then these must be echoed back in the Acknowledgment message.

COMMENTARY

If the aircrew cannot comply with the Departure Clearance, negotiations for alternatives will be conducted by voice.

The MU and/or the receiving end systems are not required to examine or verify the individual data fields of the uplink ATS messages. The downlink readback messages are expected to echo back the contents of their associated uplink messages exactly as received, without regard to data field contents or format.

D4.1.1 Departure Clearance (DCL) Readback Downlink Message Text (CDA) Format

The Departure Clearance Readback downlink message is generated by the airborne Departure Clearance application on the aircraft when initiated by pilot action and delivered to the Departure Clearance application on the ground by the DSP. The example air/ground Departure Clearance Readback information is included in Table D-3 by reference. The resulting ground/ground format is shown below. The Message Type Identifier assignment for a Departure Clearance Read-back Downlink is CDA.

CDA CLD 1035 030625 EGKK PDC 146

BAW123 CLRD TO KJFK OFF 26R VIA DTY5V

SQUAWK 5023 MDI 300 NEXT FREQ 134.550 ATIS J

Table D-3 Message Text of Departure Clearance Readback (Version 1)

Field Description	Sub-Field Name	Field Length (In Chars)	Contents [1]		Example	Notes
			Fixed text [2]	Variable Text [3]		
Message Type Identifier	Message Type	3	CDA		CDA	
	Word Separator	1	*space*		<sp>	
Message Contents	Same as Departure Clearance uplink See Table D-2					

APPENDIX D
DEPARTURE CLEARANCE FORMATS

Notes:

1. Refer to Table 1-1 of Attachment 1 for characters that can pass across the air-ground link that may be used by CAAs in ATIS uplink messages.

2. Contents in the Fixed Text column are entered into the message exactly as shown. Only the listed entries are possible. Table 1-2 lists the coding technique used to represent punctuation marks and non-printing characters.

3. The range of the contents of this field is entered in an abbreviated format. See Tables 1-2, 1-3 and 1-4 of Attachment 1 for the range of characters available for use.

There may be an associated Flight Systems Message (FSM) associated with the exchange between ATC and aircrew. See Eurocae ED-85A for specific coding of FSM messages related to Departure Clearance.

AERONAUTICAL RADIO, INC.
2551 Riva Road
Annapolis, Maryland 24101-7435

SUPPLEMENT 1
TO
ARINC SPECIFICATION 623

CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

Published: December 12, 1997

Prepared by the Airlines Electronic Engineering Committee

Adopted by the Airlines Electronic Engineering Committee: October 14, 1997

A. PURPOSE OF THIS DOCUMENT

Chapters 6 through 9 were added to document new character-oriented applications. These include:

Terminal Weather Information for Pilots

Waypoint Position Reports

Data Link Delivery of Taxi Clearance

Controller Pilot Communications

This supplement contains a note to encourage CAAs to only implement Air Traffic Services (ATS) over the ACARS data link using the added features provided by Chapter 5 of Specification 622, namely IMI and end-to-end CRC.

This supplement encourages controllers to limit the length of ATIS messages by NOT appending NOTAMS.

B. ORGANIZATION OF THIS SUPPLEMENT

In the past, changes introduced by a Supplement to an ARINC Standard were identified by vertical change bars with an annotation indicating the change number. Electronic publication of ARINC Standards has made this mechanism impractical.

In this document, vertical change bars in the margin will indicate those areas of text changed by the current Supplement only.

C. CHANGES TO ARINC SPECIFICATION 623 INTRODUCED BY THIS SUPPLEMENT

This section presents a complete listing of the changes to the document introduced by this Supplement. Each change is identified by the section number and the title as it will appear in the complete document. Where necessary, a brief description of the change is included.

1.1 Purpose of this Document

Add new text to alert CAAs that all implementations of Air Traffic Service messages should be supported by the provisions of Chapter 5 of ARINC Specification 622.

1.3 Annunciations

New section added.

2.3. Delivery of the ATIS Report Uplink

Text added noting that controllers may use the Flight Service message (FSM) to notify the pilot of the need to standby while processing is completed or to revert to voice communications.

4.3 Deliver Departure Clearance Uplink

Text was added to advise the reader that ATC may use the Flight Service message (FSM) to address amendments to the Departure Clearance. These responses will include standby and Reclearance number at the beginning of the “Free Text” portion of the message.

5.2.1.3 Supplemental Message

Text was added to provide the controller with additional response options to a request for an ATIS uplink with a Flight Service message. The defined alternatives are STANDBY and REVERT TO VOICE PROCEDURES.

Chapter 6

A new Chapter was added to describe the Terminal Weather Information for Pilots (TWIP) application.

Chapter 7

A new Chapter was added to describe the Waypoint Position Report (WPR) application.

Chapter 8

A new Chapter was added to describe the Data Link Taxi Clearance (DDTC) application.

Chapter 9

A new Chapter was added to describe the Controller/Pilot Communications (CPC) application.

Attachment 2

Editorial change: convert CR/LF to cr/lf.

Attachment 3

Editorial change: convert CR/LF to cr/lf and expand the Additional Information entry of the Field Description field column to include the Line Separator by moving the separator line up.

Attachment 4

Editorial changes to the Contents column using the ‘and/or’ phraseology to indicate that the controller has the option of mix and match the entries listed. Also aircraft position was added to the entry Request Level Change En-Route. The new text reads Request Level Change En-Route <position>.

Attachment 9

Editorial changes in the form of reorganization of Table 9-1 resulted in the creation of new Tables 9-1A and 9-1B. New Table 9-1C was added to enable the Flight Systems message to be used to acknowledge the receipt of a Pushback Clearance Request. Table 91-D was added to expand the flexibility of the Flight Systems message. Table 9-1D entries may be sent as “unsolicited uplinks” and are not necessarily associated with any other ATS command/response message.

Note 14 added to define constraints to variable length fields and message length.

Attachment 10

This new Attachment showing Terminal Weather Information for Pilots (TWIP) format was added to complement Chapter 6.

Attachment 11

This new Attachment showing Waypoint Position Reports (WPR) format was added to complement Chapter 7.

Attachment 12

This new Attachment showing Pushback Clearance formats was added to complement Chapter 8.

Attachment 13

This new Attachment showing Expected Taxi Clearance formats was added to complement Chapter 8.

Attachment 14

This new Attachment showing CPC Aircraft Log-on/Log-off message format was added to complement Chapter 9.

Attachment 15

This new Attachment showing CPC Aircrew Response message format was added to complement Chapter 9.

Attachment 16

This new Attachment showing CPC Command/Response uplink message format was added to complement Chapter 9.

AERONAUTICAL RADIO, INC.
2551 Riva Road
Annapolis, Maryland 24101-7435

SUPPLEMENT 2
TO
ARINC SPECIFICATION 623

CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

Published: October 15, 1999

Prepared by the Airlines Electronic Engineering Committee

Adopted by the Airlines Electronic Engineering Committee: September 20, 1999

A. PURPOSE OF THIS DOCUMENT

This Supplement introduces clarifications, deletes Section 7 and associated Attachment 11 that previously defined Waypoint Position Reports. Table 1-2 was revised to be consistent with the nomenclature used in ARINC Specification 622. Also an explanation on the use of Flight Indentifier by business aircraft is provided.

B. ORGANIZATION OF THIS SUPPLEMENT

In the past, changes introduced by a Supplement to an ARINC Standard were identified by vertical change bars with an annotation indicating the change number. Electronic publication of ARINC Standards has made this mechanism impractical.

In this document, vertical change bars in the margin will indicate those areas of text changed by the current Supplement only.

C. CHANGES TO ARINC SPECIFICATION 623 INTRODUCED BY THIS SUPPLEMENT

This section presents a complete listing of the changes to the document introduced by this Supplement. Each change is identified by the section number and the title as it will appear in the complete document. Where necessary, a brief description of the change is included.

2.2.2 Request for ATIS Report, Version 2

Editorial correction to align Specifications 618, 620 and 623 on the Use of the terms “Application Text” and “Application Data.”

7.0 Waypoint Position Report

The definition of the Waypoint Position Report message was deleted.

9.2 CPC Aircraft Log-On/Log-Off Request

Text added to paragraph 2 to identify the code of the aircraft’s departure as the default address when no address is provided by ATC in its uplink to the aircraft.

ATTACHMENT 1 – ENCODING RULES AND MTI ASSIGMENTS

Table 1-2 was normalized to be consistent with Table 3-1 of ARINC Specification 622. The list was expanded to include designators for sign and compass direction.

ATTACHMENT 2 – ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMAT

Tables 2-3 and 2-4 were revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 3 – REQUEST FOR OCEANIC CLEARANCE FOR DOWNLINK FORMAT

Note 2 of Table 3-2 was expanded to describe the use of Flight ID by business aircraft. This change is reflected in Note 3 of Table 3-2. Note 3 was revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 10 – TERMINAL WEATHER INFORMATION FOR PILOTS

Tables 10-1 and 10-2 were revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 11 - RESERVED

The definition of the Waypoint Position Report message was deleted.

ATTACHMENT 12 – DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

Tables 12-1 and 12-2 were revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 13 - DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

Tables 13-1 and 13-2 were revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 14 - AIRCRAFT LOG-ON/LOG-OFF MESSAGE

Duplicate Note 12 removed. Tables 14-1 and 14-2 were revised to be consistent with the new nomenclature defined in Table 3-1 of ARINC Specification 622.

ATTACHMENT 15 - AIRCREW RESPONSE DOWNLINK MESSAGE

Reinstated notes 11 and 12 in Table 15-1.

AERONAUTICAL RADIO, INC.
2551 Riva Road
Annapolis, Maryland 24101-7435

SUPPLEMENT 3
TO
ARINC SPECIFICATION 623

CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

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Prepared by the Airlines Electronic Engineering Committee

Adopted by the Airlines Electronic Engineering Committee: October 26, 2004

A. PURPOSE OF THIS DOCUMENT

This Supplement transfers authority for Departure Clearance (DCL), Automatic Terminal Information Service (ATIS), and Oceanic Clearance (OCL) message text to Eurocae. These applications are documented by Eurocae in ED- 85A, 89A, and 106A respectively. The changes to this specification were coordinated with the publication of ED-85A, 89A and 106A.

There are a number of changes that appear in this document to harmonize it with the EDs. The most notable structural change was the removal of the definitions of the DCL, ATIS and OCL message formats from the normative Chapters and Attachments. They have been moved to informative Appendices B, C and D. The representation of characters in Attachment 1 was modified to harmonize with the EDs as well. New notations were also added in Attachment 1 to reflect their use in the EDs.

As a result of the coordination with Eurocae and European CAAs, this Supplement contains changes that encompass the practices of ATCs in Europe: the use of STAND in place of GATE, the use of VOLMET in place of Enroute ATIS, the use of CTOT rather than MDI and the use of DCL rather than PDC.

The identification of airports using the 3-character IATA code was eliminated, leaving only the 4-character ICAO definition because data link service providers do not support the use of the IATA codes.

B. ORGANIZATION OF THIS SUPPLEMENT

In the past, changes introduced by a Supplement to an ARINC Standard were identified by vertical change bars with an annotation indicating the change number. Electronic publication of ARINC Standards has made this mechanism impractical.

In this document, vertical change bars in the margin will indicate those areas of text changed by the current Supplement only.

C. CHANGES TO ARINC SPECIFICATION 623 INTRODUCED BY THIS SUPPLEMENT

This section presents a complete listing of the changes to the document introduced by this Supplement. Each change is identified by the section number and the title as it will appear in the complete document. Where necessary, a brief description of the change is included.

1.1 Introduction

Clarified second Commentary description of Gatelink.

1.4 Documents Referenced

Added section for listing all referenced documents. Updated the Referenced Document List.

2.0 Automatic Terminal Information Service

The contents of Chapter 2 have been integrated with Attachment 2 and moved to Appendix B.

2.1 Automatic Terminal Information Service (ATIS)

An AEEC Staff note was added depicting the relationship between Eurocae ED-89A and ARINC Specification 623. The table was expanded to include the Imbedded Message Identifier.

2.2.1 Request for ATIS Report, Version 1

The second sentence was modified to reflect movement of Version 1 to Appendix B.

2.2.2 Request for ATIS Report, Version 2

The first sentence was modified to reflect movement of Version 2 to Appendix B.

2.2.2.2 Airport ID

The second sentence was modified to reflect the Airport ID being consistent with ICAO Document 4444.

2.2.2.3 Arrival/Departure Indicator

In Section 2.2.2.3, paragraph 5, a new sentence was added at the end showing an alternate use of this field.

2.3.2.4 ATIS Version

Added Commentary at the end of Section 2.3.2.4.

3.0 Oceanic Clearance

The contents of Chapter 3 have been integrated with Attachments 3, 4 and 5 and moved to Appendix C.

3.1 Oceanic Clearance

An AEEC Staff note was added depicting the relationship between Eurocae ED-106A and ARINC Specification 623. The table was expanded to include the Imbedded Message Identifier.

3.3.1 Oceanic Clearance Uplink, Version 1

The last sentence in the second paragraph was changed to read “In this case, the text RECLEARANCE ‘n’, where ‘n’ represents a numeric indication of the reclearance sequence, will be included in the go to and reclearance notification field of the CLX message.”

In Section 3.3.1, first sentence, “take account” was changed to “take into account.”

In Section 3.3.1,the second paragraph was restructured for clarity

3.4.1.1 Message Text

In Section 3.4.1.1, first sentence, “Table 5-1 of Attachment 5” was changed to “Table C3-1 of Appendix C.”

Departure Clearance

The contents of Chapter 4 have been integrated with Attachments 7, 6, and 8 and moved to Appendix D.

4.1 Departure Clearance

An AEEC Staff note was added depicting the relationship between Eurocae ED-85A and ARINC Specification 623. The table was expanded to include the Imbedded Message Identifier.

A note was added after the table in Section 4.1.

Commentary was added at the very end of Section 4.1

5.0 Flight System Message

A table was added to define the Imbedded Message Identifier, Message Type Identifier, and Message Format Identifier/Label of the message.

6.1 Terminal Weather Information for Pilots

The table was expanded to include the Imbedded Message Identifier.

8.1 Data Link Delivery of Taxi Clearance

The table was expanded to include the Imbedded Message Identifier.

ATTACHMENT 1 – ENCODING SYMBOLOGY AND USE

This Attachment was formerly ENCODING RULES AND MTI ASSIGNMENTS. In Table 1-1 Message Type Identifier (MTI) List, in the message name column, “Flight Message” was changed to “Flight System Message.”

Table 1-2, Message Code Sets and Abbreviations, was revised to align with the nomenclature used by Eurocae.

In Table 1-2, the time Code and Range were clarified. An example column was added.

A note column was added to Table 1-2. Note 1 was added to clarify one of the position formats.

A clarification note was added at the end of note 1.

1.1 Air-Ground Characters

Section 1.1 was added.

A new Table 1-1 Useable Character Set was added. Previous Table 1-1 Message Type Identifier (MTI) List was deleted.

1.2 Encoding Principles

Section 1.2 was added. Most of the information comes from note 3 that was below Table 1-3A.

Table 1-2 has been significantly modified.

1.3 Encoding Abbreviations – Upper Case

Section 1.3 was added.

In Table 1-3, Code F was added, Code P was added, <position> was changed to POS, Code V was deleted, time information was deleted, and date information was deleted. Note 1 was added at the end of the table.

1.3.1 Encoding Geographical Position

Section 1.3.1 was added.

1.4 Encoding Abbreviations – Lower Case

Section 1.4 was added.

Table 1-4 is a new table showing the time and date information that was removed from Table 1-3.

Section 1.5 was added.

Figure 1 is a new figure (replicated from ARINC 622) depicting the layout of the ATS Application Data (message text) in relation to the message header.

ATTACHMENT 2 - ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

The information in Attachment 2 has been integrated with the contents of Chapter 2 and moved to Appendix B.

ATTACHMENT 3 –REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT

The information in Attachment 3 has been integrated with the contents of Chapter 3 and moved to Appendix C.

ATTACHMENT 4 – OCEANIC CLEARANCE UPLINK FORMAT

The information in Attachment 4 has been integrated with the contents of Chapter 3 and moved to Appendix C.

ATTACHMENT 5 – OCEANIC CLEARANCE READBACK DOWNLINK FORMAT – RESERVED

The information in Attachment 5 has been integrated with the contents of Chapter 3 and moved to Appendix C.

ATTACHMENT 6 – REQUEST FOR DEPARTURE CLEARANCE DOWNLINK FORMAT

The information in Attachment 6 has been integrated with the contents of Chapter 4 and moved to Appendix D.

ATTACHMENT 7 – DEPARTURE CLEARANCE UPLINK FORMAT

The information in Attachment 7 has been integrated with the contents of Chapter 4 and moved to Appendix D.

ATTACHMENT 8 – DEPARTURE CLEARANCE READBACK DOWNLINK FORMAT

The information in Attachment 8 has been integrated with the contents of Chapter 4 and moved to Appendix D.

ATTACHMENT 9 – FLIGHT SYSTEM MESSAGE (FSM) FORMAT

This Attachment was formerly FLIGHT SYSTEM MESSAGE (FSM) UPLINK FORMAT.

9.1 Flight System Message (FSM)

A title was added to the section. A new sentence as added at the end of the first paragraph. A commentary was added after the new sentence.

In the example after the commentary the date “940316” was changed to “031126.”

Editorial changes were made to the Contents Column of Table 9-1.

In Table 9-1 the Contents column was divided into “Fixed Text” and “Variable Text.” In the contents column, seven items were identified as fixed text. Note numbers were renumbered.

At the end of Table 9-1 nine new/reworked notes were added

ATTACHMENT 10 – TERMINAL WEATHER INFORMATION FOR PILOTS

In Table 10-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field name column “Airport ID” was changed to “ICAO Airport ID.” In the ICAO Airport ID field, “XXXC” was changed to “XXXX,” and in the Notes Column the text was replaced by note 4.

Four new/reworked notes were added at the end of Table 10-1.

In Table 10-2 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field name column “Airport ID” was changed to “ICAO Airport ID.” In the ICAO Airport ID field, “XXXC” was changed to “XXXX,” and in the Notes Column the text was replaced by Note 4.

At the end of Table 10-2 four new/reworked notes were added.

ATTACHMENT 12 - DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

Pushback Request Downlink

Section 12.1 was added to replace the text preceding Table 12.1. The example was removed at this location.

The current value of the Gate Identifier field was increased from 3 to 5 characters to align it with the corresponding field length definition in the Departure Clearance Request (downlink) message (Appendix D).

In Table 12-1, Gate Identifier was increased to five characters, and the example now reads “F100A.” The FIELD LENGTH for the Pushback Request Remarks was corrected to “148.” Editorial changes were made to the Contents column of Table 12-1.

Editorial changes were made to the Contents column of Table 12-2.

In Table 12-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered.

In the Field Description column, “Flight and Aircraft Identifier” was changed to “Flight and ICAO Aircraft Identifier.”

In the Sub-Field Name column Departure Airport was changed from “XXX<sp> or XXXX” to “XXXX,” and the corresponding Example was changed from “BWI<sp> or KBWI” to “KBWI.”

At the end of Table 12-1 the original notes were deleted and five new/reworked notes were added. A new example was added.

In Table 12-2 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field Description column “Departure Airport” was changed to “ICAO Departure Airport,” and “Destination Airport” was changed to “ICAO Destination Airport.” The Field Length for Departure Airport and Destination Airport was changed from “3-4” to “4.” The Variable Text entries for both the ICAO Departure Airport and the Destination Airport were changed from “AAAC or AAAA” to “XXXX.” The corresponding Examples were changed from “DTW<sp> or KDTW” to “KDTW,” and from “BWI<sp> or KBWI” to “KBWI.”

The notes at the end of Table 12-2 were replaced by five new/reworked notes.

ATTACHMENT 13 – DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT

13.1 Expected Taxi Clearance Request

A new titled section was added.

In Table 13-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field Description column “Departure Airport” was changed to “ICAO Departure Airport,” and “Destination Airport” was changed to “ICAO Destination Airport.” The Variable Text entries for both the ICAO Departure Airport and the Destination Airport were changed from “XXXC” to “XXXX.” The corresponding Examples were changed from “DTW<sp> or KDTW” to “KDTW,” and from “BWI<sp> or KBWI” to “KBWI.”

The notes at the end of Table 13-1 were replaced by five new/reworked notes.

A printed example of the message described in Table 13-1 was added at the end of the table.

In Table 13-2 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field Description column “Departure Airport” was changed to “ICAO Departure Airport,” and “Destination Airport” was changed to “ICAO Destination Airport.” The Variable Text entries for both the ICAO Departure Airport and the Destination Airport were changed from “XXXC” to “XXXX.” The corresponding Examples were changed from “DTW” to “KDTW,” and from “BWI” to “KBWI.”

The notes at the end of Table 13-2 were replaced by six new/reworked notes.

ATTACHMENT 14 – AIRCRAFT LOG ON/LOG OFF MESSAGE

14.1 CPC Aircraft Log-on/Log-off Request Downlink

A Section title was added to the paragraph introducing Table 14-1.

In Table 14-1, Contents column, “CPL or COF” was moved from the Fixed Text to Variable Text column for the Message Type Sub-Field.

In Table 14-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered. In the Field Description column “Departure Airport” was changed to “ICAO Departure Airport,” and “Destination Airport” was changed to “ICAO Destination Airport.” The Variable Text entries for both the ICAO Departure Airport and the Destination Airport were changed from “XXXC” to “XXXX.” The corresponding Examples were changed from “LAX<sp> or KLAX” to “KLAX,” and from “PHL<sp> or KPHL” to “KPHL.”

The notes at the end of Table 14-1 were replaced by seven new/reworked notes.

ATTACHMENT 15 – AIR CREW RESPONSE DOWNLINK MESSAGE

15.1 CPC WILCO/UNABLE Response

A Section title was added to the paragraph introducing Table 15-1. The printed message was moved after the notes of Table 15-1.

In Table 15-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered.

In Table 15-1, Contents column, “F or M” was moved from the Fixed Text to Variable Text column for the Units Sub-Field.

The notes at the end of Table 15-1 were replaced by seven new/reworked notes.

ATTACHMENT 16 – CPC UPLINK MESSAGE

16.1 CPC Command/Response Uplink

A Section title was added to the paragraph introducing Table 16-1.

In Table 16-1 the Contents column was divided into “Fixed Text” and “Variable Text.” Note numbers were renumbered.

The notes at the end of Table 16-1 were replaced by seven new/reworked notes.

The information in Attachment 16 has been retained for completeness.

APPENDIX A – LIST OF ACRONYMS

Appendix A was added to the document.

APPENDIX B –ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMAT

Appendix B is new to Supplement 3.

ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMAT was formerly ATTACHMENT 2 of ARINC Specification 623. DIGITAL ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMAT in Appendix B has been modified to align with Eurocae Document ED-89A. Included are the formats for Version 1 and 2. Version 1 is obsolete and is included for historical purposes.

The Contents of Chapter 2 AUTOMATIC TERMINAL INFORMATION SERVICE has been integrated with Attachment 2 and now forms part of Appendix B.

APPENDIX C – OCEANIC CLEARANCE FORMATS

Appendix C is new to Supplement 3.

The REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT was formerly ATTACHMENT 3 of ARINC Specification 623. The REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT in Appendix C has been modified to align with Eurocae Document ED-106A.

The OCEANIC CLEARANCE UPLINK FORMAT was formerly ATTACHMENT 4 of ARINC Specification 623. The OCEANIC CLEARANCE UPLINK FORMAT in Appendix C has been modified to align with Eurocae Document ED-106A.

The OCEANIC CLEARANCE READBACK DOWNLINK FORMAT was formerly ATTACHMENT 5 of ARINC Specification 623. The OCEANIC CLEARANCE READBACK DOWNLINK FORMAT in Appendix C has been modified to align with Eurocae Document ED-106A.

The contents of Chapter 3 OCEANIC CLEARANCE has been integrated with Attachments 3, 4, and 5 and is now a part of Appendix C.

APPENDIX D – DEPARTURE CLEARANCE FORMATS

Appendix D is new to Supplement 3.

The REQUEST FOR DEPARTURE CLEARANCE DOWNLINK FORMAT was formerly ATTACHMENT 6 of ARINC Specification 623. The REQUEST FOR DEPARTURE CLEARANCE DOWNLINK FORMAT in Appendix D has been modified to align with Eurocae Document ED-85A.

The DEPARTURE CLEARANCE UPLINK FORMAT was formerly ATTACHMENT 7 of ARINC Specification 623. The DEPARTURE CLEARANCE UPLINK FORMAT in Appendix D has been modified to align with Eurocae Document ED-85A.

The DEPARTURE CLEARANCE READBACK DOWNLINK FORMAT was formerly ATTACHMENT 8 of ARINC Specification 623. The DEPARTURE CLEARANCE READBACK DOWNLINK FORMAT in Appendix D has been modified to align with Eurocae Document ED-85A.

The contents of Chapter 4 have been integrated with Attachments 6, 7, and 8 and form part of Appendix D.

ARINC Standard – Errata Report

1. Document Title

ARINC Specification 623-3: *Character-Oriented Air Traffic Service (ATS) Applications*
Published: April 29, 2005

2. Reference

Page Number:_____ Section Number: _____ Date of Submission: _____

3. Error

(Reproduce the material in error, as it appears in the standard.)

4. Recommended Correction

(Reproduce the correction as it would appear in the corrected version of the material.)

5. Reason for Correction

(State why the correction is necessary.)

6. Submitter (Optional)

(Name, organization, contact information, e.g., phone, email address.)

Note: Items 2-5 may be repeated for additional errata. All recommendations will be evaluated by the staff. Any substantive changes will require submission to the relevant subcommittee for incorporation into a subsequent supplement.

Please return comments to fax +1 410-266-2047 or standards@arinc.com

ARINC IA Project Initiation/Modification (APIM) Guidelines for Submittal

1. ARINC Industry Activities Projects and Work Program

A project is established in order to accomplish a technical task approved by one or more of the committees (AEEC, AMC, FSEMC) Projects generally but not exclusively result in a new ARINC standard or modify an existing ARINC standard. All projects are typically approved on a calendar year basis. Any project extending beyond a single year will be reviewed annually before being re-authorized. The work program of Industry Activities (IA) consists of all projects authorized by AEEC, AMC, or FSEMC (The Committees) for the current calendar year.

The Committees establish a project after consideration of an ARINC Project Initiation/Modification (APIM) request. This document includes a template which has provisions for all of the information required by The Committees to determine the relative priority of the project in relation to the entire work program.

All recommendations to the committees to establish or reauthorize a project, whether originated by an airline or from the industry, should be prepared using the APIM template. Any field that cannot be filled in by the originator may be left blank for subsequent action.

2. Normal APIM Evaluation Process

Initiation of an APIM

All proposed projects must be formally initiated by filling in the APIM template. An APIM may be initiated by anyone in the airline community, e.g., airline, vendor, committee staff.

Staff Support

All proposed APIMs will be processed by committee staff. Each proposal will be numbered, logged, and evaluated for completeness. Proposals may be edited to present a style consistent with the committee evaluation process. For example, narrative sentences may be changed to bullet items, etc. When an APIM is complete, it will be forwarded to the appropriate Committee for evaluation.

The committee staff will track all ongoing projects and prepare annual reports on progress.

Committee Evaluation and Acceptance or Rejection

The annual work program for each Committee is normally established at its annual meeting. Additional work tasks may be evaluated at other meetings held during the year. Each committee (i.e., AMC, AEEC, FSEMC) has its own schedule of annual and interim meetings.

The committee staff will endeavor to process APIMs and present them to the appropriate Committee at its next available meeting. The Committee will then evaluate the proposal. Evaluation criteria will include:

- Airline support – number and strength of airline support for the project, including whether or not an airline chairman has been identified
- Issues – what technical, programmatic, or competitive issues are addressed by the project, what problem will be solved
- Schedule – what regulatory, aircraft development or modification, airline equipment upgrade, or other projected events drive the urgency for this project

Accepted proposals will be assigned to a subcommittee for action with one of two priorities:

- High Priority – technical solution needed as rapidly as possible
- Routine Priority – technical solution to proceed at a normal pace

Proposals may have designated coordination with other groups. This means that the final work must be coordinated with the designated group(s) prior to submittal for adoption consideration.

Proposals that are not accepted may be classified as follows:

- Deferred for later consideration - the project is not deemed of sufficient urgency to be placed on the current calendar of activities but will be reconsidered at a later date
- Deferred to a subcommittee for refinement – the subcommittee will be requested to, for example, gain stronger airline support or resolve architectural issues
- Rejected – the proposal is not seen as being appropriate, e.g., out of scope of the committee

3. APIM Template

The following is an annotated outline for the APIM. Proposal initiators are requested to fill in all fields as completely as possible, replacing the italicized explanations in each section with information as available. Fields that cannot be completed may be left blank. When using the Word file version of the following template, update the header and footer to identify the project.

ARINC IA Project Initiation/Modification (APIM)

Name of proposed project APIM #: _____

Name for proposed project.

Suggested Subcommittee assignment

Identify an existing group that has the expertise to successfully complete the project. If no such group is known to exist, a recommendation to form a new group may be made.

Project Scope

Describe the scope of the project clearly and concisely. The scope should describe "what" will be done, i.e., the technical boundaries of the project. Example: "This project will standardize a protocol for the control of printers. The protocol will be independent of the underlying data stream or page description language but will be usable by all classes of printers."

Project Benefit

Describe the purpose and benefit of the project. This section should describe "why" the project should be done. Describe how the new standard will improve competition among vendors, giving airlines freedom of choice. This section provides justification for the allocation of both IA and airline resources. Example: "Currently each class of printers implements its own proprietary protocol for the transfer of a print job. In order to provide access to the cockpit printer from several different avionics sources, a single protocol is needed. The protocol will permit automatic determination of printer type and configuration to provide for growth and product differentiation."

Airlines supporting effort

Name, airline, and contact information for proposed chairman, lead airline, list of airlines expressing interest in working on the project (supporting airlines), and list of airlines expressing interest but unable to support (sponsoring airlines). It is important for airline support to be gained prior to submittal. Other organizations, such as airframe manufacturers, avionics vendors, etc. supporting the effort should also be listed.

Issues to be worked

Describe the major issues to be addressed by the proposed ARINC standard.

Recommended Coordination with other groups

Draft documents may have impact on the work of groups other than the originating group. The APIM writer or, subsequently, The Committee may identify other groups which must be given the opportunity to review and comment upon mature draft documents.

Projects/programs supported by work

If the timetable for this work is driven by a new airplane type, major avionics overhaul, regulatory mandate, etc., that information should be placed in this section. This information is a key factor in assessing the priority of this proposed task against all other tasks competing for subcommittee meeting time and other resources.

Timetable for projects/programs

Identify when the new ARINC standard is needed (month/year).

Documents to be produced and date of expected result

The name and number (if already assigned) of the proposed ARINC standard to be either newly produced or modified.

Comments

Anything else deemed useful to the committees for prioritization of this work.

Meetings

The following table identifies the number of meetings and proposed meeting days needed to produce the documents described above.

Activity	Mtgs	Mtg-Days
Document a	*# of mtgs*	*# of mtg days*
Document b	*# of mtgs*	*# of mtg days*

For IA staff use

Date Received_____ IA staff assigned: _____

Potential impact: ____
(A. Safety B. Regulatory C. New aircraft/system D. Other)

Forward to committee(s) (AEEC, AMC, FSEMC): _____ Date Forward:_____

Committee resolution: ____
(0. Withdrawn 1. Authorized 2. Deferred 3. More detail needed 4. Rejected)

Assigned Priority: ____ Date of Resolution:_____

A. – High (execute first) B. – Normal (may be deferred for A.)

Assigned to SC/WG _____