

ARINC

CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

ARINC SPECIFICATION 623-2

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FOREWORD

Activities of AERONAUTICAL RADIO, INC. (ARINC)

and the

Purpose of ARINC Reports and Specifications

Aeronautical Radio, Inc. is a corporation in which the United States scheduled airlines are the principal stockholders. Other stockholders include a variety of other air transport companies, aircraft manufacturers and non-U.S. airlines.

Activities of ARINC include the operation of an extensive system of domestic and overseas aeronautical land radio stations, the fulfillment of systems requirements to accomplish ground and airborne compatibility, the allocation and assignment of frequencies to meet those needs, the coordination incident to standard airborne compatibility, the allocation and assignment of frequencies to meet those needs, the coordination incident to standard airborne communications and electronics systems and the exchange of technical information. ARINC sponsors the Airlines Electronic Engineering Committee (AEEC), composed of airline technical personnel. The AEEC formulates standards for electronic equipment and systems for the airlines. The establishment of Equipment Characteristics is a principal function of this Committee.

It is desirable to reference certain general ARINC Specifications or Report which are applicable to more than one type of equipment. These general Specifications and Reports may be considered as supplementary to the Equipment Characteristics in which they are referenced. They are intended to set forth the desires of the airlines pertaining to components and general design, construction and test criteria, in order to insure satisfactory operation and the necessary interchangeability in airline service. The release of a Specification or Equipment Characteristics should not be construed to obligate ARINC or any airline insofar as the purchase of any components or equipment is concerned.

An ARINC Report (Specification or Characteristic) has a twofold purpose, which is:

- (1) To indicate to the prospective manufacturers of airline electronic equipment the considered opinion of the airline technical people, coordinated on an industry basis, concerning requisites of new equipment, and
- (2) To channel new equipment designs in a direction which can result in the maximum possible standardization of those physical and electrical characteristics which influence interchangeability of equipment without seriously hampering engineering initiative.

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1.0 CHARACTER-ORIENTED ATS APPLICATIONS

1.1 Introduction

This document defines the application text formats for character-oriented Air Traffic Services messages that can be transmitted over the ACARS data link. Several ACARS data links are available, including but not limited to, VHF, HF and satellite. The messages defined herein 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 ICAO.

ATS applications involve a single ground agency (i.e., a 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, Specification 622 calls for the addition of an Imbedded Message Identifier and an end-to-end CRC with the message.

Other data link media may become available in the future, including 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

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 620 does not duplicate any of the text formats specified herein as it only describes the envelope.

COMMENTARY

Specifications 620 and 622 also provide necessary information on the use of Labels/sub-Labels/MFIs and 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., ATIS compared to Departure Clearance).

c-1

c-1

2.0 AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS)**2.1 Automatic Terminal Information Service (ATIS)**

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

	<u>Message</u>	<u>Msg Type Ident</u>
c-1	Automatic Terminal Information Service (ATIS) Request Downlink	TIS
	Deliver Automatic Terminal Information Service (ATIS) Uplink	---

2.2 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 2.2.1 and Version 2 is defined in Section 2.2.2. Version 2 is the preferred implementation.

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

2.2.1 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 2-3 of Attachment 2 for historical purposes.

2.2.2 Request for ATIS Report, Version 2

c-2 The format of Version 2 of the request for an ATIS report is shown in Attachment 2, Table 2-4, it contains the following fields: Avionics Indicator, Airport ID, 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.

2.2.2.1 Avionics Indicator

The 3-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".

2.2.2.2 Airport ID

The Airport ID is a 4-character field used to identify the airport (or enroute sector) for which ATIS is requested. The airport ID can be either the 4-character ICAO code or the 3-character IATA code followed by a space.

2.2.2.3 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'.

2.3 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.

c-1

2.3.1 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 2-5 of Attachment 2 for historical purposes.

c-1

2.3.2 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 2.2.2). The Version 2 ATIS Uplink format is given in Attachment 2, Table 2-6 it contains the following fields; Airport ID, Arrival/Departure Indicator, ATIS Identifier, ATIS Version, ATIS Time and ATIS Information.

c-1

2.3.2.1 Airport ID

The 4-character Airport ID field identifies the airport for which ATIS is being reported. The airport ID can be either the 4-character ICAO code or the 3-character IATA code followed by a space.

2.0 AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS) (cont'd)**2.3.2.2 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".

2.3.2.3 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.

2.3.2.4 ATIS Version

The ATIS Version field contains a character (A, B, C) 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 (see Section 2.3.2.1).

2.3.2.5 ATIS Time

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

2.3.2.6 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.

3.0 OCEANIC CLEARANCE

3.1 Oceanic Clearance

To support the delivery of Oceanic Clearances via datalink, three messages have been defined:

<u>Message</u>	<u>Msg Type Ident</u>
Oceanic Clearance Request Downlink	RCL
Oceanic Clearance Uplink	CLX
Oceanic Clearance Readback Downlink	CLA

3.2 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.

3.2.1 Oceanic Clearance Request Downlink, Version 1

The format of the Request for Oceanic Clearance allows specific clearance preferences; e.g., Flight Level, Mach Number, etc. to be requested.

The expected Oceanic Clearance response (uplink) by the ATC facility is presented in Section 3.3 of this Specification.

3.2.1.1 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-'.

Table 3-1 of Attachment 3 defines the format for Version 1 of the Oceanic Clearance Request Downlink message.

3.2.1.1.1 Message Type Identifier

c-1

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.

c-1

3.2.1.1.2 Avionics Indicator

The 3-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. See Section 2.2.2.1.

If it is not necessary for the ground-based application to limit line length, the Avionics Indicator value should be set to '000'.

3.3 Oceanic Clearance Uplink

The Oceanic Clearance uplink is a message prepared by the ATC facility and sent to the ground DSP which then forwards the message to the aircraft End System that issued the initial request.

3.3.1 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.

c-1

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

3.3.1.1 Message Text

c-1

Table 4-1 of Attachment 4 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.

c-1

3.4 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.

3.4.1 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.

3.4.1.1 Message Text

c-1

Table 5-1 of Attachment 5 defines the format of the Message Text field of the Oceanic Clearance Readback Downlink, Version 1.

The Message Type Identifier assignment for the Oceanic Clearance Readback Downlink is CLA.

c-1

4.0 DEPARTURE CLEARANCE**4.1 Departure Clearance**

To support the delivery of Departure Clearances via datalink, three message have been defined:

<u>Message</u>	<u>Msg Type Ident</u>
Request for Departure Clearance Downlink	RCD
Departure Clearance Uplink	CLD
Departure Clearance Readback Downlink	CDA

4.2 Requesting a Departure Clearance

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

The expected Departure Clearance uplink response by the ATC facility is presented in Section 4.3 of this Specification.

4.2.1 Request for Departure Clearance Downlink, Version 1

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

4.2.1.1 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 6-1 of Attachment 6 defines the format of the Departure Clearance Downlink Request message.

4.2.1.1.1 Message Type Identifier

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

4.2.1.1.2 Avionics Indicator

The 3-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. See also Section 2.2.2.1.

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

4.3 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 reclearance 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.

4.3.1 Message Text, Version 1

Table 7-1 of Attachment 7 defines the format of the Departure Clearance Uplink message, Version 1.

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.

4.3.1.1 Message Type Identifier

The Message Type Identifier is a 3 character field used to identify the information the uplink is supplying. The Message Type Identifier assignment for a Departure Clearance Uplink is CLD.

4.4 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.

4.4.1 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.

4.4.1.1 Message Text

Table 8-1 of Attachment 8 defines the format of the Departure Clearance Readback Downlink message.

The Message Type Identifier assignment for a Departure Clearance Readback Downlink is CDA.

c-1

c-1

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c-1

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c-1

5.0 FLIGHT SYSTEM APPLICATION

5.1 Flight System Message

c-1 | The Flight System Message (FSM) application is used in conjunction with the ATS messages defined herein. The Flight System message provides a means to extend the range of information transfer between controller and pilot. The FSM message set 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 herein.

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 onboard 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.

c-1 | 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 3-character field contains the Message Type Identifier of a preceding received message to which the FSM application is responding. c-1

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. c-1

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. c-1

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" will be used. c-1

6.0 TERMINAL WEATHER INFORMATION FOR PILOTS**6.1 Terminal Weather Information for Pilots**

To support the delivery of TWIP reports via data link, two messages have been defined:

<u>Message</u>	<u>Msg Type Ident</u>
Request for TWIP Report Downlink	TWR
TWIP Report Uplink	TWI

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 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 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 3 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.

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6.0 TERMINAL WEATHER INFORMATION FOR PILOTS (cont'd)

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.

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7.0 RESERVED

c-2 | 7.1 Reserved
This section was formerly Waypoint Position Report.

8.0 DATA LINK DELIVERY OF TAXI CLEARANCE

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:

Message	Msg Type Ident
Pushback Clearance Request	PBR
Pushback Clearance Response	PBC
Expected Taxi Clearance Request	ETR
Expected Taxi Clearance Response	ETC

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 of this document, respectively.

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 3-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.

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9.0 CONTROLLER TO PILOT COMMUNICATION (CPC) APPLICATIONS

9.1 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 updates to this document.

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

- 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 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 Identifier), 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:

<u>Message</u>	<u>Msg Type Ident</u>
CPC Log-On Request	CPL
CPC Log-Off Request	COF

9.2.3 Avionics Indicator

The 3-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 will be set to ‘000’.

9.2.4 Message Identification Number

The avionics will 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 it is responding to.

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.

9.0 CONTROLLER TO PILOT COMMUNICATION (CPC) APPLICATIONS (cont'd)**9.2.5 Message Reference Number**

The avionics will 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 will 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.

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 will be created. The downlink will include the appropriate positive response within the Acknowledgment field and the supplemental data field will be omitted.

9.2.6 Departure and Destination Airport IDs

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

In all cases, CPC WILCO/UNABLE Response downlink will 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).

9.2.7 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.

9.3.1 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 Identifier), Message Identification Number, Message Reference Number, Acknowledgment, and the Optional (or Supplemental) data.

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.

The Message Type Identifier field for the CPC WILCO/UNABLE Response will be identified as 'CWR'.

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; or
AFFIRM/NEGATIVE

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

- a. 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.
- b. 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.

9.3.2 Message Identification Number

The avionics will 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 incrementing the Message Identification Number for each queued CPC downlink. The Message Identification Number will 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 will 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.

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9.0 CONTROLLER TO PILOT COMMUNICATION (CPC) APPLICATIONS (cont'd)**9.3.4 Supplemental CPC Data**

The inclusion of the optional supplemental data will 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" or
"AFFIRM/NEGATIVE" or
no-response, respectively.

A summary of the positive and negative responses that are applicable for each of the defined CPC applications is provided in the following table:

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

NOTE: 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 will be required in the downlink response (See Section 9.3 of this document).

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9.0 CONTROLLER TO PILOT COMMUNICATION (CPC) APPLICATIONS (cont'd)**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 Identification Number,
 Message Reference Number,
 Date and Time,
 Summary Information,
 Message Source (ARTCC),
 Aircraft Identifier (Flight Identifier), and
 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:

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 (See Note)

9.4.3 Message Identification Number

As in the avionics, the ground CPC system will maintain a unique CPC Message Identification Number. The ground - based CPC system will 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 will reset the counter to a value of 01 and continue incrementing the Message Identification Number for each queued CPC uplink. The Message Identification Number will 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 will 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, will vary based on the particular Message Type Identifier (MTI) of the CPC Command/Response uplink. The Time, Summary Information, Message Source, Aircraft Identifier (Flight Identifier), and the CPC Application Text information will always be displayed to the crew. All other fields of this message are intended for internal use by the avionics CPC end-system and will not be displayed. Specific examples of the CPC Applications Text are included in Supplement Tables 16-1A through 16-1E.

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ATTACHMENT 1
ENCODING RULES AND MTI ASSIGNMENTS

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Table 1-1 Message Text Identifiers (MTI) List

MESSAGE NAME	UP/DN	MTI	NOTES
ATIS Request	DN	TIS	2
Deliver ATIS	UP		
Oceanic Clearance Request	DN	RCL	
Oceanic Clearance Response	UP	CLX	
Oceanic Clearance Readback	DN	CLA	
Flight Service Message	UP		1
Departure Clearance Request	DN	RCD	
Departure Clearance Response	UP	CLD	
Departure Clearance Readback	DN	CDA	
Pushback Clearance Request	DN	PBR	
Pushback Clearance Response	UP	PBC	
Expected Taxi Clearance Request	DN	ETR	
Expected Taxi Clearance Response	UP	ETC	
CPC Log-On Request	DN	CPL	
CPC Log-Off Request	DN	COF	
TWIP Request	DN	TWR	
TWIP Report	UP	TWI	

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Notes:

- [1] The MTI used is associated with the application to which the Flight Service Message is responding.
- [2] Not included in message.

Table 1-2 Message Code Sets And Abbreviations

The range of the contents of this field is entered in an abbreviated and symbolic format. The conventions used to describe the contents are as follows:

Parameter	Code	Range
Length	V	Variable (1 - max length shown)
Format	A	A .. Z
	B	Boolean (0, 1)
	C	(A .. Z) + (0 .. 9) + (.) + (-) + (sp)
	DD, DDD	Degrees (00 .. 90) or (000 .. 180)
	<hh> or HH	Hours (00 .. 23)
	J	Hex (0 ..9) + (A .. F)
	<mm> or MM	Minutes (00 .. 59)
	N	0 ..9
	SS	Seconds (00 .. 59)
	T	Tenths of Minutes (0 ..9)
	X	(A ..Z) + (0 ..9)
	Q	Sign (+, -)
	Y	Compass Direction (N, S)
	Z	Compass Direction (E, W)

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ATTACHMENT 1 (cont'd)
ENCODING RULES AND MTI ASSIGNMENTS

Table 1-3 Encoding Descriptions

ENTRY	INTERPRETATION
<u>Underlined</u> UPPER CASE characters	Fixed text for display/printing
Lower case characters	Description of fixed text for display/printing or display/printer control character
<lower case character>	Description of variable text to be displayed or printed

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

Table 2-1 ATIS Report Version Numbers

VERSION NUMBER	IMI/VERSION CODE	TABLE		NOTES
		REQUEST	REPORT	
Reserved	00			
1	01	2-3	2-5	Obsolete
2	TI2	2-4	2-6	Preferred

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Table 2-2 Arrival/Departure Indicator Codes

CLASS	SYMBOL	RANGE OF CHARACTERS/ASSIGNMENT
ARRIVAL/DEPARTURE INDICATOR	A	Arrival ATIS
	D	Departure ATIS
	C	Arrival ATIS with automatic update
	T	Terminate automatic update of ATIS
	E	Automatic Enroute Information Service (AEIS)

ATTACHMENT 2 (cont'd)
ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

The following format (Version 1) has been declared obsolete. This table has been retained in this Specification as a historical record. Generally, the highest version number format is the preferred implementation.

Table 2-3 Message Text of Request For ATIS Report (Version 1)

The format for Version 1 of the Request for an ATIS Report is:

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	XXXX	KSEA	2
7	Arrival/Departure Indicator	1	<u>A</u> , <u>D</u> , <u>C</u> , <u>T</u> or <u>E</u>	A	per Table 2-2
8 to 10	Avionics Indicator	3	NNN	132	

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Table 1-2 for the range of the parameters listed.
- [2] Four-character ICAO code or Three-character IATA code plus a space character.

Table 2-4 Message Text of Request For ATIS Report (Version 2)

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

080KPITA

The format for Version 2 of the ATIS Request is:

FIELD NAME	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Avionics Indicator		3	NNN Integer	080	Range (000 - 999)
Airport ID		4	XXXX	KPIT	2
Arrival/Departure Indicator		1	<u>A</u> , <u>D</u> , <u>C</u> , <u>T</u> or <u>E</u>	A	per Table 2-2

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Table 1-2 for the range of the parameters listed.
- [2] Four-character ICAO code or Three-character IATA code plus a space character.

ATTACHMENT 2 (cont'd)
ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

The following format (Version 1) has been declared obsolete. This table has been retained in this Specification as a historical record. Generally, the highest version number format is the preferred implementation.

Table 2-5 Message Text of ATIS Report Uplink (Version 1)

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:

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	XXXX	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	

c-2

c-2

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 Table 2-2 of Attachment 2 for the list of assignments.
- [3] The information in this field is NOT intended to be presented on the display/printout of the message.

c-1

ATTACHMENT 2 (cont'd)
ATIS REPORT REQUEST (DOWNLINK) AND ATIS REPORT (UPLINK) FORMATS

Table 2-6 Message Text of ATIS Report Uplink (Version 2)

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 Uplink is:

FIELD NAME	SUB FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
AIRPORT ID		4	XXXX	KPIT	4
	Word Separator	1	space	<SP>	
ARR/DEP		3	<u>ARR</u> or <u>DEP</u> or <u>ENR</u>	ARR	
	Word Separator	1	space	<SP>	
ATIS Identifier	ATIS Identifier	4	<u>ATIS</u>	ATIS	
	Word Separator	1	space	<SP>	
ATIS Version Number	ATIS Version	1	A	E	
	Line Separator	2	carriage return-line feed	<cr/lf>	
ATIS Time	ATIS Time	5	<hhmm> <u>Z</u>	1452Z	4
	Word Separator	1	space	<SP>	
ATIS Information	ATIS Information	V	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 Table 2-2 of Attachment 2 for the list of assignments.
- [3] The information in this field is NOT intended to be presented on the display/printout of the message.
- [4] This field should be encoded in accordance with ICAO document 4444 Appendix A.

COMMENTARY

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. In no case should the message exceed four blocks in length.

ATTACHMENT 3
REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT

The Oceanic Clearance Request message is generated by the airborne Oceanic Clearance application on the aircraft when initiated by pilot action and delivered to the ATC Oceanic Clearance application on the ground by the DSP. The example Oceanic Clearance Request information illustrated in Table 3-1 should appear in the air/ground format and result in the ground/ground format shown below.

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

RCL 080
BAW123-55N010W/1234 M084F350
-RMK/ABLE F370

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTE
Message Type Identifier	Message Type	3	<u>RCL</u>	RCL	
	Word Separator	1	space	<sp>	
Avionic display/printer capability,	Avionics Indicator	3	NNN	080	
	Line Separator	2	carriage return-line feed	<cr/lf>	
Requested Entry-Point, Time, Speed and Flight Level	Flight Identifier	2-7	XXXXXXX	BAW123	2
	Field Separator	1	hyphen	<->	
	Requested Entry-Point	3 to 11	<position>	55N010W	3
	Sub-field Divider	1	slash	</>	
	Requested Time	4	<hhmm>	1234	2
	Word Separator	1	space	<sp>	
	Requested Mach No.	4	<u>M</u> NNN	M084	2
	Requested Flight Level	4	<u>F</u> NNN	F350	2
Additional Information	Line Separator	2	carriage return - line feed	<cr/lf>	4
	Field Separator	1	hyphen	<->	
	Fixed Text	3	<u>RMK</u>	RMK	
	Sub-field Divider	1	slash	</>	
	Free Text Options	V	free text	ABLE F370 ...	

c-1

c-1

c-2

ATTACHMENT 3 (cont'd)
REQUEST FOR OCEANIC CLEARANCE DOWNLINK FORMAT

Table 3-2 Notes to Clearance Messages

- c-1

[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.
- c-1

[2]

The following fields should be coded in accordance with ICAO document 4444, Appendix A:
 - 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.
- c-1

[2]

- Date
 - Wind Direction and Wind Velocity
 - Fuel Quantity
- c-2

[2]

The Flight-ID must be defined precisely as in the filed flight plan and conform to the ICAO format.
- c-2

[2]

Aircraft Address is used instead of Flight Identifier to uniquely identify Business. The Flight Identifier field of Business aircraft is generally encoded with a fixed value (e.g. UV0000).
- c-2

[3]

The <position> field may be displayed in any one of the following formats:

	<u>Code</u>	<u>Example</u>
a.	NNYNNNZ	53N054W
b.	NNNNYNNNNNZ	5305N05405W
c.	AAA or AAAA or AAAAA	CARPE
- c-2

[4]

This field is optional, but if present it must be formatted as shown.
- c-2

[5]

The Reclearance field will only be present if more than one clearance was issued. The Reclearance value may be 1 through 7.
- c-2

[6]

This message is a duplicate of the uplink clearance (Departure or Oceanic) message. Only the Message Type Identifier is changed. The downlink repeats the uplink contents exactly with no attempt at correction of message content.
- c-2

[7]

The Optional Free Text field may or may not be present.
- c-2

[8]

MDI (Minimum Departure Interval), e.g., three minutes between successive departures, is used by ATC instead of ADT (Approved Departure Time) to provide minimum time spacing of aircraft departures on specific routes. The pilot should check to determine if there are any MDI delays when reading back his Departure Clearance.
- c-1

[9]

Unassigned, reserved for future use.

ATTACHMENT 4
OCEANIC CLEARANCE UPLINK FORMAT

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 illustrated in Table 4-1 should appear in the ground/ground format and result in the air/ground format shown below.

c-1

Table 4-1 Message Text of Oceanic Clearance Uplink (Version 1)

CLX 1254 930331 EGGX CLRNC 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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>CLX</u>	CLX	
	Word Separator	1	space	<sp>	
Time and Date	Time	4	<hhmm>	1254	2
	Word Separator	1	space	<sp>	
	Date	6	<yymmdd>	930331	2
	Word Separator	1	space	<sp>	
ATCC Identifier	ICAO Designator	4	AAAA	EGGX	2
	Word Separator	1	space	<sp>	
Clearance Indicator and Number	Key Word	6	<u>CLRNC</u>	CLRNC	
	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	Flight Identifier	2-7	XXXXXXX	UAL915	2
	Word Separator	1	space	<sp>	
	Fixed Text	7	<u>CLRD TO</u>	CLRD TO	
	Word Separator	1	space	<sp>	
	ICAO Designator	4	AAAA	KIAD	2
	Word Separator	1	space	<sp>	
	Fixed Text	3	<u>VIA</u>	VIA	
	Word Separator	1	space	<sp>	
Route Detail	Entry-Point	3-11	<position>	53N015W	3
	Line Separator	2	carriage-return-line feed	<cr/lf>	
	Route Identifier	V	<u>NAT</u> spaceAAAAAA or <u>RANDOM ROUTE</u>	NAT FOXTROT	
Route Detail	Field Separator	2	carriage-return-line feed	<cr/lf>	
	Route Expansion	V	NNslashNNspaceNNslashN N..... <position> or <position><position>..... <position>	53/15 53/20 52/30 51/40 50/50 YQX	3,4
New Line	Line Separator	2	carriage-return-line feed	<cr/lf>	

c-1

ATTACHMENT 4 (cont'd)
OCEANIC CLEARANCE UPLINK FORMAT

Table 4-1 Message Text of Oceanic Clearance Uplink (Version 1) (cont'd)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Cleared Time Flight Level and Speed from Entry-Point	Fixed Text	2	<u>FM</u>	FM	
	Word Separator	1	space	<sp>	
	Entry-Point	3-11	<position>	53N015W	3
	Sub-field Divider	1	slash	</>	
	Time	4	<hhmm>	1335	2
	Word Separator	1	space	<sp>	
	Fixed Text	4	<u>MNTN</u>	MNTN	
	Word Separator	1	space	<sp>	
	Flight Level	4	<u>FNNN</u>	F370	2
	Word Separator	1	space	<sp>	
	Mach No.	4	<u>MNNN</u>	M080	2
New Line	Line Separator	2	carriage return-line feed	<cr/lf>	
Additional ATC Information	Fixed Text	3	<u>ATC</u>	ATC	2,3,4 See Table 4-1A
	Sub-field Divider	1	slash	</>	
	Fixed Text Options	V	LEVEL CHANGE and/or MACH CHANGE and/or CLEARANCE LIMIT and/or UNABLE TO APPROVE REQUEST etc.	LEVEL CHANGE NOT BEFORE 1426 AT 53N015W	
	Line Separator	2	carriage return-line feed	<cr/lf>	
Reclearance Notification	Fixed Text	11	<u>RECLEARANCE</u>	RECLEARANCE	4,5
	Word Separator	1	space	<sp>	
	Reclearance No.	1	N	1	
Optional Additional Free Text Information	Line Separator	2	carriage return-line feed	<cr/lf>	7
	Free Text	up to 80	free text	SHANWICK TEST CLEARANCE - CONFIRM ON VOICE	

Notes:

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

[2-7] Notes 2 through 7 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 4 (cont'd)
OCEANIC CLEARANCE UPLINK FORMAT

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 4-1A Additional ATC Information Message Text Options

TEXT OPTIONS [1]	NOTES
<<u>LEVEL CHANGE</u>> and/or <<u>MACH CHANGE</u>> and <<u>NOT BEFORE</u> <hhmm> <u>AT</u> <position>> and/or <<u>NOT LATER THAN</u> <hhmm> <u>AT</u> <position>> and/or	3
<<u>REQUEST LEVEL CHANGE EN-ROUTE</u> <position>> and/or	3
<<u>LEAVE LEVEL AT</u> <position> or <time>> and/or <<u>BE LEVEL AT</u> <position> or <time>> and/or	3
<<u>ROUTE CHANGE AT</u> <position>> or <<u>ROUTE CHANGE AT MULTIPLE ROUTE POINTS</u>> and/or	3
<<u>ENTRY POINT CHANGE</u>> and/or <<u>TIME INTERVAL REQUIRED</u> <flight identifier> <u>±</u> <mm>> and/or	2
<<u>CLEARANCE LIMIT</u>> and/or	
<<u>UNABLE TO APPROVE REQUEST</u>>	

Notes:

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

[2-3] Notes 2 through 3 for the above table are given in Table 3-2 of Attachment 3.

c-1

c-1

ATTACHMENT 5
OCEANIC CLEARANCE READBACK DOWNLINK FORMAT

c-1

The Oceanic Clearance Readback downlink message is generated by the airborne Oceanic Clearance application on the aircraft when initiated by pilot action and delivered to the ATC Oceanic Clearance application on the ground by the DSP. The example air/ground Oceanic Clearance Readback information is included in Table 3-1 by reference. The resulting ground/ground format is shown below.

Table 5-1 Message Text of Oceanic Clearance Readback Downlink (Version 1)

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
RECL clearance 1
SHANWICK TEST CLEARANCE - CONFIRM ON VOICE

c-1

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type	Message Type	3	<u>CLA</u>	CLA	
Message Text	Same as Oceanic Clearance Uplink See Table 4-1 of Attachment 4				6

Notes:

c-1

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters for formatting reasons.
- [6] Notes 2 through 6 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 6
REQUEST FOR DEPARTURE CLEARANCE DOWNLINK FORMAT

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 6-1 should appear in the air/ground format and result in the ground/ground format shown below.

c-1

Table 6-1 Message Text For Request Departure Clearance Downlink (Version 1)

RCD 080
BAW123-EGKK-GATE A34-KJFK
ATIS H
-TYP/B747
-RMK/REQ 23L

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>RCD</u>	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	Flight Identifier	2-7	XXXXXXX	BAW123	2
	Field Separator	1	hyphen	<->	
	Departure Airfield	4	AAAA	EGKK	2
	Field Separator	1	hyphen	<->	
	Fixed Text	4	<u>GATE</u>	GATE	
	Word Separator	1	space	<sp>	
	Gate No.	1-5	XXXXX	A34	
	Field Separator	1	hyphen	<->	
ATIS Identifier	Destination	4	AAAA	KJFK	2
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Fixed text	4	<u>ATIS</u>	ATIS	
	Word Separator	1	space	<sp>	
Aircraft Type Notification	ATIS ID	1	A	H	
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Field Separator	1	hyphen	<->	
	Fixed Text	3	<u>TYP</u>	TYP	
	Sub-field Divider	1	slash	</>	
New Line Additional Information	Aircraft Type	2-4	XXXX	B747	2
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Field Separator	1	hyphen	<->	
	Fixed Text	3	<u>RMK</u>	RMK	
	Sub-field Divider	1	slash	</>	
	Free Text Options	V	free text	REQ 23L	

c-1

Notes

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

c-1

[2-4] Notes 2 through 4 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 7
DEPARTURE CLEARANCE UPLINK FORMAT

- c- The Departure Clearance uplink message is generated by the ATC Departure Clearance application and delivered to the Departure Clearance application on the aircraft when initiated by controller action. The example Departure Clearance information illustrated in Table 4-1 should appear in the ground/ground format and result in the air/ground format shown below.

Table 7-1 Message Text of Departure Clearance Uplink (Version 1)

CLD 1035 930625 EGKK PDC 146
BAW123 CLRD TO KJFK OFF 26R VIA DTY5V
SQUAWK 5023 ADT 1022 NEXT FREQ 134.550 ATIS I
BON VOYAGE

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLES	NOTES
Message Type	Message Type	3	<u>CLD</u>	CLD	
Identifier	Word Separator	1	space	<sp>	
Time and Date	Time	4	<hhmm>	1035	2
	Word Separator	1	space	<sp>	
	Date	6	<yymmdd>	930625	2
	Word Separator	1	space	<sp>	
ATC Identifier	ICAO Designator	4	AAAA	EGKK	2
	Word Separator	1	space	<sp>	
Clearance Indicator and Number	Key Word	3	<u>PDC</u>	PDC	
	Word Separator	1	space	<sp>	
	Clearance Number	3	NNN	146	
	Line Separator	2	carriage-return-line feed	<cr/lf>	
Cleared Destination	Flight Identifier	2-7	XXXXXXX	BAW123	2
	Word Separator	1	space	<sp>	
	Fixed Text	7	<u>CLRD TO</u>	CLRD TO	
	Word Separator	1	space	<sp>	
	Destination Airfield	4	AAAA	KJFK	2
Cleared Runway Departure and Route	Word Separator	1	space	<sp>	
	Fixed Text	3	<u>OFF</u>	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	<u>VIA</u>	VIA	
	Word Separator	1	space	<sp>	
ATCRABS Squawk Notification	SID	V	XXXXXXX	DTY5V	
	Line Separator	2	carriage-return-line feed	<cr/lf>	
	Fixed Text	6	<u>SQUAWK</u>	SQUAWK	4
	Word Separator	1	space	<sp>	
Departure Time Notification	SSR Code	4	NNNN	5023	
	Word Separator	1	space	<sp>	
	Fixed Text	3	<u>ADT</u>	ADT	4,8
	Word Separator	1	space	<sp>	
Approved Departure Time	MDI or <hhmm> or <hhmm>/<hhmm>	3, 4 or 9		1022	
	Word Separator	1	space	<sp>	

ATTACHMENT 7 (cont'd)
DEPARTURE CLEARANCE UPLINK FORMAT

Table 7-1 Message Text of Departure Clearance Uplink (Version 1) (cont'd)

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Next Frequency Notification	Fixed Text	9	<u>NEXT</u> <u>FREQ</u>	NEXT FREQ	4
	Word Separator	1	space	<sp>	
	Next Frequency	7	NNN.NNN	134.550	
	Word Separator	1	space	<sp>	
Current ATIS Notification	Fixed Text	4	<u>ATIS</u>	ATIS	4
	Word Separator	1	space	<sp>	
	ATIS Identifier	1	A	I	
Optional Free Text	Line Separator	2	carriage return-line feed	<cr/lf>	7
	Free Text	Variable (1 to 80)	free text	TAXIWAY K IS CLOSED	

Notes:

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

[2-7] Notes 2 through 7 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 8
DEPARTURE CLEARANCE READBACK DOWNLINK FORMAT

- c-1 |
- c-2 |
- c-1 |
- 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 8-1 by reference. The resulting ground/ground format is shown below.

Table 8-1 Message Text of Departure Clearance Readback (Version 1)

CDA 1035 930625 EGKK PDC 146
BAW123 CLRD TO KJFK OFF 26R VIA DTY5V
SQUAWK 5023 ADT 1022 NEXT FREQ 134.550 ATIS I
BON VOYAGE

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>CDA</u>	CDA	2
	Word Separator	1	space	<sp>	2
Message Contents	Same as Departure Clearance uplink See Table 7-1 of Attachment 7				6

Notes:

- c-1 |
- [1] |
- [2-6] |
- The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters for formatting reasons.
- Notes 2 through 6 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 9
FLIGHT SYSTEM UPLINK FORMAT

Generally, the Flight Service 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 Service Message are: Departure Clearance, Oceanic Clearance and Pushback Clearance Requests.

c-1

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

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

FSM 1523 940316 EGGX
BAW123 RCL REJECTED
ERROR IN MESSAGE
REVERT TO VOICE PROCEDURES

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	FSM	FSM	
	Word Separator	1	space	<sp>	
Time and Date	Time	4	<hhmm>	1523	2
	Word Separator	1	space	<sp>	
	Date	6	<yymmdd>	940316	
	Word Separator	1	space	<sp>	
ATCC Identifier	ICAO Designator	4	AAAA	EGGX	2
	Line Separator	2	carriage return-line feed	<cr/lf>	
Message Text	Flight Identifier	2-7	XXXXXXX	BAW123	2
	Word Separator	1	space	<sp>	
	Message Type Response Identifier	3	AAA	RCL	
	Word Separator	1	space	<sp>	
	Base Message	8	<u>RECEIVED</u> or <u>REJECTED</u>	REJECTED	
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Optional Supplemental Message Part 1	Variable up to 80	<u>REQUEST BEING PROCESSED</u> or <u>REQUEST ALREADY RECEIVED</u> etc.	ERROR IN MESSAGE -	4, 10, 14
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Optional Supplemental Message Part 2	Variable up to 80	<u>STANDBY</u> or <u>REVERT TO VOICE PROCEDURES</u> etc.	REVERT TO VOICE PROCEDURES	4, 11, 14
	Line Separator	2	carriage return-line feed	<cr/lf>	
	Optional Supplemental Message Part 3	Variable up to 80			12, 14
Optional Free Text	Line Separator	2	carriage return-line feed	<cr/lf>	7, 13, 14
	Free Text	up to 80	Free Text		

c-1

Notes:

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

[2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 9 (cont'd)
FLIGHT SYSTEM UPLINK FORMAT

- [10] Refer to Table 9-1A for a listing of the optional phrases defined for use in the Supplemental Message Part 1 Subfield.
- [11] Refer to Table 9-1B for a listing of the optional phrases defined for use in the Supplemental Message Part 2 Subfield.
- [12] Refer to Table 9-1C for a listing of the optional phrases defined for use in the Supplemental Message Part 3 Subfield.
- [13] 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.
- [14] 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.

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

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

Notes:

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

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

SUB-FIELD NAME	CONTENT OPTIONS [1]	NOTES
Supplemental Message Part 2	<u>STANDBY</u> or	
	<u>REVERT TO VOICE PROCEDURES</u>	
	Other phrases may be defined in the future	

Notes:

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

ATTACHMENT 9 (cont'd)
FLIGHT SYSTEM UPLINK FORMAT

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

c-1

SUB-FIELD NAME	CONTENT OPTIONS [1]	NOTES
Pushback Clearance Acknowledgment	<u>PUSHBACK REQUEST RECEIVED</u>	

c-1

Notes:

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

c-1

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

SUB-FIELD NAME	CONTENT OPTIONS [1]	NOTES
Free Text	<u>CONTACT</u> (ATC Center Name) <u>BY VOICE</u>	10
	SIGMET information - text variable	11

c-1

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] Other pre-defined phrases may be defined in the future.
- [11] Other subjects for Free Text may be identified in the future.

c-1

ATTACHMENT 10
TERMINAL WEATHER INFORMATION FOR PILOTS

The example TWIP Request information shown in the air/ground Table 10-1 below should result in a TWIP Request ground/ground message delivered to the ATC TWIP application on the ground as:

TWR 080KPITNT

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

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

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

[2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 10 (cont'd)
TERMINAL WEATHER INFORMATION FOR PILOTS

The example TWIP uplink ground/ground message shown below should result in the air/ground message shown in Table 10-2 delivered to the airborne TWIP application on the aircraft.

TWI KPIT TWIP 1452Z
TWIP Information.....

Table 10-2 Example, TWIP Uplink Response Version 1:

FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type	3	<u>TWI</u>	TWI	
Identifier	1	space	<sp>	
Airport ID	4	XXXX	KPIT	4-character ICAO code or 3-character IATA code plus a space dependent on use in request message.
Word Separator	1	space	<sp>	
TWIP Ident	4	<u>TWIP</u>	TWIP	
Space	1	space	<sp>	
TWIP Time	5	<hhmm> <u>Z</u>	1452Z	2 digit hour followed by 2 digit minute
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] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.

ATTACHMENT 11
RESERVED

c-2

This attachment was formerly WAYPOINT POSITION REPORT DOWNLINK FORMAT.

ATTACHMENT 12
DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

In the example shown below, the following Pushback Clearance Request would be sent to the ATC Taxi Clearance application on the ground as:

PBR 080
NW3456/N552US/112359
KDTW KBWI
F10
PUSHBACK REQUEST REMARKS

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>PBR</u>	PBR	
	Word Separator	1	space	<sp>	
Avionic Display Format	Avionics Indicator	3	NNN	080	
	Line Separator	2	carriage return-line feed	<cr/lf>	
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>	
Departure Station	Departure Station	4	XXX<sp> or XXXC	DTW<sp> or KDTW	10
	Word Separator	1	Space	<sp>	
Destination Station	Destination Station	4	XXX<sp> or XXXC	BWI<sp> or KBWI	10
	Line Separator	2	carriage return-line feed	<cr/lf>	
Gate	Gate Identifier	1-3 (or 0)	XXX	F10	11
	Line Separator	2	carriage return-line feed	<cr/lf>	
Pushback Request Remarks	Remarks	≤ 150	Additional free text	PUSHBACK REQUEST REMARKS	

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters than shown in this example for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] The Airport Code may be delivered in the form of the 4-character ICAO Airport Code or as the 3-character IATA Airport Code with a trailing space <sp> character.
- [11] This field is optional. If used, Gate information can be one to three characters. If not used, the length is zero (0).

ATTACHMENT 12 (cont'd)
DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

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

PBC
NW1560/10/N8934E/DTW/BWI
PUSH APPROVED

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>PBC</u>	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	</>	
Departure Station	Departure Station	3-4	XXX or XXXC	DTW	10
	Field Separator	1	slash	</>	
Destination Station	Destination Station	3-4	XXX or XXXC	BWI	10
	Line Separator	2	carriage return-line feed	<cr/lf>	
Pushback Clearance Remarks	Remarks	≤ 150	free text	PUSH APPROVED	11

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] The Airport Code may be delivered as the 3-character IATA Airport Code or as the 4-character ICAO Airport Code.
- [11] Refer to Table 12-2A for Free Text options.

ATTACHMENT 12 (cont'd)
DATA LINK PUSHBACK REQUEST AND CLEARANCE FORMATS

Table 12-2A Typical Pushback Clearance Free Text Options

REMARKS	EXAMPLE [1]	NOTES
Pushback	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	
Clearance	PUSH APPROVED - HOLD DEEP - THE B747 OUT OF GATE B5 WILL PUSH IN FRONT OF YOU	
Approved	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	

c-1

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**

In the example shown below, the following Expected Taxi Clearance Request would be sent to the ATC Taxi Clearance application on the ground as:

ETR 080
NW3456/N552US/112359
BWI DTW
G00C7
FREE TEXT REMARKS

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>ETR</u>	ETR	
	Word Separator	1	space	<sp>	
Avionic Display Format	Avionics Indicator	3	NNN	080	
	Line Separator	2	carriage return-line feed	<cr>	
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>	
Departure Station	Departure Station	4	XXXXC	BWI <sp> or KBWI	10
	Word Separator	1	space	<sp>	
Destination Station	Destination Station	4	XXXXC	DTW <sp> or KDTW	10
	Line Separator	2	carriage return-line feed	<cr>	
Location Characters	Location Characters	1-5 (or 0)	XXXXX	G00C7	11
	Line Separator	2	carriage return-line feed	<cr>	
Expected Taxi Clearance Request Remarks	Remarks	≤ 100	free text	FREE TEXT REMARKS	

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters than shown in this example for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] The Airport Code may be delivered in the form of the 4-character ICAO Airport Code or as the 3-character IATA Airport Code with a trailing space <sp> character.
- [11] This field is optional. If used, Gate information can be one to five characters. If not used, the length is zero (0).

ATTACHMENT 13 (cont'd)**DATA LINK EXPECTED TAXI CLEARANCE REQUEST AND EXPECTED TAXI CLEARANCE FORMAT**

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

ETC
NW1560/N8934E/10/DTW/BWI/21R/118.50/119.45/RED1/D
DEICE PRIOR TO TAXI

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	ETC	ETC	10
	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	</>	
Departure Station	Departure Station	3-4	XXXC	DTW	
	Field Separator	1	slash	</>	
Destination Station	Destination Station	3-4	XXXC	BWI	
	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	11
	Field Separator	1	slash	</>	
Monitor Frequency	Monitor Frequency	7	NNN.NNN	119.450	
	Field Separator	1	slash	</>	
Expected Taxi Route	Expected Taxi Route (Coded)	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	≤ 100 Variable	Additional free text	DEICE PRIOR TO TAXI	12

Notes:

- [1] The range of the contents of this field is entered in an abbreviated format. See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. There may be more carriage return and line feed characters than shown in this example for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] The Airport Code may be delivered in the form of the 4-character ICAO Airport Code or as the 3-character IATA Airport Code.
- [11] This field is left empty (length = zero) if the frequency is not entered.
- [12] The content of the message is not restricted to the example included above.

ATTACHMENT 14
AIRCRAFT LOG-ON/LOG-OFF MESSAGE

In the example below, the following CPC Log-On Request would be sent to the ATS system that hosts the CPC Application as:

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

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>CPL</u> or <u>COF</u>	CPL	10
	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	13
	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	11
	Word Separator	1	space	<sp>	
Departure Airport	Departure Airport	4	XXXXC	LAX<sp> or KLAX	
	Word Separator	1	space	<sp>	
Destination Airport	Destination Airport	4		PHL<sp> or KPHL	
Optional Free Text	Field Separator	1	slash	</>	
	Free Text	1-100	free text	NEW USER	12

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

[2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.

[10] 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.

[11] 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.

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

[13] The Aircraft ID should be consistent with ICAO flight planning documentation.

ATTACHMENT 15
AIRCREW RESPONSE DOWNLINK MESSAGE

In the example below, the following CPC WILCO/UNABLE Response would be sent to the ATS system that hosts the CPC Application as:

CWR 960930 123235 VAL1234 13 42 WILCO -170F

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type		<u>CWR</u>	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	2
	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 Char.	<u>WILCO</u> or <u>ROGER</u> or <u>AFFIRM</u> or <u>UNABLE</u> or <u>NEGATIVE</u>	WILCO	10
	Word Separator	1	space	<sp>	
Supplemental CPC Data (Optional Based on Uplink)	DATA ID	1	hyphen	-	
	Assigned Altitude	3-4	NNN or NNNN	170	11
	Units	1	<u>F</u> or <u>M</u>	F	12

c-1

[1] See Note 1 of Table 1-2 of Attachment 1 for the Content field legend.

[2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.

[10] 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.

[11] 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.

c-2

[12] The “Units” identifies the Assigned Altitude in units of feet (F) or meters (M).

ATTACHMENT 16
CPC UPLINK MESSAGE

In the example below, the following 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

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

FIELD DESCRIPTION	SUB-FIELD NAME	FIELD LENGTH (in Chars)	CONTENTS [1]	EXAMPLE	NOTES
Message Type Identifier	Message Type	3	<u>LCS</u> or <u>TOC</u> or <u>ASM</u> or <u>MFC</u> or <u>PD1</u> or <u>PD2</u> or <u>PD3</u> or <u>PD4</u>	TOC	10
	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	
	Word Separator	1	Space	<sp>	
Time	Time	6	<hhmmss >	123235	11
	Time ID	1	<u>Z</u>	Z	
	Word Separator	1	space	<sp>	
Summary Information	Summary Info	12	Refer to Tables 16-2, A-E for Examples	KLAX 118.000	11,12
	Word Separator	2	carriage return-line feed	<cr/lf>	
Message Source	ATS Facility	4	XXXX	KZMP	11
	Word Separator	1	space	<sp>	
Aircraft Identifier	Flight Identifier	2-7	XXXXXXXX	VAL1234	2,11
	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	11,13

ATTACHMENT 16 (cont'd)
CPC UPLINK MESSAGE

- [1] See Note 1 of Table 1-2 of Attachment 1 for the Content field legend. Other notes for the above table are given in Table 3-2 of Attachment 3. There may be more carriage return and line feed characters for formatting reasons.
- [2-9] Notes 2 through 9 for the above table are given in Table 3-2 of Attachment 3.
- [10] 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.
- [11] Only the Time, Summary Information, Message Source, Aircraft Identifier, and CPC Application Text will appear as displayed message text to the crew.

c-1

COMMENTARY

Although the date is carried in the message, this information is not intended to be presented to the aircrew.

- [12] 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.
- [13] 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 (cont'd)
CPC UPLINK MESSAGE

Table 16-1A: Example - LCS CPC Application Text

CONTENTS	EXAMPLE	NOTES
[FacilityName] [FacilityFunction] <u>CONFIRM</u> <u>SQUAWK</u> [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
<u>CONTACT</u> [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] <u>ALTIMETER</u> [Altimeter] <u>TIME</u> [Time]	ATLANTA ALTIMETER TWO NINE NINE EIGHT TIME 1232	

Table 16-1D: Example - MFC CPC Application Text

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

c-1

ATTACHMENT 16 (cont'd)
CPC UPLINK MESSAGE

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

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Table 16-2C: Example - ASM Summary Information

CONTENTS	EXAMPLE	NOTES
[FacilityName] [Altimeter]	W99 2982IN	FacilityName is the Altimeter Reporting Station 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	

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SUPPLEMENT 1©
TO
ARINC SPECIFICATION 623
CHARACTER-ORIENTED AIR TRAFFIC SERVICE (ATS) APPLICATIONS

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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 DOCUMENT

Changes introduced by Supplement 1 are too extensive to make the integration of replacement pages from a separate supplement into Specification 623-1 practical for our readers.

The changes introduced by Supplement 1 have been identified using change bars and are labelled “c-1”.

C. CHANGES TO ARINC SPECIFICATION 623 INTRODUCED BY THIS DRAFT SUPPLEMENT

This section, listed directly below, presents a complete tabulation of the changes and additions to the Specification to be introduced by this Supplement. Each change or addition is defined by the section number and the title that will be employed when the Supplement is eventually incorporated. In each case a brief description of the change or addition 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

Test 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 9-1D 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.

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SUPPLEMENT 2©
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: 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 Identifier by business aircraft is provided.

B. ORGANIZATION OF THIS DOCUMENT

The first part of this document, printed on goldenrod-colored paper, is the Supplement itself. It contains descriptions of the changes introduced into the Specification and, where appropriate, extracts from the original text for comparison purposes. The second part consists of replacement white pages for the Specification, modified as required by the Supplement. The modified and added material on each replacement page is identified in the margin by a “c-2” indicator.

C. CHANGES TO ARINC SPECIFICATION 623 INTRODUCED BY THIS DRAFT SUPPLEMENT

This section presents a complete tabulation of the changes and additions to the Characteristic to be introduced by this Supplement. Each change or addition is defined by the section number and the title that will be employed when the Supplement is eventually incorporated. In each case a brief description of the change or addition 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 ASSIGNMENTS

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.