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Abstract

This document constitutes an appendix to the MADAP Interface Design Description, Operational Interfaces Overview [1]. It is drafted in a self-consistent way, to enable its use by external as well as internal client systems of the MADAP Plan Server.

The document addresses both the semantic interface aspects (by means of communication scenarios) and syntax aspects (message definitions) of the provision of MADAP flight plan data to client subsystems.

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1 INTRODUCTION

1.1 Purpose

This document constitutes an appendix to the MADAP Interface Design Description, Operational Interfaces Overview [1]. It is drafted in a self-consistent way, to enable its use by external as well as internal client systems of the MADAP Plan Server.

The document addresses both the semantic interface aspects (by means of communication scenarios) and syntax aspects (message definitions).

1.2 Intended audience

This document serves Maastricht UAC external and internal bodies :

- INTERNAL : all staff that have an interest in the position and infrastructure of Maastricht as an ATM/CNS system:
  - All ENG staff active in the ATM/CNS domain
  - Other Maastricht staff who touch upon the ATM/CNS infrastructure in their daily work
- EXTERNAL : persons involved in the maintenance of external client systems

1.3 Document Structure

Section 1.5 contains data communication scenarios for the Plan Server with internal (MADAP subsystems) and external clients, at application level. The emphasis here is on the data that is exchanged and its semantics. Where possible, the data exchanges are discussed as scenarios using a standard format, as follows:

Interface i

Purpose This section briefly describes the purpose of the interface.
Preliminary remarks This section gives background information that is essential for a good understanding of the interface.
Preconditions This section lists the preconditions of the interface (**where known**).
Dynamics This section details the various steps involved in the exchange of the data.
Postconditions This section lists the postconditions of the interface (**where known**).
Communication objects This section lists communication objects and messages involved in the data exchange and points to detailed descriptions in the appendices.
Non-functional aspects This section discusses issues such as performance requirements (**where known**).
Notes This section comments on points in the previous sections that require further attention.

1.4 Data Sharing Agreement

Use of the data provided over the MADAP Plan Server interface is subject to a Data Sharing Agreement. Potential clients can obtain the request forms by letter to Maastricht UAC, Safety Health Security Environment (see Annex 3), with copy to Director Maastricht UAC.

1.5 Response time specifications in this document

The *Madap Interface Definition* considers two kinds of requirements:

- Human Interactive response time requirements. These requirements stem from human factors in control activities. The requirements are either defined by HMI ergonomics or by feedback from operations.
- Non-Human Interactive response time requirements. These requirements stem from various quality-of-service considerations.

Response times in the *Madap Interface Definition* are end-to-end:

Category	Functions	Response time	
		Human Interactive	Non-Human Interactive
A	Traffic and flight related functions Provision of system warnings	HI_A: Less than 350 ms	NHI_A: Less than 350 ms
B	Functions sending and/or receiving management information Functions sending and/or receiving maps including cartographical and aeronautical data	HI_B: Less than 1000 ms	NHI_B: Less than 1000 ms
C	Functions sending and/or receiving statistical information Functions sending and/or receiving predicted airspace visual representations. Supervision tools for the workload/capacity assessment	HI_C: Less than 3000 ms	NHI_C: Less than 3000 ms

(Source: "Common Operational Performance Specifications (COPS) for the Controller Working Position" version 6-91/1)

2 COMMUNICATION SCENARIOS

2.1 SPN creation/repetition

Purpose To send the flight plan data of a short plan (SPN) to the clients.
Preliminary remarks
Preconditions 1. The clients must have established a connection.
Dynamics 1. The Plan Server sends a new SPN to the clients.
Postconditions
Communication objects SPN
Non-functional aspects Response time category: NHI_C
Notes A new SPN message is sent when a new SPN is activated in the FDP, or as part of a repetition (see 2.8, Repeat information, p. 13).

2.2 SPN modification

Purpose To send the flight plan data of a modified short plan (SPN) to the clients.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The short plan to be modified must have been sent before.
Dynamics 1. The Plan Server sends a modified SPN to the clients.
Postconditions
Communication objects SPN
Non-functional aspects Response time category: NHI_C
Notes The modify message is sent when a modification has occurred on the FDP, and after the SPN itself has been sent.

2.3 SPN cancellation

Purpose To inform the clients about the cancellation of a short plan.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The short plan to be cancelled must have been sent before.
Dynamics 1. The Plan Server sends a cancellation SPN to the clients.
Postconditions
Communication objects SPN
Non-functional aspects Response time category: NHI_C
Notes Cancellations of a SPN are sent when the plan is cancelled on the FDP, and after the SPN itself has been sent.

2.4 SPN to CPL modification

Purpose To inform the clients about the modification of a short flight plan into a complete flight plan (CPL).
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The short flight plan to be modified into a complete fligh plan must have been sent before.
Dynamics
Postconditions
Communication objects SPN
Non-functional aspects Response time category: NHI_C
Notes Modification of a SPN into a CPL is sent when the modification occurs on the FDP, and after the SPN itself has been sent.

2.5 CPL creation/repetition

Purpose To send the flight plan data of a complete plan to the clients.
Preliminary remarks
Preconditions 1. The clients must have established a connection.
Dynamics 1. The Plan Server sends a new CPL to the clients.
Postconditions
Communication objects CPL
Non-functional aspects Response time category: NHI_C
Notes This message is sent whenever a new CPL is activated in the FDP, or as part of a repetition (see 2.8, Repeat information, p. 13).

2.6 CPL modification

Purpose To send the flight plan data of a modified complete flight plan (CPL) to the clients.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The complete flight plan to be modified into a complete fligh plan must have been sent before.
Dynamics 1. The Plan Server sends a modified CPL to the clients.
Postconditions
Communication objects CPL
Non-functional aspects Response time category: NHI_C
Notes Modifications of a CPL are sent when the modification occurred on the FDP and after the CPL itself has been sent.

2.7 CPL cancellation

Purpose To inform the clients about the cancellation of a complete plan.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The compete plan to be cancelled must have been sent before.
Dynamics 1. The Plan Server sends a cancellation SPN to the clients.
Postconditions
Communication objects CPL
Non-functional aspects Response time category: NHI_C
Notes A cancellation of a CPL is sent when the plan is cancelled on the FDP and after the CPL itself has been sent.

2.8 Repeat information

Purpose To repeat the distribution of information to connected clients. This is done in a background cycle of 5 minutes. It enables newly connected clients to receive information that was sent before they connected.
Preliminary remarks
Preconditions 1. The clients must have established a connection.
Dynamics Each cycle is bracketed by a Start of Cycle and an End of Cycle message. 1. The Plan Server sends a Start of Cycle message to the clients. 2. The Plan Server sends SPNs and / or CPLs to the clients. 3. The Plan Server sends a End of Cycle message to the clients.
Postconditions
Communication objects Start of Cycle New SPN and/or new CPL End of Cycle
Non-functional aspects Each cycle takes 5 minutes. Response time category: NHI_C
Notes

2.9 Correlation

Purpose To inform the clients that a flight plan has been correlated with a track.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The flight plan and the track are present on the client.
Dynamics The Plan Server sends a Correlation message to its clients.
Postconditions
Communication objects Correlation
Non-functional aspects Response time category: NHI_C
Notes A correlation message is sent when correlation occurs on the FDP.

2.10 Decorrelation

Purpose To inform the client that a flight plan and a track have been de-correlated.
Preliminary remarks
Preconditions 1. The clients must have established a connection. 2. The flight plan and the track are present on the client.
Dynamics 1. The Plan Server sends a De-correlation message to its clients.
Postconditions
Communication objects De-correlation
Non-functional aspects Response time category: NHI_C
Notes A De-correlation message is sent when de-correlation occurs on the FDP.

2.11 Conflict Alert

Purpose To inform the clients about the existence of a short term conflict alert (STCA).
Preliminary remarks
Preconditions 1. The clients have established a connection. 2. The tracks in conflict have been sent to the clients before.
Dynamics 1. The Plan Server sends a Conflict Alert message once per track picture cycle for all short term conflict alerts that exist on the FDP.
Postconditions
Communication objects Conflict Alert
Non-functional aspects The Conflict Alert message is sent once per track picture cycle (4.8 s for the MADAP Track Server). Response time category: NHI_C
Notes There is no Conflict Alert Cancellation message. If an existing conflict alert is not repeated within the next track picture cycle then this implies that that conflict has been resolved.

2.12 Association

Purpose To make all sites aware of the identification of a particular flight.
Preliminary remarks An association request to MADAP is initiated by ADMAR 2000 operators to make all sites aware of the identification of a particular flight. It will assign a callsign to a particular mode 3A. ADMAR 2000 will send the internal workstation id of the operator, who requested the association, in the *I151/020 - Source ID* field. This workstation id will be used in combination with the destination id to acknowledge the request.
Preconditions 1. The client must have established a connection.
Dynamics 1. ADMAR2000 sends an Association Message to MADAP 2. If the association succeeds then MADAP sends an Association ACK to the requesting ADMAR2000 working position. If it fails it sends an Association NACK
Postconditions On success, the callsign and mode 3A code are associated.
Communication objects Association Association ACK Association NACK
Non-functional aspects Response time category: NHI_C
Notes

2.13 Association Deletion

Purpose To de-associate a mode 3A/callsign combination.
Preliminary remarks
Preconditions 1. The client must have established a connection.
Dynamics 1. ADMAR2000 sends an Association Deletion Message to the Plan Server. 2. If the de-association succeeds then the Plan Server sends an Association ACK to requesting ADMAR2000 working position. If it fails it sends an Association NACK
Postconditions On success, the callsign and mode 3A code are de-associated.
Communication objects Association Deletion Association ACK Association NACK
Non-functional aspects Response time category: NHI_C
Notes

2.14 Time Stamp

Purpose Time stamp messages are used as alive messages and specify the time of the day (Zulu time).
Preliminary remarks
Preconditions 1. Clients must have established a connection.
Dynamics 1. Every 30 s the Plan Server sends a Time Stamp message to its clients.
Postconditions
Communication objects Time Stamp
Non-functional aspects Response time category: NHI_C
Notes

2.15 Special Purpose Message

Purpose To allow user defined messages to be distributed over the network.
Preliminary remarks User defined messages are sent to the Plan Server who then distributes them to all its clients. This message is used only by ADMAR2000 clients—other clients should ignore it.
Preconditions 1. Clients must have established a connection.
Dynamics 1. An ADMAR2000 client sends a Special Purpose Message to the Plan Server. 2. The Plan Server distributes the message to all connected clients.
Postconditions
Communication objects Special Purpose Message
Non-functional aspects Response time category: NHI_C
Notes

3 PROTOCOL CONVENTIONS

3.1 Protocol profiles

Tbd (X.25 SVC or LAN)

3.2 Byte numbering

Data is sent most significant byte first. In the following message definitions, we number the bytes according to the order in which they are sent/received. Hence, byte 0 is the first byte belonging to a specific message data item and would be the most significant byte.

3.2.1 Bit numbering

Bits are not numbered in order of receipt since this would only result in confusion when dealing with msb-first or lsb-first transmissions. Instead they are numbered in the most commonly used 31/15/7 .. 0 - msb to lsb order (0=lsb).

When single data items are contained in words (or even longwords) rather than bytes the message layout would number the bytes according to *3.1.1 Byte numbering*. Bits however will be numbered contiguously from msb.. lsb (e.g. 15 .. 0 for word).

In the following example, a 2-byte (word) data item is shown. Byte indices are shown in the top header row, bit indices are shown in the bottom header row. It can be read from this example that bit 7 (msb) of byte 0 (first received) is the most significant bit (bit 15) of the data item.

0								1							
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
msb															lsb

3.2.2 Data format descriptions

Data formats descriptions are used to define the layout of each data item's items.

Since the messages are byte oriented, we'll take a byte as our elementary primary type in our format descriptions.

The format is specified as:

```
description :=   <item> | <item>; <description>

item :=          [<name>] [at <byte offset>] <type>
items :=         <item> | ( <items>; <item> )

type :=          <simple> | <array>

simple :=        <primary> as <derived>

array :=         array <range> of <items>
range :=         <nrange> | <_range>
_range :=        <first> .. <last>
nrange :=        n=<_range>
```

```
primary :=      nbyte               {n bytes of 8 bits;
                                      if n is n.a. then single byte}
derived :=      flags |             {array 7 .. 0 of boolean flags}
                character |         {ascii character}
                [unsigned] integer |
                [unsigned] fixed point <lsb weight>

name :=         string value
byte offset :=  integer type value
first :=        integer type value
last :=         integer type value
lsb weight :=   real type value
```

All data format descriptions will be aligned in three columns. The first identifies each field. The second indicates the position (byte offset) of the field in the message item. The third defines the representation.

A sample format description is given below:

```
count           at 0          byte as
                                unsigned integer;
                              at 1 array n=0 .. count-1 of
                              (
  id            at n*6+1        2byte as
                                  unsigned integer;
  name          at n*6+3        array 0 .. 3 of
                                  byte as
                                    character;
                              )
```

This example defines a message item that is containing a list, with length *count*, of *id* & *name* records. The first byte in the item contains the *count* value. Subsequent bytes contain groups of id and name pairs.

This sample message item could contain something like:

0	1	2	3	4	5	6	7	8	9	10	11	12
02	**01**	**00**	**4F**	**6E**	**65**	**20**	**02**	**01**	**54**	**77**	**6F**	**20**

2	**256**	**O**	**n**	**e**		**513**	**T**	**w**	**o**	

cnt	*id a*	*name a*	*id b*	*name b*

It defines two id/name pairs. The first equals 256/“One ”. The second equals 513/“Two ”.

3.2.3 Boolean flag values

Boolean flags are defined using the *flags* type. For Boolean flags, the value 0 can be read as FALSE and 1 can be read as TRUE.

3.2.4 Fixed point values

Fixed point types are defined using *[unsigned] fixed point <lsb weight>*. The lsb weight defines the value of the least significant bit in the field. For instance, if the weight is 2^{-7} then bit 0 represents a value of 1/128; bit 1 a value of 1/64; bit 2 a value of 1/32; etc.

3.2.5 String values

Strings are represented as *array of byte as character*. The following rules apply to strings.

The first element in the array is the left-most character in the string.

If the string represents a numeric value then this value will be right aligned, in all other cases the string's contents will be left aligned. In both cases, unused space is padded with blanks (*space* characters, 20h).

Numeric strings are assumed decimal.

Any deviations from these rules will explicitly be stated in the *Translation* sections.

3.2.6 Plan and Track Numbers

The plan and track numbers that are used in the message definitions are the numbers that are maintained by the plan/track servers (message source). At any location where track and plan numbers are used in combination, both numbers refer to the same source. I.e. a correlation message from MADAP will list the numbers used by the MADAP plan and track servers. In addition, a Conflict Alert message from the MADAP plan server will list the track numbers used by the MADAP track server. In cross-server environments, these messages have no meaning.

3.3 Message layout

3.3.1 Message blocking

MADAP may send several ASTERIX messages in a single block/frame. Each block contains a category and length header. The category is specified using a single byte integer value. E.g.: CAT 150 messages will be identified with 96h = 150d. The length is specified using two bytes and specifies the total length including the cat and length fields. The header fields are followed by a sequence of ASTERIX messages of the given category.

0	1	2				len-1
cat	**len**		Cat<cat> msg	Cat<cat> msg	Cat<cat> msg	

Non CAT150 messages are also sent using this layout. Further details on other categories can be found in references 3, 4 and 5.

3.3.2 FSPEC

Each individual message in a block (*Cat<cat> msg*) contains a field specification array header (or FSPEC). This header is followed by the message items as specified in this FSPEC. The FSPEC length is **at least** one byte.

The FSPEC defines which data items will follow in the flight plan message (see, for example, *4.1.3.1 I150/FSPEC - field specification*). Each message item is represented by a field presence flag (bit) in the field specification. If the flag is set, then the represented field will follow in the message.

The order in which the message items follow is the same as the order (msb to lsb) in which they appear in the FSPEC. I.e. Item 010 is the first item following the FSPEC.

The FSPEC Field Extend flags (marked FX) indicate the presence of subsequent array elements. For example: If a CAT150 message only contains items 010, 020, 030 and 040 (e.g. plan deletion) then only the first FSPEC byte needs to be sent with its FX set to FALSE.

In the following example the first FSPEC byte would match: 111****1b, thus indicating that fields 010, 020 and 030 are present and that a second FSPEC byte will follow (FX bit). The second FSPEC byte would match: *******0b, indicating that no additional FSPEC byte will follow.

0	1	2	3	4	5	6	…	…
FSPEC		010		020		030	…	…

3.3.3 User Application Profile

MADAP will be forming predefined sets of data items for each CAT15* message subtype. Each message definition will contain a User Application Profile section which specifies the data items that will be included for any given message subtype.

The following notation is used in those sections:

-	not sent
y	always sent
a	only sent if data is available
c	only sent if data is available and has changed
n.a.	not applicable for this message type
F	fixed field, mandatory

Although possible to use the knowledge of these predefined sets for decoding, we recommend using the FSPECs to determine if certain data items are present.

3.4 Message distribution

Flight plan messages are sent to different clients. Each client will set-up a point-to-point WAN connection to the flight plan server (on X.25 a Switched Virtual Connection). Genuine broadcasting is not supported. Broadcast functionality is implemented as multiple transmissions of a single message (one to each individual client).

The SVC connections will allow message transmission in both directions. Client to Server and vice-versa (e.g. 4.2.1.1, Association Request).

4 MESSAGE DEFINITIONS

4.1 I150 – Flight Data Message

The main purpose of I150 messages is to distribute Flight Plan data to clients. However, other data items can be sent using I150 as well. I150 messages can be divided into the following sub-categories:

- Flight Plan (Short & Complete)
  - new
  - modification
  - repetition
  - cancellation
- Start/End of cycle
  - start of cycle
  - end of cycle
- Correlation/De-correlation
  - correlate
  - de-correlate
- Conflict Alert

4.1.1 Message Descriptions

4.1.1.1 Flight Plan

Flight plan messages are sent to inform the clients of activation/deactivation of flight plans and to provide the flight plan details. If flight plan details change then a flight plan modification is transmitted.

In addition to these flight plan messages, flight plan repetitions are sent to ensure that newly connected clients are updated. These repetitions are sent distributed over a background cycle of 5 minutes.

Flight plan messages appear in 2 distinct forms: Current Flight Plan (CPL) and Short Flight Plan (SPN).

A CPL represents a normal system flight plan with all known flight details including the route.

An SPN is a minimum contents flight plan, generally used for temporary identification purposes of a flight for which no MADAP CPL exists (yet). Example could be a flight which stays in an area of orbit for a certain time. An SPN contains at least a callsign and SSR Code, and it may be correlated with a track. The callsign may not be the real callsign of the flight, but e.g. an indication of the type of mission.

An SPN may be upgraded to a CPL, in which case a special SPN message is transmitted (item I150/100 Flight Type Flags indicates type CPL), and in subsequent CPL modification messages the same Plan Reference Number is retained.

4.1.1.2 Start/End of Cycle

Start and End of Cycle messages are sent to mark the 5-minute flight plan repetition background cycle. The start of cycle will indicate how many flight plans can, potentially, be sent in that cycle. The end of cycle will list exactly how many plans were repeated.

4.1.1.3 Correlation/De-correlation

Correlation and de-correlation messages are sent if a track has become correlated with a flight plan. Correlations are only valid within the MAS-UAC control area.

4.1.1.4 Conflict Alert

Conflict alert messages are used to broadcast Short-Term Conflict Alert events. Each track picture cycle (4.8-second cycle for MADAP track server) STCAs will be evaluated. If an STCA exists then a conflict alert message will be sent.

STCA is applied to aircraft with air defence SSR Codes only, defined in MADAP zones 3 and 4.

Note that there is no Conflict Alert Cancellation message. If an existing conflict alert is not repeated within the next track picture cycle then this implies that that conflict has been resolved.

4.1.1.5 User Application Profiles

4.1.1.6 Short Flight Plan (SPN)

SPN	*Short Flight Plan*	*new or rep*	*mod*	*mod to CPL*	*can*
I150/010	Destination ID	F	F	F	F
I150/020	Source ID	F	F	F	F
I150/030	Message type	y	y	y	y
I150/040	Plan Reference Number	y	y	y	y
I150/050	Callsign	y	-	-	-
I150/060	Present Mode 3A	y	c	-	-
I150/070	Next Mode 3A	y	c	-	-
I150/080	Departure Aerodrome	-	-	y	-
I150/090	Destination Aerodrome	-	-	y	-
I150/100	Flight Type Flags	y	-	y	-
I150/110	Flight Status Flags	y	c	y	-
I150/120	Aircraft Type	-	-	y	-
I150/130	Cleared Flight Level	a	c	-	-
I150/140	Route Points, description	-	-	y	-
I150/150	Route Points, co-ordinates	-	-	y	-
I150/160	Route Points, time	-	-	y	-
I150/170	Route Points, flight level	-	-	y	-
I150/180	Route Points, speed	-	-	y	-
I150/190	Controller ID	a	c	a	-
I150/200	Field 18	-	-	a	-
I150/210	Correlated Track Number	a	a	a	-

4.1.1.6.1 Notes

- A SPN modification does not include the *I150/100 – Flight Type Flags* unless it is a SPN to CPL modification. For an SPN to CPL modification, the field would indicate CPL. This implies that we cannot tell if an incoming **modification** is an SPN or CPL modification.
- If a SPN becomes a CPL, the same *I150/040 - Plan Reference Number* is maintained.

4.1.1.7 Complete Flight Plan (CPL)

CPL	*Complete Flight Plan*	**new** or **rep**	**mod**	**can**
I150/010	Destination ID	F	F	F
I150/020	Source ID	F	F	F
I150/030	Message type	y	y	y
I150/040	Plan Reference Number	y	y	y
I150/050	Callsign	y	-	-
I150/060	Present Mode 3A	y	c	-
I150/070	Next Mode 3A	y	c	-
I150/080	Departure Aerodrome	y	-	-
I150/090	Destination Aerodrome	y	-	-
I150/100	Flight Type Flags	y	-	-
I150/110	Flight Status Flags	y	c	-
I150/120	Aircraft Type	y	-	-
I150/130	Cleared Flight Level	y	c	-
I150/140	Route Points, description	y	-	-
I150/150	Route Points, coordinate	a	-	-
I150/160	Route Points, time	y	c	-
I150/170	Route Points, flight level	y	c	-
I150/180	Route Points, speed	y	-	-
I150/190	Controler ID	a	c	-
I150/200	Field 18	a	-	-
I150/210	Correlated Track Number	a	a	-
I150/171	Route Points, RFL	a	c	-
I150/151	Route Points, Geographic Pos.	a	-	-

4.1.1.8 Start/End of Cycle

CYC	*Start/End of Cycle*	**soc**	**eoc**
I150/010	Destination ID	F	F
I150/020	Source ID	F	F
I150/030	Message type	y	y
I150/220	Maximum Plan Count	y	-
I150/230	Number of Plans	-	y

4.1.1.9 Correlation/De-correlation

COR	*Correlation/Decorrelation*	**cor**	**decor**
I150/010	Destination ID	F	F
I150/020	Source ID	F	F
I150/030	Message type	y	y
I150/240	Newly Correlated Plans	y	-
I150/250	Newly Decorrelated Plans	-	y

4.1.1.10 Conflict Alert

COR	*Correlation/Decorrelation*	**conflict**
I150/010	Destination ID	F
I150/020	Source ID	F
I150/030	Message type	y
I150/251	Tracks in Conflict	y

4.1.2 Data items

4.1.2.1 I150/FSPEC - field specification

4.1.2.1.1 Definition

See 3.2.3 User Application Profile

4.1.2.1.2 Format

0							
7	6	5	4	3	2	1	0
010	020	030	040	050	060	070	FX

1							
7	6	5	4	3	2	1	0
080	090	100	110	120	130	140	FX

2							
7	6	5	4	3	2	1	0
150	160	170	180	190	200	210	FX

3							
7	6	5	4	3	2	1	0
220	230	240	250	251	171	151	-

```
flags            at 0          array n=0 .. <> of
                 at n            byte as
                                   flags;
```

4.1.2.1.3 Translation

0 (FALSE)	:	not present
1 (TRUE)	:	present

4.1.2.1.4 Remarks

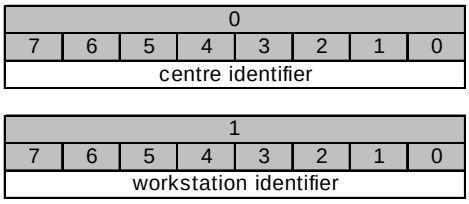
At the moment a fixed length of 4 bytes is sent (all FX fields are set to TRUE) - even if no data items are specified in bytes 1 .. 3. Nevertheless, is still recommended to use the FX field for decoding.

4.1.2.2 I150/010 - Destination ID

4.1.2.2.1 Definition

Identification of the receiving centre.

4.1.2.2.2 Format




```
centre id          at 0          byte as
                                   unsigned integer;

workstation id     at 1          byte as
                                   unsigned integer;
```

4.1.2.2.3 Translation

See Annex 1, *Centre ID Definitions*.

4.1.2.2.4 Remarks

The Destination ID is irrelevant in CAT150 messages since the flight plan messages are sent to all centres. Hence, the centre identifier is set to *broadcast*.

The workstation identifier can be ignored.

4.1.2.3 I150/020 - Source ID

4.1.2.3.1 Definition

Identification of the sending centre.

4.1.2.3.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*.

4.1.2.3.3 Remarks

The Source ID centre identifier will define the flight plan source centre.

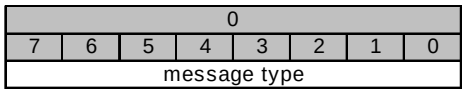
The workstation identifier can be ignored.

4.1.2.4 I150/030 - Message Type

4.1.2.4.1 Definition

The event that triggered the message transmission.

4.1.2.4.2 Format




```
message type       at 0          byte as
                                   unsigned integer;
```

4.1.2.4.3 Translation

01	1	: flight plan creation
02	2	: flight plan modification
03	3	: flight plan repetition
04	4	: manual flight plan deletion
05	5	: automatic flight plan deletion
06	6	: flight is beyond extraction area boundary
FB	251	: short term conflict alert
FC	252	: correlations
FD	253	: decorrelations
FE	254	: start of background loop
FF	255	: end of background loop

4.1.2.4.4 Remarks

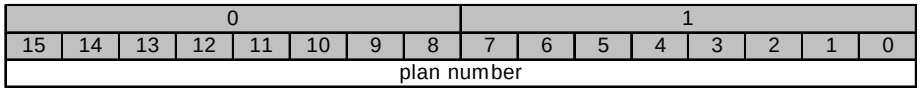
-

4.1.2.5 I150/040 - Plan Reference Number

4.1.2.5.1 Definition

Identification of the flight plan.

4.1.2.5.2 Format




```
plan number      at 0          2byte as
                                 unsigned integer;
```

4.1.2.5.3 Translation

-

4.1.2.5.4 Remarks

See *3.1.7 Plan and Track Numbers*.

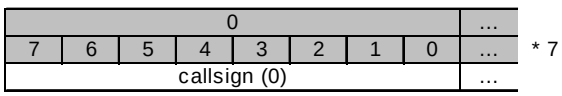
The currently defined range for plan reference numbers used in MADAP is 0 .. 1999. Client systems should allow for a range of 0 .. 2047.

4.1.2.6 I150/050 - Callsign

4.1.2.6.1 Definition

Flight identity.

4.1.2.6.2 Format




```
callsign         at 0          array n=0 .. 6 of
  callsign(n)    at n            byte as
                                   character;
```

4.1.2.6.3 Translation

-

4.1.2.6.4 Remarks

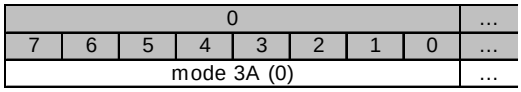
-

4.1.2.7 I150/060 - Present Mode 3A

4.1.2.7.1 Definition

Actual transponder code *mode 3A* of the flight.

4.1.2.7.2 Format



* 4

```
mode 3A          at 0          array 0 .. 3 of
   mode 3A(n)    at n            byte as
                                    character;
```

4.1.2.7.3 Translation

Octal representation.

zzzz	:	no code availlable/assigned
dd00	:	code family
other	:	discrete code

where : z :== 'z'
0 :== '0'
d :== '0' .. '7'

4.1.2.7.4 Remarks

-

4.1.2.8 I150/070 - Next Mode 3A

4.1.2.8.1 Definition

Next transponder code *mode 3A* of the flight.

4.1.2.8.2 Format and Translation

See *4.1.3.7 I150/060 - Present Mode 3A*

4.1.2.8.3 Remarks

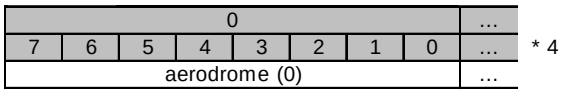
-

4.1.2.9 I150/080 - Departure Aerodrome

4.1.2.9.1 Definition

Identification of the flight's departure aerodrome.

4.1.2.9.2 Format




```
aerodrome        at 0          array 0 .. 3 of
   aerodrome(n)  at n            byte as
                                    character;
```

4.1.2.9.3 Translation

zzzz	:	no standard ICAO location identifier
other	:	unique ICAO location identifier

where : z :== 'z'

4.1.2.9.4 Remarks

-

4.1.2.10 I150/090 - Destination Aerodrome

4.1.2.10.1 Definition

Identification of the flight's destination aerodrome.

4.1.2.10.2 Format and Translation

See 4.1.3.9 I150/080 - Departure Aerodrome

4.1.2.10.3 Remarks

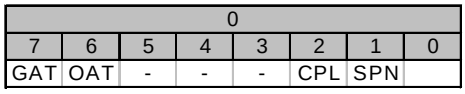
-

4.1.2.11 I150/100 - Type Flags

4.1.2.11.1 Definition

Type of flight and type of flight plan.

4.1.2.11.2 Format




```
type flags       at 0          byte as
                                  flags;
```

4.1.2.11.3 Translation

GAT	:	general air traffic
OAT	:	operational air traffic
CPL	:	complete flight plan
SPN	:	short flight plan

4.1.2.11.4 Remarks

-

4.1.2.12 I150/110 - Status Flags

4.1.2.12.1 Definition

Status of the flight.

4.1.2.12.2 Format

0							
7	6	5	4	3	2	1	0
	HLD	RVQ	RVC	RVX	-	-	-

```
status flags     at 0          byte as
                                  flags;
```

4.1.2.12.3 Translation

HLD	:	aircraft is in hold state
RVQ	:	aircraft is RVSM Equipped
RVC	:	aircraft is RVSM Capable
RVX	:	aircraft is RVSM Exempted

4.1.2.12.4 Remarks

If an aircraft is set in hold status then the ETO values are increased with 3 hours.

RVQ is set for

GAT or GAT SPN: never

GAT or OAT CPL: if “W” filed in field 10a [Radio Communication, Navigation and Approach Aid Equipment] of the flightplan

RVC is set for:

GAT or OAT SPN: on controller input or reception of ACT with “RVSM Capable”

GAT or OAT CPL (in decreasing priority):

Controller input **or** reception of ABI or ACT with “RVSM Capable”

“W” filed in field 10a [Radio Communication, Navigation and Approach Aid Equipment] **and** “1” filed in field 9a [number of aircraft] in the flightplan.

RVX is set for:

GAT SPN: on controller input “RVSM Exempted”

OAT SPN: by default **or** on controller input “RVSM Exempted”

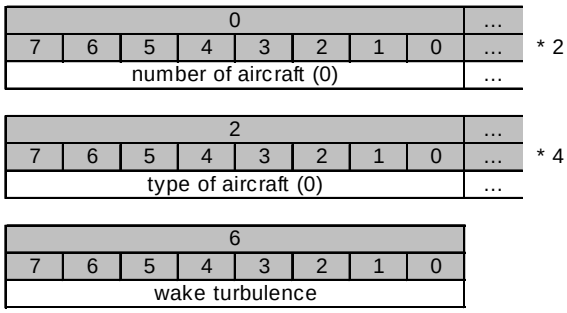
GAT or OAT CPL: if “O”, “M” or “A” filed in field 8b [type of flight] of the flightplan

4.1.2.13 I150/120 - Aircraft Type

4.1.2.13.1 Definition

Flight formation details.

4.1.2.13.2 Format




```
num. o.a.         at 0          array 0 .. 1 of
  num. o.a.(n)    at n            byte as
                                    character;
type o.a.         at 2          array 0 .. 3 of
  type o.a.(n)    at 2+n          byte as
                                    character;
wake turbulence   at 6          byte as
                                  character;
```

4.1.2.13.3 Translation

-

4.1.2.13.4 Remarks

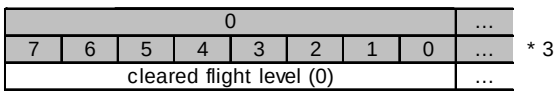
-

4.1.2.14 I150/130 - Cleared Flight Level

4.1.2.14.1 Definition

Cleared flight level from the sector that has the aircraft under control.

4.1.2.14.2 Format




```
cleared FL        at 0          array 0 .. 2 of
  cleared FL(n)   at n            byte as
                                    character;
```

4.1.2.14.3 Translation

Cleared Flight Level is listed in FLs (100ft).

4.1.2.14.4 Remarks

The Cleared Flight Level corresponds to the “current Planned Flight Level”, valid for the sector which is currently in communications with the aircraft.

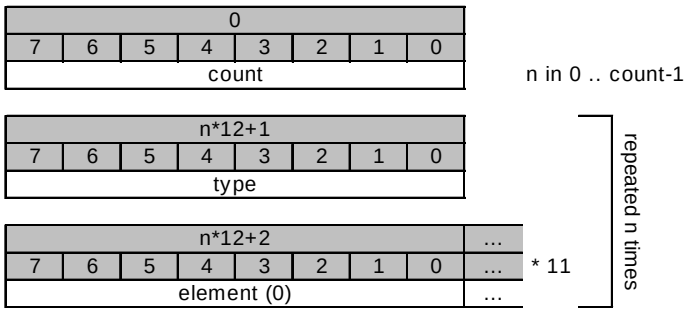
Intermediate flight levels, temporarily assigned by controllers, are not distributed by MADAP.

4.1.2.15 I150/140 - Route Points, description

4.1.2.15.1 Definition

Route point descriptions.

4.1.2.15.2 Format




```
count             at 0          byte as
                                   unsigned integer;
                                at 1 array n=0 .. count-1 of
                                (
   type(n)        at n*12+1        byte as
                                     unsigned integer;
   element(n)     at n*12+2        array 0 .. 10 of
                                     byte as
                                       character
                                );
```

4.1.2.15.3 Translation

Valid route point types are:

01	1 : P, point
02	2 : B, point with bearing and distance
03	3 : LS, latitude/logitude position short format
04	4 : LL, latitude/logitude position long format
05	5 : X, x/y co-ordinate position
06	6 : G, georeference position
0E	14 : E, airport

For route point description elements the following layouts are used depending on the type:

		Element (n)										
		1	2	3	4	5	6	7	8	9	10	11
	01	n	n	n	n	n	*blanks*					
	02	n	n	n	n	n	b	b	b	d	d	d
Ty	03	s	s	N|S	w	w	w	E|W	*blanks*			
pe	04	s	s	m	m	N|S	w	w	w	m	m	E|W
	05	*all blanks - see 150*										
	06	g	g	x	x	y	y	*blanks*				
	0E	a	a	a	a	*blanks*						

where n : name of route point
b : digits for bearing
d : digits for distance
N|S : 'N' for North, 'S' for South
E|W : 'E' for East, 'W' for West
s : digits for degrees north/south
w : digits for degrees east/west
m : digits for minutes
g : georeference grid identity
x : digits for horizontal distance [NM] within georeference grid
y : digits for vertical distance [NM] within georeference grid
a : name of airport

4.1.2.15.4 Remarks

For all route point items (140..180), present in a single message the *count* values are equal. Co-ordinate (1), description (1), etc. form a single route point.

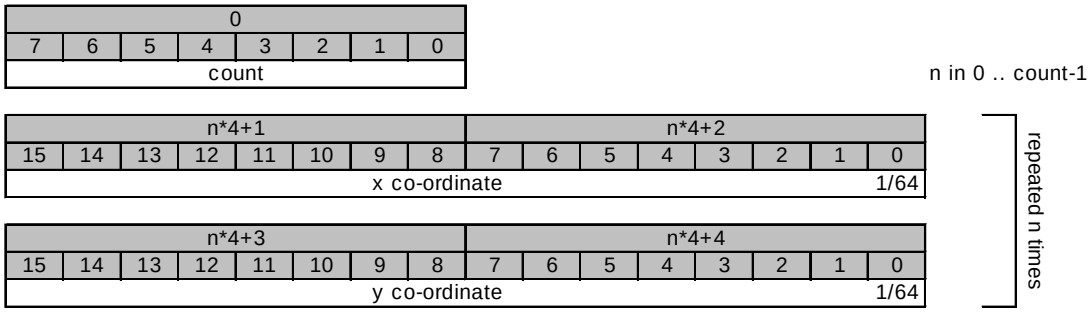
The maximum number of route points is currently set to 28.

4.1.2.16 I150/150 - Route Points, co-ordinate

4.1.2.16.1 Definition

Route point co-ordinates.

4.1.2.16.2 Format




```
count           at 0          byte as
                                unsigned integer;
                              at 1 array n=0 .. count-1 of
                              (
   x(n)         at n*4+1        2byte as
                                  fixed point 2-6;
   y(n)         at n*4+2        2byte as
                                  fixed point 2-6
                              );
```

4.1.2.16.3 Translation

Co-ordinate values are in [NM] as Cartesian offsets from 51°00'00"N, 008°00'00"E (see §2.2.1.2 of the *User Interface Definition of the MADAP Track Server*)

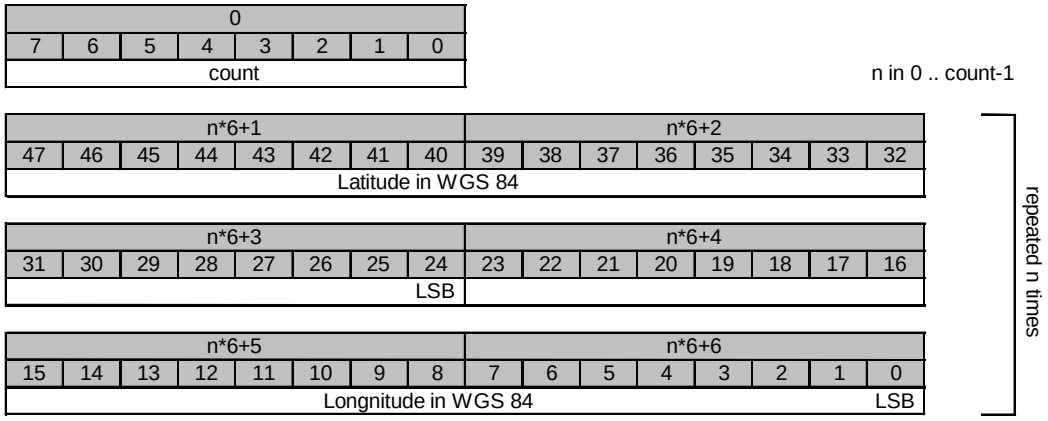
4.1.2.16.4 Remarks

4.1.2.17 I150/151 - Route Points, Geographic Position

4.1.2.17.1 Definition

Route point position in Lat. / Long. (WSG84)

4.1.2.17.2 Format




```
count            at 0          byte as
                                 unsigned integer;
                               at 1 array n=0 .. count-1 of
                               (
   Lat/Long.(n)  at n*6+1         48 bit Lat. Long. value;
                               );
```

4.1.2.17.3 Translation

Latitude and Longitude (WSG84) poistion in two's compliment.

Latitude Range

-90<= Latitude <= 90 degrees

LSB (bit 24) $180/2^{23} = 2.145767 * 10^{-05}$ Degrees

Lon gitude Range

-180<= Latitude < 180 degrees

LSB (bit 0) $180/2^{23} = 2.145767 * 10^{-05}$ Degrees

4.1.2.17.4 Remarks

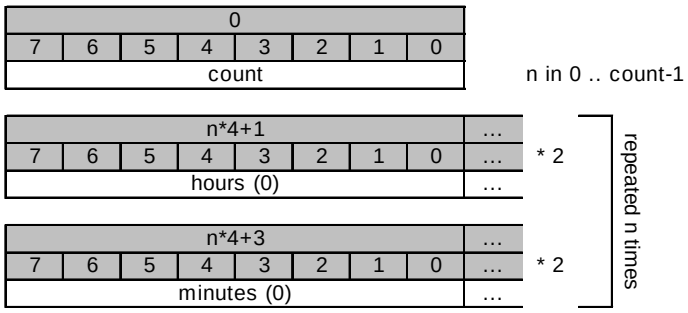
This corresponds to an accuracy of at least 2.4 meters.

4.1.2.18 I150/160 - Route Points, time

4.1.2.18.1 Definition

Estimated times over route points.

4.1.2.18.2 Format




```
count             at 0          byte as
                                   unsigned integer;
                                 at 1 array n=0 .. count-1 of
                                 (
   hours(n)       at n*4+1        array 0 .. 1 of
                                    byte as
                                      character;
   minutes(n)     at n*4+3        array 0 .. 1 of
                                    byte as
                                      character
                                 );
```

4.1.2.18.3 Translation

Times are specified in 24-hour format. I.e. ranging from 00:00 to 23:59.

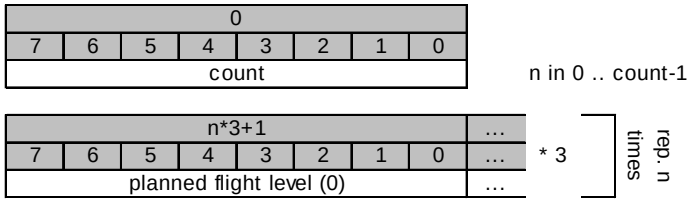
4.1.2.18.4 Remarks

4.1.2.19 I150/170 - Route Points, flight level

4.1.2.19.1 Definition

Planned flight level over route point.

4.1.2.19.2 Format




```
count             at 0          byte as
                                   unsigned integer;
```

```
                                    at 1 array n=0 .. count-1 of
    planned FL(n) at n*3+1            array 0 .. 2 of
                                        byte as
                                          character;
```

4.1.2.19.3 Translation

The planned flight levels are given in FLs (100 ft).

4.1.2.19.4 Remarks

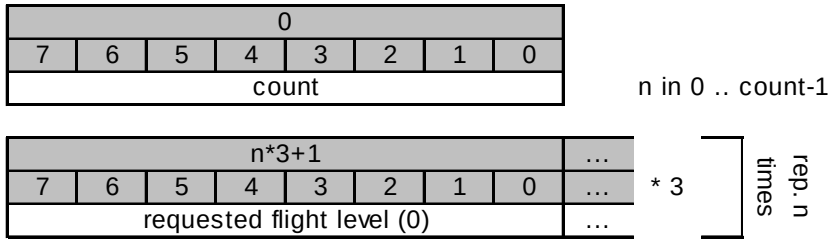
All flight levels have the same value, equal to the “Current Planned Flight Level”. This is the Planned Flight Level valid for the sector which is in communication with the aircraft.

4.1.2.20 I150/171 - Route Points, Requested flight level (RFL)

4.1.2.20.1 Definition

Requested flight level over route point.

4.1.2.20.2 Format




```
  count            at 0          byte as
                                   unsigned integer;

                                 at 1 array n=0 .. count-1 of
    requested FL(n)              at n*3+1    array 0 .. 2 of
                                     byte as
                                       character;
```

4.1.2.20.3 Translation

The planned flight levels are given in FLs (100 ft).

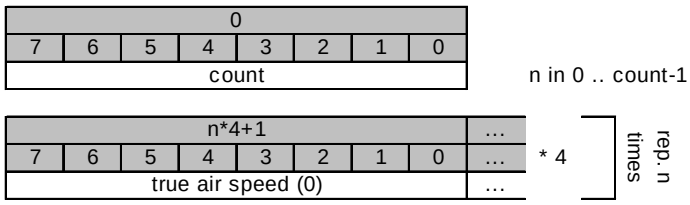
4.1.2.20.4 Remarks

4.1.2.21 I150/180 - Route Points, speed

4.1.2.21.1 Definition

Filed true air speed over route point.

4.1.2.21.2 Format




```
count              at 0          byte as
                                   unsigned integer;

                                 at 1 array n=0 .. count-1 of
   t.a.speed(n)    at n*4+1        array 0 .. 3 of
                                     byte as
                                       character;
```

4.1.2.21.3 Translation

The true airspeed is indicated in Knots [NM/h].

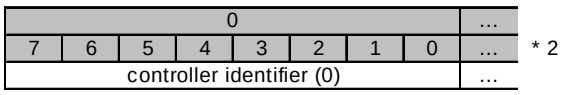
4.1.2.21.4 Remarks

4.1.2.22 I150/190 - Controller ID

4.1.2.22.1 Definition

Current control position in charge of the aircraft.

4.1.2.22.2 Format




```
controller id    at 0          array 0 .. 1 of
                                 byte as
                                   character;
```

4.1.2.22.3 Translation

Single character controller ids are sent with a leading space character. This can be interpreted as a *right aligned* value.

4.1.2.22.4 Remarks

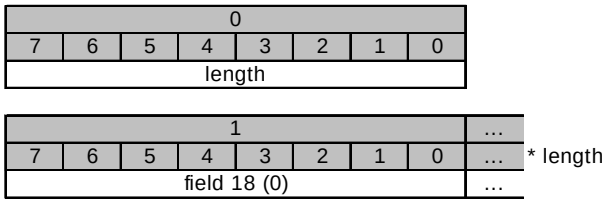
-

4.1.2.23 I150/200 - Field 18

4.1.2.23.1 Definition

Field 18 free text information. Contains subfields, each starting with a 3 or 4 letter keyword followed by forward slash; e.g. RMK/free text.

4.1.2.23.2 Format




```
length          at 0          byte as
                                 unsigned integer;
field 18        at 1          array 0 .. length-1 of
                                 byte as
                                   character;
```

4.1.2.23.3 Translation

-

4.1.2.23.4 Remarks

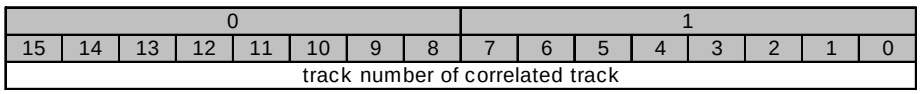
-

4.1.2.24 I150/210 - Correlated Track Number

4.1.2.24.1 Definition

The track number of the track that has been correlated to the flight plan.

4.1.2.24.2 Format




```
track number    at 0          2byte as
                                 unsigned integer;
```

4.1.2.24.3 Translation

-

4.1.2.24.4 Remarks

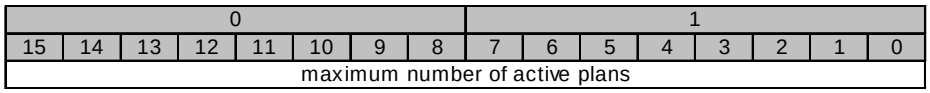
See *3.1.7 Plan and Track Numbers*.

4.1.2.25 I150/220 - Maximum Plan Count

4.1.2.25.1 Definition

Maximum plan count is the maximum number of possible active plans

4.1.2.25.2 Format



```
maximum number   at 0          2byte as
                                  unsigned integer;
```

4.1.2.25.3 Translation

-

4.1.2.25.4 Remarks

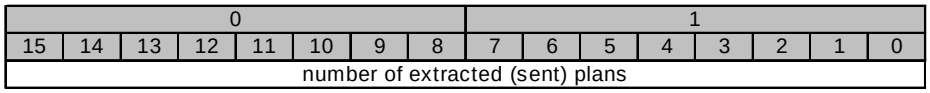
The maximum number of active plans is fixed and, at present, set to 302.

4.1.2.26 I150/230 - Number of Plans

4.1.2.26.1 Definition

Number of plans that were sent during the last update cycle

4.1.2.26.2 Format




```
number of plans  at 0          2byte as
                                  unsigned integer;
```

4.1.2.26.3 Translation

-

4.1.2.26.4 Remarks

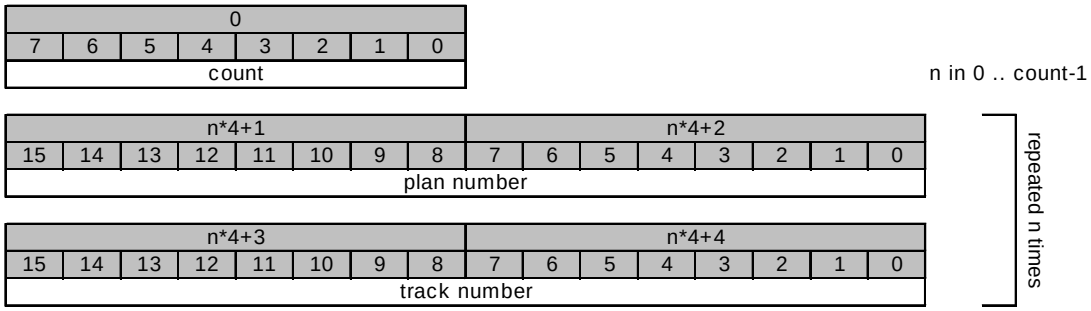
The number of extracted plans should be equal to the number of plans received between the *start of cycle* and *end of cycle* messages.

4.1.2.27 I150/240 - Newly Correlated Plans

4.1.2.27.1 Definition

Array of correlated plan/track combinations valid in the Maastricht UAC Area of Interest.

4.1.2.27.2 Format




```
count            at 0          byte as
                                  unsigned integer;
```

```
                                    at 1 array n=0 .. count-1 of
                                    (
      plan num.(n)  at n*4+1          2byte as
                                        unsigned integer;
      track num.(n) at n*4+3          2byte as
                                        unsigned integer
                                    );
```

4.1.2.27.3 Translation

-

4.1.2.27.4 Remarks

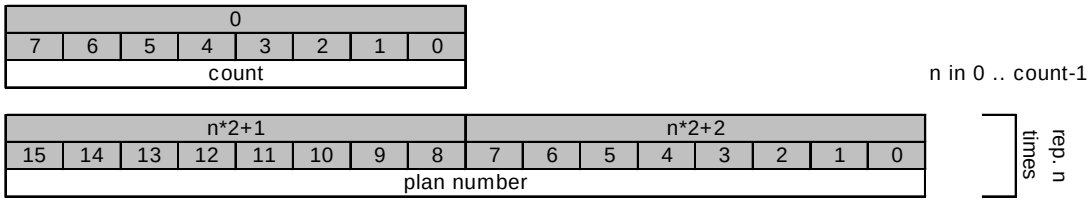
See *3.1.7 Plan and Track Numbers*.

4.1.2.28 I150/250 - Newly De-correlated Plans

4.1.2.28.1 Definition

Array of de-correlated plans.

4.1.2.28.2 Format




```
   count             at 0          byte as
                                     unsigned integer;
                                    at 1 array n=0 .. count-1 of
      plan num.(n)   at n*2+1         2byte as
                                        unsigned integer;
```

4.1.2.28.3 Translation

-

4.1.2.28.4 Remarks

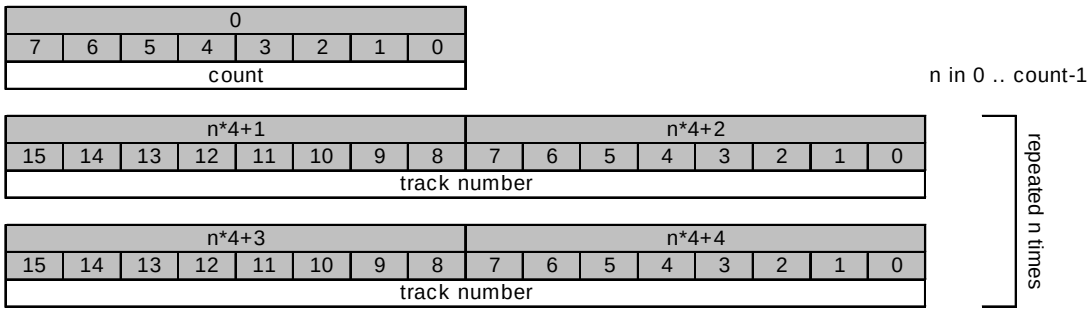
See *3.1.7 Plan and Track Numbers*.

4.1.2.29 I150/251 - Tracks in Conflict

4.1.2.29.1 Definition

Array of conflicting track/track combinations.

4.1.2.29.2 Format




```
count              at 0          byte as
                                   unsigned integer;
                                 at 1 array n=0 .. count-1 of
                                 (
   track1 num.(n)at n*4+1          2byte as
                                     unsigned integer;
   track2 num.(n)at n*4+3          2byte as
                                     unsigned integer
                                 );
```

4.1.2.29.3 Translation

-

4.1.2.29.4 Remarks

See *3.1.7 Plan and Track Numbers*.

4.1.3 I 151 - Association Message

I151 messages can be divided into the following sub-categories:

- request, from ADMAR 2000 to MADAP
- delete, from ADMAR 2000 to MADAP
- acknowledge, from MADAP to ADMAR 2000
- negative acknowledge, from MADAP to ADMAR 2000

4.1.4 Message Descriptions

4.1.4.1 Association Request

An association request is initiated by ADMAR 2000 operators to make all sites aware of the identification of a particular flight. It will assign a callsign to a particular mode 3A. ADMAR 2000 will send the internal workstation id of the operator, who requested the association, in the *I151/020 - Source ID* field. This workstation id will be used in combination with the destination id to acknowledge the request.

4.1.4.2 Association Deletion Request

The association deletion is used to de-associate a mode 3A/callsign combination. As with the association request, the workstation id is sent in the request.

4.1.4.3 Association ACK

De-Association acknowledgements are sent to a particular ADMAR 2000 working position to confirm the requested association has been performed. To address the specific working position, its id (as sent with the request) is added to the *I151/010 - Destination ID*.

4.1.4.4 Association NACK

If for any reason, the requested association cannot be performed then a negative acknowledgement is sent with an error message. As with the acknowledgements, NACKs are sent to the requesting workstation.

4.1.5 User Application Profiles

For all message sub-categories, all message fields will be sent.

I151/010	Destination ID	F
I151/020	Source ID	F
I151/030	Message type	y
I151/040	Association ID	y
I151/050	Mode 3A	y
I151/060	Callsign	y
I151/070	ACK/NACK message	y

4.1.6 Data Items

4.1.6.1 I151/FSPEC

4.1.6.1.1 Definition

See 3.2.3 User Application Profile

4.1.6.1.2 Format

0							
7	6	5	4	3	2	1	0
010	020	030	040	050	060	070	FX=0

```
flags              at 0          byte as
                                    flags;
```

4.1.6.1.3 Translation

0 (FALSE)	:	not present
1 (TRUE)	:	present

4.1.6.1.4 Remarks

-

4.1.6.2 I151/010 - Destination ID

4.1.6.2.1 Definition

The destination of the association message

4.1.6.2.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.1.6.2.3 Remarks

Note that, in addition, the workstation id is used for association messages.

4.1.6.3 I151/020 - Source ID

4.1.6.3.1 Definition

The source of the association message.

4.1.6.3.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.1.6.3.3 Remarks

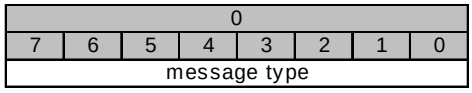
Note that, in addition, the workstation id is used for association messages.

4.1.6.4 I151/030 - Message type

4.1.6.4.1 Definition

The event that triggered the message transmission.

4.1.6.4.2 Format




```
message type     at 0          byte as
                                  unsigned integer;
```

4.1.6.4.3 Translation

01	1 : association request
02	2 : deassociation request
03	3 : acknowledgement
04	4 : negative acknowledgement

4.1.6.4.4 Remarks

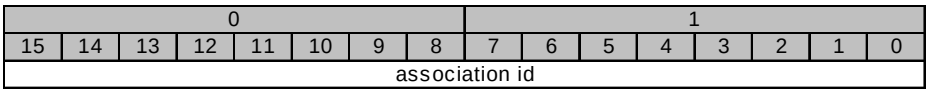
-

4.1.6.5 I151/040 - Internal Number

4.1.6.5.1 Definition

Identification of the association event.

4.1.6.5.2 Format




```
association id   at 0          2byte as
                                  unsigned integer;
```

4.1.6.5.3 Translation

-

4.1.6.5.4 Remarks

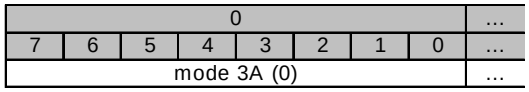
Note that the association id is generated by the ADMAR 2000 sites.

4.1.6.6 I151/050 - Mode 3A

4.1.6.6.1 Definition

The Mode 3A of the target.

4.1.6.6.2 Format




```
mode 3A          at 0          array 0 .. 3 of
  mode 3A(n)     at n            byte as
                                   character;
```

4.1.6.6.3 Translation

-

4.1.6.6.4 Remarks

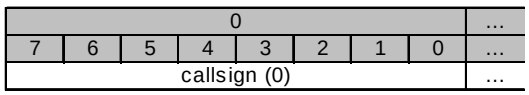
-

4.1.6.7 I151/060 - Callsign

4.1.6.7.1 Definition

The flight identity of the target flight.

4.1.6.7.2 Format




```
callsign         at 0          array 0 .. 6 of
  callsign(n)    at n            byte as
                                   character;
```

4.1.6.7.3 Translation

-

4.1.6.7.4 Remarks

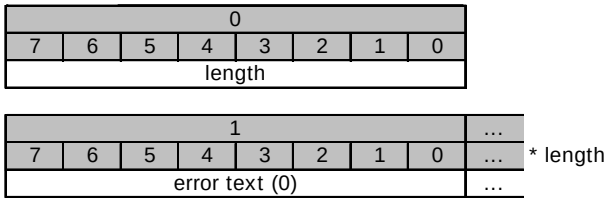
-

4.1.6.8 I151/070 - Error Message

4.1.6.8.1 Definition

Message indicating reason for failure.

4.1.6.8.2 Format




```
length          at 0          byte as
                                 unsigned integer;
message         at 1          array n=0 .. length-1 of
  message(n)    at 1+n          byte as
                                   character;
```

4.1.6.8.3 Translation

-

4.1.6.8.4 Remarks

-

4.2 I152 - Time Stamp Message

I152 messages consist only of one type of message. No sub-types are defined.

4.2.1 Message Descriptions

4.2.1.1 Time Stamp

Time stamps are used as alive messages and specify the time of day (Zulu time).

4.2.2 User Application Profiles

All message fields will be sent.

I152/010	Destination ID	F
I152/020	Source ID	F
I152/030	Time stamp	y

4.2.3 Data Items

4.2.3.1 I152/FSPEC

4.2.3.1.1 Definition

See 3.2.3 User Application Profile

4.2.3.1.2 Format

0							
7	6	5	4	3	2	1	0
010	020	030	-	-	-	-	FX=0

```
flags              at 0          byte as
                                    flags;
```

4.2.3.1.3 Translation

0 (FALSE) : not present
1 (TRUE) : present

4.2.3.1.4 Remarks

-

4.2.3.2 I152/010 - Destination ID

4.2.3.2.1 Definition

4.2.3.2.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.2.3.2.3 Remarks

4.2.3.3 I152/020 - Source ID

4.2.3.3.1 Definition

4.2.3.3.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.2.3.3.3 Remarks

4.2.3.4 I152/030 - Time Stamp

4.2.3.4.1 Definition

4.2.3.4.2 Format

0								1								2							
23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
time stamp																							1/128

```
time               at 0          3byte as
                                    fixed point 2-7;
```

4.2.3.4.3 Translation

Unit: [s]

4.2.3.4.4 Remarks

4.3 I 153 - Special Purpose Message

The Special Purpose Message is defined to allow User defined messages to be distributed over the network. They are sent to the MADAP Plan Server who then distributes them to all MADAP Plans Server clients.

All Clients apart from ADMAR 2000 should discard the messages. The format of the messages is described here to allow successful decoding of the ASTERIX data packet.

The receiving ADMAR 2000 client shall determine to whom the message is addressed by examining the Destination ID.

Note: It is intended that the ADMAR 2000 shall make use of these CAT 153 Messages to replace and enhance the Association Mechanism, currently operated using CAT 151 Messages, in conjunction with both the MADAP Plan Server and the MADAP Track Server Output. In the longer-term, the use of the MADAP Plan Server to distribute the messages shall also be removed.

4.3.1 Message Descriptions

The contents and purpose of the messages are ADMAR 2000 specific, and shall not be described here.

4.3.2 User Application Profiles

For all message sub-categories, all message fields will be sent.

I151/010	Destination ID	F
I151/020	Source ID	F
I151/030	Special Contents type	y
I151/040	Special Contents length (n)	y
I151/050	Special Contents	y

4.3.3 Data Items

4.3.3.1 I153/FSPEC

4.3.3.1.1 Definition

See 3.2.3 User Application Profile

4.3.3.1.2 Format

0							
7	6	5	4	3	2	1	0
010	020	030	040	050	-	-	FX=0

```
flags              at 0          byte as
                                   flags;
```

4.3.3.1.3 Translation

0 (FALSE)	:	not present
1 (TRUE)	:	present

4.3.3.1.4 Remarks

-

4.3.3.2 I153/010 - Destination ID

4.3.3.2.1 Definition

The destination of the Special Purpose message

4.3.3.2.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.3.3.2.3 Remarks

The receiving client should check this to determine to whom the message is intended. Note that, in addition, the workstation id may be used.

4.3.3.3 I153/020 - Source ID

4.3.3.3.1 Definition

The source of the Special Purpose message.

4.3.3.3.2 Format and Translation

See *4.1.3.2 I150/010 - Destination ID*

4.3.3.3.3 Remarks

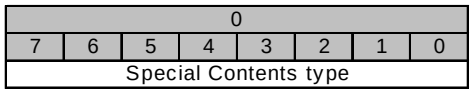
Note that, in addition, the workstation id may be used.

4.3.3.4 I153/030 - Special Contents type

4.3.3.4.1 Definition

The Special Contents type is used to determine the contents of he Special Contents field.

4.3.3.4.2 Format




```
Special Contents type          at 0 byte as
                                 unsigned integer;
```

4.3.3.4.3 Translation

00	0 : Not Used
01	1 : ADMAR Text Message
02	2 : Reserved for ADMAR 2000
03	3 : Reserved for ADMAR 2000
04	4 : Reserved for ADMAR 2000
05	5 : Reserved for ADMAR 2000
06	6 : Reserved for ADMAR 2000
07	7 : Reserved for ADMAR 2000

4.3.3.4.4 Remarks

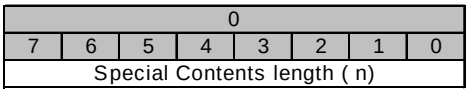
The CAT 153 Messages are intended for user defined messages, therefore the detailed contents of each type will not be described in this document.

4.3.3.5 I153/040 -Special Contents length (n)

4.3.3.5.1 Definition

The Special Contents length is used to determine the length of the Special contents.

4.3.3.5.2 Format




```
Special Contents length (n)    at 0 byte as
                                  unsigned integer;
```

4.3.3.5.3 Translation

-

4.3.3.5.4 Remarks

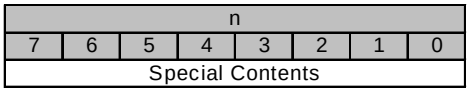
-

4.3.3.6 I153/050 - Special Contents

4.3.3.6.1 Definition

The Special Contents.

4.3.3.6.2 Format




```
Special Contents               at 0  array 0 .. (n-1) of byte
```

4.3.3.6.3 Translation

The translation is determined by the Special Contents type.

4.3.3.6.4 Remarks

-

Annex 1 *Centre ID definition*

ID		Site/Centre	Flight Plans		Ref	RTC
Hex	dec		Src	Dst		Dec/Name[1]
01	1	CRC Brekendorf		Y	BRE	104
02	2	CRC Brockzetel		Y	BRO	103
03	3	CRC Erndtebrück		Y	ERN	099
04	4	CRC Lauda		Y	LAU	111
05	5	CRC Meβstetten		Y	MES	081
06	6	CRC Freising		Y	FRE	101
07	7	CRC Cölpin		Y	COL	105
08	8	CRC Schönewalde		Y	SCH	106
09	9	SSZ-Nord, Kalkar		Y	KAL	107
0A	10	COMIL, Erndtebrück2		Y	CMI	108
0B	11	POLYGONE Coordination Centre, Bann		Y	PCC	098
0C	12	FLIZ1, Köln		Y	FL1	102
0D	13	LIZ (STANLY), DFS, Offenbach		Y	LIZ	100
..						
0F	15	FLIZ II, Karlsruhe		Y	FL2	110
10	16	Maastricht ADMAR Development		Y	DEV	097
11	17	Maastricht EXACT Development		Y	XACT	
12	18	GAME2, KARLDAP, Karlsruhe	Y		GAM1	-
13	19	GAME2, ZKSD, Karlsruhe	Y		GAM2	-
14	20	STANLY, Maastricht		Y	STN	082
..						
1C[2]	28	FACT1		Y	FCT1	
1D	29	FACT2		Y	FCT2	
1E	30	FACT3		Y	FCT3	
1F	31	GIADS, Schönewalde		Y	SCS	102
20	32	MADAP on-line, Maastricht	Y		MDP1	-
21	33	MADAP stand-by, Maastricht	Y		MDP2	-
22	34	GAFPLAN on-line	Y		GAF1	
22	34	GAFPLAN stand-by	Y		GAF2	
FF	255	All centres, broadcast		Y	ALL	MAP

[1] RouTing Centre name, if different from REFerence name. Applicable to broad-/multicast clients

[2] Pending Data Sharing Agreement

ID		Site/Centre	Flight Plans		Ref	RTC
Hex	dec		Src	Dst		Dec/Name[1]
-	-	SURVITE, EEC Bretigny		Y	SURV	FLP
-	-	Height Monitor Unit, EEC Bretigny		Y	HMU	FLP
-	-	ETFMS Main, CFMU, Brussels		Y	ETM	FLP
-	-	ETFMS Stand-by, CFMU, Brussels		Y	ETS	FLP
-	-	N3CA, The Hague		Y	N3CA	FLP
-	-	Regional Flight Server, TINC, Brussels		Y	RSRV	FLP
-	-	ATM Safety Monitoring Tool, Maastricht		Y	ASMT	FLP
-	-	MTCD Evaluation platform		Y	MTCD	FLP

Annex 2 *User Message Profiles*

REF	SPN	CPL	CYC	CORL	CONF	TIME	SPEC
BRE	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
BRO	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
ERN	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
LAU	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
MES	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
FRE	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
COL	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
SCH	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
KAL	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
CMI	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
PCC	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
FL1	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
FL2	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
DEV	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
GAM1	**-**	**Y**	**Y**	**-**	**-**	**-**	**(Y)**
GAM2	**-**	**Y**	**Y**	**-**	**-**	**-**	**(Y)**
SCS	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**(Y)**
MDP1	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**-**
MDP1	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**-**
STN	**Y**	**Y**	**Y**	**Y**	**-**	**Y**	**(Y)**
LIZ	**Y**	**Y**	**Y**	**Y**	**-**	**Y**	**(Y)**
SURV	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
STAN	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
HMU	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
ETM	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
ETS	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
N3CA	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
RSRV	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**
ASMT	**Y**	**Y**	**Y**	**Y**	**-**	**-**	**-**

Legend:

REF	:	User Reference (see Annex 1)
SPN	:	Short Flight Plan message
CPL	:	Complete Flight Plan message
CYC	:	Start/End of Cycle message
CORL	:	Correlation/De-correlation message
CONF	:	Conflict Alert message
TIME	:	Time Stamp message
SPEC	:	Special Purpose message
Y	:	Yes
(Y)	:	provisional
-	:	No

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Reference Documents

[1] Operational Interfaces Overview, TE1.DED.MIDD.OIF.000
(Part of the MADAP Interface Design Description (MIDD))

Change Record

Edition-Revision	Revision Date	Pages / Sections Affected	Remarks
01 - 00	24 September 2001	All	New
01 - 01	26 September 2001	2.1.2.12	RVSM flags in I150/110
01 - 02	21 February 2002		
01 - 03	21 October 2003	3.1.1.6, Appendices A and C	Corrections and additions (e-mail THD + RfC03/E226)
01 - 04	05 February 2004	Appendix B, C	Remove STANS as client
02A	10 March 2004	New section Section 1 modified	Insertion of OIF Overview Ed. 01-08 section 5.5
02	05 April 2004		Release (no modifications)
03A	24 June 2004	New	
		1.5	Response time specifications in this document
03	20 August 2004		Release (no AWG comments)