ADDONMAIL

MaXware UA-FI Programmer’s Guide

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UA-FI 5.3

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1. Introduction to X.400 and the UA-FI

1.1 What is UA-FI?

The MaXware product UA-FI (User Agent File Interface) is made for mail enabling of applications using the X.400 network. The application generates a set of files describing the required operation to do. UA-FI performs the requested operations and reports back to the application in another set of files.

UA-FI is using the X.400 protocol P7.

1.2 What you will find in this guide and how it is organised.

The scope of the Guide *is* to provide *all* necessary information for Programmers integrating an application with UA-FI.

The scope of this document is *not* to give a complete introduction to X.400, Electronic Data Interchange (EDI) or Military messaging. A general overview is however provided.

The scope of this document is *not* to provide all necessary information about how to configure UA-FI for use. See the Appendix for references to Documentation and Literature.

The Appendix section is intended for quick look up whereas the Guide itself contains more explanations.

1.3 What is X.400?

X.400 is a set of recommendations for message handling developed by the International Standards Organization (ISO) and by the International Telecommunication Union (ITU). It provides comprehensive specifications for message handling covering any number of co-operating open systems.

Message handling systems and services enable users to exchange messages on a store-and-forward basis. A message is submitted by one user, the originator, is conveyed by the Message Transfer System (MTS), the main component of a larger Message Handling System (MHS), and is then delivered to one or more users, the recipients.

An MHS consists of a variety of interconnected functional entities. Message Transfer Agents (MTA‘s) co-operate to perform the store-and-forward message transfer function. Messages Stores (MS‘s) provide storage for messages and make it possible to send, fetch and manage messages. User Agents (UA‘s) help users create messages and exchange them with other users. Access Units (AU‘s) provide links to other communication systems and services of various kinds (like other telematic or postal services).

User Agents co-operate with each other using the peer-to-peer protocol Interpersonal Messaging Protocol (P2 or P22) , Military Messaging protocol (P772) or the EDI Messaging Protocol (Pedi). These protocols define the content of the message.

The MS-access protocol (P7) is used between a User Agent and a Message Store to provide access to the MS service. The MS service supports message retrieval from the MS (Mailbox) and message submission through the MS.

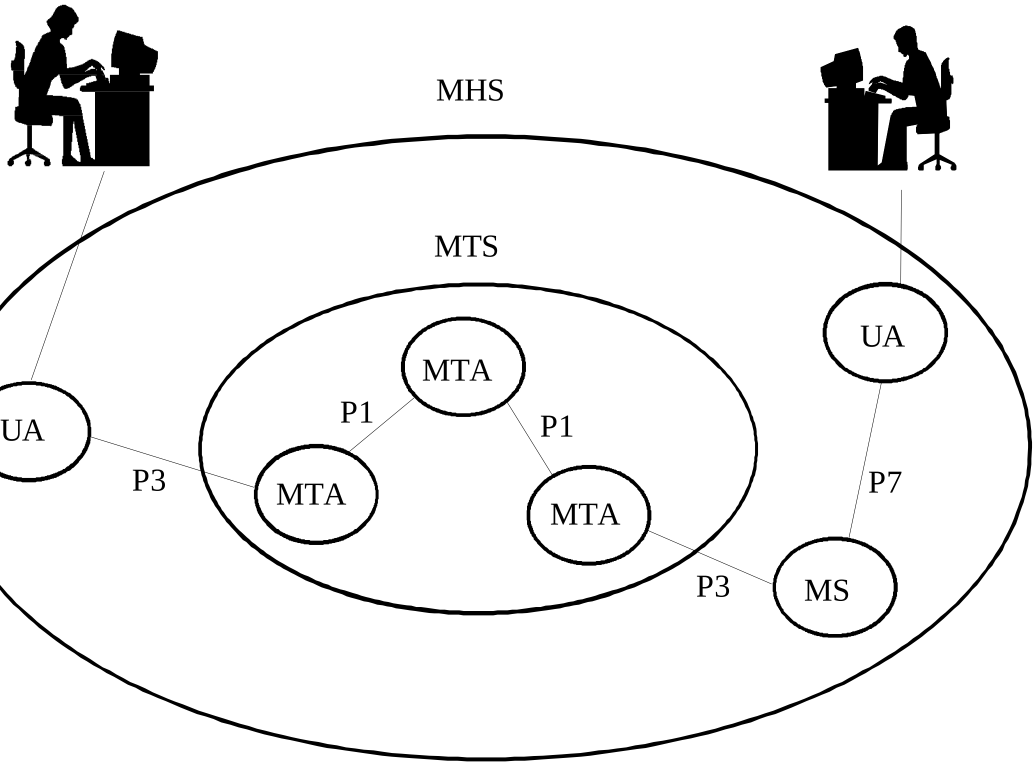


Figure 1: A Message Handling System

In the rest of this document the term Mailbox shall mean Message Store.

1.3.1 The structure of an X.400 message

A message consists of an envelope and the content. The envelope carries information that is used by the MTS when transferring the message within the MTS. The content is the information that the originating UA wishes delivered to one or more recipient UA's. The MTS does not modify or examine the content, except for necessary character set conversion.

The X.400 standard gives detailed specifications for how to address recipients of electronic mail and EDI. The X.400 address is unique for each user. The X.400 address syntax is described in section 3.1.

The figure below shows how you can compare an electronic message to a regular letter with an envelope and the content. The envelope contains necessary information to transfer the message to the correct recipient, including the P7 level addresses. The content contains the message heading (including P2 level addresses) and the message text.

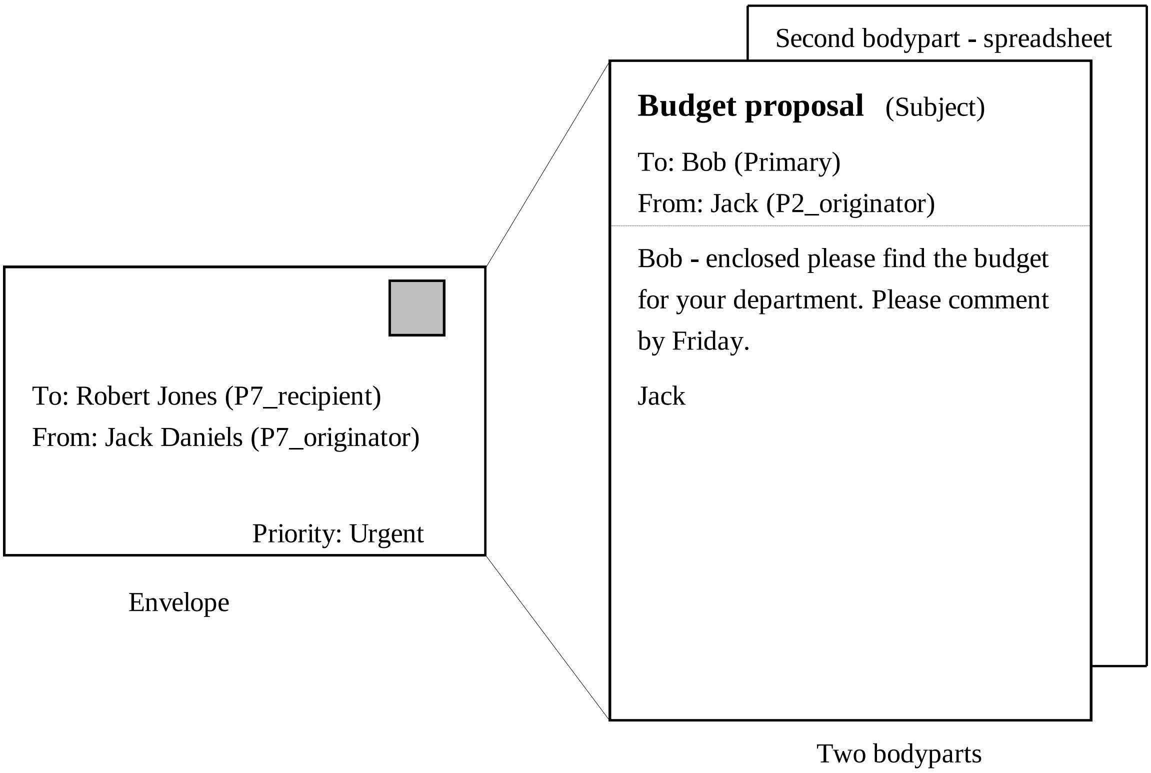

Second bodypart - spreadsheet
Budget proposal (Subject)
To: Bob (Primary)
From: Jack (P2_originator)
Bob - enclosed please find the budget for your department. Please comment by Friday.
Jack
To: Robert Jones (P7_recipient)
From: Jack Daniels (P7_originator)
Priority: Urgent
Envelope
Two bodyparts

Figure 2 Structure of an X.400 message

1.3.2 Message Store and P7 protocol

The communication between the MaXware UA-FI (User Agent) and the Mailbox (MS) is defined by the X.400 protocol P7. The P7 protocol is based on request and response (client/server). UA-FI (client) sends requests to the Mailbox (server), which processes the requests and sends responses back to UA-FI.

The following P7 request are supported by UA-FI

- Logon is used to logon to the users Mailbox on the MS.
- Submit is used to send a message.
- List is used to get a list of the messages in the Mailbox.
- Fetch is used to fetch messages from the Mailbox.
- Delete is used to delete messages in the Mailbox.
- Change MS-Password is used to change the password protecting the Mailbox.

Note: The client always initiates the connection with the Mailbox.

The Mailbox is part of a "post office" that handles your messages. Outgoing messages are sent from UA-FI through the Mailbox. On arrival, incoming messages are stored on behalf of the user in the Mailbox. The user/application decides when to fetch the messages and when messages shall be deleted from the Mailbox. Incoming messages are normally deleted in the Mailbox after they have been fetched and stored on disk file locally by UA-FI.

The Mailbox contains a database where incoming messages are stored with a number of attributes. The attributes specifies, for example, who created the message and when, what priority the message has, who is the recipient(s), whether it is an EDI message or Inter Personal Message (IPM) and other useful information.

The P7 protocol allows UA-FI to list, fetch and delete selected messages by the use of a filter.

Different kinds of messages may be handled by the Mailbox:

- IPM messages.
- EDI messages.
- Military Messages.
- Notifications.

The Notifications provides the originator with the status of the message in the MHS, i.e. if the message is delivered to the recipient or read by the recipient. Such Notifications are only returned if they are requested.

Each Mailbox is defined by its own unique X.400 address, and is protected by the MS-Password. When using UA-FI, the “own X.400 address” and the MS-Password are stored in a encrypted file.

Remarque: Since version UA-FI 5.2, password are secured using PBKDF2 algorithm. A specific command (UPDATEUSER) allows to encrypt existing passwords in this new algorithm. It also no longer possible to read the MS password with command READUSER

2. How to use UA-FI

2.1 Installing the UA-FI programmers kit

The UA-FI variants and configuration files comes on one floppy. Put the disk in your floppy drive.

For MS-Windows type:

```
A:\SETUP
```

On other operating you must install by manually copying the files. The file readme.txt contains more information about this.

During installation you will be prompted to select a Mail Service Provider. If the Mail Service you want to connect to is not present on the list you must contact their helpdesk.

If this was a first time installation you must use the CREATEUSER command before you can access the Message Store. When doing this you will need to supply the X.400 address and the MS Password. This is provided by the Mail Service Provider.

The file named README.TXT also contains information about the files you have installed and other information about the product not present in this Guide.

2.2 How to execute UA-FI

UA-FI is an executable. It is run the following way:

UA-FI [OPTIONS] <COMMANDFILE><RESPONSEFILE><USERNAME> <PASSWORD>

- The **command file** containing the commands to UA-FI.
- The **response file** where UA-FI shall put the results of the operations specified in the command file.
- The local **user name**
- The local **password**

All 4 parameters are mandatory (except for the CREATEUSER command where only the commandfile and responsefile shall be supplied).

There are 4 optional options:

[-v]
"Verbose". Optional flag to display progress information on the screen during the use of the UA-FI program. The progress information is a sub-set of the response file

[-password <new-ms-passw>]
Optional new Message Store password up to 62 characters. The Message Store password is changed to [new-ms-passw] if this parameter is present.

[-path <path>]
This parameter of up to 64 characters is used to specify the path to the directory where the configuration files MAXWARE.INI and USERS.DAT amd the message file MAX??.MSG are located. Use of -path is recommended. But you may also use the environment variable MAILMAX to specify the location of the configuration parameters.

[-strong]
This parameter allows making a strong authentication instead of the standard authentication (X400 address/password)

The command line input must not exceed 128 characters, including the program name.

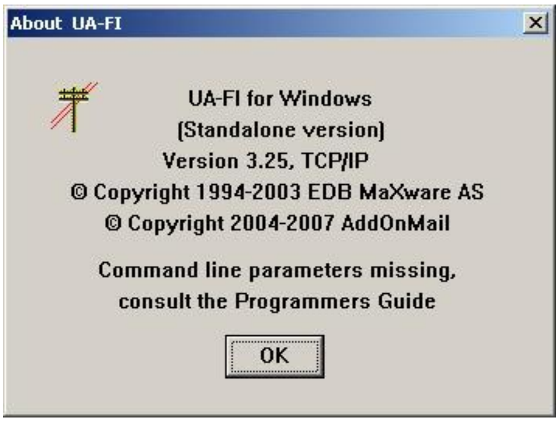
An actual command line may look like this:

```
UA-FI -v -path c:\uafi c:\uafi\message.cmd c:\uafi\message.rsp john fixwords
```

If you start UA-FI with no command line parameters UA-FI will display version and usage on the screen like the example below (On non-Windows System).

```
UA-FI 3.25 April 25, 2007 (TCP/IP (Linux)Copyright: Copyright EDB MaXware AS/AddOnMail
Usage:  c:\uafi\ua-fi [options] <cmd-file> <rsp-file> [user-name [passw]]
options:
-v
-password <new-ms-passw>
-path <path>
```

If you start UA-FI with no command line parameters UA-FI will display version on the screen like the example below (On Windows System).



UA-FI for Windows
(Standalone version)
Version 3.25, TCP/IP
© Copyright 1994-2003 EDB MaXware AS
© Copyright 2004-2007 AddOnMail

Command line parameters missing,
consult the Programmers Guide

Figure 3 Display of UA-FI with no parameters.

The first time you run UA-FI you must use the CREATEUSER command.

User names containing spaces must be enclosed with apostrophes.

It is not possible to use language-specific characters in the user name, such as f.ex. Norwegian characters Æ,Ø,Å,æ,ø,å.

2.3 What happens when you execute UA-FI?

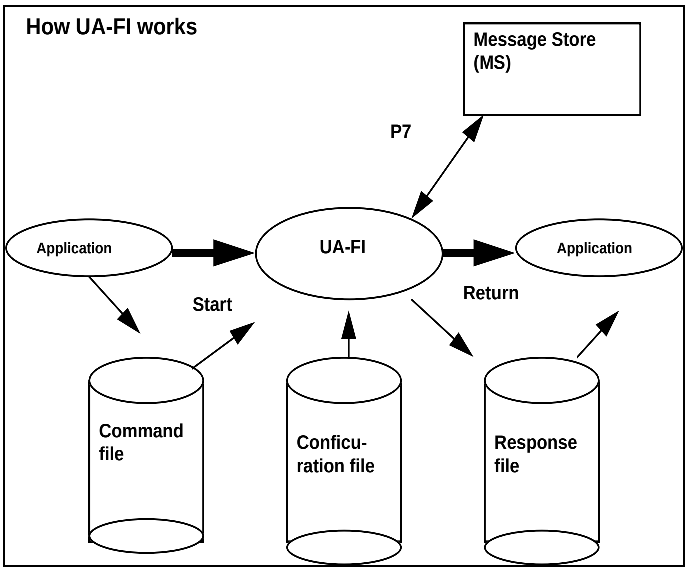
When UA-FI is launched it will start reading its communication parameters. These are found in the files maxware.ini and users.dat. This information is used to establish the connection with the Mailbox. If UA-FI is started with option "-strong", UA-FI will make a strong authentication using the certificate associated with PKCS12User command.

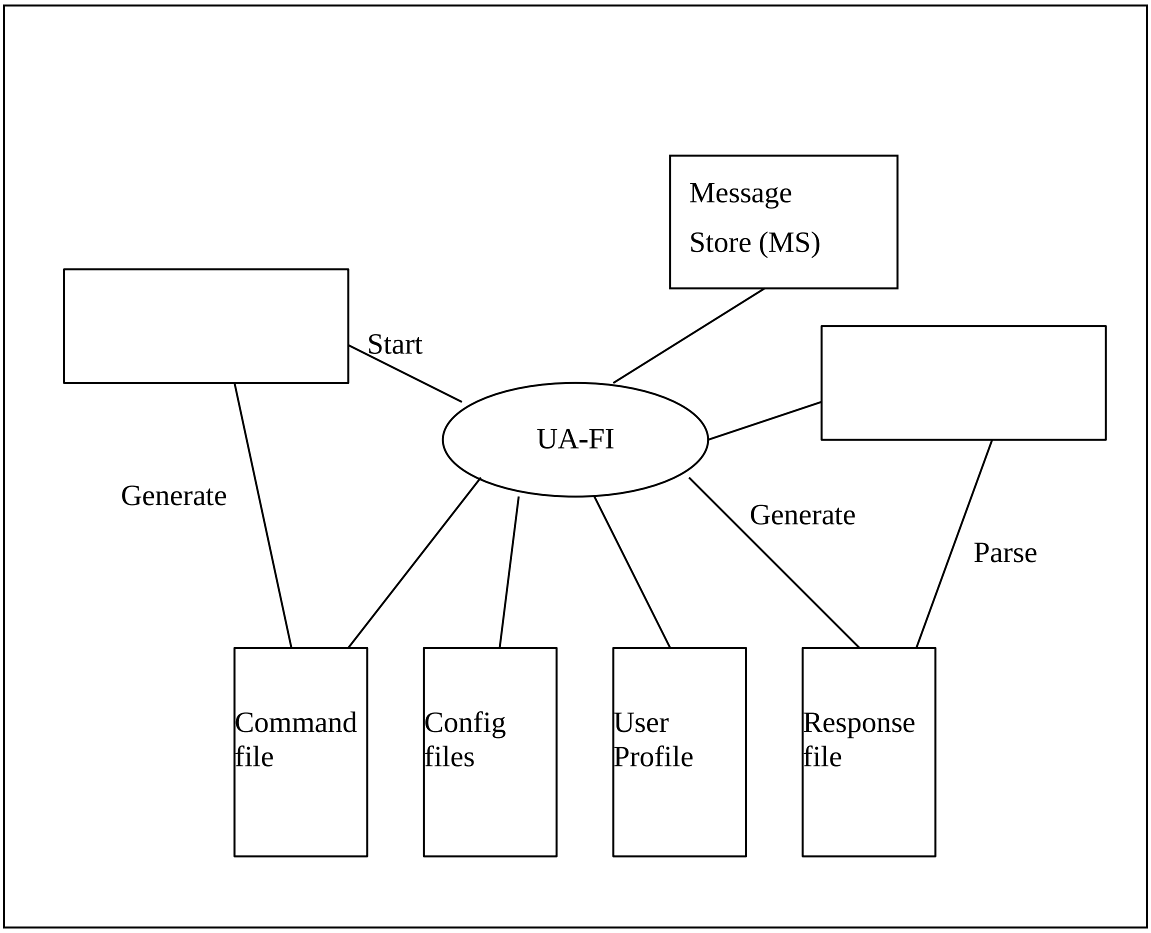
UA-FI will then read the command file. The command file contains keywords that tell UA-FI which P7 requests or other operations shall be performed: Sending messages, listing messages in the Mailbox, fetching messages or deleting messages from the Mailbox.

The specified P7 requests are carried out, the responses from the requests are written to the response file and UA-FI terminates. The application must then processes the response file.

Note: UA-FI is batch oriented. You may *not* generate new commands for UA-FI while it is communicating with the Message Store.

Figure 4 How UA-FI works





2.4 The UA-FI file structure

When executing UA-FI it will perform the commands specified in the *command file*. A message or notification contains several parameters. These are found in the *header files*. A message may also contain attachments. These are found in the *bodypart files.*

If you specify in the command file to submit messages each submit statement shall point to the header file describing the message. The header file will contain pointers to the attachments of the message.

If you list messages each list result in the response file will point to the header file describing the listed message.

If you fetch messages each fetch result will point to a header file describing the fetched message. These header file will contain pointers to the attachments of the fetched message.

For incoming messages UA-FI will automatically generate unique file names for each message. The file names will be the same but the extensions are different. The header files will have extensions .HDR. The first BodyPart file has the file extension .001, the second has .002 and so on.

For examples on command files, header files and BodyParts, see Appendix A.

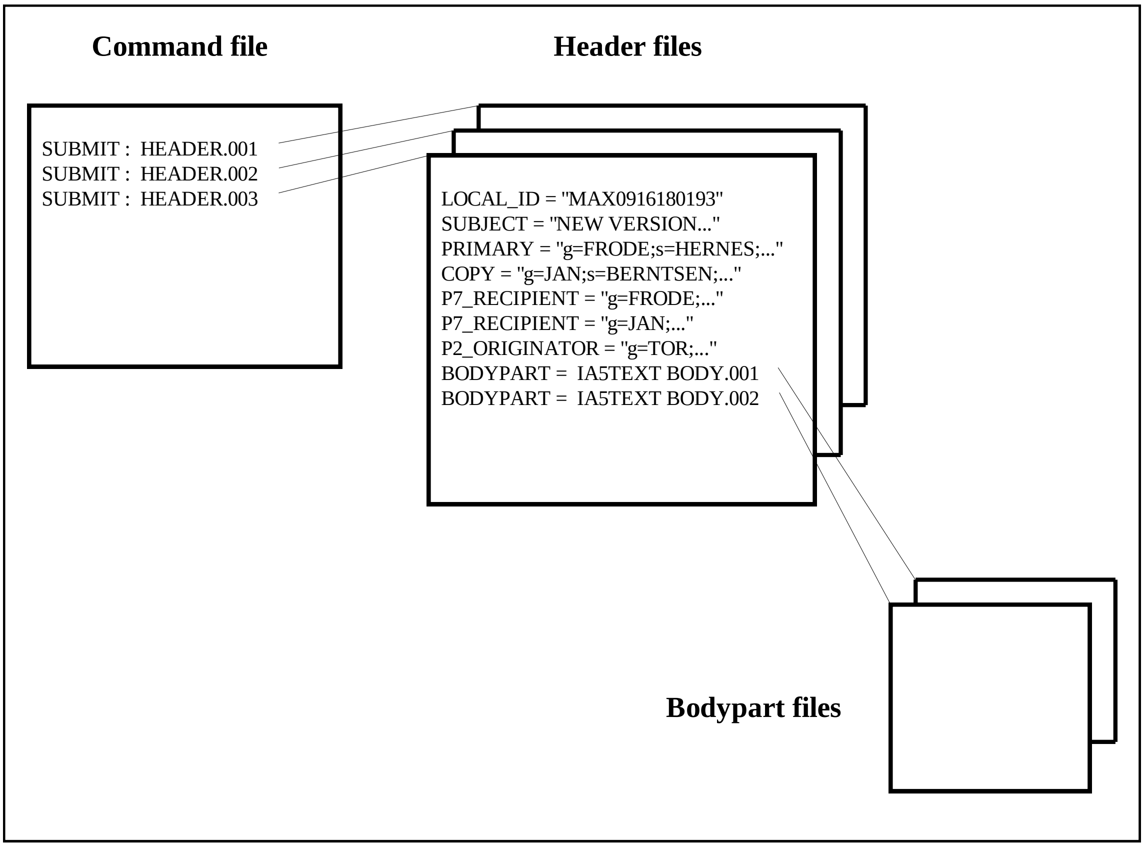

Command file
Header files
SUBMIT : HEADER.001
SUBMIT : HEADER.002
SUBMIT : HEADER.003
LOCAL_ID = "MAX0916180193"
SUBJECT = "NEW VERSION..."
PRIMARY = "g=FRODE;s=HERNES;..."
COPY = "g=JAN;s=BERNTSEN;..."
P7_RECIPIENT = "g=FRODE;..."
P7_RECIPIENT = "g=JAN;..."
P2_ORIGINATOR = "g=TOR;..."
BODYPART = IA5TEXT BODY.001
BODYPART = IA5TEXT BODY.002
Bodypart files

Figure 3: Relationship between command file, header files and BodyPart files

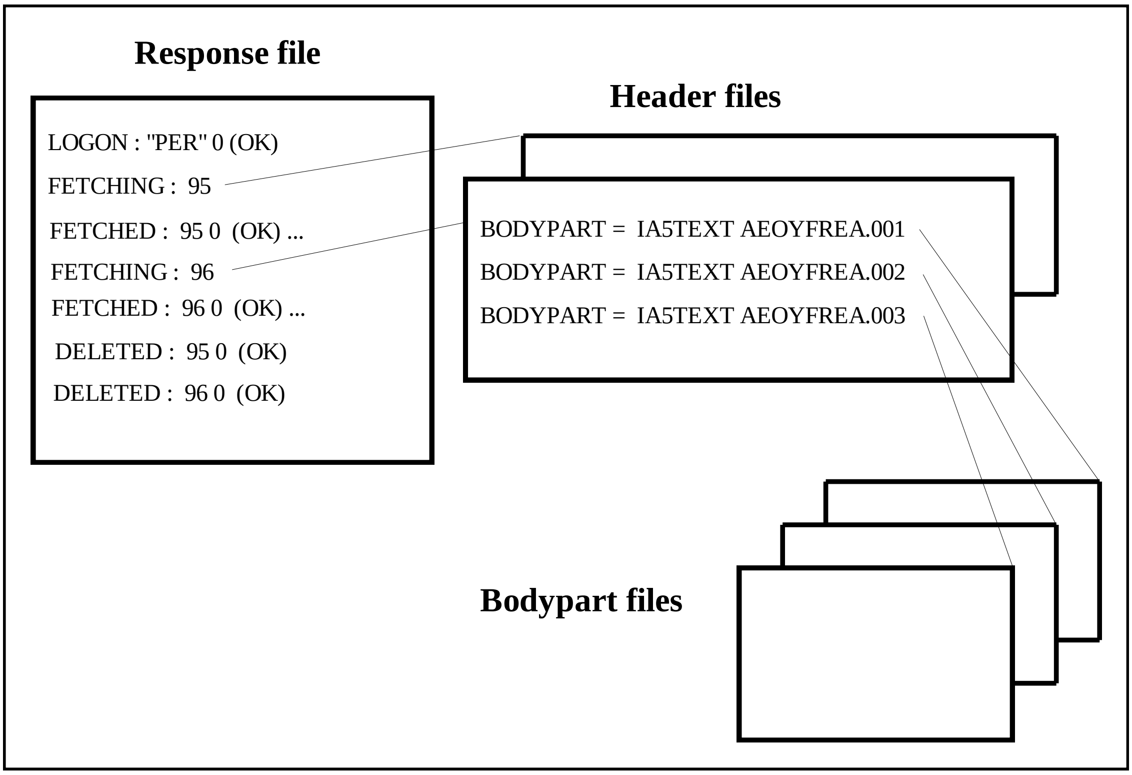


Figure 4: Response file with header and BodyPart files for incoming messages

2.5 Management of Security

2.5.1 Local Security

By default, UA-FI doesn't manage or check the integrity of messages or secure the content of messages.

The configuration parameter SecurityLevel defines the level of local, file based security (See the document *Configuration Guide*). It is not used to secure the content of the message while sending it.

SecurityLevel = 1 (sign locally)

> If the SecurityLevel is set to 1 (sign locally), UA-FI will build a hash value (SHA 512) for each message sent or fetched. This hash value is based on header attachments, body, subject, sender and recipient, and this hash is secured by an internal symmetric key. This hash value is stored in the header file when a messaged is fetched or in the response file when a message is submitted.
>
> The command CheckHash can be used to verify the integrity of a message (See 4.11 CheckHash).

SecurityLevel = 2 (secure content level)

> If the SecurityLevel is set to 2 (secure content level), UA-FI will also encrypt the body parts of fetched messages using AES256. The encryption is only local so the encrypted body parts of outbound messages are automatically decrypted before being sent.
>
> The hash value is also calculated for sent and fetched message, but using encrypted attachments.
>
> When an attachment is encrypted, the tag "ENCRYPTED" is added to the bodypart (See 5.1.9 BodyPart and 5.1.11 FTAM_BodyPart).
>
> The commands Decrypt and Encrypt can be used to decrypt or encrypt attachments (See 4.9 Decrypt and 4.10 Encrypt).

2.5.2 Secure X.400 mail

To secure the content of a message sent to a partner/recipient new header file tags have been implemented.

When a message is sent, the tag SECURE (See also 5.1.24 Secure X.400 Mail) is used in the header file to indicates that the message has to be secured (signed or encrypted or both).

When a message is fetched, the tag SECURE indicates whether this message is signed or encrypted and the result of the integrity check (signature) and/or the decryption (OK/NOK).

The Secure MIME content (PKCS#7) used to secure the content of the X.400 message can also be retrieved on submission (See 5.1.28) and it is also available for fetched messages.

Remarks:

> As the Secure MIME content is send within a single X.400 FTAM body part, the content-type of the message has to be defined to P22.
>
> UA-FI will only use the security tags if the message has a single recipient.
>
> UA-FI will only process signed content that includes the certificate of the signer.

The PKCS12USER command allows creating a link between a X400 profile and a p12 file that contains the private key of this local user. The private key is used to sign the content of message and to decrypt the encrypted content of a message.

The PEMADD command will add an entry in the PEM database and create a link between the X400 address of a partner and his public certificate. The certificate is used to encrypt the content of a message sent to this partner. The X400 addresses and the associated certificate are stored in a database. The command PEMADD, PEMDELETE and PEMLIST allow managing the entries in this database.

3. How to make an application with UA-FI

UA-FI is a file based interface to the X.400 communication which is used to mail enable applications. It implements a User Agent (UA) which is designed to be easy to use and maintain. The application first creates a command file containing a list of operations (P7 requests) to be performed. UA-FI reads the command file, performs the operations, and generates a response file containing a log of all messages sent and received and the result of the operations. The UA-FI must be started separately after the application has generated the command file, and when UA-FI is finished the application must be (re)started to inspect the response file and read the messages that have been fetched from the Mailbox.

The main benefit of UA-FI is its simplicity. It is possible, by spending a few hours, to create an application to send and receive messages. Since the UA-FI is run as a separate program, it does not add to the memory requirements of an MS-DOS application. The same application may be used on modem (asynchronous dial-up), X.25 installations and TCP/IP without any changes in the application.

The UA-FI also has its limitations. There is no message journal, and the application has to do all the logging of messages itself. The application also needs to keep track of the received Notifications, and correlate them to the appropriate messages. The file interface means that in case of disk crash or unexpected program termination, outgoing messages may be sent twice, and incoming messages may be fetched twice. Messages will however not be lost.

The required security must be handled by the application. It is therefore important that the application or the user inspects the response file in order to ensure reliable communication, and the application or the user re-sends or re-fetches any aborted communication.

4. Description of the command and response file.

The commands are the instructions to be executed by UA-FI when it is launched. This chapter describes the syntax, the behaviour and the output to the response file of each command.

4.1 Overview of commands

CREATEUSER
Is used to create a new user definition.

MODIFYUSER
Is used to modify an existing user definition.

READUSER
Is used to read the content of an existing user definition.

DELETEUSER
Is used to delete an existing user definition.

UPDATETEUSER
Is used to update the encoding of password to PBKDF2 algorithm.

LISTALLUSERS
Is used to list all existing users definition.

PKCS12USER
Is used to link one existing user with on PKCS12 file (for Strong authentication).

DECRYPT
Is used to decrypt the content of a file.

ENCRYPT
Is used to encrypt the content of a file.

CHECKHASH
Is used to calculate and check the hash of a message

PEMADD
The command is used to associate the public certificate in a PEM file to an X400 address.

PEMDELETE
The command is used to remove the association a public certificate and an X400 address.

PEMLIST
The command is used to list public certificate associated to X400 address.

UAFI-INFO
Is used to display UA-FI information.

TEXT-FORMAT
Specifies the character set for the files used by UA-FI. This command may only be specified once, on top of the command-file.

LOGON
This command lets you log on to a new mailbox in the central message store, by specifying a new local user (defined in the file USERS.DAT). Succeeding commands are executed on the new mailbox.

SUBMIT
Specifies a message (header-file with references to documents) to be submitted.

FETCH
Specifies the selection criteria for messages to be fetched from the Message Store.

LIST
Specifies the selection criteria for messages to be listed in the Message Store.

DELETE
Specifies the selection criteria for messages to be deleted in the Message Store.

INCLUDE
Is used to include a new command file into the main command file.

WAITANDFETCH
Is used to poll the MS until a new message matching a certain criteria arrives, and the fetch it.

4.2 CreateUser

The command is used to create a new user record in the USERS.DAT file. This command *must* be executed before first time connection to the Message Store. When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

```
UA-FI <cmd-file> <rsp-file>
```

Remark : is the strong bind authentication is used, it is necessary to call PKCS12User command to link the user with the pkcs12 file, and then call UA-FI with "-strong" parameter.

4.2.1 Command file syntax

CREATEUSER : "<localusername>" "<localpassword>" "<own X.400 address>" "<MS-password>""<national character set>"

<localuser name>. Specifies the local user name. Maximum 35 characters.

<localpassword>. Specifies the local password. Maximum 32 characters.

<own X.400 address>. Specifies the X.400 address of the Mailbox to be used by this user. Use the X.400 address provided by your Mail Service Provider..

<MS-password>. Specifies the password used to get access to your Mailbox. Use the MS-password provided by your Mail Service provider. Maximum 62 characters

<national character set>. Specifies the national character set for the special national characters used in text documents (Ia5text BodyParts). UA-FI uses this to find the correct mapping table when converting text BodyParts to/from ANSI/PCASCII and the X.400 transfer format IA5.

The value is given as a 2 character ISO country code. If no mapping is required\used use "US"

All parameters must be present. Empty values is set with "" (two double quotes).

4.2.2 Output to the response file

CREATED : "user name" createuser-status

Createuser-status's written to the response file:

0	(OK)
1	(Invalid character used in name or password)
2	(User already exists)

4.3 ModifyUser

The command is used to modify one existing user record in the USERS.DAT file. When starting UA-FI, the user name/password of the user record to be modified must be specified on the command line.

4.3.1 command file syntax

MODIFYUSER : "<new password>" "<new MS-password>" "<new own X.400 address>" "<new national charset>"

The parameters are as in the CREATEUSER command.

All parameters must be present. If a value is empty (i.e. “”) this parameter will not be modified.

Note: An existing non-empty password cannot be changed to an empty password.

4.3.2 Outputs to the response file

Response file:

MODIFIED : "user name" modified-status

Modified-status written to the response file:

0 (OK)
1 (Invalid character used in name or password)

4.4 ReadUser

The command is used to read the content of a specified user record in the USERS.DAT file.

The ReadUser command can be used to validate a name/password combination by checking that the ReadUser-status equals 0 (OK).

When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

```
UA-FI <cmd-file> <rsp-file>
```

Remark: if passwords are secured by PBKDF2 algorithm, the MS password is not written in the response file (it is replace by ***PBKDF2***)

4.4.1 Command file syntax

READUSER : "<user name>" "<password>"

4.4.2 Outputs to the response file

READUSER : "user name" ReadUser-status

ReadUser-status’s written to the response file:

0 (OK) "<username>" "<password>" "<X.400 address>" "<MS-password>" "<national character set>"
1 (No such user)
2 (Incorrect password)

4.5 DeleteUser

The command is used to delete the content of a specified user record in the USERS.DAT file.

When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

```
UA-FI <cmd-file> <rsp-file>
```

4.5.1 Command file syntax

DELETEUSER : "<user name>" "<password>"

4.5.2 Outputs to the response file

DELETEUSER : "user name" DeleteUser-status

DeleteUser-status’s written to the response file:

0	(OK)
1	(No such user)
2	(Incorrect password)

4.6 UpdateUser

The command is used to update the encoding of passwords to PBKDF2 algorithm.

When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

```
UA-FI <cmd-file> <rsp-file>
```

4.6.1 Command file syntax

UPDATEUSER : "<user name>" "<password>"

4.6.2 Outputs to the response file

UPDATEUSER : "user name" UpdateUser-status

UpdateUser-status’s written to the response file:

0	(OK)
1	(No such user)
2	(User passwords are already secured with PBKDF2 algorithm)

4.7 ListAllUsers

The command is used to list all user record in the USERS.DAT file.

When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

UA-FI <cmd-file> <rsp-file>

4.7.1 Command file syntax

LISTALLUSERS :

4.7.2 Outputs to the response file

LISTALLUSERS : ListAllUsers-status

User : “user name” “<X.400 address>” “<national character set>” “<PBKDF2>”

➔ One line per user

Remark: if passwords of the user are already secured with PBKDF2 algorithm, the info PBKDF2 is added at the end of the line.

ListAllUsers-status’s written to the response file:

0	(OK)
1	(No such user)

4.8 Pkcs12User

If the command is successful, the users and the file are linked and the file PKCS12 is copied in the directory PKCS12 of the user.

The private password of the PKCS12 file has to be indicated. If the private password allows to read the PKCS12 file, a new file named <user name>.p12 is created in the directory PKCS12. This file will contain the certificate protected by the password of the file. If a new password is indicated, the file protected with the new password.

This password used to protect the PKCS12 file has a minimum length of 8 characters, and contains at least one letter, one number and one non-alphanumeric character

When starting UA-FI, the user name/password of the user record to be modified must be specified on the command line

4.8.1 command file syntax

PKCS12User : "<private password>" "<PKCS12 file>" "<new private password>"

The parameter "<new private password>" is optional.

<Private password> is used to read <PKCS12 file>

If <New private password> is indicated, the file <user name>.p12 is protected with this new password.

<username> need a local password not empty.

4.8.2 Outputs to the response file

Response file:

PKCS12USER : "<user name>" "<PKCS12User-status>"

PKCS12User-status written to the response file:

0 (OK)

1 (No such user)

2 (Incorrect password)

3 (PKCS12 Problem)

4.9 Decrypt

The command is used to decrypt the content of a file.

This command is available only on Windows and Linux. (the parameter SecurityLevel defines the level of Security : See the document *Configuration Guide*).

When executing this command, UA-FI must be started with specifying user name and password on the command line:

UA-FI <cmd-file> <rsp-file>

4.9.1 Command file syntax

DECRYPT : "<Encrypted file>" "<Unencrypted file>"

4.9.2 Outputs to the response file

DECRYPT : Decrypt-status

Decrypt-status’s written to the response file:

0	(OK) "<Encrypted file>" "<Unencrypted file>"
1	(No such user)
2	(Incorrect password)
3	(Decryption problem) "<Encrypted file>" "<Unencrypted file>"

4.10 Encrypt

The command is used to encrypt the content of a file

This command is available only on Windows and Linux. (the parameter SecurityLevel defines the level of Security : See the document *Configuration Guide*).

When executing this command, UA-FI must be started with specifying user name and password on the command line:

UA-FI <cmd-file> <rsp-file>

4.10.1 Command file syntax

ENCRYPT : "<Unencrypted file>" "<Encrypted file>"

4.10.2 Outputs to the response file

ENCRYPT : Encrypt-status

Decrypt-status’s written to the response file:

0	(OK) "< Unencrypted file>" "< Encrypted file>"
1	(No such user)
2	(Incorrect password)
3	(Encryption problem) < Unencrypted file>" "< Encrypted file>"

4.11 CheckHash

The command is used to calculate and check the hash of a message.

This command is available only on Windows and Linux. (the parameter SecurityLevel defines the level of Security : See the document *Configuration Guide*).

When executing this command, UA-FI must be started with specifying user name and password on the command line:

UA-FI <cmd-file> <rsp-file>

4.11.1 Command file syntax

CHECKHASH : <header file name> " "<Hash>"

The header-file syntax is the same as header-file for SUBMIT.

Only following keywords are used:

- SUBJECT
- P2_ORIGINATOR
- PRIMARY
- COPY
- BCC
- BODYPART
- FTAM_BODYPART

All other keywords are ignored

4.11.2 Outputs to the response file

CHECKHASH : Encrypt-status

CheckHash-status's written to the response file:

0 (OK) "<header file name> " "<Hash>"

1 (No such user)

2 (Incorrect password)

3 (Failed) "<header file name> " "<Hash>"

4.12 PemAdd

The command is used to associate the public certificate in a PEM file to an X400 address.

If the command is successful, the public certificate in the PEM file is associated to the X400 address and is stored in the database.

4.12.1 Command file syntax

PEMADD : “<X400 address>” “<PEM file>”

4.12.2 Outputs to the response file

Response file:

PEMADD : “<X400 address>” “<PEM file>” “<PEMADD-status>”

PEMADD-status written to the response file:

0 (OK)

1 (Invalid PEM file)
File inexistent

2 (Invalid PEM file)
PEM invalid

3 (X400 address already exists)

4.13 PemDelete

The command is used to remove the association between a PEM file and an X400 address.

If the command is successful, the entry with X400 address and the associated certificate is removed from the database.

4.13.1 Command file syntax

PEMDELETE : “<X400 address>”

4.13.2 Outputs to the response file

Response file:

PEMDELETE : “<X400 address>” “<PEMDELETE-status>”

PEMUser-status written to the response file:

0 (OK)

1 (X400 address does not exist)

4.14 PemList

The command is used to list public certificate associated to an X400 address.

If the command is successful, the details of all entries (X.400 address with associated certificate) in the database or only the entry details of a defined X400 address will be displayed.

4.14.1 Command file syntax

PEMLIST : all (displays details of all entries in database)

PEMLIST : "X.400 address" (displays only the details of this single entry)

4.14.2 Outputs to the response file

Response file:

PEMLIST : "<PEMLIST-status>"

User : "<X400 address>"

Certificate:

<Details of certificate>

PEMUSER-status written to the response file:

0	(OK)
1	(X400 address does not exist)

4.15 Uafi-Info

The command is used to display information on UA-FI. When executing this command, UA-FI must be started *without* specifying user name and password on the command line:

```
UA-FI <cmd-file> <rsp-file>
```

4.15.1 Command file syntax

```
UAFI-INFO : ALL
```

4.15.2 Outputs to the response file

UAFI-INFO : VERS: "<Version of UA-FI>" MAIL: "<Messaging System>" PROT: "<Protocol>" COMM: "<Network communication>" OS: “<OS Type>”

Messaging System**:**

X400

Protocol**:**

P7

Network communication**:**

TCP/IP
APS
CAPI

OS Type**:**

WIN32
Linux
AIX
Solaris
HP

Example :

```
UAFI-INFO: VERS: "3.25" MAIL: "X400" PROT: "P7" COMM: "CAPI" OS: "WIN32"
```

4.16 Text format

Set the text conversion tables for IA5 and T.61 strings to be used. The tables are specified in files with extension .chs. This parameter specifies which character mapping file to use.

The most commonly needed files (ANSI character set and the most common DOS code pages) are installed together with UA-FI.

This parameter is seldom needed. It can be used if you f.ex. whant to submit PCASCII text files while using UA-FI for Windows.

4.16.1 Command file syntax

TEXT-FORMAT : format

Format = PCASCII / ANSI.

The default values are ANSI for all Operating systems except DOS where it is PCASCII

4.16.2 Output to the response file

Normally no output to the responsefile. You will get a warning if the specified character mapping file is not found.

4.17 Logon

The LOGON command logs off the current Message Store mailbox and logs on to a new mailbox. If the dial-up version of UA-FI is used and the MAXWARE.INI parameter ReuseNetwork = True, the logon function will logon to the new mailbox without doing modem hang up and redial.

UA-FI will implicitly logon to the mailbox specified on the command line. Therefore when connecting to only one mailbox in a batch this command is *not needed*.

4.17.1 Command file syntax

LOGON : <"user name"> <"password">

The user name may contain up to 35 characters, and should be quoted if it contains one or more spaces. The password may contain maximum 32 characters and should be enclosed in double quotes.

4.17.2 Output to the response file

LOGON: "user name" logon-status

Possible logon status's written to the response file:

0	(OK)
1	(Authentication error)
2	(Unacceptable security context)
3	(Unable to establish association)

4.18 Submit

The SUBMIT command is used to send a Message or a Notification. The information about the Message\Notification to send is stored in a header file pointed to by the submit statement.

4.18.1 Command file syntax

SUBMIT : <header file name> [path]

The header file name may contain up to 78 characters, the path up to 65 characters. The header-file syntax for messages and Notifications is specified in the next chapter.

The [path] is the path where the recipient file shall be stored by UA-FI. A recipient file is created when the submit-status = 5, and it contains information about any improperly specified recipients in the message on the format:

P7_RECIPIENT = “<X.400 address of the recipient>“

4.18.2 Output to the response file.

SUBMITTING: *Content-identifier* ("*subject*")
HASH: *Content-identifier* “*Hash*"
SUBMITTED : *Content-identifier submit-status*

*4.18.2.1 **Content-identifier***

Up to 16 characters identifying the message submitted. The Content-identifier has the same value as the LOCAL_ID specified in the header file.

*4.18.2.2 **Subject***

The subject of the message. If the message is a Receipt Notification, subject is replaced with the text "Receipt Notification". When sending Pedi messages the subject is set to “EDI message”.

*4.18.2.3 **Hash***

The hash calculated by UA-FI, based on subject, sender, recipients and attachments.

*4.18.2.4 **Submit-status***

This is the result of the attemempt to send a message. The values are returned by the Message Store.

0	(OK) <MTS-identifier> <message-submission-time>
1	(Remote operation rejected)
2	(Submission control violated)
3	(Element of service not subscribed)
4	(Originator invalid)
5	(Recipient improperly specified) <recipient-file name>
6	(Inconsistent request)
7	(Security error)
8	(Unsupported critical function)
9	(Remote bind error)

4.18.2.4.1 MTS-identifier

The MTS-identifier is a 32 character ID (inside double quotes) generated by the Message Store to uniquely identify the message within the MTS.

4.18.2.4.2 Message-Submission-Time

The message-submission-time is given on the UTC time format.

4.18.2.4.3 Recipient-File Name

The recipient-file name may contain up to 78 characters. The file contains information about the recipient(s) which were improperly specified. See section 5.3.

Note: If the submit-status is 5, the message is not sent to any of the recipients.

4.19 Fetch

The FETCH command fetches messages and Notifications from the Message Store.

You may use the FETCH command in two different ways. You can

Specify a filter to select messages according to certain criteria.

Specify a set of MS-sequence-numbers for the messages to be fetched

Both alternatives are described in section 4.8.1 below.

You may specify the path to where UA-FI shall put the received messages and Notifications.

You may also specify if you want to delete the messages or Notifications from the MS after they are successfully fetched.

Note: If "ACKNOWLEDGE_MODE = MANUALLY" is not set in the MAXWARE.INI file or "ACKNOWLEDGE_MODE =AUTOMATICALLY", UA-FI will automatically generate a Receipt Notification for the fetched message if the *entry-status* on the fetched message was **new** or **listed** and the sender had requested a Receipt Notification.

4.19.1 Inputs

4.19.1.1 Fetch with filter

FETCH : <filter> ["delete"] [path]

The filter consists of one or more selection criteria. The available selection criteria are:

All

entry-status

entry-type

p2_content

content_type

Pedi-content

X.400 address of the message originator

The [delete] and [path] options are described in the next subchapters.

If you use a combined filter (combination of simple criterias), there is an implicit logical OR between values of the same attribute/criteria type (e.g. the values new/listed/processed for the attribute type **entry status**), and an implicit AND between values of different attribute/criteria type.

Note: You use the same kind of filter for the commands LIST, FETCH and DELETE.

4.19.1.1.1 **The selection criteria *all.***

The *All* criteria fetches all messages in the mailbox. This filter should not be used in a combined filter. (This has the same effect as FETCH : NEW LISTED PROCESSED).

4.19.1.1.2 The selection criteria *MS-entry-status*

The *MS-entry-status* (the status of the message in the MS) can be

new

listed

processed.

The entry-status **new** means that no attributes have yet been fetched or listed from this message.

The status **listed** means that the message has been listed or that parts of it has been fetched.

The status **processed** means that the entire message with all BodyParts has been fetched from the MS. The recommendation X.413 states the following:

"Either a UA has "completely fetched" the message or the MS has performed an Auto-action on it and the definition of that auto action causes a change of entry-status. The exact definition of completely fetched is content-specific and is defined in the corresponding content specific Recommendation."

Note: You should be careful if you use a filter that checks the entry status. When you use FETCH with a filter, an implicit LIST operation is performed by UA-FI in order to get the sequence numbers of the entries that match the filter. UA-FI then fetches the messages by specifying the sequence numbers. During this process, the entry status of the entries in the central Message Store change.

For example, if you use the filter

FETCH : new

and the communication is aborted after the implicit LIST operation has been performed, the entries will have changed status to **listed**. If you try to use the same filter once more, the messages you listed during the aborted connection will not be fetched.

Also some MS application will change the state of a message to processed when a FETCH operation is done rather than when the message is actually fetched.

For example if you use the operation

DELETE : PROCESSED

And the FETCH operation of a message was aborted you risk deleting messages that has not been fetched. You should rather either

Use FETCH : ALL DELETE

or DELETE : <MS sequence number>

Where the MS-Sequnce numbers are the numbers of earlier fetched messages.

If you want to fetch all messages and reports, you should rather use the filter:

FETCH : all

4.19.1.1.3 The selection criteria MS-*entry-type.*

The *MS- entry-type* can be

delivered_message

delivered_report.

The entry-type **delivered_message** is used to select E-mail messages (IPM), EDI messages (Pedi), Receipt Notifications (IPN) and Pedi Notifications (EDIN).

The entry-type **delivered_report** selects Delivery and Non-Delivery Reports.

4.19.1.1.4 The selection criteria *p2_content*

This filter fetches IPM/IPN messages only (P2 or P22). The *p2_content* can be

IPM (for an Inter Personal message)

IPN (for a Receipt Notification).

This criterion is only valid for the entry type delivered_message. Delivery Reports will NOT be fetched when using this selection criteria.

4.19.1.1.5 The selection criteria *content_type*

The *content_type* can be

P2

P22

Pedi

P2 will select IPM messages with content according to the 1984 X.400 standard, while P22 will select messages with content according to the 1988 X.400 standard.

The *content_type* describes the content of the Message. This filter can for example. be used to select between EDI and IPM messages

4.19.1.1.6 The selection criteria *Pedi-Content*

This criteria fetches Pedi messages only. *Pedi-content* can be

EDIM (for a EDI message)

EDIN (for a EDI Notification).

Note: This criteria is not always supported by the MS. Check with your service provider.

4.19.1.1.7 The selection criteria X.400 address

This criteria is used to fetch messages that are sent from a certain originator. The **X.400 address** of the message originator is specified as a string enclosed with <>. The syntax of the X.400 address string is described in the chapter "Syntax and rules".

4.19.1.2 Fetch with MS-sequence number

The MS-sequence number is a unique number assigned by the central Message Store to identify a message (range 0-2147483647). If you use the *MS sequence number* when fetching messages you will typically already have performed a list so that the *MS sequence numbers* are known.

The syntax is

FETCH : <*MS sequence numbers*> [delete] [path]

For *MS sequence numbers* you can:

Specify a list of single MS sequence numbers separated by commas.

Specify a range by giving the first and the last number separated by a hyphen.

Specify a combination of single MS sequence numbers and ranges separated

by commas.

The [delete] and [path] options are described in the next subchapters.

Here is an example of how you can use the FETCH command with sequence numbers:

FETCH : 2-5,8,11-17,25,27

Note: Not all Message Stores support the use of range.

*4.19.1.3 **The [delete] option***

If you use the optional parameter "delete", the message(s) will be deleted from the MS after it has been fetched. The delete operation will be performed after the message has been stored to the local file system.

*4.19.1.4 **The [path]]] parameter***

The path parameter specifies the directory where the fetched header and BodyPart files shall be placed by UA-FI. If the path is not specified, the current directory is used. Maximum length of the path name is 65 characters.

EXAMPLE 1:

This example shows how you can use the FETCH command to fetch all messages, notifications and delivery reports in the mailbox. The header files and BodyPart file will be stored on the directory c:\mydir\in. The Messages will be deleted on the Message Store.

```
FETCH : all delete c:\mydir\in
```

EXAMPLE 2:

This example shows how you can use the FETCH command to fetch all Pedi messages and Pedi reports in the mailbox. The header files and BodyPart file will be stored on the directory c:\edi\in. The Messages will be deleted on the Message Store.

```
FETCH : Pedi delete c:\edi\in
```

EXAMPLE 3:

If you use a combined filter with values from two or more different selection criteria (entry status, entry type or p2_content), there is an implicit logical AND between values of each selection criteria. For example, the filter

```
FETCH : new IPM delete
```

will fetch all new IPM messages (entry-status= = new **new** AND p2_content=**IPM** = IPM).

EXAMPLE 4:

The filter

```
FETCH : new listed IPM delete
```

will fetch all IPM Messages with MS-entry status new/listed ((entry-status== **new** OR entry-status== **listed**) AND p2_content = IPM)

EXAMPLE 5:

The filter

```
FETCH : <s=SUPPORT;o=MAXWARE;a=TELEMAX;c=NO> delete
```

will fetch all messages and notifications sent from the originator

```
s=SUPPORT;o=MAXWARE;a=TELEMAX;c=NO
```

4.19.2 Outputs when fetching messages.

The result of the FETCH command may be:

No messages or Notifications are fetched.

One or several messages are fetched.

One or several Notifications are fetched.

The fetch operation failed.

The fetch operation may fetch several messages and different Notifications depending on the filter you have used.

4.19.2.1 No messages or Notifications are fetched.

If no messages or Notifications are fetched (i.e. there where no messages in the MS fulfilling the filter criteria), the line

FETCHED : NONE

appears in the response file.

4.19.2.2 Output when a message is successfully fetched.

Two lines of information is output to the response file for each message being fetched:

FETCHING : MS-sequence-number
FETCHED: MS-sequence-number 0 (OK) <fetch-header-file>

The fetch-header-file name returned by UA-FI may have a name with up to 78 characters. The fetch header file syntax is described in Chapter 5.

4.19.2.3 Output when fetching Notifications.

If Notifications are fetched, the following lines are output to the response file:

FETCHING : MS-sequence-number

NOTIFICATION : <Notification Parameters>

The following notifications may be received:

Delivery Report (DN). For both IPM end EDI messages.

Non-Delivery Report (ND). For both IPM end EDI messages.

Receipt Notification (RN). For IPM messages only.

Non-Receipt Notification (NR). For IPM messages only.

Positive Notification (PN). For EDI messages only.

Negative Notification (NN). For EDI messages only.

Forwarding Notification (FN). For EDI messages only.

Below, these notifications are described in more detail. For reference see figure 1.

4.19.2.3.1 **Delivery Report DN**

The Delivery Report is generated by the receiver's mail system when the message has been successfully delivered to the recipient's mailbox. When sending messages with the SUBMIT command, you may request a Delivery Report by using the DN parameter in the P7_RECIPIENT keyword (See chapter 5.1).

The syntax in the response file is:

DELIVERED : <MS-sequence-number> <MTS-ID> <Content-ID> <P7-originator> <Delivery time>

MS-sequence-number: The message (entry) number of the Notification in the MS.

MTS-ID: See chapter 5.1

Content-ID: The message ID of the sent message equals the local-id (see Ch. 5.1). This can be used to correlate the Notification with the corresponding sent message. If no Content-ID is present in the Delivery report, UA-FI reports the value as "NONE".

P7-originator : The sender of the Notification. Equals the P7_recipient (see Ch. 5.1) of the originally sent Message. This can be used to correlate the Notification with the corresponding recipients of the corresponding message.

Delivery time: The time when the message was delivered to the recipient's mailbox. Is given on UTCtime format (see Ch. 3).

Note: One FETCHING statement may result in several Delivery Notifications, i.e. several DELIVERED statements. This may be the case if a message is delivered to several recipients on the same mail system.

4.19.2.3.2 **Non-Delivery Report ND**

The Non-Delivery Report is generated by the MTS if the message could not for some reason (e.g. unknown address) be delivered to the recipients mailbox within the time defined by the priority set for the message. When sending messages, you may request a Non-Delivery Report by using the DN or ND parameter in the P7_RECIPIENT keyword (See chap 5.1).

The syntax in the response file is:

NONDELIVER : <MS-sequence-no> <MTS-ID> < Content-ID > <P7-Originator> <Reason> [Diagnostic] [Supplementary-information]

For MS-sequences-number, MTS-ID, Content-ID and P7-Originator: see Delivery Notification above.

For possible Reason and Diagnostic codes see the Appendix section "Error Handling".

Supplementary-information: contains additional textual information about why the message could not be delivered. Maximum length is 200 characters.

4.19.2.3.3 Receipt Notification RN

This is an IP Notification. A Receipt Notification is generated when the message has been read or opened by the recipient. When sending messages, you may request a Receipt Notification by using RN parameter in the keywords PRIMARY, COPY or BCC (See chapter 5.1).

The syntax in the response file is:

RECEIPT : <MS-sequence-number> <local-id> <P2-Originator > <Receipt time>

Local-id (see Ch. 5.1.): The local-id on the original message. This can be used to correlate the Receipt Notification with the corresponding sent message.

P2-Originator (see Ch. 5.1): The P2 X.400 address of the recipient sending the Receipt Notification. May be used to correlate the RN with the corresponding recipient of the original message.

Receipt time: The time when the message was read or opened. Is given on UTCtime format (see Ch. 3).

4.19.2.3.4 Non-Receipt Notification NR

This is a IP Notification. A Non-Receipt is generated by the receiver's Mail system if the recipient could not read the received message or he deleted it without reading it. When sending messages, you may request a Receipt Notification by using the RN or NR parameter in the keywords PRIMARY, COPY or BCC (See chapter 5.1).

The syntax in the response file is:

NON-RECEIPT : <MS-sequence-number> <local-id> <P2-originator > <nrn-reason>

For MS-sequence-number, local-id and P2-Originator: See Receipt Notification above.

nrn-reason: Specifies the reason for why the messages was not read by the recipient. Possible values for nrn-reason are

0. The message was discarded messages by the recipient
1 The message was auto-forwarded by the recipients Mail system

4.19.2.3.5 Positive Notification PN

This is a EDI Notification. A Positive Notification is generated when the message has reached the recipients mailbox and the recipient has accepted EDI responsibility for it. When sending EDI messages, you may request a Positive Notification by using the PN parameter in the keywords PRIMARY or COPY (see chapter 5.1).

The syntax in the response file is:

EDI_RECEIPT : <MS-sequence-number> <local-id> <From> <Notification time> [Supplementary-Info]

For MS-sequence-number, local-id see above.

From (see Ch. 5.5): The Pedi X.400 address of the recipient sending the Positive Notification. May be used to correlate the PN with the corresponding recipient of the original EDI message.

Notification time: The time when the message was accepted. Is given on UTCtime format (see Ch. 3).

Supplementary-info: Gives additional textual information. Up to 200 characters.

4.19.2.3.6 Negative Notification NN

This is an EDI Notification. A Negative Notification is generated by the recipients UA if the recipient refuses to accept EDI Responsibility for the received EDI message. When sending EDI messages, you may request a Positive Notification by using the PN parameter in the keywords PRIMARY or COPY (see Ch. 5.5).

The syntax is:

EDI_NON-RECEIPT : <MS-sequence-number> <local-id> <From > <Pedi-nn-reason> [Supplementary-information] <Notification time> <Pedi-nn-diagnostic> <Pedi-nn-generated-by>

For MS-sequence-number, local-id, From, Supplementary-information see above.

Notification time: The time when the message was refused. Is given on UTCtime format (see Ch. 3).

See the Appendix section “Error Handling” for possible values of Pedi-nn-reason, Pedi-nn-diagnostic and Pedi-nn generated-by.

4.19.2.3.7 Forwarded Notification FN

This is a EDI Notification. A Forwarded Notification is generated by the recipients Mail system if the EDI messages is successfully received, and the user forwards both the EDI message the acceptance of responsibility. When sending EDI messages, you may request a Forwarded Notification by using the FN parameter in PRIMARY or COPY (see Ch. 5.5).

The syntax in the response file is:

FORWARDED : <MS-sequence-number> <local-id> <From> <Notification time> <Forwarded to> <FN generated by> <Pedi-fn-reason> <Pedi-fn-diagnostic>

For MS-sequence-number, local-id, From, see above.

Forwarded to: The X.400 address of the recipient to whom the message was forwarded to.

FN generated by: Which entity that generated the FN. 0: UA/MS, 1: User, 2: PDAU

Notification time: The time when the message was forwarded. Is given on UTCtime format (see Ch. 3).

See the Appendix section “Error Handling” for possible values of Pedi-fn-reason and Pedi-fn-diagnostic.

Note: UA-FI 3.3 does not support submission of forwarded Pedi Messages. Therefore submission of FN is not supported. FN can only be received.

*4.19.2.4 **Result when the fetch operation fails.***

If the FETCH operation fails, the following information is output to the response file:

FETCHING : MS-sequence-number
FETCHED: MS-sequence-number fetch-status

If the Fetch operation fails before UA-FI knows the sequence number, the sequence number is set to -1 in the FETCHED-statement in the response file. This may happen, for example, after an implicit LIST operation has failed.

Possible fetch status's written to the response file:

0	(OK)
1	(Remote operation reject)
2	(Attribute error)
3	(Fetch restriction error)
4	(Invalid parameter error)
5	(Range error)
6	(Security error)
7	(Sequence number error)
8	(Service error)

4.20 List

The LIST command retrieves attribute information about messages and report in the Message Store. If the listing is successful, a set of list-header-files with the list-result are created. The list-header-file syntax is described in Chapter 5.

If an error occurs, an error message is written to the response file.

The purpose of the LIST command is to obtain information about the messages in the mailbox without having to fetch the whole message. A typical example may be to LIST all messages in the mailbox and then only fetch “small” and/or URGENT messages.

4.20.1 Parameters

LIST : <filter> [path]
LIST : <MS-sequence numbers> [path]

The use of filter and sequence numbers is the same as for the FETCH command. See section 4.8.1.

4.20.2 Outputs when listing

LISTED: MS-sequence-number list-status
LISTED : NONE

There will be one LISTED-statement for each message found, or one line containing NONE. If the operation fails before the MS sequence number is known, it is set to -1.

Possible list status's written to the response file:

0	(OK) <list-header-file>
1	(Remote operation reject)
2	(Attribute error)
3	(Invalid parameters error)
4	(Range error)
5	(Security error)
6	(Sequence number error)
7	(Service error)

If the status is 0, the LISTED statement gives the name of a list-header-file. It points to a header-file with keywords for requested entry information attributes for the message.

4.21 Delete

The DELETE command deletes messages in the Message Store. You normally delete messages after they have been fetched. It is also possible to delete a message that has not been fetched, for example, after a list operation has shown that you do not want to fetch it. If an error occurs, a message is written to the response file.

4.21.1 Parameters

DELETE : <filter>
DELETE : <MS-sequence-numbers>

The use of filter and sequence numbers is the same as for the FETCH command. See section 4.6.1.

4.21.2 Outputs when deleting

DELETED : MS-sequence-number delete status
DELETED : "NONE"

There will be one DELETED-statement for each deleted message, or one line containing NONE. If the sequence number is unknown because it is not possible to connect a sequence number to a message, the sequence number is set to -1.

Possible delete status’s written to the response file:

0	(OK)
1	(Remote operation reject)
2	(Delete error)
3	(Invalid parameters error)
4	(Range error)
5	(Security error)
6	(Sequence number error)
7	(Service error)

Note: Status 6, Sequence number error, is given if the message is already deleted or an incorrect sequence number is specified

4.22 Include

This is used to include a new command file into the main command file. This is useful if an UA-FI based application shall be used together with MailmaX.400 for Windows.

Before switching to the include command-file, and before switching back to the main command-file again, UA-FI will finish all outstanding operations for the current command-file. If the text-format is changed, the old text-format is used when switching back to the main command file. If a parser error, communication error or fatal error occurs at the inner command-file, the error is also reported to the main response-file.

4.22.1 Inputs

INCLUDE : <filename of command file to be included> <filename of response file>

The <response filename> is Optional. If no <response filename> is specified, UA-FI reports the results to the main-response file. Maximum length of both filenames is 78 characters.

4.22.2 Outputs

INCLUDED : <filename of command file to be included> <filename of response file>

If no response file was specified for the include command file, UA-FI reports:

INCLUDED : <filename of command file to be included> NONE

Maximum length of both filenames is 78 characters.

4.23 WaitAndFetch

The WaitAndFetch command polls, at regular intervals, the MS for new messages fulfilling a certain criteria. If a message is found, it is fetched and the command is finished. This command keeps UA-FI Logged on to the Message Store until a message or report is fetched or the time-out expires.

The purpose of this command may be to submit a request to a information server and wait for the response without disconnecting. An example of use of this function may be using X.400 for Query By Mail.

Note: It is recommended that you use the X.400 address of the message originator in the filter, to avoid UA-FI disconnecting due to receiving an “unexpected” message. In addition to the X.400 address, the filter should include “IPM” (entry type) so that UA-FI not triggers on a received Delivery Report.

4.23.1 Input

WaitAndFetch : <filter> <poll> [“delete”] [path]

The use of <filter> [delete] and [path] is as for FETCH command see section 4.8.1. Sequence numbers are not supported with this command.

<poll> : POLL=<interval>, <time-out>

interval: This is the time in seconds between each poll (list) operation while UA-FI stays connected to the MS. May have values 1-32676.

time-out : This is the maximum time in seconds UA-FI stays connected and polls the MS. This may have values 1-32676.

Example of use in command file:

```
SUBMIT : c:\mydir\out\header1.hdr
WAITANDFETCH : <s=directory;a=telemax;c=no> delivered_message POLL=5,45 delete c:\mydir\in
```

4.23.2 Processing

The WaitAndFetch function regurarly (according to the <interval) polls the Message Store for messages fullfilling the filter criteria until a message or notification has been fetched or time-out has been reached. If the polling/fetching is successful, a fetch-header-file with the fetch-result is generated.

4.23.3 Output from WaitAndFetch

The output to the response file is as for the fetch command.

4.24 Change MS-password

The change MS-password function is used to change the password of a mailbox in the central Message Store. This

This function will only be executed if a new Message Store password is specified on the command line when starting UA-FI. If the function succeeds, the user profile USERS.DAT is updated with the new Message Store password.

If the old MS-password is no longer valid (it may have been changed by the Service provider at the MS side), the connection to the central Message Store will not be established successfully. UA-FI will then do a new connect attempt with the new MS-password. If this operation succeeds, the user profile is updated with the new Message Store password. The MS-password should be quoted.

If an error occurs, the user profile is not updated.

4.24.1 Inputs

The following must be input as part of the command line parameters when

“-password” <new-ms-passw>

New Message Store password, maximum 62 7-bit PS characters. Passed on the command line.

4.24.2 Outputs

“CHANGE-PASSWORD” “:” change-password-status

Possible status’s written to the response file:

0	(OK)
1	(Remote operation reject)
2	(Attribute error)
3	(Auto action request error)
4	(Invalid parameters error)
5	(Security error)
6	(Service error)

5. Header Files

This chapter describes the syntax of the header files and their Keywords. A formal description is given in the Appendix section.

Header files are used with the SUBMIT command to submit Messages and Notifications. Header files are generated by UA-FI when using the FETCH, LIST and WAITANDFETCH command.

5.1 Submit and Receipt of IPM messages

Inter Personal Messages can be outgoing or incoming. The remaining part of this section covers in detail each keyword used the header files.

The keywords PRIMARY, COPY, BCC and BODYPART may be repeated. The functionality provided by the Message Store and the parameter FETCH_ATTRIBUTES attribute in the [Communication] section of the configuration file (<service provider> .PRF), determines which of the optional keywords are included for incoming messages.

5.1.1 Content-type

CONTENT_TYPE = <P2 / P22 / P772>

This keyword defines the content of the Message. On Outgoing messages it must be placed on the top of the header file.

If you use P22 functionality like FTAM BodyPart, general text BodyPart or X.400 88 address attributes (Common Name, Physical Delivery or Directory Name as described in chapter 3), you must set CONTENT_TYPE=P22. This will be noted in the explanation of each keyword below.

If you use military functionality you must set CONTENT_TYPE=P772. This also enables you to use X.400 88 functionality.

This keyword is Optional. Default value is P2

5.1.2 Local ID

LOCAL_ID = "<local-id>"

This keyword specifies the Message ID for outgoing messages. UA-FI also uses the value of this keyword in the Content-ID of the message envelope. The value of this keyword can be used to correlate received Receipt Notifications (RN, NR) for this message, as the value is returned in the <local id> parameter of the Notification. The keyword can also be used to correlate received Delivery Reports (DN, ND) for this message, as it is returned in the <content-id> parameter of the Report. It should therefore be unique on each submitted message. If you send an answer to a received message, the LOCAL_ID of the received message is included (to let the recipient correlate the answer).

This parameter is Mandatory. Maximum length is 64 characters, and must contain only "printable string" characters.

5.1.3 P2_Originator

P2_ORIGINATOR = "<Freeform name and Telephone number of the sender>"

UA-FI will pick the rest of the users own X.400 address from USERS.DAT. This keyword is used when you want to present your Freeform Name and \ or telephone number to the receiver.

This keyword is optional.

5.1.4 Primary Recipient

PRIMARY = "<X.400 address of a primary recipient>" [RE] [RN / NR]

The X.400 address of a primary recipient of the message, used in the message heading. Several PRIMARY recipients may be present in the header file.

RE means that a Reply is requested.

RN means that both a Receipt Notificationn and a Non-Receipt Notification is requested. NR means that only a Non-Receipt Notification is requested.

This keyword is optional, but at least one primary or copy recipient must be present on the message.

5.1.5 Copy recipient

COPY = "<X.400 address of copy recipient>" [RE] [RN / NR]

The X.400 address of a recipient to receive a copy of the message, used in the message heading. Several COPY recipients may be present in the header file. You can use the same requests as for PRIMARY.

This keyword is optional, but at least one primary or copy recipient must be present on the message.

5.1.6 Blind Copy Recipient

BCC == "X.400 address of blind copy Recipient" [RE] [RN / NR]

The X.400 address of a blind copy recipient to receive a copy of the message, used in the message heading. A blind copy recipient is not presented to the other recipients of the message. Several BCC recipients may be present in the header file. You can use the same requests as for PRIMARY.

This keyword is optional. On reception, UA-FI will not present other BCC recipients than yourself in the incoming header file. Be aware that UA-FI will encode a message with BCC as one message. This implies that other systems may be able to display the recipients.

5.1.7 In reply to

IN_REPLY_TO = <message-id>

Specifies the message ID of the message to which **this** message is a Reply. On outgoing messages (i.e. when sending a reply), the value should be taken from the Message_ID field of the incoming message to which you are responding.

This keyword is optional. Maximum length is 64 characters. The keyword may be present on both incoming and outgoing messages.

5.1.8 Subject

SUBJECT = "<subject>"

Specifies the subject of the message.

This keyword is optional. Maximum length is 128 characters. The keyword may be present on both incoming and outgoing messages.

Note: The SUBJECT is encoded using the Teletex (T61) character set. In T61, accented letters occupy 2 characters (the base character and the accent). To be safe: If accented text may occur you should limit the SUBJECT field to 64 characters.

5.1.9 BodyPart

BODYPART = <BodyPart-type> <file-name>[ENCRYPTED] [CDIF] [optional G3fax parameters]

Specifies a BodyPart that is part of this message (see also FTAM BodyPart) . The following <BodyPart- types> may be used when sending messages:

IA5TEXT

8859-X
FORWARDED
BILATERALLY_DEFINED
T61
ACCENTEDTEXT
G3FAX

UNSUPPORTED

The <file-name> field may contain up to 78 characters. On incoming messages, UA-FI generates a unique filename for each received BodyPart (the algorithm for defining the file name is based on the PC clock). The path will be current path unless this is specified different (see FETCH and WAITANDFETCH commands).

The keyword is Optional, i.e. you can submit and receive a message without any BodyParts. There may be several BodyParts in the same header file.

The keyword "ENCRYPTED" is optional and indicates that the body is encrypted . (the parameter SecurityLevel defines the level of Security : See the document *Configuration Guide*).

The keyword "CDIF" is set by UA-FI and indicates that the body is a CDIF bodypart and isn't used for Hash calculation. This tag is added only in case of encrypted bodypart on fetch messages.

*5.1.9.1 **IA5TEXT***

IA5 text (7 bit ASCII) BodyParts is used to send and receive text messages/notes. UA-FI will perform conversion of national characters according to the command file command TEXT-FORMAT (specifies if PCASCII or ANSI) and the conversion tables in the .CHS files.

5.1.9.2 ***8859-x***

On submission you may specify the BodyPart type 8859-1. Which means the character set

8859-1. On reception the character x may have values 1-9. Meaning the ISO character sets 8859-1, 8859-2 etc. No character conversion is performed when these BodyParts are sent or received. As Windows ANSI and ISO 8859-1 are almost alike you may use this for sending Windows ANSI documents. When receiving such documents you may assume that it is Windows ANSI.

5.1.9.3 ***FORWARDED***

FORWARDED is used to specify a message that is forwarded. If the BodyPart-type is "FORWARDED", the BodyPart file shall be a header file with the same syntax as described in this section. Forwarded BodyParts shall contain the following keywords if available: message-id, p2-originator, primary, copy, BCC, in-reply-to, subject, BodyPart.

Using UA-FI, it is possible to nest "FORWARDED" in 3 levels. If more than 3 levels is specified for outgoing messages, UA-FI aborts and presents an exit code and an ABORTED statement in the response-file. For incoming messages, 3 levels are "unpacked" and all lower levels are deleted. The header-file of the lowest level includes a statement

BodyPart = forwarded <deleted>

for each message that has been deleted.

5.1.9.4 ***BILATERALLY_DEFINED***

BILATERALLY_DEFINED BodyPart is used to send binary files and documents, without any additional information. If you want to add information like file name, size and last-modified date, you must send the files as FTAM BodyParts (see the keyword FTAM_BodyPart).

5.1.9.5 ***T61***

T61 (Teletex) BodyParts is used to send text messages/notes containing accented characters and special national characters. When sending the T61 BodyPart, UA-FI by default sets the page length to 55 lines. In the MAXWARE.INI section [Communication] this can be changed by setting the parameter T61LinesPerPage. UA-FI will perform the character mapping from ANSI/PCASCII to the T61 transfer format. If the T.61 body-part is enclosed with <>, UA-FI will not do any conversion.

5.1.9.6 ***ACCENTED TEXT***

ACCENTEDTEXT is used when sending accented letters as IA5 text, a standard commonly used in France. UA-FI encodes the accented letter as the Ia5text string

<accent><BACKSPACE><letter>

as described in the CCITT recommendation T.50 (Appendix I.2.3).

*5.1.9.7 **G3FAX***

Is used to send and receive G3 fax BodyParts. The syntax for G3FAX is:

BODYPART = "G3FAX" <file name> [Number_of_Pages] [Non_Basic_Params]

<File name>: Name of the G3fax BodyPart file. Mandatory. The BodyPart can be on one of two different formats:

> Format 1. A ready encoded fax on ASN1 format (Abstract Syntax Notation 1). When encoding the message, UA-FI will copy the whole content of the file directly into the X.400 message.
>
> Format 2. A file containing a list of filenames (one filename pr line) comprising the content of the G3fax BodyPart, one filename for each page included in the fax BodyPart. The list of filenames is given in ascending order, the first line containing the filename of page 1.

When submitting, UA-FI will check if the ASN1 g3fax tag (the first character is hex A3 or AF) is present in the BodyPart file to see which format is used.

When receiving a G3fax BodyPart, the decoding is done according to the MAXWARE.INI [Communication] section parameter G3FAX_FORMAT:

```
G3FAX_FORMAT = ASN1 | G3FAX
```

Default value is ASN1. If the value is ASN1, the whole BodyPart (including parameters and data) is copied to the BodyPart file encoded as ASN1.

If the value is G3FAX the BodyPart is decoded.

[Number_of_Pages]: Integer in the range 0-32767 specifying the number of pages included in the BodyPart. Only used if Format 2 is used.

[Non_Basic_Params]: "FINE-RESOLUTION". Specifies the resolution of the fax. Only used if Format 2 is used.

5.1.10 UNSUPPORTED

This may be presented as the BodyPart type on incoming messages. This will occur if UA-FI as received a BodyPart that it is unable to decode. Either because it is not supported or because it is incorrectly encoded. The BodyPart file may include X.400 protocol information («strange characters») in addition to the BodyPart data itself.

5.1.11 FTAM_BodyPart

Is used to send binary files and documents, with additional information about the sent file. Because the FTAM BodyPart is only supported in the 1988 version of X.400, this keyword can only be used when CONTENT_TYPE = P22 or P772(see the keyword CONTENT_TYPE above). Syntax:

> FTAM_BodyPart = <Filename=filename> [User_Filename=<the original filename used by the user>] [Application_Reference =object-ID] [User_Visible_String =string] [ENCRYPTED] [CDIF]

The ordering of the parameters is arbitrary. There are no default values for the optional parameters, so parameters which are not present will not be encoded.

Example of FTAM BodyPart:

> FTAM_BODYPART = filename=c:\mydir\out\H-00125.001 user_visible_string="Word 6.0" user_filename=P288Spec.doc application_reference= 1.2.840.113556.4.2

Note: FTAM BodyPart may not be supported by all Service providers and recipients.

The keyword “ENCRYPTED” is optional and indicates that the body is encrypted. (the parameter SecurityLevel defines the level of Security : See the document *Configuration Guide*)..

The keyword “CDIF” is set by UA-FI and indicates that the body is a CDIF bodypart and is not use for Hash calculation. This tag is added only in case of encrypted bodypart by UA-FI while fetching a message.

*5.1.11.1 **Operation when using FTAM BodyPart***

If FTAM_BodyPart is specified on sending, the date and time of last modification will be automatically fetched from the file system. When receiving a FTAM BodyPart, UA-FI will modify the date and time to the original values when the received file is stored to the file system.

Note: UA-FI will not perform any correction for UTCtime on the “date and time of last modification” parameter.

*5.1.11.2 **Filename***

This is the full path and filename of the file to be sent. The parameter is mandatory. Maximum length is 78 characters.

*5.1.11.3 **User_Filename :***

This is the original filename of the BodyPart. The parameter is Optional. Maximum length is 78 characters.

Note: On submission this parameter must be specified if you want this encoded. UA-FI will *not* use the name specified in the filename parameter. The reason for this is that the UA-FI user might be using a temporary BodyPart file with an “incorrect” filename for submission.

*5.1.11.4 **Application_Reference***

This is a numeric identifier known as Object Identifier (OID) which uniquely identifies different message attachment types. OID‘s shall be assigned by the associated Software Vendor (like Microsoft and Lotus).

An organization wishing to register OID‘s for the file/document types, can do so by first obtaining a unique Organization OID from a qualified Registration Authority (ANSI in the US).

If an OID is not known by your application, the file extension and the User_Visible_String might give valuable information for determining the document type.

*5.1.11.5 **User_Visible_String***

This parameter should be used to convey any additional information describing the file type, like "Microsoft Word 6.0 document". Maximum length is 80 characters

5.1.12 P7 Recipient

P7_RECIPIENT = "<X.400 address of the Recipient>" [DN / ND]

Specifies the X.400 address of a Recipient, used on the envelope. There should be one P7_Recipient for each Primary, Copy and BCC recipient.

The Delivery Report requests may be DN for Delivery Notification or ND for Non-Delivery Notification. See the FETCH command for an explanation of DN and ND. If omitted, no reports are requested.

This keyword is mandatory. At least one P7_Recipient must be specified. This keyword is only used on outgoing messages.

5.1.13 Priority

PRIORITY = <priority>

The priority parameter specifies the urgency of the message to the Message Transfer System. Legal priority values are:

NORMAL
NON-URGENT
URGENT

If no priority is set on outgoing messages, "NORMAL" is used.

This keyword is optional. The keyword may be present on both incoming and outgoing messages.

5.1.14 MS entry number

MS_ENTRY_NO = <MS-sequence-number>

The sequence number is used to uniquely identify a message in the Message Store (Mailbox). The value is between 0 and 2147483647 and is generated by the MS.

This keyword is only present on incoming messages.

5.1.15 Message ID

MESSAGE_ID = <message-id>

The message ID uniquely identifies the message content, and may be used as a message reference between the sender and recipient. The ID can contain up to 64 characters that must be in the "printable string" character set, plus an X.400 address. The syntax is:

<<LOCAL_ID>*<X.400 address>>

Example:

MESSAGE_ID = <1325 94/08/22*G=john;S=jones;A=maxware;C=no>

This keyword is only present on incoming messages. When receiving messages generated by another UA-FI user, the "local_id" part is the same as the LOCAL_ID specified in the header file of the sent message (see also Local_ID above).

5.1.16 MTS_ID

MTS_ID = <MTS-identifier>

The MTS_ID uniquely identifies a message within the Message Transfer System. The parameter is generated by the MTS on submission.

Example:

MTS_ID = "NORWAYII R0003000782403620020"

This keyword is only present on incoming messages. When sending messages, the MTS_ID is part of the submit result. Maximum length is 32 characters.

5.1.17 P7 originator

P7_ORIGINATOR = "<X.400 address of the sender>"

Contains the X.400 address of the message originator. Used on the envelope. This parameter is only present on incoming messages. On submission, UA-FI uses the own X.400 address defined in USERS.DAT.

5.1.18 Submission time

SUBMISSION_TIME = <time when the message was sent>

The time when the message was sent by the senders mail system. This parameter is only present on incoming messages. Given on the UTC format, specifying the date, time and offset compared to GMT. The syntax for UTC time is specified in chapter 3. When sending messages, the submission time is part of the submit result.

5.1.19 Creation time

CREATION_TIME = <time when the message was received in the MS>

The time when an incoming message was created in the Message Store. The creation time is only present in incoming messages. Given on the UTC format, specifying the date, time and offset compared to GMT. The syntax for UTC time is specified in chapter 3.

5.1.20 Content length

CONTENT_LENGTH = <length of the message content>

Specifies the length of the message content, in number of bytes.

This keyword is only used on incoming messages.

5.1.21 Deferred-delivery

DEFERRED_DELIVERY_TIME = <desired message delivery time>

Specifies the date and time when the Mail Service shall deliver the message to the Recipients. The keyword DEFERRED_DELIVERY_TIME is optional and is specified on the UTCtime format . The syntax for UTC time is specified in chapter 3.

This keyword is only used on outgoing messages.

5.1.22 Importance

IMPORTANCE = <importance>

Specifies the importance of the message to the Recipient. Legal importance values are:

NORMAL
LOW
HIGH

If no importance is set on outgoing messages, "NORMAL" is used.

This keyword is Optional, and may be present on both outgoing and incoming messages.

5.1.23 Sensitivity

SENSITIVITY = <sensitivity>

Specifies the sensitivity of the message to the Recipient. Legal sensitivity values are:

PERSONAL
PRIVATE
COMPANY-CONFIDENTIAL

This keyword is Optional, and may be present on both outgoing and incoming messages.

5.1.24 Secure X.400 mail

SECURE = <SECURE>

Specifies if the content of the X.400 message (all body parts) has to be signed or encrypted or both while sending it. Possible values are

SIGN

ENCRYPT

SIGN_ENCRYPT

If this tag is not in the header of a message it will be sent unsecured.

Specifies if the content (all body parts) of the received message was signed or encrypted or both and if is the handling of the secured content was successfully. Possible values are:

SIGN [OK/NOK]
ENCRYPT [OK/NOK]
SIGN_ENCRYPT [OK/NOK]

SECURE = SIGN

Header of message submitted:

If SECURE is set to SIGN, and if there is only one recipient, UA-FI will create a MIME containing all body parts, SIGN the MIME and produce a PKCS#7 object that will contain an opaque signature (signature with signed content inside and the certificate).

The message is sent with one FTAM body part containing the PKCS#7 object.

Header of message fetched:

If SECURE is set to SIGN OK, the received message was signed and the integrity check of the content was successful.

If SECURE is set to SIGN NOK, the received message was signed and the integrity check of the content failed.

SECURE = ENCRYPT

Header of message submitted:

If SECURE is set to ENCRYPT, and if there is only one recipient, UA-FI will create a MIME containing all body parts, ENCRYPT the MIME according to the recipient and produce a PKCS#7 object that will contain the encrypted MIME

The message is sent with one FTAM body part containing the PKCS#7 object.

Header of message fetched:

If SECURE is set to ENCRYPT OK, the received message was encrypted and the un-encryption is positive.

If SECURE is set to ENCRYPT NOK, the received message was encrypted and the un-encryption is negative.

SECURE = SIGN_ENCRYPT

Header of message submitted:

If SECURE is set to SIGN_ENCRYPT, and if there is only one recipient, UA-FI will create a MIME containing all body parts, SIGN the MIME and then ENCRYPT the result according to the recipient and produces a PKCS#7 object that will contain the signed and encrypted MIME.

The message is sent with one FTAM body part containing the PKCS#7 object.

Header of message fetched:

If SECURE is set to SIGN_ENCRYPT OK, the received message was signed and encrypted and the un-encryption and the check of the signature are positive.

If SECURE is set to SIGN_ENCRYPT NOK, the received message was signed and encrypted and the un-encryption and the check of the signature are negative.

This keyword is optional, and may be present on both outgoing and incoming messages.

If no SECURE is set on outgoing messages, "UNSECURED" is used.

Remark: As the Secure MIME content is send within a single X.400 FTAM body part, the content-type of the message has to be defined to P22.

5.1.25 MIME_ENCODING

MIME_ENCODING = <MIME ENCODING>

When a message is sent, and configure to be secured within a MIME body (tag SECURE set to SIGN, ENCRYPT or SIGN_ENCRYPT), the tag MIME_ENCODING can be set to define how the MIME is set.

MIME_ENCODING = 0 (no encoding)

If the MIME_ENCODING is set to 0 (no encoding), the MIME isn't encoded. The Content-Transfer-Encoding of the multipart/signed MIME body part (at least one body part) and all includes body parts (also the signature) is set to binary.

MIME_ENCODING = (encoding)

If the MIME_ENCODING is set to 1 (encoding), the MIME is encoded. The Content-Transfer-Encoding of the multipart/signed MIME body part (at least one body part) and all included body parts is 7bits encoded (text in quoted-printable, binary in BASE64)..

5.1.26 DIGEST_ALGO

DIGEST_ALGO =<DIGEST_ALGO>

When a message is sent, and configure to be secured within a MIME body (tag SECURE set to SIGN, ENCRYPT or SIGN_ENCRYPT), the tag DIGEST_ALGO can be set to define the digest algorithm used for the signature.

Value can be:

SHA1
SHA256
SHA384
SHA512

If no digest algorithm is set, "SHA256" is used

5.1.27 CIPHER_ALGO

CIPHER_ALGO =<CIPHER_ALGO>

When a message is sent, and configure to be secured within a MIME body (tag SECURE set to ENCRYPT or SIGN_ENCRYPT), the tag CIPHER_ALGO can be set to define the cipher algorithm used for the encryption

Value can be:

DES3
AES128
AES192
AES256

If no digest algorithm is set, "DES3" is used

5.1.28 SMIME_BODYPART

When a message is sent, and configure to be secured within a MIME body (tag SECURE set to SIGN, ENCRYPT or SIGN_ENCRYPT), the tag SMIME_BODYPART can be set to keep locally the SMIME body part sent.

Syntax:

SMIME_BODYPART = < filename>

The SMIME body part of the sent message is stored in the configured file.

Remarks: on reception of a message with one FTAM body part that contains a secured message content, the tag SMIME_BODYPART in the header has the same syntax as a normal FTAM_BodyPart. The FTAM_BodyPart including the secured message content (S/MIME encoded) will be stored in a file with extension ".001", all the unsecured body part of the content in files with extension ".001-1, .001-2 ..." and if the content was signed the certificate of the signer in a file with the extension ".001-signer".

Example of FTAM Body part for a signed message that contains one attachment

- SECURE = SIGN
- MIME_ENCODING = 0
- DIGEST_ALGO = sha256

```
Content-Type: multipart/signed; protocol="application/pkcs7-signature";
micalg="sha256"; boundary="----277281233AD89DA76A18FFA1699604CD"
Content-Transfer-Encoding: binary

This is an S/MIME signed message

------277281233AD89DA76A18FFA1699604CD
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: binary

A IA5 text.
------277281233AD89DA76A18FFA1699604CD
Content-Type: application/pkcs7-signature; name="smime.p7s"
Content-Transfer-Encoding: binary
Content-Disposition: attachment; filename="smime.p7s"

[binary data : PKCS#7cryptographic message]

------277281233AD89DA76A18FFA1699604CD--
```

Example of FTAM Body part for a signed message that contains one attachment

- SECURE = SIGN
- MIME_ENCODING = 1
- DIGEST_ALGO = sha256

```
Content-Type: multipart/signed; protocol="application/pkcs7-signature";
micalg="sha256"; boundary="----BFEF90812EC8BA6A97AEE1AACD4CD328"

This is an S/MIME signed message

------BFEF90812EC8BA6A97AEE1AACD4CD328
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: quoted-printable

A IA5 text.
------BFEF90812EC8BA6A97AEE1AACD4CD328
Content-Type: application/pkcs7-signature; name="smime.p7s"
Content-Transfer-Encoding: base64
Content-Disposition: attachment; filename="smime.p7s"

MIIFzgYJKoZIhvcNAQcCoIIFvzCCBbsCAQExDTALBglghkgBZQMEAgEwCwYJKoZI
hvcNAQcBoIIDkTCCA40wggL2oAMCAQICAS8wDQYJKoZIhvcNAQEFBQAwbzELMAkG
A1UEBhMCRlIxEjAQBgNVBAcTCUFERE9OTUFJTDESMBAGA1UEChMJQURET05NQUlM
MRIwEAYDVQQDEwlBRERPTk1BSUwxJDAiBgkqhkiG9w0BCQEWFXN1cHBvcnRAYWRk
b25tYWlsLmNvbTAeFw0xNDExMTcxMTI4NThaFw0zNDAxMTYxMTI4NThaMF0xCzAJ
BgNVBAYTAkZSMRIwEAYDVQQKEwlBRERPTk1BSUwxEjAQBgNVBAMTCUFERE9OTUFJ
TDEmMCQGCSqGSIb3DQEJARYXc2Vjc2VuZGVyQGFkZG9ubWFpbC5jb20wgZ8wDQYJ
KoZIhvcNAQEBBQADgY0AMIGJAoGBAMqCz/E55ljuYZdis4BDEZ/4Ab2gzZMcpqKS
mW3XlzqQjgywxgK/nPoZ8fsaD1Zd7oT7RgehwGb7xnWd/+H5w+p2tLU7dVZPyfd2
9oti5jllJ1qQ3FR5cDBayYwvDjqOAGEJZ9KhZ5S+DVZDhainiOH3Vh7kVXZlUUZd
91EaP4JLAgMBAAGjggFJMIIBRTAMBgNVHRMBAf8EAjAAMBEGCWCGSAGG+EIBAQQE
AwIEsDALBgNVHQ8EBAMCBeAwLgYJYIZIAYb4QgENBCEWH0FkZE9uTWFpbCBHZW5l
cmF0ZWQgQ2VydGlmaWNhdGUwHQYDVR0OBBYEFI6TkfArk8zg89P5T17T2WoIkiUR
MIGhBgNVHSMEgZkwgZaAFJrExLxLD2Gr+9TICecgBLph+f0doXOkcTBvMQswCQYD
VQQGEwJGUjESMBAGA1UEBxMJQURET05NQUlMMRIwEAYDVQQKEwlBRERPTk1BSUwx
EjAQBgNVBAMTCUFERE9OTUFJTDEkMCIGCSqGSIb3DQEJARYVc3VwcG9ydEBhZGRv
bm1haWwuY29tggkAtpEl4FswlYswIgYDVR0RBBswGYEXc2Vjc2VuZGVyQGFkZG9u
bWFpbC5jb20wDQYJKoZIhvcNAQEFBQADgYEAVxYPLuC0ZiyrHfdzPu5zPePQRLXl
GCsgw/p5ESYpwx35vlKpXVm8LN/bYY4V4QgDDj+owYuySWlYWae0Wqx8TEun9Wc/
xRZNTwhRyrNvKS3K5+wh5bW5j0syyCIRmp4dkjwBfz8SC5+IPQKsn6U7FRa01vj4
cFqiXF46gDEFQWExggIDMIIB/wIBATB0MG8xCzAJBgNVBAYTAkZSMRIwEAYDVQQH
EwlBRERPTk1BSUwxEjAQBgNVBAoTCUFERE9OTUFJTDESMBAGA1UEAxMJQURET05N
QUlMMSQwIgYJKoZIhvcNAQkBFhVzdXBwb3J0QGFkZG9ubWFpbC5jb20CAS8wCwYJ
YIZIAWUDBAIBoIHkMBgGCSqGSIb3DQEJAzELBgkqhkiG9w0BBwEwHAYJKoZIhvcN
AQkFMQ8XDTE2MTAwNjA0MDQzMlowLwYJKoZIhvcNAQkEMSIEIDoFgbANzrrgB6JR
JrJHnjOYtznMII4ux3bd2Iumr7p5MHkGCSqGSIb3DQEJDzFsMGowCwYJYIZIAWUD
BAEqMAsGCWCGSAFlAwQBFjALBglghkgBZQMEAQIwCgYIKoZIhvcNAwcwDgYIKoZI
hvcNAwICAgCAMA0GCCqGSIb3DQMCAgFAMAcGBSsOAwIHMA0GCCqGSIb3DQMCAgEo
MA0GCSqGSIb3DQEBAQUABIGAgqU74zJtH06tM24sIqJZK0NXqmknpRYIp98ZShkT
5ndH9dJosX+GOkM5vRf76qUWm2OULv85AqDiPvVDtqVdbftzSfMSFU2WS+gTAZz9
1LHNtPsazBPR6oQCLa//boeSKVLzWt3dySaEPemnyPtYJWp2XJC2b9rASJCScMJA
swM=

------BFEF90812EC8BA6A97AEE1AACD4CD328--
```

Example of FTAM Body part for a signed message that contains several attachments

- SECURE = SIGN
- MIME_ENCODING = 0
- DIGEST_ALGO = sha256

```
Content-Type: multipart/signed; protocol="application/pkcs7-signature";
micalg="sha256"; boundary="----056E817A1FC67D00BB36AABD0FCE69C6"
Content-Transfer-Encoding: binary

This is an S/MIME signed message

------056E817A1FC67D00BB36AABD0FCE69C6
Content-Type: multipart/mixed; boundary="KRcVLtsMVwRut512E2TvK26NsGeJSVSQ"
Content-Transfer-Encoding: binary

This a multi-part message in MIME format.
--KRcVLtsMVwRut512E2TvK26NsGeJSVSQ
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: binary

A IA5 text.
--KRcVLtsMVwRut512E2TvK26NsGeJSVSQ
Content-Type: application/octet-stream
Content-Transfer-Encoding: binary
Content-Disposition: attachment; filename="nom_fichier_accentués.txt";
modification-date="Mon, 15 Aug 2016 09:16:38 +0200"
Content-Description: test ftbp avec un nom de fichier avec au moins un caractère
accentué

[binary data …. ]

--KRcVLtsMVwRut512E2TvK26NsGeJSVSQ--

------056E817A1FC67D00BB36AABD0FCE69C6
Content-Type: application/pkcs7-signature; name="smime.p7s"
Content-Transfer-Encoding: binary
Content-Disposition: attachment; filename="smime.p7s"

[binary data : PKCS#7cryptographic message]

------056E817A1FC67D00BB36AABD0FCE69C6--
```

Example of FTAM Body part for an encrypted message or a signed and encrypted message

- SECURE = ENCRYPT or SIGN_ENCRYPT

```
Content-Type: application/pkcs7-mime; smime-type=enveloped-data; name="smime.p7m"
Content-Transfer-Encoding: binary
Content-Disposition: attachment; filename="smime.p7m"

[binary data : PKCS#7cryptographic message]
```

5.1.29 Per Message Indicators

PerMessageIndicators=[AlternateRecipientAllowed]/[DisclosureOfRecipients]/
[ImplicitConversionProhibited]/[ConversionWithLossProhibited]

5.2 Submit and receipt of military messages

This chapter describes parameters for the protocol P772, Military Mail. P772 is a military specification which defines a number of extensions to the basic X.400 (1988) protocol for the service required by military mail. The extensions are fairly small and do not impact on security which is already covered in other parts of the X.400 specifications.

This chapter will only describe the extensions for military mail. Please refer to the chapter «Submit and receipt of IPM messages». Note that the IPM keywords Importance and Sensitivity is not used for military messages. These keywords are however allowed by UA-FI in military messages.

5.2.1 Content-type

The content type for military messages shall be P772. This parameter is mandatory for military messages.

5.2.2 Primary Precedence

P772-PRIMARY-PRECEDENCE =<*precedence*>

precedence is an integer 0-5 with the following meaning:

0	deferred
1	routine
2	priority
3	immediate
4	flash
5	override

This information is provided both as information from originator to recipient and to set the priority to the MTS.

This parameter is optional.

5.2.3 Copy Precedence

P772-COPY-PRECEDENCE=<*precedence*>

The value of the copy Precedence assigned must be the same or a lower value than the Primary Precedence of the same message. This parameter is optional.

5.2.4 Extended Authorization Info

P772-EXTENDED-AUTHORIZATION-INFO=UTCtime

This enables the originating UA to indicate to the recipient the date and time when the message was released. This information shall be present on all officially released military messages. This parameter is optional.

5.2.5 Distribution codes

P772-DISTRIBUTION-CODES = 1-8 *SIC* (Subject Indicator Code)

SIC=3-8 Printable String characters.

This enables the originating UA to give distribution information to a recipient UA. This may be used by the recipient to perform distribution of the message to one or more persons or staff cells. You may have between 1 and 8 SIC’s. This parameter is optional.

5.2.6 Security-Classification

SECURITY-CLASSIFICATION = *classification*

classification is an integer with values 0-256 with the following meaning:

0	unmarked
1	unclassified
2	restricted
3	confidential
4	secret
5	top-secret

This is put on the message envelope and identifies the security level to the MTS.

5.2.7 Military Message BodyPart

BODYPART = MM-MESSAGE

This BodyPart type is used for forwarded military messages. See chapter Submit and receipt of IPM messages for more details about forwarded BodyParts.

5.3 Submit of IP Notifications

There are two types of IP Notifications: Receipt Notification (RN) and Non-Receipt Notification (NR). For each type, there are some common keywords and some keywords specific to the Notification type.

You should only submit RN and NR for a received message if it was requested and the Notification has not automatically been sent by UA-FI (ACKNOWLEDGE_MODE=AUTOMATICALLY). When you receive a message, any requests for RN/NR from you will be specified in the PRIMARY, COPY or BCC keywords which equals your own X.400 address in the received header file (see also Ch. 5.1). You should submit a RN when the end-user has opened/read a received message, and submit a NR if he deleted the message without processing/reading it.

When sending messages, RN/NR is requested after the PRIMARY, COPY or BCC keywords.

5.3.1 Common keywords

*5.3.1.1 **Content_type***

CONTENT_TYPE = P2 / P22

This keyword specifies the content type of the Notification (See also chapter 5.1).This keyword must be placed on the top of outgoing messages.

This keyword is Optional. Default value is P2.

*5.3.1.2 **Type of Notification***

TYPE = RECEIPT / NON-RECEIPT

Specifies if the Notification is a RN or a NR. It must be placed as the second keyword below the CONTENT_TYPE, or on top of the header file if CONTENT_TYPE is not present.

The keyword is Mandatory.

*5.3.1.3 **Local_ID***

LOCAL_ID = "<Local ID>"

This keyword specifies the Message ID for the outgoing Notification. Mandatory keyword. See also chapter 5.1

*5.3.1.4 **P7 Recipient***

P7_RECIPIENT = "<X.400 address of the recipient of the Notification>"

Specifies the X.400 address of the recipient of the Notification, used on the envelope. Mandatory keyword. See also chapter 5.1

*5.3.1.5 **Subject_IPN***

SUBJECT-IPN = <message ID of the messages for which this Notification is sent>

Specifies the Message ID of the message you have received, and for which this notification is sent. You fetch the value for this keyword from the keyword MESSAGE_ID on the received message (see Ch. 5.1). This keyword is used by the receiver of the Notification to correlate the Notification with the originally sent message.

The keyword is Mandatory.

*5.3.1.6 **P2_Originator***

P2_ORIGINATOR = "<X.400 address of the sender >"

The P2/P22 X.400 address of the sender of the Notification. Optional keyword. See also chapter 5.1.

5.3.2 Keywords specific to Receipt Notification

*5.3.2.1 **Receipt_Time***

RECEIPT_TIME = UTC time

This is the time when the original message was processed by the user/application. Mandatory parameter.

*5.3.2.2 **Acknowledgement_mode***

ACKNOWLEDGE_MODE = MANUALLY / AUTOMATICALLY

Manually means that the original message was read by an end user before the Notification was sent.

Automatically means that the message is processed on behalf of the end user by an application. This parameter is optional.

*5.3.2.3 **Supplemenatary_Info.***

SUPPLEMENTARY_INFO = "<additional text>"

Is used to add additional information about the receipt of the message. Maximum length is 200 characters. This keyword is optional.

5.3.3 Keywords specific to Non-Receipt Notification

5.3.3.1 ***Reason***

REASON = DISCARDED or AUTOFORWARDED

Specifies whether the message was discarded by the user or his system without being read, or if it was autoforwarded by the users system. The keyword is Mandatory.

5.4 EDI-Messages (Pedi)

5.4.1 Content-type

CONTENT_TYPE = PEDI

This keyword specifies the content type of the Message. On outgoing messages this must be placed on the top of the message. Default value is P2. To send Pedi Messages you **must** set CONTENT_TYPE = PEDI.

The parameter is Optional.

5.4.2 Local ID

LOCAL_ID = "<Local ID>"

This keyword specifies the Message ID for outgoing messages. UA-FI also uses the value of this keyword in the Content-ID of the message envelope. This parameter can be used to correlate received EDI Notifications (PN,NN,FN) for this message, as it is returned in the <local id> parameter of the notification. The parameter can also be used to correlate received Delivery Reports (DN, ND) for this message, as it is returned in the <content-id> parameter of the report. It should therefore be unique on each submitted message.

This parameter is Mandatory. Maximum length is 64 characters, and must contain only "printable string" characters.

5.4.3 Primary Recipient

PRIMARY = "<X.400 address of primary Recipient>" [PN NN FN]
[Interchange_Recipient =<interchange recipient id> Recipient_Qualifier = <Identification code qualifier>]] [Responsibility_Passing = TRUE / FALSE]

The X.400 address of a primary recipient of the message, used in the heading of the EDI message. Several PRIMARY recipients may be present in the header file. This parameter is optional, and may be present on both outgoing and incoming messages.

PN means that Positive Notification PN is requested. NN means that Negative Notification NN is requested.FN means that a Forwarded Notification FN is requested.

Interchange_Recipient: is the unique Identification of the EDI Recipient, used in the EDI Interchange. Maximum length is 35 characters. Optional parameter

Recipient_Qualifier: is the qualifier associated with the Interchange_Recipient ID. Maximum length is 4 characters. Optional parameter

Responsibility_Passing: specifies if forwarding of EDI responsibility for this message is allowed. Default value is false. Optional parameter

5.4.4 Copy recipient

COPY = "<X.400 address of a copy Recipient>" [PN / NN /FN]
[Interchange_Recipient =<interchange recipient id> Recipient_Qualifier = <Identification code qualifier>]] [Responsibility_Passing = TRUE / FALSE]

The X.400 address of a copy recipient of the message, used in the heading of the EDI message. Several COPY recipients may be present in the header file. This parameter is optional, and may be present on both outgoing and incoming messages.

See keyword PRIMARY above for further details.

The keyword may be present on both outgoing and incoming messages. Several COPY may be present on a message. The keyword is not mandatory.

5.4.5 EDI BODYPART TYPE

EDI_BODYPART_TYPE = <EdiSyntax> <charset>

This keyword specifies the EDI syntax (e.g. EDIFACT) used in the EDI Interchange being sent in this EDI message. It also specifies the character set used in the Interchange.

<EdiSyntax>: the syntax may have one of the values "EDIFACT" / "ANSIX12" / "UNTDI" / "PRIVATE" /"UNDEFINED". The maximum length is 32 characters.

<charset> may have one of the values "T61" / "OCTET" / "ISO646". The maximum length is 32 characters. If charset is enclosed with brackets <>, no character conversion will be performed for national characters. Character conversion will be as for IA5 when ISO646 is used.

This keyword is optional. The keyword may appear both on outgoing and incoming messages. Maximum length on both *syntax* and *charset* is 32 characters.

Note: If this keyword is not present, the default values EDIFACT ISO646 is used by UA-FI.

The Syntax/Charset combination constitutes an object identifier (OID) that must be specified in the configuration file MAXWARE.INI. The object identifier is a unique identification of the BodyPart type used by UA-FI when encoding/decoding the message.

The MAXWARE.INI parameter EDI_format_n is used to define the object identifiers. It is put here for reference. It shall be put in a section named [PEDIFormats].

EDI_format_n = syntax, charset1:object-d, charset:object-id, charset2:object-d, charset:object-id......

Example.:

```
[PEDIFormats]

Format_1=EDIFACT,ISO646:2.6.7.11.0,T61:2.6.7.11.1,OCTET:2.6.7.11.2

Format_2=ANSIX12,ISO646:2.6.7.11.3,T61:2.6.7.11.4,OCTET:2.6.7.11.5,EBCDIC:2.6.7.11.6
```

5.4.6 Edi_Message Type

EDI_MESSAGE_TYPE = "<type 1>“ "<type 2> "<type 3>“ .....

This keyword specifies the the type of EDI-transactions (like invoice or purchase order) being sent in the EDI Interchange in this EDI message. Several types may be specified separated by spaces, like:

EDI_MESSAGE_TYPE = "ORDERS" "INVOIC" "CONFIR"

This keyword is Optional, and the maximum length is 6 characters for each type

5.4.7 Interchange_Sender

INTERCHANGE_SENDER = <id-code> [id-code-qualifier]

This keyword specifies the Interchange Sender of the EDI Interchange being sent in this EDI message, and is Optional.

Id-code: is the unique Identification of the EDI Sender, used in the EDI Interchange. Maximum length is 35 characters.

Recipient_Qualifier: is the qualifier associated with the Interchange Sender. Maximum length is 4 characters.

5.4.8 BodyPart

BODYPART = EDI <file-name>

Specifies the file name of the BodyPart file containing the EDI Interchange. There can only be one EDI BodyPart in a EDI message.

The file name of the BodyPart file may contain up to 78 characters. On incoming messages, UA-FI generates a unique file name for the EDI BodyPart. The path will be the current path unless other is specified (see the FETCH command).

In addition the "BodyPart type" UNSUPPORTED is used on incoming messages to denote a BodyPart type that is not supported by UA-FI or incorrect encoded. This BodyPart may include X.400 protocol information in addition to the BodyPart data itself.

5.4.9 P7 Recipient

P7_RECIPIENT = "<X.400 address of the Recipient>" [DN] [ND]

Specifies the X.400 address of a Recipient, used on the envelope. There should be one P7_RECIPIENT for each PRIMARY, COPY and BCC recipient.

The Delivery Report requests may be DN for Delivery Report or ND for Non-Delivery Report. See the FETCH command for an explanation of DN and ND. If omitted, no reports are requested.

This keyword is mandatory, at least one P7_RECIPIENT must be specified. This keyword is only used on outgoing messages.

5.4.10 Priority

PRIORITY = <priority>

The priority parameter specifies the urgency of the message to the Message Transfer System. Legal priority values are:

NORMAL
NON-URGENT
URGENT

If no priority is set on outgoing messages, "NORMAL" is used.

This parameter is optional. The keyword may be present on both incoming and outgoing messages.

5.4.11 MS entry number

MS_ENTRY_NO = <MS-sequence-number>

The sequence number is used to uniquely identify a message in the Message Store (Mailbox). The value is between 0 and 2147483647 and is generated by the MS.

This keyword is only present on incoming messages.

5.4.12 Message ID

MESSAGE_ID = <message-id>

The message ID uniquely identifies the message content, and may be used as a message reference between the sender and recipient. The ID can contain up to 64 characters that must be in the "printable string" character set, plus an X.400 address. The syntax is:

<<LOCAL_ID>*<X.400 address>>.

Example:

MESSAGE_ID = <1325 94/08/22*G=john;S=jones;A=maxware;C=no>

This parameter is only present on incoming messages. When receiving messages generated by another UA-FI user, the “local_id” part is the same as the LOCAL_ID specified in the header file of the sent message (see also Local_ID above).

5.4.13 MTS_ID

MTS_ID = <MTS-identifier>

The MTS_ID uniquely identifies a message within the Message Transfer System. The parameter is generated by the MTS on submission.

Example:

MTS_ID = "NORWAYII R0003000782403620020"

This parameter is only present on incoming messages. When sending messages, the MTS_ID is part of the submit result. Maximum length is 32 characters.

5.4.14 Receipt_To

RECEIPT_TO = “<X.400 address for where to send EDIN for this message>“ [message-id]

This keyword specifies the Recipient to whom EDIN (EDI Notification) for this message shall be sent and the message ID of the original message. This information is present when you receive a forwarded message where the EDI responsibility is also forwarded to you (See also the chapter on header files for EDI Notifications below).

If you send a EDIN for this forwarded message, send it to the recipient specified by this keyword and set the “SUBJECT_EDIM” to the value of [message ID]. This makes it possible for the originator of the original message to correlate the EDIN.

Note: This version of UA-FI can not forward EDI messages, so the keyword is only present in incoming messages.

5.4.15 First-Recipient

FIRST_RECIPIENT = "<X.400 address of first recipient in the forwarding chain>"

This keyword is only present on incoming forwarded messages where the EDI responsibility is also forwarded to you, and specifies the X.400 address of the first recipient in the forwarding chain.

When you send an EDIN for the forwarded message, set the “FIRST_RECIPIENT” to the value of the <X.400 address of first recipient in the forwarding chain>. This makes it possible for the originator of the original message to correlate the EDIN.

Note: This version of UA-FI can not forward EDI messages, so the keyword is only present in incoming messages.

5.4.16 P7 Originator

P7_ORIGINATOR = "<X.400 address of the sender>"

Contains the X.400 address of the message originator. Used on the envelope. This parameter is only present on incoming messages. On submission, UA-FI uses the own X.400 address defined in USERS.DAT.

5.4.17 Submission time

SUBMISSION_TIME = <time when the message was sent>

The time when the message was sent by the senders mail system. This parameter is only present on incoming messages. Given on the UTC format, specifying the date, time and offset compared to GMT. The syntax for UTC time is specified in chapter 3.

5.4.18 Creation time

CREATION_TIME = <time when the message was received in the MS>

The time when an incoming message was created in the Message Store. The creation time is only present in incoming messages. Given on the UTC format, specifying the date, time and offset compared to GMT. The syntax for UTC time is specified in chapter 3.

5.4.19 Content length

CONTENT_LENGTH = <length of the message content>

Specifies the length of the message content, in number of bytes.

This parameter is only used on incoming messages.

5.4.20 Deferred-delivery

DEFERRED_DELIVERY_TIME = <desired message delivery time>

Specifies the date and time when the Mail Service shall deliver the message to the Recipients. The keyword DEFERRED_DELIVERY_TIME is optional and is specified on the UTCtime format . The syntax for UTC time is specified in chapter 3.

This parameter is only used on outgoing messages.

5.5 Submission of EDI Notifications

EDI Notifications (EDIN) are used to provide end-to-end acceptance of responsibilty for received EDI messages. EDI Notifications take three forms:

> Positive Notification (PN). The recipient accepts responsibilty for the EDI message. An UA accepts EDI responsibility if and only if it sends a PN EDIN for the received message.
>
> Negative Notification (NN). The recipient does not accepts responsibilty for the EDI message. An UA refuses EDI responsibility if and only if it sends a NN EDIN for the received message.
>
> Forwarded Notification (FN). The recipient forwarded both the EDI message and the request for “acceptance of responsibility” to another recipient. The new recipient may choose to accept/not accept the message, and may also forward it.

You should submit PN/NN EDIN if and only if this is requested in the received message.

Note: This version of UA-FI can not forward EDI messages nor send FN.

For each EDIN Notification type, there are some common keywords and some keywords specific to the Notification type.

5.5.1 Common keywords

*5.5.1.1 **Content_type***

CONTENT_TYPE = PEDI

This keyword must be placed on the top of outgoing header file for the EDIN and describes the message content type to the MHS. See also chapter 5.1.

This keyword must always be present when sending EDINs.

*5.5.1.2 **Type***

TYPE = EDI_RECEIPT / EDI-NON_RECEIPT

The keyword specifies whether the EDIN is a PN or a NN, and must be placed as the second keyword (right below the field CONTENT_TYPE) in the header file. Possible values:

EDI_RECEIPT is used for Positive Notification PN.

EDI-NON_RECEIPT is used for Negative Notification NN.

*5.5.1.3 **Local_ID***

LOCAL_ID = “<local id>“

Mandatoy parameter. See Ch. 5.1

*5.5.1.4 **P7_recipient***

P7_RECIPIENT = “<X.400 address of the recipient of the EDIN>“

This keyword specifies the X.400 address of the recipient of this EDIN. You normally (if the message you send the EDIN for was **not** forwarded) set the “P7_RECIPIENT” to the value of the “P7_ORIGINATOR” found in the header file of the message for which this EDIN is sent.

When you send an EDIN for a received forwarded EDI message, set the “P7_RECIPIENT” to the value of the “EDIN_RECEIVER” found in the header file for the message for which this EDIN is sent.

The keyword is Mandatory.

*5.5.1.5 **Subject_EDIM***

SUBJECT_EDIM_EDIM = <message-id>

This keyword specifies the message-id of the original EDI message for which this EDIN is sent. The value should be taken from the RECEIPT_TO keyword of the incoming message, if present. If the RECEIPT_TO is not present, the value is taken from the keyword MESSAGE_ID.

This SUBJECT_EDIM is used by the receiver of the EDIN to correlate the EDIN with the corresponding message. The keyword is mandatory.

See Ch. 5.1 for more details of message-id.

*5.5.1.6 **From***

FROM= = “<X.400 address of the sender of the EDIN>“

The Pedi X.400 address of the sender of the EDIN, used in the heading of the EDIN.

This keyword is optional. UA-FI will by default use the users own X.400 address as defined in USERS.DAT .

*5.5.1.7 **First_Recipient***

FIRST_RECIPIENT = "<X.400 address of first recipient in the forwarding chain>"

When you send an EDIN for a received forwarded EDI message, set the “FIRST_RECIPIENT” to the value of the “FIRST_RECIPIENT” of the header file of the message for which this EDIN is sent. This makes it possible for the originator of the original message to correlate the EDIN.

*5.5.1.8 **Receipt_Time***

RECEIPT_TIME = <the time when the EDIN was generated>

Given on the UTC format, specifying the date, time and offset compared to GMT. The syntax for UTC time is specified in chapter 3.

5.5.2 Keywords special to Positive Notifications

*5.5.2.1 **Supplementary_Information***

SUPPLEMENTARY_INFORMATION = "<additional textual information>"

This keyword contains additional information about the Positive Notification, and is Optional. Maximum length is 200 characters.

5.5.3 Keywords special to Negative Notifications

*5.5.3.1 **Reason***

REASON = <nn-reason> [nn-diagnostic]

This keyword specifies the reason, and optionally an additional diagnostic, for why responsibilty is **not** accepted for the EDI message for which this EDIN is sent. The keyword is Mandatory when sending NN EDINs.

Possible nn-reason and nn-diagnostic codes are defined in the Appendix section. Both nn-reason and nn-diagnostic are integers.

5.6 Recipient file syntax

The Recipient file is used when the response file contains the submit error "Recipient improperly specified", i.e. a SUBMITTED statement with status 5 (Recipient improperly specified). It contains one P7_RECIPIENT for each recipient having an X.400 address with invalid format. The file syntax for the P7 recipient file is as follows:

P7_RECIPIENT = "<X.400 address of Recipient>"

The keyword appears once for each P7 Recipient.

5.7 List result syntax

The list result file contains the attributes returned by the MS as a result of the LIST operation. Which attributes to be requested is specified in the parameter P7_LIST_ATTRIBUTES in the [Communication] section of MAXWARE.INI.

A list result header file may contain these keywords:

<MS_ENTRY_NO>

[SUBJECT]

<P7_ORIGINATOR>

[MESSAGE_ID]

[CONTENT_LENGTH]

[PRIORITY]

[SUBMISSION_TIME]

[CREATION_TIME]

[P2_ORIGINATOR]

[CONTENT_TYPE]

[MTS_ID]

These keywords are described in chapter 5.1.

6. Configuration and customer installation

6.1 Configuration files

When you start UA-FI, it opens three configuration files for reading user and communication parameters. See the document *Configuration Guide* for a detailed description of these files.

The user specific parameters (name and password) is located in the file USERS.DAT. The USERS.DAT is an encrypted file and is edited by using the commands CreateUser and ModifyUser.

The communication parameters are located in the files called MAXWARE.INI and <service profile>.PRF. MAXWARE.INI contains common parameters (like modem parameters and COM port settings). The <service profile>.PRF contains Mail Service specific parameters (like addresses to the MS).

6.2 Special UA-FI configuration parameters

The special UA-FI configuration file keywords are described below. You may, if necessary, edit or add one or more of the configuration keywords to the in an ASCII editor.

MAX_FETCH = <number>

Specifies the maximum number of messages to be fetched before a Message Store delete operation is invoked on the fetched message. Range from 1 to 32767. The default is 5. Located in <service profile>.PRF.

Note: In the standard service profiles provided by MaXware, this parameter is set to 1. This is done to reduce possibility to receive the same message twice in cases of aborted connections.

ACKNOWLEDGE_MODE = <mode>
Specifies whether receipt Notifications shall be generated automatically by UA-FI or not. Selectable modes are **AUTOMATICALLY OR MANUALLY**. The default is AUTOMATICALLY. Located in MAXWARE.INI.

Note: If you run an application using UA-FI on the same directory as MailmaX.400 and wants UA-FI to automatically generate receipt-Notifications, the application should set and reset the value for each run (because MailmaX.400 uses the value manually).

MESSAGE_LANGUAGE = <ISO two-letter country code>
The message language is used to specify the language of the error message file MAX??.MSG, where ?? denotes the two-letter country code. Default value is EN. Located in MAXWARE.INI.

6.3 Messages during communication

If the -v parameter is used on the command line when UA-FI is started, progress information is displayed on the screen.

6.4 Customer installation

Your application installation job should also install the UA-FI files. When the UA-FI files are copied to the correct directory on the user's PC, some communication parameters must be set, and if it is a first time installation a user definition must be created. This should be done via integrated management/administration screens in the application using UA-FI.

It is also possible to edit the configuration files in a simple text editor and use a .BAT file with the CreateUser command to create a new user definition.

6.4.1 First time installation

These parameters should be present in the [Communication] section of MAXWARE.INI file on the installation set, and set correctly:

ServiceProfile

Message_Languague

For the dial-up (APS) version only:

Device (COM port)

Baudrate (modem speed)

Outside_Line

Modem_Init_String

Modem_Dialing_Prefix

Modem_Hangup_Prefix

Modem_Init_String

Then a user definition must be created in USERS.DAT:

It is done by using the UA-FI command CreateUser.

For a detailed description of these files and parameters, see the document "Configuration Guide".

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Appendix Section

6.5 Appendix A: Programming examples

This chapter contains some programming examples which uses most of the UA-FI functions. Other example files are on the program diskette.

6.5.1 Create a new user

Before you can start communicating with UA-FI, a user must be defined in the USERS.DAT file. Use the CreateUser command with the address information you got from your service provider.

The command file create.cmd:

```
createuser : "test" "hot" "c=no;a=telemax;o=maxware;s=test1" "MS-Passw" "NO"
```

Starting the UA-FI program:

```
UA-FI create.cmd create.rsp
```

6.5.2 Send a message

The example shows how to send a message with a text note and one attachment. The command file consists of a single SUBMIT keyword to identify the header file for the message:

```
SUBMIT : header1.hdr
```

The header file header1.hdr:

```
LOCAL_ID = "MAX0916180193"
SUBJECT = "New version of the UA-FI 3.3 manual"
PRIMARY = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO" RE RN
COPY = "g=TOR MARTIN;s=UV;o=MAXWARE;a=TELEMAX;c=NO" RN
P2_ORIGINATOR = "g=PER;s=ARLOV;o=WORDFIXERS;a=TELEMAX;c=NO"
P7_RECIPIENT = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO" DN
P7_RECIPIENT = "g=TOR MARTIN;s=UV;o=MAXWARE;a=TELEMAX;c=NO" DN
BODYPART = ia5text per1.txt
BODYPART = bilaterally_defined manual.doc
PRIORITY = urgent
```

This header file submits a message from Per Arlov to Frode Hernes with a copy sent to Tor Martin Uv. The message contains the text file per1.txt, and the file MANUAL.DOC is attached as a binary document.

BodyPart file per1.txt:

```
Dear Frode and Tor Martin!

Enclosed is the update of the UA-FI 3.3 manual. I have incorporated your latest comments. It
is written in Word for Windows 6.0. Could you take a look at it?

Sincerely, Per
```

The BodyPart file is an ia5text file, which means that it can only contain ASCII characters.

Starting the UA-FI program:

```
ua-fi -v command1.cmd respons1.rsp per mypassword
```

"mypassword" is the local password for the user "Per". Since no path is specified, UA-FI uses the files MAXWARE.INI and USER.DAT on the %MAILMAX% directory.

The response file respons1.rsp will be:

```
LOGON : "per" 0 (OK)
SUBMITTING : "MAX0916180193" ("New version of the UA-FI 3.3 manual")
SUBMITTED : "MAX0916180193" 0 (OK) "NORWAY 930713122214N"
930713122214+0200
```

The status 0 (OK) indicates that the message was successfully submitted. If an error occurred, there would be an error message in the response instead.

6.5.3 List messages in the Mailbox

The example shows how to list all messages that have been delivered to the Mailbox and retrieve descriptive information (like subject and originator) from them. The command file consists of a single LIST keyword with a filter:

```
LIST : delivered_message
```

Starting the UA-FI program:

```
ua-fi -v command2.cmd respons2.rsp frode frodepw
```

The response file respons2.rsp will be:

```
LOGON : "frode" 0 (OK)
LISTED : 76 0 (OK) BJYHPCHA.hdr
LISTED : 77 0 (OK) BJYHPCIA.hdr
```

The response file shows that user Frode was logged on, and that there were two messages for him in the Mailbox.

The list-header file BJYHPCHA.hdr

```
MS_ENTRY_NO = 76
SUBJECT = "New version of the ua-fi 2.1 manual"
P7_ORIGINATOR = "g=PER;s=ARLOV;o=WORDFIXERS;a=TELEMAX;c=NO"
MESSAGE_ID = <MAX0916180193*g=Per;s=Arlov;o=Wordfixers;a=Telemax;c=No>
CONTENT_LENGTH = 2568
PRIORITY = URGENT
SUBMISSION_TIME = 930713122214+0200
CREATION_TIME = 930713102216Z
```

The list-header file BJYHPCIA.hdr

```
MS_ENTRY_NO = 77
SUBJECT = "Special offer only for you"
P7_ORIGINATOR = "g=John;s=Salesman;o=Personal Products;a=Telemax;c=NO"
MESSAGE_ID = <751 93/07/13*g=John;s=Salesman;o=Personal Products;a=Telemax;c=No>
CONTENT_LENGTH = 227
PRIORITY = NORMAL
SUBMISSION_TIME = 930713123623+0200
CREATION_TIME = 930713103626Zv
```

From the information in the two header files it is possible to see that the second one is a "junk mail letter" with normal priority, while the first letter has the priority "urgent".

6.5.4 Fetch a specific message and delete “junk mail”

The example shows how to fetch a specific messages and delete it when fetched. The example also deletes the "junk mail" message with MS-sequence-number 77:

```
FETCH : 76 delete

DELETE : 77
```

Starting the UA-FI program:

```
ua-fi -v command3.cmd respons3.rsp frode frodepw
```

The response file respons3.rsp will be:

```
Logon : "frode" 0 (OK)
Deleted : 77 0 (OK)
Fetching : 76
Fetched : 76 0 (OK) BJYHRXNA.hdr
Deleted : 76 0 (OK)
```

The response file shows that user Frode has been logged on, message number 77 has been deleted from the Mailbox, message 76 is fetched and afterwards deleted from the Mailbox.

The fetched header file BJYHRXNA.hdr

```
MS_ENTRY_NO = 76
MESSAGE_ID = <MAX0916180193*g=Per;s=Arlov;o=Maxware;a=Telemax;c=NO>
P2_ORIGINATOR = "g=PER;s=ARLOV;o=WORDFIXERS;a=TELEMAX;c=NO"
PRIMARY = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO" RE RN
COPY = "g=TOR MARTIN;s=UV;o=MAXWARE;a=TELEMAX;c=NO" RN
SUBJECT = "New version of the UA-FI 3.3 manual"
BODYPART = IA5TEXT BJYHRXNA.001
BODYPART = BILATERALLY_DEFINED BJYHRXNA.002
PRIORITY = URGENT
P7_ORIGINATOR = "s=UA-API1;o=MAXWARE;a=TELEMAX;c=NO"
SUBMISSION_TIME = 930713122214+0200
CREATION_TIME = 930713102216Z
CONTENT_LENGTH = 2568
```

6.5.5 Forward a message

```
SUBMIT : HEADER4.HDR
```

The header file header4.hdr:

```
local_id = "MAX1443180193"
p2_originator = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO"
primary = "g=BJORN;s=OPPEDAL;o=MAXWARE;a=TELEMAX;c=NO"
subject = "UA-FI 3.3 manual from PER"
BodyPart = ia5text frode1.txt
BodyPart = forwarded body4.fwd
P7_recipient = "g=BJORN;s=OPPEDAL;o=MAXWARE;a=TELEMAX;c=NO" DN
priority = normal
```

This header file shows that Frode Hernes forwards the message he has received to the user Bjorn Oppedal.

BodyPart file frode1.txt:

```
Bjørn - could you have a look at this, please?

Frode
```

The BodyPart file body4.fwd

```
MESSAGE_ID = <MAX0916180193*g=Per;s=Arlov;o=Maxware;a=Telemax;c=NO>
P2_ORIGINATOR = "g=PER;s=ARLOV;o=WORDFIXERS;a=TELEMAX;c=NO"
PRIMARY = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO" RE RN
COPY = "g=TOR MARTIN;s=UV;o=MAXWARE;a=TELEMAX;c=NO" RN
SUBJECT = "New version of the UA-FI 3.3 manual"
BODYPART = IA5TEXT BJYHRXNA.001
BODYPART = BILATERALLY_DEFINED BJYHRXNA.002
PRIORITY = URGENT
```

Starting the UA-FI program:

```
ua-fi -v command4.cmd respons4.rsp frode frodepw
```

The response file respons4.rsp

```
Logon : "frode" 0 (OK)
Submitting : "MAX1443180193" ("UA-FI 3.3 manual from PER")
Submitted : "MAX1443180193" 0 (OK) "NORWAY 930713135454M" 930713135454+0200
```

6.5.6 Fetch all messages and Notifications

```
FETCH : all
```

This command fetches all messages and delivery reports.

Starting the UA-FI program:

```
ua-fi -v command5.cmd respons5.rsp bjorn bjornpw
```

The response file respons5.rsp

```
Logon : "bjorn" 0 (OK)
Fetching : 386
Fetched : 386 0 (OK) BJYHVCBA.hdr
```

The header file BJYHVCBA.hdr

```
MS_ENTRY_NO = 386
MESSAGE_ID = <MAX1443180193*G=Frode;S=Hernes;O=Maxware;A=Telemax;C=No>
P2_ORIGINATOR = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO"
PRIMARY = "g=BJORN;s=OPPEDAL;o=MAXWARE;a=TELEMAX;c=NO"
SUBJECT = "UA-FI 3.3 Manual from PER"
BODYPART = IA5TEXT BJYHVCBA.001
BODYPART = FORWARDED BJYHVCBA.002
PRIORITY = NORMAL
P7_ORIGINATOR = "g=FRODE;s=HERNES;o=MAXWARE;a=TELEMAX;c=NO"
SUBMISSION_TIME = 930713135454+0200
CREATION_TIME = 930713115456Z
CONTENT_LENGTH = 2827
```

The header file shows that there is a forwarded BodyPart file BJYHVCBA.002.

The forwarded BodyPart file BJYHVCBA.002

```
MESSAGE_ID = <MAX0916180193*G=per;S=arlov;O=wordfixers;A=telemax;C=no>
P2_ORIGINATOR = "G=per;S=arlov;O=wordfixers;A=TELEMAX;C=NO"
PRIMARY = "G=frode;S=hernes;O=MaXware;A=TELEMAX;C=NO" RE RN
COPY = "G=tor martin;S=uv;O=MaXware;A=TELEMAX;C=NO" RN
SUBJECT = "New version of the ua-fi 2.1 manual"
BODYPART = IA5TEXT BJYHVCBA.003
BODYPART = BILATERALLY_DEFINED BJYHVCBA.004
```

This BodyPart file contains references to the two BodyPart files that make up the forwarded message: BJYHVCBA.003 and BJYHVCBA.004.

6.5.7 Submission of Non-Receipt Notification

```
TYPE = NON-RECEIPT
LOCAL_ID = "8626 96/03/27"
P7_RECIPIENT = "S=support;O=maxware;A=telemax;C=no;"
SUBJECT_IPN = <8624 96/03/27*S=support;O=maxware;A=telemax;C=no;>
REASON = Discarded
```

This is the generation of NR message to the message with
Message_ID = <8624 96/03/27*S=support;O=maxware;A=telemax;C=no;>
Received from S=support;O=maxware;A=telemax;C=no.

6.5.8 Fetch Receipt and Non-Receipt Notifications only

```
FETCH : IPN
```

This command file fetches all Receipt Notifications and all Non-Receipt Notifications.

Starting the UA-FI program:

```
ua-fi -v command6.cmd respons6.rsp per perpw
```

The response file respons6.rsp

```
Logon : "per" 0 (OK)
Fetching : 65
Receipt : 65 "MAX0916180193" "g=Frode;s=Hernes;o=Maxware;a=Telemax;c=NO"
930117161411+0100
```

This response file shows that a Receipt Notification has been fetched from the Mailbox, telling that the original message with Message-ID "MAX0916180193" has been read by Frode Hernes.

6.5.9 Send a signed message

The example shows how to send a sign message with mime encoding and with a text note and one attachment. The command file consists of a single SUBMIT keyword to identify the header file for the message:

```
SUBMIT : header1.hdr
```

The header file header1.hdr:

```
CONTENT_TYPE = P22
LOCAL_ID = "securemail0001"
PRIMARY = "C=FR;A=ATLAS;P=EXTERNALX400;O=SECURE;S=SENDER"
SUBJECT = "SEND_SIGNED MESSAGE"
BODYPART = ia5text test.txt
FTAM_BODYPART = FILENAME="FILENAME.BDY" USER_FILENAME="FILE.TXT"
        USER_VISIBLE_STRING="VISIBLE STRING" APPLICATION_REFERENCE=1.2.3.4.5.6
P7_RECIPIENT = "C=FR;A=ATLAS;P=EXTERNALX400;O=SECURE;S=RECEIVER"
PRIORITY = NORMAL
IMPORTANCE = NORMAL
SENSITIVITY = PERSONAL
SECURE = SIGN
MIME_ENCODING = 1
```

This header file submits a message to Receier. The message contains the text file test.txt, and the file filename.bdy is attached as a ftam bodypart with an original name of file.txt. The message will be signed and mime encoded

Starting the UA-FI program:

```
ua-fi -v command1.cmd respons1.rsp per mypassword
```

"mypassword" is the local password for the user "Per". Since no path is specified, UA-FI uses the files MAXWARE.INI and USER.DAT on the %MAILMAX% directory.

The response file respons1.rsp will be:

```
LOGON : "PER" 0 (OK)
SUBMITTING : "securemail0001" ("SEND_SIGNED MESSAGE ")
SUBMITTED : "securemail0001" 0 (OK) "ISOCOR-57f4a1e557f4a0fc-GT" 161006070543+0200
```

The status 0 (OK) indicates that the message was successfully submitted. If an error occurred, there would be an error message in the response instead.

6.5.10 Fetch a signed and encrypted message

The example shows how to fetch a specific message that is signed and encrypted:

```
FETCH : 76
```

Starting the UA-FI program:

```
ua-fi -v command3.cmd respons3.rsp per mypassword
```

The response file respons3.rsp will be:

```
Logon : "per" 0 (OK)
Fetching : 76
Fetched : 76 0 (OK) drabmava.hdr
```

The response file shows that user per has been logged on, message number 76 has been fetched from the Mailbox.

The header file drabmava.hdr:

```
MS_ENTRY_NO = 5846
CONTENT_TYPE = P22
MTS_ID = "ISOCOR-57F4A1F557F4A0FC"
MESSAGE_ID=
<SECUREMAIL0001*S=SENDER;S=SECURE;P=EXTERNALX400;A=ATLAS;C=FR>
P2_ORIGINATOR = " S=SENDER;S=SECURE;P=EXTERNALX400;A=ATLAS;C=FR "
PRIMARY = "S=RECEIVER;O=SECURE;P=EXTERNALX400;A=ATLAS;C=FR"
SUBJECT = "IMPORTANT MESSAGE"
SENSITIVITY = PERSONAL
BODYPART = IA5TEXT drabmava.001-1"
SMIME_BODYPART = FILENAME = drabmava.001" USER_FILENAME = "smime.p7m"
    APPLICATION_REFERENCE = 1.2.840.113549.1.7.4 USER_VISIBLE_STRING =
    "S/MIME Encrypted Message"
PEM_ORIGINATOR = "drabmava.001-signer"
SECURE = SIGN_ENCRYPTOK
DIGEST_ALGO =SHA256
MIME_ENCODING = 0
P7_ORIGINATOR = "S=SENDER;O=SECURE;P=EXTERNALX400;A=ATLAS;C=FR"
SUBMISSION_TIME = 161006072708+0200
CREATION_TIME = 161006072708+0200
CONTENT_LENGTH = 2978
```

This header file shows following information

- one ia5 bodypart named drabmava.001-1
- the smime bodypart is stored in the file drabmava.001 (tag SMIME_BODYPART)
- the public certificate of the sender is stored in the file drabmava.001-signer (tag PEM_ORIGINATOR)
- the received message is signed and encrypted and the received message is successfully decrypted and the check of the signature is correct (tag SECURE = SIGN_ENCRYPTOK)
- the message is signed using the digest sha256 (tag DIGEST_ALGO =SHA256)
- the mime isn't encoded (tag MIME_ENCODING = 0)

6.5.11 Submission of a Pedi Message

The following header file is used:

```
Content_Type = PEDI
local_id = "urglmff"
primary = "c=no;a=telemax;o=company2;s=edi" PN interchange_recipient="ID110"
Recipient_qualifier="No12" responsibility_passing=false
P7_recipient = " c=no;a=telemax;o=company2;s=edi" ND
from = "c=no;a=telemax;o=company1;S=edi"
Interchange_Sender = "ID111" "No12"
EDI_Message_Type = "ORDERS" "INVOIC" "CONFIR"
EDI_BodyPart_type = EDIFACT ISO646
BodyPart = EDI d:\uafi30\cmd\body.bdy
```

This will generate the following response file:

```
Logon : "company1" 0 (OK)
Submitting : "urglmff" ("EDI message")
Submitted : "urglmff" 0 (OK) "NORWAYII  R0004000792074582612" 950206124302Z
```

6.5.12 Receipt of Pedi Message

The following Command file is used:

```
fetch : pedi delete d:\uafi30\rsp
```

This will generate the following respons file:

```
Logon : "company2" 0 (OK)
Fetching : 2294
Fetched : 2294 0 (OK) d:\uafi30\rsp\bllruvoa.hdr
Deleted : 2294 0 (OK)
```

The file bllruvoa.hdr is as follows:

```
MS_ENTRY_NO = 2294
CONTENT_TYPE = PEDI
MESSAGE_ID = <urglmff*S=edi;O=company1;A=telemax;C=no>
FROM = "S=edi;O=company1;A=telemax;C=no"
PRIMARY = "S=edi;O=company2;A=telemax;C=no" PN
    INTERCHANGE_RECIPIENT = "ID110" RECIPIENT_QUALIFIER = "No12"
EDI_MESSAGE_TYPE = "ORDERS" "INVOIC" "CONFIR"
INTERCHANGE_SENDER = "ID111" "No12"
BODYPART = EDI d:\uafi30\rsp\bllruvoa.001
P7_ORIGINATOR = "S=edi;O=company1;A=telemax;C=no"
SUBMISSION_TIME = 950206124303Z
CREATION_TIME = 950206124305Z
CONTENT_LENGTH = 2331
```

Note: The primary statement is on 1 line in the examples above.

6.5.13 Submission of EDIN Positive Notification

The following header file is used:

```
CONTENT_TYPE = Pedi
TYPE = EDI_RECEIPT
LOCAL_ID ="grmlbf"
P7_RECIPIENT = "c=no;a=telemax;o=company1;s=edi"
SUBJECT_EDIM = <urglmff*S=edi;O=company1;A=telemax;C=NO>
RECEIPT_TIME = 950206140520Z
FROM = "C=no;A=telemax;O=company2;S=edi"
SUPPLEMENTARY_INFO = "Nothing special"
```

This has the following response file when submitted:

```
Logon : "test-2" 0 (OK)
Submitting : "grmlbf" ("Receipt notification")
Submitted : "grmlbf" 0 (OK) "NORWAYII  R0001000792084085738" 950206152125Z
```

6.5.14 Receiption of EDI Notification (EDIN)

A received PN EDIN has the following response file:

```
Logon : "company1" 0 (OK)
Fetching : 994
EDI_Receipt  :  994  "grmlbf"  "S=edi;O=company2;A=telemax;C=no"  950206140520Z
"Nothing special"
Deleted : 994 0 (OK)
```

6.6 Appendix B: Error handling

6.6.1 Error handling

Below, you find an overview of how UA-FI handles error situations. You find a more detailed description of this in Appendix B, *Error handling*.

When you run UA-FI, the program always returns an exit code (called "Error level" in MS-DOS) when it terminates (except for MS-Windows version). If no problems were encountered, the exit code is 0. In many cases, the status and error codes in the response file are on the format

<module number> : <error code number>.

The module number identifies the module where the error occurs (X.25, modem, OSI, transport etc.), and the error code number specifies the error condition. An error message describing this error situation is found in the MaXware message file MAX??.MSG, in a line starting with the module number and error code number.

If an error occurs, UA-FI will write a warning or an error message in the response file if possible. The format of such messages is given in section 3.4 above. If a fatal error like "disk full" occurs, this is not written to the response file, but is given as an exit code instead.

If the error is such that it is possible for UA-FI to continue to execute the commands in the command file, the program will do so after the error message has been written to the response file.

The texts used for the warning and error messages is found in the file MAX??.MSG on the %MAILMAX% directory. The ?? characters represent an ISO country code to indicate which language the messages are in. The English error messages, for example, are found in the file MAXEN.MSG. You can identify the exit code or response file error message and fetch the corresponding message text from the error message file.

If UA-FI runs out of memory, it terminates. For some operating systems (Linux, UNIX) a special program exit code (7) is set. See Appendix D Platform specific topics..

6.6.2 General

This appendix gives a detailed explanation to the most important warnings and error messages generated by UA-FI and written to the response file. In addition, it suggests which messages should be presented to the end user of the application.

The errors can be grouped into Parser errors and Communication errors. If the error is serious, UA-FI will exit and return a error-level code (exit code). See appendix D.

All messages are fetched from the message file MAX??.MSG, except for errors on P7 operations which are hard coded.

6.6.3 UA-FI parser errors

If an error occurs when parsing command files and header/BodyPart files, UA-FI will report a Warning, Error or Fatal-error according to the severity of the error. These errors are local to UA-FI. This means they are not related to the communication process.

6.6.3.1 Warning messages

Warning messages are given when UA-FI discovers a non-serious syntax error in a command file, header file or BodyPart file. This indicates an error in the application using UA-FI. UA-FI will continue after the warning message is written to the response file (and displayed on the screen).

The Warning messages are given on the following format:

> WARNING : <module number>:<error number> <filename> <line-no> <column-no> [parameter] (filename: <filename>,line-no: <line-no>,col: <column-no>, <warning-message>)

If the application wants to report the WARNING to the end user, the following general warning message might be given:

> "Some information may have been lost during communication. You can contact your dealer if the error occurs several times.
>
> Error code: <module number>:<error number><warning-message>"

The following warning messages are defined i UA-FI:

> **Warning message**: "Unknown command <command name>". Number 3100:0100 in max??.msg. Means that UA-FI has detected an unknown command in the command-file. The command is ignored by UA-FI.
>
> **Warning message** "Unknown Keyword <keyword>". Number 3100:0101 in max??.msg. Means that UA-FI has detected an unknown keyword in a header file. The keyword is ignored by UA-FI.

Warning message "Unknown character <character> ignored". Number 3100:0102 in max??.msg. Means that UA-FI has detected an invalid character in a text-BodyPart file (e.g a character that can not be mapped from ANSI/PCASCII to IA5text) during submission. The character is ignored by UA-FI.

*6.6.3.2 **Error messages***

Error messages are given when UA-FI discovers a serious syntax error in a command file, header file or BodyPart file. This indicates a serious error in the application using UA-FI. UA-FI will exit with an exit code after the error message is written to the response file and the display.

The error messages are given on the following format:

ERROR : <module number>:<error number> <exit code> <filename> <line-no> <column-no> [parameter] (filename: <filename>,line-no: <line-no>,col: <column-no>, <error-message>)

The application can report the following general error message to the end user for all the different ERRORS:

"Communication failed due to an internal application failure. Try again. Contact your dealer if the error still occurs.

Error code: <module number>:<error number><error-message>"

If one wants to report more specific messages for the most common errors, the following error messages should be reported:

Error message: "Cannot open file <filename>". (Number 3100:0200 in max??.msg). Means that UA-FI does not find the specified file (command file, header file or BodyPart file) because the file does not exist, the application does not have access to the specified file or the allowed number of simultaneously opened files in the operating system is exceeded. UA-FI will abort with exit code 3 (File error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error code 3100:0200 <error message>".

Error message: "No such user". (Number 3100:0210 in max??.msg). Means that the user-name passed on the command line at startup or in a LOGON command does not exist. UA-FI will abort with exit code 4 (User name error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0210 <error message>".

Error message: "Incorrect password". (Number 3100:0211 in max??.msg). Means that the local password passed on the command line at startup or in a LOGON command is incorrect. UA-FI will abort with exit code 5 (Password error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0211 <error message>".

Error message: "Parameter <parameter name> is invalid". (Number 3100:0203 in max??.msg). Means that the specified parameter in the command-file or header-file is invalid. UA-FI will abort with exit code 2 (Parameter error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0203 <error message>".

Error message: "Separator <separator> is invalid". (Number 3100:0202 in max??.msg). Means that a invalid separator is used in either the command-file (shall be colon :) or in the header-file (shall be equal =). UA-FI will abort with exit code 2 (Parameter error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0202 <error message>".

Error message: "Upper bounds exceeded". (Number 3100:0205 in max??.msg). Means that the value of a given parameter in the header-file is too long. The parameters and their upper bounds are:

SUBJECT in header file	: 128 characters
LOCAL-ID in header file	: 16 characters
IPM-ID in a Reply (in-reply-to)	: 64 characters
Supplementary info in IPN-header-file	: 64 characters
Autoforwarded comment in IPN-header-file	: 200 characters

UA-FI will abort with exit code 2 (Parameter error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0205 <error message>".

Error message: "More than 3 nested forwarded". (Number 3100:0206 in max??.msg). Means that you have tried to submit a message with more than three levels of forwarded BodyParts. UA-FI will abort with exit code 10 (More than 3 nested forwarded).
End user message: "Communication failed. You have tried to send a message containing more than 3 levels of forwarded messages - this program can only handle 3 levels".

Error message: "Mandatory parameter is missing". (Number 3100:0207 in max??.msg). Means that the parameter value for one of the mandatory keywords in the header-file is missing. See Chapter 5, *File Syntax*. UA-FI will abort with exit code 2 (Parameter error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0207 <error message>".

Error message: "Connection aborted". (Number 3100:0212 in max??.msg). Means that the network connection to the Message Store was aborted (while UA-FI was waiting for the result of a issued P7-Operation).
End user message: "Communication failed because the network connection was aborted. Try again. If the error still occurs contact your dealer and report the error 3100:0212 <error message>".

Error message: "Directory <directory name> does not exist". (Number 3100:0208 in max??.msg). Means that the path to fetch-directory (where the fetch-header-file is stored), submit-result-directory (file containing incorrectly specified Recipients), list-result-directory (where the list-header-file is stored) does not exist.
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0208 <error message>".

Error message: "Too long line". (Number 3100:0201 in max??.msg). Means that UA-FI has detected a line in the command file or header file that is longer than 256 characters. UA-FI will abort with exit code 8 (Too long line).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0201 <error message>".

Error message: "Attribute <attribute name> is unknown". (Number 3100:0213 in max??.msg). Means that UA-FI has detected an unknown attribute in one of the P7_FETCH_ATTRIBUTES or P7_LIST_ATTRIBUTES configuration parameters in the configuration file MAXWARE.INI. UA-FI will abort with exit code 2 (Parameter error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0213 <error message>".

*6.6.3.3 **Fatal errors***

If an fatal error occurs, UA-FI will abort with an exit code if possible, and in some cases also write a Fatal error message to the response file if possible.

If the disk is full, UA-FI will abort with the exit code 6 (Disk full) if possible, but no message is written to the response file.

If UA-FI runs out of memory, it will abort with the exit code 7 (Out of memory) if possible, but no message is written to the response file.

FATAL-ERROR messages are given on the following format in the response file / display:

FATAL-ERROR : <exit code> (<error message>)

The following Fatal error messages are defined i UA-FI:

"**FATAL-ERROR : 3** (Cannot open file <filename>)". Number 3100:0200 in max??.msg. Means that UA-FI does not find one of the files MAXWARE.INI or USERS.DAT. UA-FI will abort with exit code 3 (File error).
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0200 <error message>".

"**FATAL-ERROR: 255** (Environment variable MAILMAX is not set" is given if "-path" is not passed on the command line and the environment variable %MAILMAX% is not specified. UA-FI does not find the files USERS.DAT, MAXWARE.INI orMAX??.MSG. UA-FI will abort with exit code 255 (Fatal error).
End user message: "Communication failed. The environment variable MAILMAX is not set to the directory where the application is installed. Use the DOS-command SET MAILMAX=<directory where UA-FI is installed>. If necessary, contact your dealer and report the error 3100:0209 <error message>".

"**FATAL ERROR : 255** (Exception)". (Number 3100:0215 in max??.msg). Means that UA-FI has aborted with exit code 255 due to an unknown error/exception.
End user message: "Communication failed due to an internal application error. Contact your dealer and report the error 3100:0215 <error message>".

6.6.4 UA-FI communication errors

Communication errors can occur in all OSI-layers of the communication stack and will be reported as ABORTED error messages (except for errors on P7 operations). UA-FI will abort with exit code 1 (Communication error).

If the logon process to the Message Store fails, the error will be reported in the LOGON status. UA-FI will abort with exit code 1 (Communication error).

Errors in P7-operations are reported in the submit-status, fetch-status, list-status, delete-status and change-password-status. UA-FI will continue after the status is written to the response file.

ABORTED error messages are given on the following format

> ABORTED : <module-number>:<error-number> (abort reason)

where module-number and error-number refers to the abort-reason message in MAX??.MSG. Example:

> ABORTED : 3003:0100 (Checksum error)

For most of the abort reasons, the following general error message may be presented to the end user:

> "Communication failed. Try again. If the error still occurs, contact your dealer and report the error <module-number>:<error-number> (abort reason)."

The following abort reasons should result in specific End user messages:

*6.6.4.1 **Aborts reasons/messages from the Link protocol***

"**ABORTED : 3003:0100** (Checksum error)" means that there was an error in an incomming data packet. This is due to a noisy telephone line or that incoming bytes are lost on the communication port. The user should switch to error recovery mode or reduce the modem speed.

End user message: "Communication failed due to noise on the telephone line. Switch to error recovery mode or reduce the modem speed. Try again. If the error still occurs contact your service provider and report the error code 3003:0100."

"**ABORTED : 3003:0202** (Too many re-transmissions)" means that there was much noise on the telephone line. The user should try again or reduce the modem speed.

End user message: "Communication failed due to noise on the telephone line. Try again or reduce the modem speed. If the error still occurs contact your service provider and report the error code 3003:0202."

6.6.4.2 Aborts reasons/messages from the Network protocol

"**ABORTED : 3002:0231** (Network disconnected by remote end - The Service is busy. Try again)" means that the Service was too busy to be able to set up the connection. The user should try again.

End user message: "The Service is busy. Try again. If the error still occurs contact your service provider."

"**ABORTED : 3002:0232** (Network disconnected by remote end - The X.25 address to the Service is wrong.)" means that the X.25 address to the Message Store is wrong. Should be corrected in the <service profile>.PRF file parameter MS_Address.

End user message: "The X.25 address to the Service is wrong. Correct it and try again."

"**ABORTED : 3002:0233** (Network disconnected by remote end - Time expired)" means that the Service was too busy to be able to set up the connection. The user should try again.

End user message: "The Service is busy. Try again. If the error still occurs contact your service provider."

6.6.4.3 Logon errors

LOGON errors are given as logon status with value higher than 0, on the format:

LOGON : <logon-error-no> (<error message>)

"**LOGON : 1** (Authentication error)". Error message number 0413:0400 in MAX??.MSG. Means that an invalid MS-password or an invalid own X.400-address is used.
End user message: "Communication failed. Connection with the central Message Store was not established because the value for one of the parameters MS-Password or Own X.400 address is incorrect. Check these values and try again. If the error still occurs contact your service provider."

"**LOGON : 3** (Unable to establish association)". Error message number 0413:0402 in MAX??.MSG. Means that an invalid MS-password or an invalid own X.400-address is used.
End user message: "Communication failed. Connection with the central Message Store was not established because the value for one of the parameters MS-Password or Own-O/R-address are incorrect. Check these values and try again. If the error still occurs contact your service provider."

*6.6.4.4 **Submit-Errors***

On SUBMIT commands, UA-FI presents the following response in the response file in case an error occurred (submitstatus status is different from 0):

SUBMITTED : <content-Identifier> <submit-status>

where submit-status = <submit-error-no> (<submit-error-message>) [additional info]

Example

SUBMITTED : "72 18/02/93" 1 (remote operation rejected)

SUBMITTED : "72 18/02/93" 5 (recipient improperly specified) c:\uafi\recfile.hdr

"**SUBMITTED : <content-Identifier> 1 (remote operation rejected)**". Means that the MS did not accept the operation at the moment - one should try again.
End user message: "One or more of the messages you tried to send failed. Try again. If the error still occurs contact your service provider."

"**SUBMITTED : <content-Identifier> 2 (submission control violated)**". Means that the Message Store has restricted the submit operation at the moment (probably due to heavy load).
End user message: "One ore more of the messages you tried to send failed due to heavy traffic in the Mail service. Try again. If the error still occurs contact your service provider."

"**SUBMITTED : <content-Identifier> 3 (element of service not subscribed)**". Means that the submitted message contained protocol elements not supported/subscribed to on the Message Store.
End user message: "One or more of the messages you tried to send was not accepted by the central Message Store. Try again. If the error still occurs contact your service provider."

"**SUBMITTED : <content-Identifier> 4 (originator invalid)**". Means that the originator's X.400-address is invalid because it contains non-printable-string characters or is missing mandatory attributes (e.g. Surname is missing when Given name is present).
End user message: "One ore more of the messages you tried to send failed because your own X.400-address is incorrectly specified. Correct your own address and try again. If the error still occurs contact your service provider."

"**SUBMITTED : <content-Identifier> 5 (recipient improperly specified) <filname to file where the illegal recipients are listed>** ". Means that the X.400-address of one or more of the Recipients is invalid, because it contains non-printable-string characters and/or is missing mandatory attributes.
End user message: "One ore more of the messages you tried to send failed because some of the Recipient addresses was incorrectly specified. Correct the addresses and try again. If the error still occurs contact your service provider."

"**SUBMITTED : <content-Identifier> 6 (inconsistent request)**". Means that UA-FI has sent an inconsistent request to the Message Store.
End user message: "One ore more of the messages you tried to send failed because of interoperability problems between your application and the central Message Store. Contact your service provider."

"**SUBMITTED : <content-Identifier> 7 (security error)**". Not applicable in this version of UA-FI.

"**SUBMITTED : <content-Identifier> 8 (Unsupported critical function)**". Means that a critical X.400-1988 protocol element is not supported by the Message Store. Not applicable in this version of UA-FI.

"**SUBMITTED : <content-Identifier> 9 (remote bind error)**". Means that the MS does not manage to connect to the associated MTA - this is an error in the mail service.
End user message: "One ore more of the messages you tried to send failed because of an internal problem in the central Message Store. Try again. If the error still occurs contact your service provider."

*6.6.4.5 **Fetch-Errors***

On FETCH commands, UA-FI presents the following response in the response file in case an error occurred (fetch-status is different from 0):

FETCHED : <MS-sequence-number> <fetch-status>

where submit-status = <fetch-error-no> (<fetch-error-message>)

Example

FETCHED : 2367 1 (remote operation rejected)

"**FETCHED : <MS-sequence-number> 1 (remote operation rejected)**". Means that the MS did not accept the operation at the moment - one should try again.
End user message: "One or more of the message you tried to fetch from the central Message Store failed. Try again. If the error still occurs contact your service provider."

"**FETCHED : <MS-sequence-number> 2 (attribute error)**". Means that the MS does not support one or more of the attributes requested in the fetch operation.
End user message: "One or more of the message you tried to fetch from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**FETCHED : <MS-sequence-number> 3 (Fetch restriction error)**". Not applicable in this version of UA-FI.

"**FETCHED : <MS-sequence-number> 4 (Invalid parameters error)**". Means that MS has reported a protocol error in UA-FI.
End user message: "One or more of the message you tried to fetch from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**FETCHED : <MS-sequence-number> 5 (Range error)**". Means that UA-FI has specified an illegal list of sequence numbers in the filter of the fetch operation.
End user message: "One or more of the messages you tried to fetch from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**FETCHED : <MS-sequence-number> 6 (Security error)**". Not applicable in this version.

"**FETCHED : 7 (Sequence number error)**". Means that UA-FI has specified a sequence number (in the filter) that does not correspond with any of the messages stored in the MS.
End user message: "The application tried to fetch a non-existing message from the Message Store. Try again. If the error still occurs contact your dealer."

"**FETCHED : 8 (Service error)**". Means that there is a problem in the MS (e.g. too busy or unavailable).
End user message: "One or more of the message you tried to fetch from the central Message Store failed because of internal problems in the service. Try again. If the error still occurs contact your service provider."

*6.6.4.6 **List-Errors***

On LIST commands UA-FI presents the following response in the response-file in case an error occurred (list-status is different from 0):

LISTED : <MS-sequence-number> <list-status>

where list-status = <list-error-no> (<list-error-message>)

Example

LISTED : 2367 1 (remote operation rejected)

"**LISTED : <MS-sequence-number> 1 (Remote operation rejected)**. Means that the MS did not accept the operation at the moment - one should try again.
End user message: "A List or Fetch operation failed. Try again. If the error still occurs contact your service provider."

"**LISTED : <MS-sequence-number> 2 (Attribute error)**. Means that the MS does not support one or more of the attributes requested in the list operation.
End user message: "One or more of the message you tried to fetch/list from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**LISTED : <MS-sequence-number> 3 (Invalid parameters error)**. Means that MS has reported a protocol error in UA-FI.
End user message: "One or more of the message you tried to list/fetch from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**LISTED : <MS-sequence-number> 4 (Range error)**. Means that UA-FI has specified an illegal list of sequence numbers in the filter of the list operation.
End user message: "One or more of the message you tried to fetch/list from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**LISTED : <MS-sequence-number> 5 (Security error)**. Not applicable in this version of UA-FI.

"**LISTED : <MS-sequence-number> 6 (Sequence number error)** Means that UA-FI has specified a sequence number (in the filter of the list operation) that does not correspond with any of the messages stored in the MS.
End user message: "The application tried to fetch/list a non-existing message from the Message Store. Try again. If the error still occurs contact your dealer."

"**LISTED : <MS-sequence-number> 7 (Service error)**. Means that there is a problem in the MS (e.g too busy or unavailable).
End user message: "One or more of the message you tried to fetch/list from the central Message Store failed because of internal problems in the service. Try again. If the error still occurs contact your service provider."

*6.6.4.7 **Delete-Errors***

On DELETE commands UA-FI presents the following response in the response-file in case an error occurred (submit-status is different from 0):

DELETED : <MS-sequence-number> <delete-status>

where delete-status = <delete-error-no> (<delete-error-message>)

Example

DELETED : 1 (Remote operation rejected)

"**DELETED: <MS-sequence-number>** 1 **(Remote operation rejected)**". Means that the MS did not accept the operation at the moment - one should try again.
End user message: "A Delete or Fetch operation failed. Try again. If the error still occurs contact your service provider."

"**DELETED: <MS-sequence-number> 2 (Delete error)**". Means that the MS does not allow you to delete the specified message (because an attempt is made to delete a child-entry or a restriction is violated).
End user message: "One or more of the messages that was tried to be deleted from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**DELETED: <MS-sequence-number> 3 (Invalid parameters error)**". Means that MS has reported a protocol error in UA-FI.
End user message: "One or more of the messages which were attempted to be deleted from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**DELETED: <MS-sequence-number> 4 (Range error)**". Means that UA-FI has specified an illegal list of sequence numbers in the filter of the delete operation.
End user message: "One or more of the message you which was attempted to be deleted from the central Message Store failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**DELETED: <MS-sequence-number> 5 (Security error)**". Not applicable in this version of UA-FI.

"**DELETED: <MS-sequence-number> 6 (Sequence number error)**". Means that UA-FI has specified a sequence number (in the filter of the delete operation) that does not correspond with any of the messages stored in the MS.
End user message: "The application tried to delete a non-existing message from the Message Store. Try again. If the error still occurs contact your dealer."

"DELETED: <MS-sequence-number> 7 **(Service error)**". Means that there is a problem in the MS (e.g. too busy or unavailable).
End user message: "One or more of the message you tried to delete from the central Message Store failed because of internal problems in the service. Try again. If the error still occurs contact your service provider."

6.6.4.8 Change MS-Password Errors

On Change-MSPassword commands UA-FI presents the following response in the response file in case an error occurred (submit-status is different from 0):

CHANGE-PASSWORD : <change-password-status>

where change-password-status = <change-password-error-no> (<change-password-error-message>)

Example

CHANGE-PASSWORD : 1 (Remote operation rejected)

"**CHANGE-PASSWORD : 1 (Remote operation rejected)**". Means that the MS did not accept the operation at the moment - one should try again.
End user message: "The Change MS-Password operation failed. Try again. If the error still occurs contact your service provider."

"**CHANGE-PASSWORD : 2 (Attribute error)**". Means that the MS does not support one or more of the attributes specified in the change MS password operation.
End user message: "The Change MS-Password operation failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**CHANGE-PASSWORD : 3 (Auto action request error)**". Not applicable in this version of UA-FI.

Means that the MS does not support the specified auto-action-request or the user has not subscribed to the specified auto-action.
End user message: "The Change MS-Password operation failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**CHANGE-PASSWORD : 4 (Invalid parameters error)**". Means that MS has reported a protocol error in UA-FI.
End user message: "The Change MS-Password operation failed because of interoperability problems. Try again. If the error still occurs contact your service provider."

"**CHANGE-PASSWORD : 5 (Security error)**". Not applicable in this version of UA-FI.

"**CHANGE-PASSWORD : 6 (Service error)**". Means that there is a problem in the MS (e.g. too busy or unavailable).
End user message: "The Change MS-Password operation failed because of internal problems in the service. Try again. If the error still occurs contact your service provider."

6.6.5 Non-Receipt-Notifications

Non-receipt-Notifications (IPN messages) contain a reason code and a qualifier telling what went wrong with the original message. The reason code is given in the fetch header file for IP-Notification.

The following reasons apply for UA-FI:

Reason code 0 - UA initiated discard. Means that the recipient has not yet read the message, and the deadline for reading the message is expired.
Mesage: "The message was discarded by the recipient or his system"

Reason code 1 - Autoforwarded. Means that the message was automatically forwarded by the recipients mail system.
Message: "The message was automatically forwarded by the recipients mail system."

6.6.6 Non-Delivery Reports

Non-Delivery-Reports contain a reason code and a diagnostic code telling what went wrong with the original message. The following reasons/diagnostics apply for UA-FI, and you should give the following messages:

Reason code 0 (transfer failure) and **diagnostic 0 (unrecognized X.400 address)**. Means that the recipient address is unknown to the service.
End user message: "The recipient address is unknown to the Mail service." Create a new message, correct the recipient address and try again"

Diagnostic 1 (ambiguous X.400 address). Means that the recipient address is ambiguous to the service.
End user message: "The recipient address is ambiguous. Create a new message, include the full recipient address and try again"

Diagnostic 2 (MTA congestion). Means that the message could not be delivered because of congestion in the Mail service.
End user message: "Failure during transfer because of heavy traffic in the Mail service. Create a new message and try again"

Diagnostic 3 (loop detected). Means that the message could not be delivered because it was transferred in a loop inside the Mail Service.
End user message: "The message could not be delivered due to an internal looping failure in the Mail service. Contact your service provider."

Diagnostic 4 (UA unavailable). Means that the message could not be delivered because of a failure in the recipient's Mail system.
End user message: "The message could not be delivered due to a failure in the recipient's system. Create a new message and try again."

Diagnostic 5 (maximum time expired). Means that the message could not be delivered before the maximum transfer time (set by Priority -low/normal/urgent) expired. The X.400 specifies the values Low=24 hours, Normal=4 hours, and Urgent=1 hour.
End user message: "The message could not be delivered due to an internal failure in the Mail system. Create a new message and try again."

Diagnostic 6 (encoded information types unsupported). Means that the message could not be delivered because the recipient's mail system could not handle the data format of a BodyPart in the message.
End user message: "The message could not be delivered because the recipient's system could not handle the format of a document included in the message. Create a new message, correct the format of the content and try again."

Diagnostic 7 (content too long). Means that the message could not be delivered because the recipient's mail system could not handle such a large message.
End user message: "The message could not be delivered because the message is too

large to be handled by the recipient's system. If possible, create a new message with reduced content size and try again."

Diagnostic 8 (Conversion Impractical) / 9 (Conversion prohibited) / 10 (Implicit conversion not registered). Means that the message could not be delivered because the recipients mail system could not handle the data format of a BodyPart in the message.
End user message: "The message could not be delivered because the recipients system could not handle the format of a document included in the message. Create a new message, correct the format of the content and try again."

Diagnostic 11 (Invalid parameters). Means that the message could not be delivered because the message was not accepted by the Mail service.
End user message: "The message could not be delivered because it was not accepted by the Mail service. Contact your service provider."

6.6.7 Negative (EDI) Notification NN Reason and diagnostic codes

*6.6.7.1 **EDIN generated by an UA or an MS***

If the NN EDIN was generated by an UA or an MS (Generated =0), the following values for nn-reason are possible:

0	Unspecified
1	Cannot deliver to user
2	Delivery time-out
3	Message discarded
4	Subscription terminated
5	Forwarding error
6	Security error

Possible values for nn-diagnostics are:

1	Protocol violation
2	Edim originator unknown
3	Edim recipient unknown
4	Edim recipient ambiguous
5	Action request not supported
6	Edim expired
7	Edim obsoleted
8	Duplicate edim
9	Unsupported extension
10	Incomplete copy rejected
11	Edim too large for application
12	Forwarded edim not delivered
13	Forwarded edim delivery time out
14	Forwarding loop detected
15	Unable to accept responsibility
16	Interchange sender unknown
17	Interchange recipient unknown
18	Invalid heading field
19	Invalid BodyPart type
20	Invalid message type
21	Invalid syntax id
22	Message integrity failure
23	Forwarded message integrity failure
24	Unsupported algorithm
25	Decryption failed
26	Token error
27	Unable to sign Notification

28	Unable to sign message receipt
29	Authentication failure
30	Security context failure
31	Message sequence failure
32	Message security labelling failure
33	Repudiation failure
34	Proof of failure

*6.6.7.2 **EDIN generated by an end user/application***

If the NN EDIN was generated by an end user or application using UA-FI (Generated =1), the following values for nn-reason are possible:

0	Unspecified
1	Syntax error
2	Interchange sender unknown
3	Interchange recipient unknown
4	Invalid heading field
5	Invalid BodyPart type
6	Invalid message type
7	Functional group not supported
8	Subscription terminated
9	No bilateral agreement
10	User defined reason

The values for nn-diagnostics are user defined and must be agreed upon between the sender and recipient.

*6.6.7.3 **EDIN generated by a PDAU***

If the NN EDIN was generated by a PDAU (Generated =2), the following values for nn-reason are possible:

0	Unspecified
1	Undeliverable mail
2	Physical rendition not performed

Possible values for nn-diagnostics are:

31	Physical rendition attributes not supported
32	Undeliverable mail physical delivery address incorrect
33	Undeliverable mail physical delivery office incorrect or invalid
34	Undeliverable mail physical delivery address incomplete
35	Undeliverable mail recipient unknown
36	Undeliverable mail recipient deceased
37	Undeliverable mail organization expired
38	Undeliverable mail recipient refused to accept
39	Undeliverable mail recipient did not claim
40	Undeliverable mail recipient changed address permanently
41	Undeliverable mail recipient changed address temporarily
42	Undeliverable mail recipient changed temporary address
43	Undeliverable mail new address unknown
44	Undeliverable mail recipient did not want forwarding
45	Undeliverable mail originator prohibited forwarding

6.6.8 Forwarded Notification Reason and Diagnostic codes

If the FN EDIN was generated by an UA or an MS (Generated =0), the following values for nn-reason are possible:

0	Unspecified
1	Onward routing
2	Recipient unknown
3	Originator unknown
4	Forwarded by edi ms

Possible values for nn-diagnostics are:

1	Recipient name changed
2	Recipient name deleted

If the FN EDIN was generated by an end user or application using UA-FI (Generated =1), the following values for nn-reason are possible:

0	Unspecified
1	Forwarded for archiving
2	Forwarded for information
3	Forwarded for additional action
4	Subscription changed
5	Heading field not supported
6	BodyPart type not supported
7	Message type not supported
8	Syntax identifier not supported
9	Interchange sender unknown
10	User defined reason

The values for nn-diagnostics are user defined and must be agreed upon between the sender and recipient.

If the FN EDIN was generated by a PDAU (Generated =2), the following values for nn-reason are possible:

0	Unspecified
1	Forwarded for physical rendition and delivery

The values for the forwarded Notification diagnostic code from the PDAU must be agreed upon with the service provider.

6.7 Appendix D: Platform specific topics

6.7.1 Exit codes

The Linux and UNIX versions of UA-FI returns an exit code when finished. On MS-Windows no exit code is returned.

Possible exit codes

Communication

1 Communication error

Parser errors

2	Parameter error
3	File error
4	User name error
5	Password error
6	Disk full (fatal error)
7	Out of memory (fatal error)
8	Too long line
9	Too many lines
10	More than 3 nested forward
255	Fatal error

6.7.2 Serial communication

For the dial-up version of UA-FI there are two modes of operation: Error recovery mode or V.42 dependent mode. The modes are controlled by the configuration parameter APSLink_Protocol.

The value “LAPB” denotes error recovery mode and provides error detection on the physical connection. Is used if the telephone connections is bad and the modem does not provide error correction (V.42, MNP).

The value “APS” denotes V.42 dependent mode and relies on the underlying connection. This mode is normally faster than the error recovery mode. Is used if the telephone connections is good or the modem provides error correction (V.42, MNP).

Note: Maximum communication speed is dependent of modem type, communication port hardware (UART) and operating system. Check your system documentation.

6.8 Appendix E: Formal header-file syntax for IP-Messages

```
ip-message      =       outgoing
                /       incoming
outgoing        =       [content-type]         ;Must be placed on top of header-file.
                        local-id
                        [from / p2-originator]
                        1*(primary/copy/bcc)   ; At least one primary, copy or bcc
                                               ; recipient must be included according
                                               ; to ENV 41202
                        [in-reply-to]
                        [subject]
                        [expiry-time]
                        [reply-time]
                        [importance]
                        [sensitivity]
                        [*bodypart]
                        [*ftam_bodypart]
                        1*p7-recipient
                        [priority]
                        [per-message-indicators]
                        [deferred-delivery-time]
                        [latest-delivery-time]
                        [dl-expansion-prohibited]
incoming        =       ms-entry-no
                        [content-type]
                        [mts-id]
                        [message-id]
                        [p2-originator]
                        [primary]
                        [copy]
                        [bcc]
                        [in-reply-to]
                        [subject]
                        [expiry-time]
                        [reply-time]
                        [importance]
                        [sensitivity]
                        [*bodypart]
                        [*ftam_bodypart]
```

```
                           [priority]
                           [per-message-indicators]
                           [p7-originator]
                           [submission-time]
                           [creation-time]
                           [content-length]
content-type       =       "CONTENT_TYPE" "=" "P2" / "P22"
                           :P7.PerMessageSubmissionFields.ContentType
mts-id             =       "MTS_ID" "=" <">1*32CHAR<">
                           ;P7MessageDeliveryIdentifier.LocalIdentifier
local-id           =       "LOCAL_ID" "=" <">1*64PS-CHAR<">
                           ; Mandatory message identifier. Shall be used in
                           ; P2.heading.IPMessageId.PrintableString and in the
                           ; P7.PerMessageSubmissionFields.ContentIdentifier
                           ; (limited to first 16 PS-CHAR of local-id).
                           ; Then this identifier can be used as reference both on
                           ; incoming delivery reports and on receipt notifications.
                           ; P2.heading.IPMessageId.ORName shall be constructed from
                           ; the users O/R name in the user profile.
from               =       "FROM" "=" <">colon-or-descriptor<">
                           ; Mandatory P2.heading.originator according
                           ; to ENV 41 202 Functional Standard
                           ; If omitted, the users O/R name in the user profile shall be used.
p2-originator      =       "P2_ORIGINATOR" "=" <">colon-or-descriptor<">
                           ; Mandatory P2.heading.originator according
                           ; to ENV 41 202 Functional Standard
                           ; If omitted, the users O/R name in the user profile shall be used.
                           ; Kept for compatibility reasons
primary            =       "PRIMARY" "=" recipient
                           ; P2.heading.primaryRecipients
copy               =       "COPY" "=" recipient
                           ; P2.heading.copyRecipients
bcc                =       "BCC" "=" recipient
                           ; P2.heading.blindCopyRecipients
recipient          =       <">colon-or-descriptor<">
                           [reply-request]
                           [notification-request]
reply-request      =       "RE"
notification-request
                   =       "RN"                    ; Receipt notification
                   /       "NR"                    ; Non receipt notification
```

```
in-reply-to     =       "IN_REPLY_TO" "=" msg-id
subject         =       "SUBJECT" "=" <">*128t61-char<">
expiry-time     =       "EXPIRYTIME" "=" UTCtime
reply-time      =       "REPLYTIME" "=" UTCtime
t61-char                =       <Character shall be mapped according to [18]>
importance      =       "LOW"
                /       "NORMAL"
                /       "HIGH"
sensitivity     =       "PERSONAL"
                /       "PRIVATE"
                /       "COMPANY-CONFIDENTIAL"
bodypart        =       "BODYPART" "=" bodypart-type
bodypart-type   =       "IA5TEXT" filename              ; P2.body.IA5TextBodyPart.
                                                        ;  IA5TextData
                /       "ACCENTEDTEXT" filename
                                                        ; P2.body.IA5TextBodyPart.
                                                        ;  IA5TextData
                                                        ; Composite Graphic Characters,
                                                        ; ref. T.50 app. I.2.3.
                /       "FORWARDED" filename            ; P2.body.MessageBodyPart.
                                                        ;  MessageData
                /       "BILATERALLY_DEFINED" filename
                                                        ; P2.body.BilaterallyDefinedBodyPart
                /       "G3FAX" filename [number-of-pages] [non-basic-params]
                                                        ; P2.body.G3FacsimileBodyPart.
                                                        ;  G3FacsimileData
                /       "T61" filename                  ; P2.body.TeletexBodyPart.
                                                        ;  TeletexData
                /       "UNSUPPORTED" filename          ; Used when an incoming message
                                                        ; contains a bodypart type that is not
                                                        ; supported.
                /       "8859-x" filename               ; P2.body.ExternallyDefinedBodyPart
                                                        ; GeneralTextData .
                ; IA5 text bodyparts shall be read and written in accordance with the command
                ; TEXT-FORMAT. Except if the bodypart-type keyword is surrounded by <>
                ; on submission. Then no conversion shall be made.


                ; G3FAX bodyparts shall be read according to the format of the bodypart. If the
                ; first character in the bodypart file is a g3fax tag (either hex A3 or AF), the
                        ; bodypart file shall be assumed to be on a correctly ASN.1 encoded
```

```
g3fax                   ; format. When this format is used, the parameters 'number-of-pages'
and non-                ; basic params' shall be ignored. If neither of the tags are
present, the format     ; shall be a file containing a list of filenames (one
filename pr line) comprising    ; the content of the g3fax bodypart, one filename for
each page.
                ; G3FAX bodyparts shall be written according to the configuration file
                ; parameter G3FAX_FORMAT. If the parameter implies ASN1-format, the
                        ; fully encoded bodypart received shall be written to the bodypart-file,
                        ; otherwise the received bodypart shall be written.


                ; Sending and reception of 8859-x bodyparts shall be done according to [22].
ftam-bodypart   =       "FTAM_BODYPART" "=" ("FILENAME" "=" filename)
                        ["USER_FILENAME" "=" 1*78CHAR]
                        ; FileTransferParameters.file-attributes.pathname
                        ;       FileTransferParameters.file-attributes.date-and-time-of-last-
modification
                        ;  shall be read from /set to file specified in FILENAME parameter
above.
                        ; FileTransferParameters.file-attributes.object-size shall be read from
file
                        ;  specified in FILENAME parameter above.
                        ["APPLICATION_REFERENCE" "=" object-identifier]
                        ; FileTransferParameters.environment.application-reference.
                        ;  registered-identifier
                        ["USER_VISIBLE_STRING" "="<">1*80OCTET<">]
                        ; FileTransferParameters.environment.user-visible-string
                        ;  Only the first string in sequence shall be used.
object-identifier=      (1*10DIGIT) *("." 1*10DIGIT); 0-2147483647
filename        =       1*78CHAR                ; File name of bodypart file
                        ; If bodypart-type is "FORWARDED" the bodypart file shall
                        ; contain header-information with syntax as described in
                        ; this appendix.
                        ;
                        ; Forwarded bodyparts shall contain P2 information.
                        ; It shall be possible to nest "FORWARDED" in 6
                        ; levels. If more than 6 levels, for outgoing messages, the
                        ; program shall abort, present exit code and log in the
                        ; response-file. For incoming messages, 6 levels shall be
                        ; "unpacked", all lower levels shall be deleted. The header-
                        ; file shall log that a forwarded document has been deleted.
                        ;
                        ; If bodypart-type is not "FORWARDED" the bodypart file shall
```

```
                                    ; contain octets as defined by bodypart-type.
number-of-pages         =           1*5DIGIT        ; 0-32767
non-basic-params
                        =           "FINE-RESOLUTION"
p7-recipient            =           "P7_RECIPIENT" "=" <">colon-or-address<"> [report-request]
                                    ; P7.PerRecipientMessageSubmissionFields.RecipientName
                                    ; Mandatory on outgoing messages.
                                    ; Will not be included on incoming messages.
report-request          =           "DN"            ; Delivery notification
                        /           "ND"            ; Non-delivery notification
                                    ; If omitted, no report shall be requested.
priority                =           "PRIORITY" "="
                                    "NORMAL" / "NON-URGENT" / "URGENT"
                                    ; P7.PerMessageSubmissionFields.Priority
                                    ; If not included on outgoing messages, normal shall be used.

per-message-indicators
                        =           "PERMESSAGEINDICATORS" "=" [*indicators]

indicators              =           "AlternateRecipientAllowed"
                                    /  "DisclosureOfRecipients"
                                    /  "ImplicitConversionProhibited"
                                    /  " ConversionWithLossProhibited "
deferred-delivery-time
                        =           "DEFERRED_DELIVERY_TIME" "=" UTCtime

latest-delivery-time
                        =           "LATEST_DELIVERY_TIME" "=" UTCtime

dl-expansion-prohibited
                        =           "DLEXPANSIONPROHIBITED" = boolean
boolean                 =           "TRUE" / "FALSE"

ms-entry-no             =           "MS_ENTRY_NO" "=" 1*10DIGIT      ; sequence-number
                                                                     ; 0-2147483647
message-id              =           "MESSAGE_ID" "=" msg-id
msg-id                  =           "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
p7-originator           =           "P7_ORIGINATOR" "=" <">colon-or-address<">
submission-time                     =           "SUBMISSION_TIME" "=" UTCtime
```

```
                        ; P7.MessageSubmissionTime
                        ; Shall be ignored on outgoing messages.
creation-time   =       "CREATION_TIME" "=" UTCtime
                        ; P7.MessageCreationTime
                        ; Shall be ignored on outgoing messages.
                        ; Shall be created on incoming messages if
                        ; Message Store does not return submission-time.
content-length  =       "CONTENT_LENGTH" "=" *DIGIT
                        ; Shall be ignored on outgoing messages
UTCtime         =       date time offset
date            =       6DIGIT              ; YYMMDD
time            =       4DIGIT              ; hhmm
                /       6DIGIT              ; hhmmss
offset          =       + 4DIGIT            ; +hhmm
                /       - 4DIGIT            ; -hhmm
                /       "Z"                 ; GMT
CHAR            =       <any ASCII character> ; (0 - 127)
PS-CHAR         =       1DIGIT / 1ALPHA / " " / "'" / "+" /
                        / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT           =       <any ASCII decimal digit>       ; (48 - 57)
ALPHA                   =       <any ASCII alphabetic character>        ; (65 - 90 , 97 - 122)
```

6.9 Appendix F: Formal Header-file syntax for IP-Notifications (submission)

```
Notification         =   [content-type]          ;Must be placed on top of header-file.
                         rn-Notification / nrn-Notification
content-type         =   "CONTENT_TYPE" "=" "P2" / "P22" / "PEDI"
                         :P7.PerMessageSubmissionFields.ContentType
rn-Notification      =   "TYPE" "=" "RECEIPT"
                         common-fields
                         rn-fields
nrn-Notification     =   "TYPE" "=" "NON-RECEIPT"
                         common-fields
                         nrn-fields
common-fields        =   local-id
                         1*p7-recipient
                         "SUBJECT_IPN" "=" msg-id    ; P2.reported
                         [p2-originator]
                         ["PREFERRED_RECIPIENT" "=" <">colon-or-descriptor<">]
                                                     ; P2.intendedRecipient
msg-id               =   "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
p2-originator        =   "P2_ORIGINATOR" "=" <">colon-or-descriptor<">
                     ; Mandatory P2.actualRecipient according
                     ; to ENV 41 202 Functional Standard
                     ; If omitted, the users O/R name in the user profile shall be
                     ; used.
p7-recipient         =   "P7_RECIPIENT" "=" <">colon-or-address<">
                     ; P7.PerRecipientMessageSubmissionFields.RecipientName
rn-fields                =       "RECEIPT_TIME" "=" UTCtime
                         ["ACKNOWLEDGE_MODE" "=" acknowledgement-mode]
                         ["SUPPLEMENTARY_INFO" "=" <">1*64PS-CHAR<">]
nrn-fields           =   "REASON" "=" non-receipt-reason
                         ["DISCARD_REASON" "=" discard-reason]
                         ["AUTOFORWARD_COMMENT" "=" <">1*200PS-CHAR<">]
acknowledgement-mode
                     =   "Manually"
                     /   "Automatically"
non-receipt-reason   =   "Discarded"
                     /   "Autoforwarded"
discard-reason       =   "Expired"
                     /   "Obsoleted"
                     /   "Terminated"
local-id             =   "LOCAL_ID" "=" <">1*16PS-CHAR<">
                     ; Mandatory message identifier. Shall be used in the
                     ; P7.PerMessageSubmissionFields.ContentIdentifier.
colon-or-descriptor  =   1*(descriptor-attribute "=" value ";")
                         [colon-or-address]
descriptor-attribute =   "FREEFORM"              ; P2.ORDescriptor.freeformName
                     /   "TEL"                   ;P2.ORDescriptor.TelephoneNumber
colon-or-address         =       1*(address-attribute "=" value ";")
                         [directory]
```

```
address-attribute   =   "G"                   ; P1.PersonalName.givenName
                    /   "I"                   ; P1.PersonalName.initials
                    /   "S"                   ; P1.PersonalName.surName
                    /   "Q"                   ; P1.PersonalName.generationQualifier
                    /   "GQ"                  ; RARE generationQualifier
                    /   "CN"                  ; P1.CommonName
                    /   "O"                   ; P1.OrganisationName
                    /   "OU1"                 ; P1.OrganisationalUnit 1
                    /   "OU2"                 ; P1.OrganisationalUnit 2
                    /   "OU3"                 ; P1.OrganisationalUnit 3
                    /   "OU4"                 ; P1.OrganisationalUnit 4
                    /   "OU"                  ; RARE OrganisationalUnit
                     /  "P"                   ; P1.PrivateDomainName
                    /   "PRMD"                ; RARE PrivateDomainName
                    /   "A"                   ; P1.AdministrationDomainName
                    /   "ADMD"                ; RARE AdministrationDomainName
                    /   "C"                   ; P1.CountryName
                    /   "PD-PN"               ; P1.PhysicalDeliveryPersonalName
                    /   "PD-EA"               ; P1.ExtensionORAddressComponents
                    /   "PD-ED"         ; P1.ExtentionPhysicalDeliveryAddressComponents
                    /   "PD-OFN"              ; P1.PhysicalDeliveryOfficeNumber
                    /   "PD-OF"               ; P1.PhysicalDeliveryOfficeName
                    /   "PD-O"                      ;
        P1.PhysicalDeliveryOrganizationName
                    /   "PD-S"                ; P1.StreetAddress
                    /   "PD-A"                      ; P1.UnformattedPostalAddress
                    /   "PD-U"                      ; P1.UniquePostalName
                    /   "PD-L"                ; P1.LocalPostalAttributes
                    /   "PD-R"                      ; P1.PosteRestanteAddress
                    /   "PD-B"                      ; P1.PostOfficeBoxAddress
                    /   "PD-PC"               ; P1.PostalCode
                    /   "PD-SN"               ; P1.PDSName
                    /   "PD-C"                      ; P1.PhysicalDeliveryCountryName
                    /   "X.121"                     ; P1.X121Address
                    /   "X121"                ; RARE X121Address
                    /   "N-ID"                ; P1.NumericUserIdentifier
                    /   "UA-ID"               ; RARE NumericUserIdentifier
                    /   "T-ID"                ; P1.TerminalIdentifier
                    /   "T-TY"                      ; P1.TerminalType
                    /   domain-defined-type   ; P1.DomainDefinedAttribute.type
                        domain-defined-type
                    =   "DDA:" 1*8(PS-CHAR)
                    /   "DD." 1*8(PS-CHAR) ; RARE
value             = *PS-CHAR
directory           =   "DIRECTORY" "=" "<"1*(directory-attribute "=" value ";")">"
directory-attribute =   "C"                   ; P1.CountryName
                    /   "O"                   ; P1.OrganisationName
                    /   "OU"                  ; P1.OrganisationalUnit 1
                    /   "CN"                  ; P1.CommonName
                    /   "S"                   ; P1.PersonalName.surName
UTCtime             =   date time offset
date                =   6DIGIT                      ; YYMMDD
time                =   4DIGIT                      ; hhmm
                    /   6DIGIT                      ; hhmmss
```

```
offset          =    + 4DIGIT                   ; +hhmm
                /    - 4DIGIT                   ; -hhmm
                /    "Z"                        ; GMT
PS-CHAR         =    1DIGIT / 1ALPHA / " " / """ / "+" /
                     / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT           =    <any ASCII decimal digit>  ; (48 - 57)
ALPHA                    =          <any ASCII alphabetic character>         ; (65 - 90 , 97 -
122)
```

6.10 Appendix G: Formal syntax of Recipient-file

```
p7-recipient        =    "P7_RECIPIENT" "="
                          <">colon-or-address<">
                    ; P7.PerRecipientMessageSubmissionFields.RecipientName
colon-or-address         =        1*(address-attribute "=" value ";")
                         [directory]
address-attribute   =    "G"                     ; P1.PersonalName.givenName
                    /    "I"                     ; P1.PersonalName.initials
                    /    "S"                     ; P1.PersonalName.surName
                    /    "Q"                     ; P1.PersonalName.generationQualifier
                    /    "CN"                    ; P1.CommonName
                    /    "O"                     ; P1.OrganisationName
                    /    "OU1"                   ; P1.OrganisationalUnit 1
                    /    "OU2"                   ; P1.OrganisationalUnit 2
                    /    "OU3"                   ; P1.OrganisationalUnit 3
                    /    "OU4"                   ; P1.OrganisationalUnit 4
                    /    "P"                     ; P1.PrivateDomainName
                    /    "A"                     ; P1.AdministrationDomainName
                    /    "C"                     ; P1.CountryName
                    /    "PD-PN"                 ; P1.PhysicalDeliveryPersonalName
                    /    "PD-EA"                 ; P1.ExtensionORAddressComponents
                    /    "PD-ED"        ; P1.ExtentionPhysicalDeliveryAddressComponents
                    /    "PD-OFN"                ; P1.PhysicalDeliveryOfficeNumber
                    /    "PD-OF"                 ; P1.PhysicalDeliveryOfficeName
                    /    "PD-O"                           ;
        P1.PhysicalDeliveryOrganizationName
                    /    "PD-S"                  ; P1.StreetAddress
                    /    "PD-A"                           ; P1.UnformattedPostalAddress
                    /    "PD-U"                           ; P1.UniquePostalName
                    /    "PD-L"                  ; P1.LocalPostalAttributes
                    /    "PD-R"                           ; P1.PosteRestanteAddress
                    /    "PD-B"                           ; P1.PostOfficeBoxAddress
                    /    "PD-PC"                 ; P1.PostalCode
                    /    "PD-SN"                 ; P1.PDSName
                    /    "PD-C"                           ; P1.PhysicalDeliveryCountryName
                    /    "X.121"                          ; P1.X121Address
                    /    "N-ID"                  ; P1.NumericUserIdentifier
                    /    "T-ID"                  ; P1.TerminalIdentifier
                    /    "T-TY"                           ; P1.TerminalType
                    /    domain-defined-type     ; P1.DomainDefinedAttribute.type
domain-defined-type
                    =    "DDA:" 1*8(PS-CHAR)
value               =    *PS-CHAR
directory       =   "DIRECTORY" "=" "<"1*(directory-attribute "=" value ";")">"
directory-attribute =    "C"                     ; P1.CountryName
                    /    "O"                     ; P1.OrganisationName
                    /    "OU"                    ; P1.OrganisationalUnit 1
                    /    "CN"                    ; P1.CommonName
                    /    "S"                     ; P1.PersonalName.surName
PS-CHAR             =    1DIGIT / 1ALPHA / " " / "'" / "+" /
                         / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT               =     <any ASCII decimal digit>      ; (48 - 57)
ALPHA                    =                       <any ASCII alphabetic character>      ;  (65  -
                                                 90 , 97 - 122)
```

6.11 Appendix H: Formal Header-file syntax for list-results

```
list-result          =   ms-entry-no
                         [content-type]
                         [mts-id]
                         [subject]
                         p7-originator
                         [message-id]
                         [content-length]
                         [priority]
                         [submission-time]
                         [creation-time]
                         [p2-originator]

ms-entry-no          =   "MS_ENTRY_NO" "=" 1*10DIGIT     ; sequence-number
                                                         ; 0-2147483647
content-type         =   "CONTENT_TYPE" "=" ("P2" / "P22" / "PEDI")
                         ; P7.PerMessageSubmissionFields.ContentType
mts-id               =   "MTS_ID" "=" <">1*32CHAR<">
                         : P7.MessageDeliveryIdentifier.LocalIdentifier
subject              =   "SUBJECT" "=" <">1*128t61-char<">
t61-char                 =       <Character shall be mapped according to [18]>
p7-originator        =   "P7_ORIGINATOR" "=" <">colon-or-address<">
message-id           =   "MESSAGE_ID" "=" msg-id
msg-id               =   "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
content-length       =   "CONTENT_LENGTH" "=" *DIGIT
priority             =   "PRIORITY" "="
                         "NORMAL" / "NON-URGENT" / "URGENT"
submission-time          =       "SUBMISSION_TIME" "=" UTCtime
creation-time        =   "CREATION_TIME" "=" UTCtime
p2-originator        =   "P2_ORIGINATOR" "=" <">colon-or-descriptor<">
colon-or-descriptor  =   1*(descriptor-attribute "=" value ";")
                         [colon-or-address]
descriptor-attribute =   "FREEFORM"          ; P2.ORDescriptor.freeformName
                     /   "TEL"               ; P2.ORDescriptor.TelephoneNumber
colon-or-address         =       1*(address-attribute "=" value ";")
                         [directory]
```

```
address-attribute    =   "G"                  ; P1.PersonalName.givenName
                     /   "I"                  ; P1.PersonalName.initials
                     /   "S"                  ; P1.PersonalName.surName
                     /   "Q"                  ; P1.PersonalName.generationQualifier
                     /   "CN"                 ; P1.CommonName
                     /   "O"                  ; P1.OrganisationName
                     /   "OU1"                ; P1.OrganisationalUnit 1
                     /   "OU2"                ; P1.OrganisationalUnit 2
                     /   "OU3"                ; P1.OrganisationalUnit 3
                     /   "OU4"                ; P1.OrganisationalUnit 4
                     /   "P"                  ; P1.PrivateDomainName
                     /   "A"                  ; P1.AdministrationDomainName
                     /   "C"                  ; P1.CountryName
                     /   "PD-PN"              ; P1.PhysicalDeliveryPersonalName
                     /   "PD-EA"              ; P1.ExtensionORAddressComponents
                     /   "PD-ED"         ; P1.ExtentionPhysicalDeliveryAddressComponents
                     /   "PD-OFN"             ; P1.PhysicalDeliveryOfficeNumber
                     /   "PD-OF"              ; P1.PhysicalDeliveryOfficeName
                     /   "PD-O"                         ;
       P1.PhysicalDeliveryOrganizationName
                     /   "PD-S"               ; P1.StreetAddress
                     /   "PD-A"                         ; P1.UnformattedPostalAddress
                     /   "PD-U"                         ; P1.UniquePostalName
                     /   "PD-L"               ; P1.LocalPostalAttributes
                     /   "PD-R"                         ; P1.PosteRestanteAddress
                     /   "PD-B"                         ; P1.PostOfficeBoxAddress
                     /   "PD-PC"              ; P1.PostalCode
                     /   "PD-SN"              ; P1.PDSName
                     /   "PD-C"                         ; P1.PhysicalDeliveryCountryName
                     /   "X.121"                        ; P1.X121Address
                     /   "N-ID"               ; P1.NumericUserIdentifier
                     /   "T-ID"               ; P1.TerminalIdentifier
                     /   "T-TY"                         ; P1.TerminalType
                     /   domain-defined-type  ; P1.DomainDefinedAttribute.type
domain-defined-type  =        "DDA:" 1*8(PS-CHAR)
value                =   *PS-CHAR
directory            =   "DIRECTORY" "=" "<"1*(directory-attribute "=" value ";")">"
directory-attribute  =   "C"                  ; P1.CountryName
                     /   "O"                  ; P1.OrganisationName
                     /   "OU"                 ; P1.OrganisationalUnit 1
                     /   "CN"                 ; P1.CommonName
                     /   "S"                  ; P1.PersonalName.surName
UTCtime              =   date time offset
date                 =   6DIGIT                         ; YYMMDD
time                 =   4DIGIT                         ; hhmm
                     /   6DIGIT                         ; hhmmss
offset               =   + 4DIGIT             ; +hhmm
                     /   - 4DIGIT             ; -hhmm
                     /   "Z"                  ; GMT
PS-CHAR              =   1DIGIT / 1ALPHA / " " / "'" / "+" /
                         / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT                =   <any ASCII decimal digit>      ; (48 - 57)
ALPHA               = <any ASCII alphabetic character> ; (65 - 90 , 97 - 122)
```

6.12 Appendix I: Formal header-file syntax for EDI-Messages

```
edi-message        =    [content-type]                  ; Must be placed on top of header-file.
                        outgoing / incoming
content-type       =    "CONTENT_TYPE" "=" "P2" / "P22" / "PEDI"
                        :P7.PerMessageSubmissionFields.ContentType
outgoing           =    local-id
                        [from / p2-originator]
                        [*primary]
                        [*copy]
                        [edi-BodyPart-type]
                        [*edi-message-type]
                        [interchange-sender]
                        [BodyPart]
                        1*p7-recipient
                        [priority]
                        [deferred-delivery-time]

incoming           =    ms-entry-no
                        [message-id]
                        [mts-id]
                        [from]
                        [*primary]
                        [*copy]
                        [edi-BodyPart-type]
                        [*edi-message-type]
                        [interchange-sender]
                        [Notification-Receiver]
                        [first-recipient]
                        [BodyPart]
                        [priority]
                        [p7-originator]
                        [submission-time]
                        [creation-time]
                        [content-length]

local-id           =    "LOCAL_ID" "=" <">1*16PS-CHAR<">
                        ; Mandatory message identifier. Shall be used in
                        ; PEDI.Heading.ThisEDIMField.LocalReference and in the
                        ; P7.PerMessageSubmissionFields.ContentIdentifier.
                        ; Then this identifier can be used as reference both on
                        ; incoming delivery reports and on receipt Notifications.
                        ; PEDI.heading.ThisEDIMField.ORName shall be constructed from
                        ; the users O/R name in the user profile.
from               =    "FROM" "=" <">colon-or-address<">
                        ; PEDI.Heading.OriginatorField
p2-originator      =    "P2_ORIGINATOR" "=" <">colon-or-address<">
                        ; PEDI.Heading.OriginatorField
                        ; Kept for compatibility reasons.
primary            =    "PRIMARY" "="recipient
                        ; PEDI.Heading.RecipientsField.ActionRequestFiels = {id-for-action}
copy               =    "COPY" "="recipient
                        ; PEDI.Heading.RecipientsField.ActionRequestFiels = {id-for-copy}
```

```
recipient           =   <">colon-or-address<">
                        ; PEDI.Heading.RecipientsField.RecipientField
                        [Notification-request]
                        ; PEDI.Heading.RecipientsField.EDINotificationRequestField
                        [“interchange_recipient” “=“ id-code
                        ;PEDI.Heading.RecipientsField.IdentificationCode
                        [“recipient_qualifier”] “=“ id-code-qualifier] ]
                        ;PEDI.Heading.RecipientsField.IdentificationCodeQualifier
                        [“responsibility_passing” “=“ boolean]
                        ;PEDI.Heading.RecipientsField.ResponsibilityPassingAllowedField
Notification-request    =       "PN"                    ; Positive Notification
                        /       "NN"                    ; Negative Notification
                        /       "FN"                    ; Forwarded Notification
id-code             =   <“>*35T61-char<“>
id-code-qualifier       =       <“>*t61-char<“>
boolean             =   “TRUE” / “FALSE”
edi-BodyPart-type   =   "EDI_BODYPART_TYPE" "="
                        syntax
                        charset                 ; BodyPart and *OCTET following will
                                                ; be converted according to charset,
                                                ; Charset surrounded by <> implies no
                                                ; conversion
                        ; PEDI.Heading.EDIBodyPartType
                        ; The syntax - charset combination constitutes an object identifier that
                        ; must be specified in the configuration file. (EDI_format_x)
syntax              =   "EDIFACT"
                    /   "ANSIX12"
                    /   "UNTDI"
                    /   "PRIVATE"
                    /   "UNDEFINED"
charset             =   ("T61" / "<T61>")
                    /   "OCTET"
                    /   ("ISO646" / "<ISO646>")     ; Conversion according to IA5
                    /   "<EBCDIC>"
edi-message-type        =       "EDI_MESSAGE_TYPE" "="
                         *(message-type)
                        ; PEDI.Heading.EDIMessageTypeField
message-type        =   <">*6t61-char<">
t61-char                =       <Character shall be mapped according to [18]>
interchange-sender  =   "INTERCHANGE_SENDER" "="
                        id-code
                        ; PEDI.Heading.InterchangeSenderField.IdentificationCode
                        id-code-qualifier
                        ;PEDI.Heading.InterchangeSenderField.IdentificationCodeQualifier
id-code             =   <">*35t61-char<">
id-code-qualifier       =       <">*4t61-char<">
BodyPart            =   "BODYPART" "=" BodyPart-type
BodyPart-type       =   "EDI" filename
                        ; PEDI.Body.PrimaryBodyPart.EDIBodyPart
                    /   "FORWARDED" filename    ; Only supported on incoming message
                        ; PEDI.Body.PrimaryBodyPart.EDIMBodyPart.MessageData
filename            =   1*78CHAR                ; File name of BodyPart file
```

```
p7-recipient          =   "P7_RECIPIENT" "="
                           <">colon-or-address<"> [report-request]
                          ; P7.PerRecipientMessageSubmissionFields.RecipientName
                          ; Mandatory on outgoing messages.
                          ; Will not be included on incoming messages.
report-request        =   "DN"           ; Delivery Notification
                      /   "ND"           ; Non-delivery Notification
                          ; If omitted, no report shall be requested.
priority              =   "PRIORITY" "="
                          "NORMAL" / "NON-URGENT" / "URGENT"
                          ; P7.PerMessageSubmissionFields.Priority
deferred-delivery-time
                      =   "DEFERRED_DELIVERY_TIME" "=" UTCtime
                          ; P7.PerMessageSubmissionFields.DeferredDeliveryTime
ms-entry-no           =   "MS_ENTRY_NO" "=" 1*10DIGIT   ; sequence-number
                                                        ; 0-2147483647
message-id            =   "MESSAGE_ID" "=" msg-id
msg-id                =   "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
Notification-receiver     =      "NOTIFICATION_TO" "="
                           <">colon-or-address< ">
                          ; PEDI.Heading.EDINReceiverField.ORName
                          [msg-id]
                          ; PEDI.Heading.EDINReceiverField.EDIMIdentifier
first-recipient       =   "FIRST_RECIPIENT" "="
                          <">colon-or-address< ">
                          ; PEDI.Heading.EDINReceiverField.FirstRecipientField
p7-originator         =   "P7_ORIGINATOR" "=" <">colon-or-address<">
submission-time           =      "SUBMISSION_TIME" "=" UTCtime
                          ; P7.MessageSubmissionTime
creation-time         =   "CREATION_TIME" "=" UTCtime
                          ; P7.MessageCreationTime
                          ; Shall be created on incoming messages if
                          ; Message Store does not return submission-time.
content-length        =   "CONTENT_LENGTH" "=" *DIGIT
colon-or-address          =      1*(address-attribute "=" value ";")
                          [directory]
address-attribute     =   "G"                  ; P1.PersonalName.givenName
                      /   "I"                  ; P1.PersonalName.initials
                      /   "S"                  ; P1.PersonalName.surName
                      /   "Q"                  ; P1.PersonalName.generationQualifier
                      /   "GQ"                 ; RARE generationQualifier
                      /   "CN"                 ; P1.CommonName
                      /   "O"                  ; P1.OrganisationName
                      /   "OU1"                ; P1.OrganisationalUnit 1
                      /   "OU2"                ; P1.OrganisationalUnit 2
                      /   "OU3"                ; P1.OrganisationalUnit 3
                      /   "OU4"                ; P1.OrganisationalUnit 4
                      /   "OU"                 ; RARE OrganisationalUnit
                       /  "P"                  ; P1.PrivateDomainName
                      /   "PRMD"               ; RARE PrivateDomainName
                      /   "A"                  ; P1.AdministrationDomainName
                      /   "ADMD"               ; RARE AdministrationDomainName
                      /   "C"                  ; P1.CountryName
```

```
                    /    "PD-PN"                ; P1.PhysicalDeliveryPersonalName
                    /    "PD-EA"                ; P1.ExtensionORAddressComponents
                    /    "PD-ED"        ; P1.ExtentionPhysicalDeliveryAddressComponents
                    /    "PD-OFN"               ; P1.PhysicalDeliveryOfficeNumber
                    /    "PD-OF"                ; P1.PhysicalDeliveryOfficeName
                    /    "PD-O"                         ;
        P1.PhysicalDeliveryOrganizationName
                    /    "PD-S"                 ; P1.StreetAddress
                    /    "PD-A"                         ; P1.UnformattedPostalAddress
                    /    "PD-U"                         ; P1.UniquePostalName
                    /    "PD-L"                 ; P1.LocalPostalAttributes
                    /    "PD-R"                         ; P1.PosteRestanteAddress
                    /    "PD-B"                         ; P1.PostOfficeBoxAddress
                    /    "PD-PC"                ; P1.PostalCode
                    /    "PD-SN"                ; P1.PDSName
                    /    "PD-C"                         ; P1.PhysicalDeliveryCountryName
                    /    "X.121"                        ; P1.X121Address
                    /    "X121"                 ; RARE X121Address
                    /    "N-ID"                 ; P1.NumericUserIdentifier
                    /    "UA-ID"                ; RARE NumericUserIdentifier
                    /    "T-ID"                 ; P1.TerminalIdentifier
                    /    "T-TY"                         ; P1.TerminalType
                    /    domain-defined-type    ; P1.DomainDefinedAttribute.type
domain-defined-type
                    =    "DDA:" 1*8(PS-CHAR)
                    /    "DD." 1*8(PS-CHAR) ; RARE
value               =    *PS-CHAR
directory           =    "DIRECTORY" "=" "<"1*(directory-attribute "=" value ";")">"
directory-attribute =    "C"                    ; P1.CountryName
                    /    "O"                    ; P1.OrganisationName
                    /    "OU"                   ; P1.OrganisationalUnit 1
                    /    "CN"                   ; P1.CommonName
                    /    "S"                    ; P1.PersonalName.surName
UTCtime             =    date time offset
date                =    6DIGIT                         ; YYMMDD
time                =    4DIGIT                         ; hhmm
                    /    6DIGIT                         ; hhmmss
offset              =    + 4DIGIT               ; +hhmm
                    /    - 4DIGIT               ; -hhmm
                    /    "Z"                    ; GMT
CHAR                =    <any ASCII character>  ; (0 - 127)
PS-CHAR             =    1DIGIT / 1ALPHA / " " / "'" / "+" /
                         / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT               =    <any ASCII decimal digit>      ; (48 - 57)
ALPHA               =    <any ASCII alphabetic character>       ; (65 - 90 , 97 - 122)
```

6.13 Appendix J: Formal header-file syntax for EDI-Notifications (submission)

```
edi-Notification       =  [content-type]              ; Must be placed on top of header-file.
                          positive-Notification / negative-Notification
content-type           =  "CONTENT_TYPE" "=" "P2" / "P22" / "PEDI"
                          :P7.PerMessageSubmissionFields.ContentType
positive-Notification     =     "TYPE" "=" "EDI_RECEIPT"
                          common-fields
                          pn-fields
negative-Notification     =     "TYPE" "=" "EDI_NON-RECEIPT"
                          common-fields
                          nn-fields
common-fields          =  local-id
                          1*p7-recipient
                          "SUBJECT_EDIM" "=" msg-id
                          ; PEDI.CommonFields.SubjectEDIMField
                          [from / p2-originator]
                          ; Mandatory PEDI.CommonFields.EDINOriginatorField
                          ; If omitted, the users O/R name in the user profile shall be used.
                          ["PREFERRED_RECIPIENT" "=" <">colon-or-address<">]
                          ; PEDI.CommonFields.firstRecipientField
                          "RECEIPT_TIME" "=" UTCtime
                          ; PEDI.CommonFields.NotificationTimeField
msg-id                 =  "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
from                   =  "FROM" "=" <">colon-or-address<">
p2-originator          =  "P2_ORIGINATOR" "=" <">colon-or-address<">
                          ; Kept for compatibility reasons.
p7-recipient           =  "P7_RECIPIENT" "=" <">colon-or-address<">
                          ; P7.PerRecipientMessageSubmissionFields.RecipientName
pn-fields              =  ["SUPPLEMENTARY_INFO" "=" <">1*64PS-CHAR<">]
                          ; PEDI.PositiveNotificationFields.EDISupplementaryInformation
nn-fields              =  "REASON" "=" nn-reason [nn-diagnostic]
                          ["SUPPLEMENTARY_INFO" "=" <">1*64PS-CHAR<">]
                          ; PEDI.NegativeNotificationFields.EDISupplementaryInformation
nn-reason              =  1*5DIGIT
                          ; PEDI.NegativeNotificationFields.NNUserReasonCodeField.
                          ; NNUserBasicCodeField, 0-32767
nn-diagnostic          =  1*5DIGIT
                          ; PEDI.NegativeNotificationFields.NNUserReasonCodeField.
                          ; NNUserDiagnosticField, 0-32767
local-id               =  "LOCAL_ID" "=" <">1*16PS-CHAR<">
                          ; Mandatory message identifier. Shall be used in the
                          ; P7.PerMessageSubmissionFields.ContentIdentifier.
colon-or-address          =     1*(address-attribute "=" value ";")
                          [directory]
```

```
address-attribute   =   "G"                   ; P1.PersonalName.givenName
                    /   "I"                   ; P1.PersonalName.initials
                    /   "S"                   ; P1.PersonalName.surName
                    /   "Q"                   ; P1.PersonalName.generationQualifier
                    /   "GQ"                  ; RARE generationQualifier
                    /   "CN"                  ; P1.CommonName
                    /   "O"                   ; P1.OrganisationName
                    /   "OU1"                 ; P1.OrganisationalUnit 1
                    /   "OU2"                 ; P1.OrganisationalUnit 2
                    /   "OU3"                 ; P1.OrganisationalUnit 3
                    /   "OU4"                 ; P1.OrganisationalUnit 4
                    /   "OU"                  ; RARE OrganisationalUnit
                     /  "P"                   ; P1.PrivateDomainName
                    /   "PRMD"                ; RARE PrivateDomainName
                    /   "A"                   ; P1.AdministrationDomainName
                    /   "ADMD"                ; RARE AdministrationDomainName
                    /   "C"                   ; P1.CountryName
                    /   "PD-PN"               ; P1.PhysicalDeliveryPersonalName
                    /   "PD-EA"               ; P1.ExtensionORAddressComponents
                    /   "PD-ED"        ; P1.ExtentionPhysicalDeliveryAddressComponents
                    /   "PD-OFN"              ; P1.PhysicalDeliveryOfficeNumber
                    /   "PD-OF"               ; P1.PhysicalDeliveryOfficeName
                    /   "PD-O"                       ;
        P1.PhysicalDeliveryOrganizationName
                    /   "PD-S"                ; P1.StreetAddress
                    /   "PD-A"                       ; P1.UnformattedPostalAddress
                    /   "PD-U"                       ; P1.UniquePostalName
                    /   "PD-L"                ; P1.LocalPostalAttributes
                    /   "PD-R"                       ; P1.PosteRestanteAddress
                    /   "PD-B"                       ; P1.PostOfficeBoxAddress
                    /   "PD-PC"               ; P1.PostalCode
                    /   "PD-SN"               ; P1.PDSName
                    /   "PD-C"                       ; P1.PhysicalDeliveryCountryName
                    /   "X.121"                      ; P1.X121Address
                    /   "X121"                ; RARE X121Address
                    /   "N-ID"                ; P1.NumericUserIdentifier
                    /   "UA-ID"               ; RARE NumericUserIdentifier
                    /   "T-ID"                ; P1.TerminalIdentifier
                    /   "T-TY"                       ; P1.TerminalType
                    /   domain-defined-type   ; P1.DomainDefinedAttribute.type
domain-defined-type
                    =   "DDA:" 1*8(PS-CHAR)
                    /   "DD." 1*8(PS-CHAR) ; RARE
value               =   *PS-CHAR
directory           =   "DIRECTORY" "=" "<"1*(directory-attribute "=" value ";")">"
directory-attribute =   "C"                   ; P1.CountryName
                    /   "O"                   ; P1.OrganisationName
                    /   "OU"                  ; P1.OrganisationalUnit 1
                    /   "CN"                  ; P1.CommonName
                    /   "S"                   ; P1.PersonalName.surName
```

```
UTCtime      =   date time offset
date         =   6DIGIT                     ; YYMMDD
time         =   4DIGIT                     ; hhmm
             /   6DIGIT                     ; hhmmss
offset       =   + 4DIGIT                   ; +hhmm
             /   - 4DIGIT                   ; -hhmm
             /   "Z"                        ; GMT
PS-CHAR      =   1DIGIT / 1ALPHA / " " / "'" / "+" /
                 / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT        =   <any ASCII decimal digit>  ; (48 - 57)
ALPHA                =          <any ASCII alphabetic character>        ; (65 - 90 , 97 -
122)
```

6.14 Appendix K Formal header-file syntax for Military Messages.

```
ip-message   =    outgoing
             /    incoming
outgoing     =    [content-type]         ;Must be placed on top of header-file.
                  local-id
                  [from / p2-originator]
                  1*(primary/copy/bcc)   ; At least one primary, copy or bcc
                                         ; recipient must be included according
                                         ; to ENV 41202
                  [in-reply-to]
                  [subject]
                  [expiry-time]
                  [reply-time]
                  [importance]
                  [sensitivity]
                  [P772-Primary-Precedence]
                  [P772-Copy-Precedence]
                  [P772-Extended-Authorisation-Info]
                  [P772-Distribution-Codes]
                  [*bodypart]
                  [*ftam_bodypart]
                  1*p7-recipient
                  [priority]
                  [per-message-indicators]
                  [Security-Classification]
                  [deferred-delivery-time]
                  [latest-delivery-time]
                  [dl-expansion-prohibited]
incoming     =    ms-entry-no
                  [content-type]
```

```
                        [mts-id]
                        [message-id]
                        [p2-originator]
                        [primary]
                        [copy]
                        [bcc]
                        [in-reply-to]
                        [subject]
                        [expiry-time]
                        [reply-time]
                        [importance]
                        [sensitivity]
                        [P772-Primary-Precedence]
                        [P772-Copy-Precedence]
                        [P772-Extended-Authorisation-Info]
                        [P772-Distribution-Codes]
                        [*bodypart]
                        [*ftam_bodypart]
                        [priority]
                        [Security-Classification]
                        [p7-originator]
                        [submission-time]
                        [creation-time]
                        [content-length]
content-type    =       "CONTENT_TYPE" "=" "P772"
                        ;P7.PerMessageSubmissionFields.ContentType
                        ;"P772" is encoded as the ExternalContentType: id-nato-mmhs-cont-mm88
mts-id          =       "MTS_ID" "=" <">1*32CHAR<">
                        ;P7MessageDeliveryIdentifier.LocalIdentifier
local-id        =       "LOCAL_ID" "=" <">1*64PS-CHAR<">
                        ; Mandatory message identifier. Shall be used in
                        ; P2.heading.IPMessageId.PrintableString and in the
                        ; P7.PerMessageSubmissionFields.ContentIdentifier
                        ; (limited to first 16 PS-CHAR of local-id).
                        ; Then this identifier can be used as reference both on
                        ; incoming delivery reports and on receipt notifications.
                        ; P2.heading.IPMessageId.ORName shall be constructed from
                        ; the users O/R name in the user profile.
from            =       "FROM" "=" <">colon-or-descriptor<">
```

```
                         ; Mandatory P2.heading.originator according
                         ; to ENV 41 202 Functional Standard
                         ; If omitted, the users O/R name in the user profile shall be
                         ; used.
p2-originator    =       "P2_ORIGINATOR" "=" <">colon-or-descriptor<">
                         ; Mandatory P2.heading.originator according
                         ; to ENV 41 202 Functional Standard
                         ; If omitted, the users O/R name in the user profile shall be
                         ; used.
                         ; Kept for compatibility reasons.
primary          =       "PRIMARY" "=" recipient
                         ; P2.heading.primaryRecipients
copy             =       "COPY" "=" recipient
                         ; P2.heading.copyRecipients
bcc              =       "BCC" "=" recipient
                         ; P2.heading.blindCopyRecipients
recipient        =       <">colon-or-descriptor<">
                         [reply-request]
                         [notification-request]
reply-request    =       "RE"
notification-request
                 =       "RN"                      ; Receipt notification
                 /       "NR"                      ; Non receipt notification
in-reply-to      =       "IN_REPLY_TO" "=" msg-id
subject          =       "SUBJECT" "=" <">*128t61-char<">
expiry-time      =       "EXPIRYTIME" "=" UTCtime
reply-time       =       "REPLYTIME" "=" UTCtime
t61-char                 =      <Character shall be mapped according to [18]>
importance       =       "LOW"
                 /       "NORMAL"
                 /       "HIGH"
sensitivity      =       "PERSONAL"
                 /       "PRIVATE"
                 /       "COMPANY-CONFIDENTIAL"
P772-Primary-Precedence
                 =       "P772-PRIMARY-PRECEDENCE" "=" precedence
                         ; P2.heading.extensions.primaryPrecedence
P772-Copy-Precedence
                 =       "P772-COPY-PRECEDENCE" "=" precedence
                         ; P2.heading.extensions.copyPrecedence
```

```
precedence      =       1*2DIGIT                ; 0-31
                                                ; deferred (0)
                                                ; routine (1)
                                                ; priority (2)
                                                ; immediate (3)
                                                ; flash (4)
                                                ; override (5)
P772-Extended-Authorisation-Info
                =       " P772-EXTENDED-AUTHORISATION-INFO" "=" UTCtime
                        ; P2.heading.extensions.extendedAuthorizationInfo
P772-Distribution-Codes
                =       " P772-DISTRIBUTION-CODES" "=" 1*8(sic)
                        ; P2.heading.extensions.distributionCodes.sic
sic             =       <">3*8PS-CHAR<">
bodypart        =       "BODYPART" "=" bodypart-type
bodypart-type   =       "IA5TEXT" filename      ; P2.body.IA5TextBodyPart.
                                                ;  IA5TextData
                /       "ACCENTEDTEXT" filename
                                                ; P2.body.IA5TextBodyPart.
                                                ;  IA5TextData
                                                ; Composite Graphic Characters,
                                                ; ref. T.50 app. I.2.3.
                /       "FORWARDED" filename    ; P2.body.MessageBodyPart.
                                                ;  MessageData
                /       "BILATERALLY_DEFINED" filename
                                                ; P2.body.BilaterallyDefinedBodyPart
                /       "G3FAX" filename [number-of-pages] [non-basic-params]
                                                ; P2.body.G3FacsimileBodyPart.
                                                ;  G3FacsimileData
                /       "T61" filename          ; P2.body.TeletexBodyPart.
                                                ;  TeletexData
                /       "UNSUPPORTED" filename  ; Used when an incoming message
                                                ; contains a bodypart type that is not
                                                ; supported.
                /       "8859-x" filename       ; P2.body.ExternallyDefinedBodyPart
                                                ; GeneralTextData
                /       "MM-MESSAGE" filename   ; P2.body.ExternallyDefinedBodyPart
                                                ; MMMessageData
                ; IA5 text bodyparts shall be read and written in accordance with the command
                ; TEXT-FORMAT. Except if the bodypart-type keyword is surrounded by <>
                ; on submission. Then no conversion shall be made.


                ; G3FAX bodyparts shall be read according to the format of the bodypart. If the
                ; first character in the bodypart file is a g3fax tag (either hex A3 or AF), the
                ; bodypart file shall be assumed to be on a correctly ASN.1 encoded g3fax
                ; format. When this format is used, the parameters 'number-of-pages' and non
                ; basic params' shall be ignored. If neither of the tags are present, the format
                ; shall be a file containing a list of filenames (one filename pr line) comprising
                ; the content of the g3fax bodypart, one filename for each page.
                ; G3FAX bodyparts shall be written according to the configuration file
                ; parameter G3FAX_FORMAT. If the parameter implies ASN1-format, the
                ; fully encoded bodypart received shall be written to the bodypart-file,
                ; otherwise the received bodypart shall be written.


                ; Sending and reception of 8859-x bodyparts shall be done according to [22].
ftam-bodypart   =           "FTAM_BODYPART" "=" ("FILENAME" "=" filename)
                        ["USER_FILENAME" "=" 1*78CHAR]
                        ; FileTransferParameters.file-attributes.pathname
                        ;           FileTransferParameters.file-attributes.date-and-time-of-last-
modification
                        ;  shall be read from /set to file specified in FILENAME parameter
above.
                        ;  FileTransferParameters.file-attributes.object-size shall be read from
file
                        ;  specified in FILENAME parameter above.
                        ["APPLICATION_REFERENCE" "=" object-identifier]
                        ; FileTransferParameters.environment.application-reference.
                        ;  registered-identifier
                        ["USER_VISIBLE_STRING" "="<">1*80OCTET<">]
                        ; FileTransferParameters.environment.user-visible-string
                        ;  Only the first string in sequence shall be used.
object-identifier=          (1*10DIGIT) *("." 1*10DIGIT); 0-2147483647
filename        =           1*78CHAR                    ; File name of bodypart file
                        ; If bodypart-type is "FORWARDED" the bodypart file shall
                        ; contain header-information with syntax as described in
                        ; this appendix.
                        ;
                        ; Forwarded bodyparts shall contain P2 information.
                        ; It shall be possible to nest "FORWARDED" in 6
                        ; levels. If more than 6 levels, for outgoing messages, the
                        ; program shall abort, present exit code and log in the
                        ; response-file. For incoming messages, 6 levels shall be
                        ; "unpacked", all lower levels shall be deleted. The header-
                        ; file shall log that a forwarded document has been deleted.
                        ;
                        ; If bodypart-type is not "FORWARDED" the bodypart file shall
                        ; contain octets as defined by bodypart-type.
number-of-pages         =       1*5DIGIT       ; 0-32767
non-basic-params
                =       "FINE-RESOLUTION"
p7-recipient    =       "P7_RECIPIENT" "="
                         <">colon-or-address<"> [report-request]
                        ; P7.PerRecipientMessageSubmissionFields.RecipientName
                        ; Mandatory on outgoing messages.
                        ; Will not be included on incoming messages.
report-request  =       "DN"            ; Delivery notification
                /       "ND"            ; Non-delivery notification
                        ; If omitted, no report shall be requested.
priority        =       "PRIORITY" "="
                        "NORMAL" / "NON-URGENT" / "URGENT"
                        ; P7.PerMessageSubmissionFields.Priority
                        ; If not included on outgoing messages, normal shall be used.

per-message-indicators =        "PERMESSAGEINDICATORS" "=" [*indicators]

indicators      =       "AlternateRecipientAllowed"
                        /  "DisclosureOfRecipients"
                        /  "ImplicitConversionProhibited"
                        /  " ConversionWithLossProhibited "



dl-expansion-prohibited
                =       "DLEXPANSIONPROHIBITED" = boolean
boolean         =       "TRUE" / "FALSE"


Security-Classification
                =       "SECURITY-CLASSIFICATION" "=" classification
                        ; P7. PerMessageSubmissionFields. PerMessageSubmissionExtensions.
                        ; message-security-label.SecurityClassification
classification  =       1*3DIGIT                        ; 0-256
                                                        ; unmarked (0)
                                                        ; unclassified (1)
```

```
                                                            ; restricted (2)
                                                            ; confidential (3)
                                                            ; secret (4)
                                                            ; top-secret (5)
deferred-delivery-time
                =       "DEFERRED_DELIVERY_TIME" "=" UTCtime
latest-delivery-time
                =       "LATEST_DELIVERY_TIME" "=" UTCtime
ms-entry-no     =       "MS_ENTRY_NO" "=" 1*10DIGIT         ; sequence-number
                                                                  ; 0-2147483647
message-id      =       "MESSAGE_ID" "=" msg-id
msg-id          =       "<" [1*64PS-CHAR] "*" [colon-or-address] ">"
p7-originator   =       "P7_ORIGINATOR" "=" <">colon-or-address<">
submission-time         =       "SUBMISSION_TIME" "=" UTCtime
                        ; P7.MessageSubmissionTime
                        ; Shall be ignored on outgoing messages.
creation-time   =       "CREATION_TIME" "=" UTCtime
                        ; P7.MessageCreationTime
                        ; Shall be ignored on outgoing messages.
                        ; Shall be created on incoming messages if
                        ; Message Store does not return submission-time.
content-length  =       "CONTENT_LENGTH" "=" *DIGIT
                        ; Shall be ignored on outgoing messages
UTCtime         =       date time offset
date            =       6DIGIT                  ; YYMMDD
time            =       4DIGIT                  ; hhmm
                /       6DIGIT                  ; hhmmss
offset          =       + 4DIGIT                ; +hhmm
                /       - 4DIGIT                ; -hhmm
                /       "Z"                     ; GMT
CHAR            =       <any ASCII character> ; (0 - 127)
PS-CHAR         =       1DIGIT / 1ALPHA / " " / """ / "+" /
                        / "," / "-" / "." / "/" / ":" / "=" / "?"
DIGIT           =       <any ASCII decimal digit>       ; (48 - 57)
ALPHA                   =       <any ASCII alphabetic character>        ; (65 - 90 , 97 - 122)
```

6.15 Appendix X Syntax rules for the command, header and response files

There must be a space, a colon and another space between a command and the first parameter, and a space between subsequent parameters.

The Keywords are case-insensitive.

UA-FI reads command and header files with line length of 256 characters terminated by LINETERM.

LINETERM	=	CR / LF / CRLF / LFCR
CR	=	<ASCII CR, carriage return>
LF	=	<ASCII LF, linefeed>
CRLF	=	CR LF
LFCR	=	LF CR

UA-FI can read command and header files with up to 32767 lines with a maximum length of 256 characters. If the line length or maximum number of lines is exceeded, UA-FI terminates.

Each keyword and its corresponding parameters must be specified on one line.

Each statement in the response file is on the format:

<keyword> : <formal part> (<user friendly message>)

Note : There is a space before and after the colon. The formal part is usually one or more status codes, while the plain text message inside parentheses is a corresponding user friendly message.

MESSAGE_LANGUAGE statement in the MAXWARE.INI file.

If a parameter contains one or more spaces, the parameter value must be quoted using double quotation marks. If the double quote character occurs inside the quoted parameter, use two double quote characters to represent it.

In the command and header files, the following parameter values must be quoted: X.400 address, user name, subject, message_ID, local_ID, primary, copy,bcc, in_reply_to, MS_password, MTS_ID, and P2_originator. These values are always quoted when they appear in the response file.

6.16 Appendix XX Limitations in in UA-FI

- The maximum length of a file name itself in the MS-DOS version is 8 characters, with a 3 character extension (the maximum length of the file name including drive and path is 78 characters).
- A message may have as many as 32767 recipients, and it is possible to send and receive messages with a length of up to 2,147,483,647 bytes, possibly limited by available disk space.
- A message may have as many as 999 BodyParts.

6.17 Appendix X Character Sets

6.17.1 Printable string

This includes:

Capital Letters	A, B,......Z
Small Letters	a, b,........z
Digits	0, 1,........9
Space	(space)
Apostrophe	‘
Left Paranthesis	(
Right Parantesis	)
Plus sign	+
Comma	,
Hyphen	-
Full Stop	.
Solidus	/
Colon	:
Equal Sign	=
Question Mark	?

This has the abbreviation “PS” or PS-CHARin this manual.

6.17.2 IA5

This is very similar to 7 ASCII.

6.17.3 Teletex

This is US ASCII + Floating accents.+ a few additional characters. This often called “T.61 with reference to the standard were it is defined.

6.17.4 Char

This is any ASCII character (0 - 127).

6.17.5 Digit

This is any ASCII decimal digit (48 - 57).

6.17.6 ALPHA

This is any ASCII alphabetic character (65 - 90 , 97 - 122).

6.18 Appendix X X.400 address elements

The X.400 address is represented as a string containing a number of elements. Each element uses the syntax <keyword> = <value>;. Upper and lower case is not significant. The X.400 address used must be quoted. An example:

"g=PER;s=ARLOV;o=WORDFIXERS;a=TELEMAX;c=NO"

Here is a list of the X.400 address elements. Note that the address elements you can use on the envelope (p7_recipient and p7_originator) and in the message header (primary, copy and bcc) differs somewhat. Note also that the address elements you can use on E-mail and Pedi messages differs slightly. This is stated after the address elements below.

Here is a list of the X.400 address elements:

Address elements defined in X.400 1984

C	ISO-Country code (2 characters)
A	ADMD. Administrative management domain name - service provider (up to 16 characters)
P	PRMD. Private management domain name (up to 16 characters)
O	Organization name (up to 64 characters)
S	Surname (up to 40 characters)
G	Given name (up to 16 characters)
I	Initials (up to 5 characters)
GQ	Generation qualifier - to distinguish between users with identical names, for example father and son, using Sr. and Jr. (up to 3 characters)
X.121	The X.121-address - network address (up to 15 characters)
T-ID	Terminal identifier (up to 24 characters)
OU1	Organization unit name 1 (up to 32 characters)
OU2	Organization unit name 2 (up to 32 characters)
OU3	Organization unit name 3 (up to 32 characters)
OU4	Organization unit name 4 (up to 32 characters)
N-ID	Numeric user identifier (up to 32 characters)
T-TY	Terminal type
DDA:	Domain defined attribute 1 - 4. This part has the syntax DDA:type=value where "type" is the type, and "value" is the attribute itself. Both must contain only printable string characters (see below). “Type” may be up to eight characters and the value up to 128 characters. You can use this, for example, to address users on a network that is connected to the X.400 service through a gateway: DDA:RFC-822=Harald(a)vax.delab.nth.edu
FREEFORM	Freeform name. Address element for use in E-mail messages only (primary, copy bcc and p2_originator). Is used to describe the sender, like your full name, business role or company name. Up to 64 characters.
TEL	Telephone number. Address element for use in E-mail messages only (primary, copy bcc and p2_originator). Up to 32 characters.

Address elements defined in X.400 1988 (Content_type P22 og Pedi only):

CN	Common name (up to 64 characters)
PD-PN	Physical delivery personal name (up to 30 characters)
PD-EA	Physical delivery extension components (up to 30 characters)
PD-ED	Physical delivery extension name components (up to 30 characters)
PD-OFN	Physical delivery office number (up to 30 characters)
PD-OF	Physical delivery office name (up to 30 characters)
PD-O	Physical delivery organisation name (up to 30 characters)
PD-S	Street address (up to 30 characters)
PD-A	Unformatted postal address (up to 30 characters). Line 1.
PD-A	Unformatted postal address (up to 30 characters). Line 2.
PD-A	Unformatted postal address (up to 30 characters). Line 3.
PD-A	Unformatted postal address (up to 30 characters). Line 4.
PD-A	Unformatted postal address (up to 30 characters). Line 5.
PD-A	Unformatted postal address (up to 30 characters). Line 6.
PD-U	Unique postal name (up to 30 characters)
PD-L	Local postal attributes (up to 30 characters)
PD-R	Poste restante address (up to 30 characters)
PD-B	Post office box address (up to 30 characters)
PD-PC	Postal code (up to 16 characters)
PD-SN	PDS name (up to 30 characters)
PD-C	Physical delivery country name (up to 2 characters)
DN	Directory Name. T61 String.

Syntax: “DN=<directory name>“

The directory name attributes are as follows:

c= country name (2 character ISO country code)
st= State and Province
o= Organization name
l= Locality
ou= Organization unit name
cn= common name
s= surname

Example 1:

Primary=“dn=<c=no;o=maxware;cn=John Smith>”

Example 2:

Primary=“s=Jones;o=maxware;a=telemax;c=no;dn=<c=no;l=Oslo;cn=Bob Jones>”

Note: In UA-FI the total number of characters in a X.400 address is limited to 256 characters.

6.19 Appendix X UTC time

X.400 messages have time-stamps for when they are submitted, fetched etc. This time is normally given in UTC time This consists of the date (six digits), the time (four or six digits) and offset to GMT in hours (negative or positive number).

Example: If the time is given as

921214095403+0100

it means 14 December 1992 at 9:54:03 am, 1 hour ahead of GMT.

6.20 Appendix L Related documentation and Literature

The configuration files and their parameters are described in the document *Configuration Guide*.

MailmaX.400 for Windows Programmers Guide describes how an UA-FI based application can be used together with MailmaX for Windows.

Blue book Companion, CCITT MHS 1988, ISO/IEC MOTIS Message Oriented Text Interchange System by Carl Uno Manros published by Technology Appresials 1989.

EDI and X.400 using Pedi. The Guide for implementers & Users. Richard Hill.

ISBN 1 87 180**2 0**

6.21 Appendix M Index