3.2   MIME Format Message

For MIME format message, there is EDIFACT message and Attachment file transmission message.
Each format and message structure are shown as follows.

3.2.1   EDIFACT message

3.2.1.1   Message format for EDIFACT messages

The following shows the message format for EDIFACT messages.

3.2.1.1.1   Messages used

NACCS uses the following messages. Note that PAXLST cannot be sent from lines other than those
provided by aeronautical communication contractors.

(1)UN/EDIFACT
CUSRES (Customs response message)
CUSREP (Customs conveyance report message)
CUSCAR (Customs cargo report message)
PAXLST (Passenger list message)
CODECO (Container gate-in/gate-out report message)
IFTMIN (Instruction message)
IFTMBC (Booking confirmation message)
APERAK (Application error and acknowledgment message)
GENRAL (General purpose message)
CONTRL (Syntax and service report message)

(2)US/EDIFACT
PAXLST (Passenger list message)

(3)PADIS EDIFACT
PNRGOV (Passenger Name Record information to government)

3.2.1.1.2 Syntax rules

Syntax rules for EDIFACT messages used at NACCS should be ISO 9735 Third edition (version 3.0).
Note that for messages using PAXLST, syntax rules for UN/EDIFACT should be ISO 9735 Fourth edition (version 4.0), and for syntax rules for US/EDIFACT, should be ISO 9735 First edition (version 1.0). However, when processing messages at NACCS mail server, process messages according to syntax rules specified in ISO 9735 Third edition (version 3.0).
For messages using PNRGOV, syntax rules for PADIS EDIFACT should be ISO 9735 Fourth edition (version 4.0).

3.2.1.1.3 Message version

Message version for EDIFACT messages used at NACCS should be the following (1) and (2) which are approved by D.98B and DMR (*). However, below message are not included.
For CONTRL messages, message version 2.0 should be used.

Message	Version	Remarks
ITFMBC	D.99B	
CUSCAR	D.17A	Which is only used for "Advance Cargo Information Registration (ADM01)" procedure and "Advance Cargo Information (House Manifest) Registration (HDM01)" procedure
PAXLIST	D.02B	
PNRGOV	11.1	

*The following shows details where DMR was submitted from NACCS Center to United Nations and approved.

(1) This was approved at Brussels JRT meeting held at October, 1998.
(These are incorporated in version D.99A.)

○ CUSREP
• Addition of segments to Segment Group 4
FII (conditional 1)
LOC (conditional 1)
RFF (conditional 1)
DTM (conditional 9)

• Addition of segments to Segment Group 9
STS (conditional 9)

(2) This was approved at Brussels JRT meeting held at October, 1998.
(These are incorporated in version D.99B.)

○ CUSREP
• Increase of the number of repeat of NAD segments in Segment Group 9.
9 times → 99 times

* DMR is abbreviation of "Data Maintenance Request". This refers to requesting of maintenance of data directory of EDIFACT to United Nations.

3.2.1.1.4 Message structure

For structures of each EDIFACT message used at NACCS, refer to "Appendix 14.2.2 Message Structure" in Appendix 14.2 EDIFACT Mapping Rules.

(Note 1) "++++" is attached before segments indicated in 3.2.1.1.3 (1) and (2).

3.2.1.1.5 Available character set

The character set which can be used in EDIFACT messages should be the Level A Character Set plus the 2 characters "@" and "#".

However, the above rule does not apply for some of the procedures, and details are shown in Mapping Table for Each Procedure as special notes.

Besides, note that the character set to be used in EDIFACT messages transmitted via lines which are provided by aeronautical communication contractors should be Level A Character Set. Table 3.2.1 and Table 3.2.2 show Level A Character Set.

Table 3.2.1   Level A Character Set

Type	Available character	Remarks
Character (capital letter)	A - Z	
Numeric character	0 - 9	
Space		
Period	.	In NACCS, a period is uniformly used to indicate a decimal point.
Comma	,	
Hyphen/minus sign	-	
Left parenthesis	(	
Right parenthesis	)	
Slash	/	
Equal sign	=	
Exclamation mark	!	
Quotation mark	"	
Percentage	%	
Ampersand	&	
Asterisk	*	
Semicolon	;	
Inequality sign (less-than)	<	
Inequality sign (greater-than)	>	

Type	Available character	Remarks
The following character set is Level A Character Set. This is used for special purposes, so when using this in data elements, make sure to assign a release character (?) right before this.		
Apostrophe	'	Segment ending sign
Plus sign	+	Data element separator
Colon	:	Component data element separator
Question mark	?	Release character

Table 3.2.2 Range of Level A Character Set

Bits	b7	b6	b5	b4	b3	b2	b1	row	0	1	2	3	4	5	6	7
				0	0	0	0	0			SP (Note 1)	0	@	P		
				0	0	0	1	1			!	1	A	Q		
				0	0	1	0	2			"	2	B	R		
				0	0	1	1	3			#	3	C	S		
				0	1	0	0	4				4	D	T		
				0	1	0	1	5			%	5	E	U		
				0	1	1	0	6			&	6	F	V		
				0	1	1	1	7			'	7	G	W		
				1	0	0	0	8			(	8	H	X		
				1	0	0	1	9			)	9	I	Y		
				1	0	1	0	A			*	:	J	Z		
				1	0	1	1	B			+	;	K			
				1	1	0	0	C			,	<	L			
				1	1	0	1	D			-	=	M			
				1	1	1	0	E			.	>	N			
				1	1	1	1	F			/	?	O			

(Note 1) SP denotes a space.

3.2.1.2 EDIFACT message structure

When using EDIFACT messages, e-mail style processing mode (gateway computers) should be used as the data transmission/receipt mode. In this case, a communications protocol header and a trailer are added to an EDIFACT message.
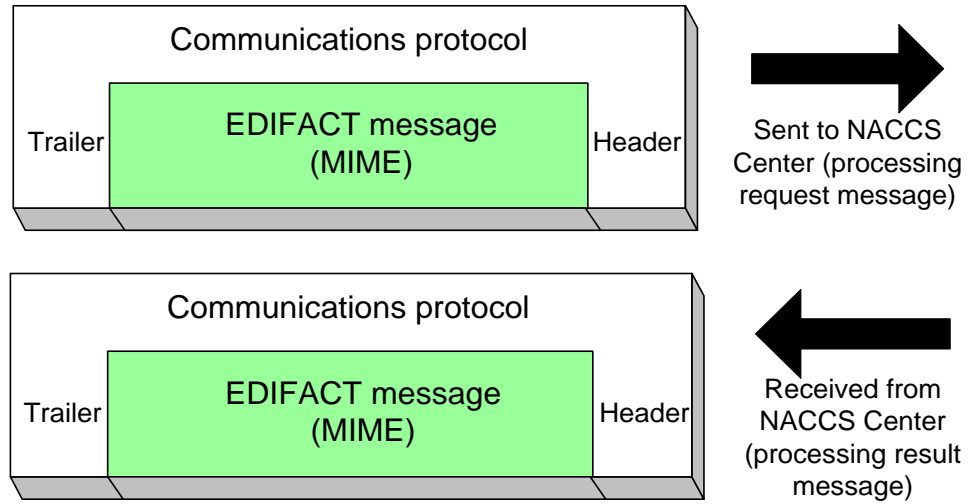Figure 3.2.1 shows message structure.

Figure 3.2.1   EDIFACT message

3.2.1.2.1 Input (output) common fields

The following shows input (output) common fields of procedure messages for EDIFACT messages. In addition, for the filing method for EDIFACT messages, details are shown in Mapping Table for Each Procedure.

(1) Common field for input screen (processing request message)
Table 3.2.3 shows input common fields for EDIFACT.

Table 3.2.3　Input Common Fields

Item No.	Field name	Length	Outline	Sample settings, etc.
1	Procedure Code	Max 5	Set a procedure code for identifying the procedure.	VBX (General Vessel Information Registration)
2	User code	Fixed 5	Set a user code, Identifying Number and password for identifying the user.	1AABC
3	Identifying Numbers	Fixed 3		001
4	User Password	Max 8		********
5	Message Tag (Note)	Max 26	Set information for matching a processing request message with a processing result message. (See 3.5.2)	Assign a unique value.
6	Input Message ID (Note)	Max 10	This value will be output in a processing result message. (See 3.5.1)	Assigns an arbitrary value.
7	Index Tag (Note)	Max 64	Used in the inquiry procedure, etc. when inquiry results, etc. do not fit in a single processing result message, or when inquiring consecutive information (continued processing), or when calling other specified information in the cargo information inquiry procedure (ICG). (See 3.5.3)	(When sequential processing is implemented, set a value as specified in Index Tag of the processing result message that has arrived)

(Note) See "3.5 Message control elements" for details on Message Tag, Input Message ID and Index Tag.

(2) Output common fields (processing result messages)
Table 3.2.4 shows Output common fields for EDIFACT

Table 3.2.4　Output Common Fields

Item No.	Field name		Length	Outline	Sample settings, etc.
1	Procedure Code		Max 5	Indicates a procedure code (Note 2)	ACL01 (Application for Checking of Loading (for container vessel))
2	Output Information code		Max 7	The code of an output message. Advisable to use this code for sorting messages.	SAT1401
3	User code		Fixed 5	The code of the user who received the relevant message	1AABC
4	Message Tag		Max 26	Used to identify a series of processing result messages responding to a processing request message. (See 3.5.2)	(Data set in the processing request message sent by the user is reflected as it is)
5	Message Control Information	Division Sequence Number	Fixed 3	Used to identify a series of processing result messages responding to a processing request message.	000 - 001
6		Termination	Fixed 1	Used to identify a series of processing result messages responding to a processing request message.	'E' is supplied at the end of the message. Otherwise, enter a space.
7		Message Type	Fixed 1	To indicate a message class. (See 3.4)	'R' is supplied for a processing result message.
8		(Reserved area)	Max 3	(Note 1)	
9	Input Message ID		Max 10	Outputs all settings of the processing request message. For EXC type messages, spaces are filled (See 3.5.1)	(Settings of a processing request massage)
10	Index Tag		Max 64	Set when inquiry results do not fit in a single processing result message (subsequent processing to follow) (See 3.5.3)	(Subsequent information)

(Note 1) The reserved areas are used to control the system.

(Note 2) The Procedure Code set in the output common fields may not necessarily match that in another input common fields. There are some occasions where a procedure code different from that in the processing request message is specified in the output common fields. Advisable to use output message codes for sorting messages.

3.2.1.2.2 Transmission unit for messages

3.2.1.2.2.1 Transmission unit for one exchange

In NACCS, UNA should not be used as a header for one exchange of EDIFACT messages. In addition, one to multiple EDIFACT messages can be stored for one exchange (UNB - UNZ). However, in "Passenger Manifest Report (PLR01)" procedure and "Surname/Given Name Report (NLR01)" procedure, UNA can be used.

3.2.1.2.2.2 Transmission unit for single-message and multiple-message

Single-message refers to a message where 1 EDIFACT message (UNH - UNT) is stored in one exchange (UNB - UNZ). Multiple-message refers to multiple EDIFACT messages are stored in one exchange.
However, when using multiple messages, due to the limit in processing capacity of the NACCS Center server, the maximum number of EDIFACT messages to be stored by one exchange should be 99.
However, in "Passenger Manifest Report (PLR01)" procedure, "Surname/Given Name Report (NLRO1)" procedure, and "Passenger Reservation Record Report (PNR01)" procedure, "Advance Cargo Information Registration (ADM01)" procedure and "Advance Cargo Information (House Manifest) Registration (HDM01)" procedure, only single-messages should be used.

3.2.1.2.2.3 Transmission unit for single B/L message and multiple B/L message

A single B/L message refers to a message where 1 unit of B/L information and container information relating to the B/L are stored in 1 CUSCAR message which is used in the "Manifest Information Registration (MFR)" procedure and "Manifest Information Correction (before submission of Cargo Manifest) (CMF01)" procedure. Multiple B/L message refers to a message where multiple units of B/L information and container information are stored in a similar CUSCAR message.
However, due to the limit in processing capacity of the NACCS Center server, only single-messages should be used to send multiple B/L messages.

3.2.1.2.3 Message format

3.2.1.2.3.1 Processing request message

(1) UN/US EDIFACT format
In the message structure of UN/US EDIFACT messages for processing request messages, multiple function groups or multiple messages can be stored in 1 procedure message.
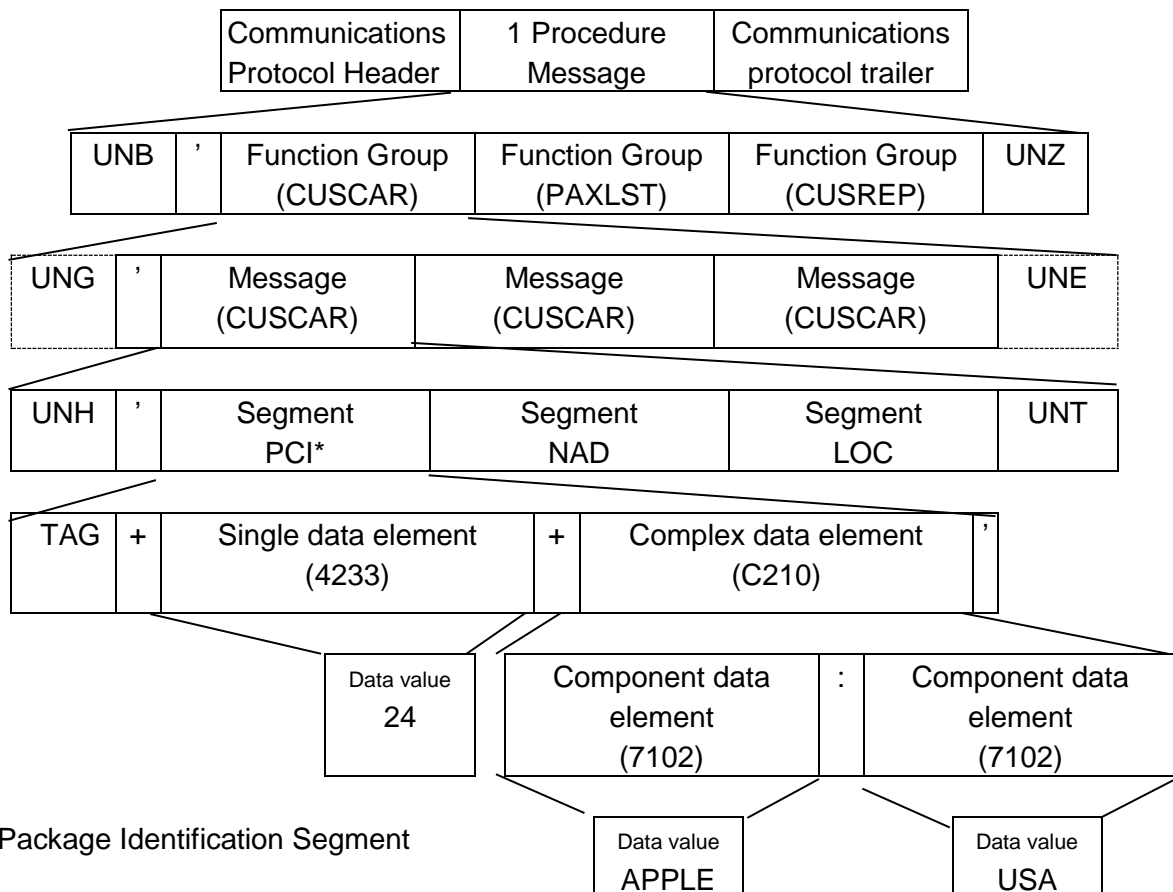In addition, for multiple B/L messages, multiple B/Ls and containers can be stored.
However, the maximum length per procedure message is 10MB (10,000,000 bytes) for the multiple B/L message.
When multiple function groups or messages are included in 1 procedure message, and when multiple B/Ls or containers are included in 1 multiple B/L message, those will be decomposed into multiple NACCS EDI messages by the mail server.
For transmission/receipt of EDIFACT messages, e-mail style processing mode (gateway computer) is used and a communications protocol header and a trailer are added.
Figure 3.2.2.1 shows the message structure of EDIFACT messages for processing request messages.

Communications Protocol Header	1 Procedure Message	Communications protocol trailer

UNB	’	Function Group (CUSCAR)	Function Group (PAXLST)	Function Group (CUSREP)	UNZ

UNG	’	Message (CUSCAR)	Message (CUSCAR)	Message (CUSCAR)	UNE

UNH	’	Segment PCI*	Segment NAD	Segment LOC	UNT

TAG	+	Single data element (4233)	+	Complex data element (C210)	’

Data value 24	Component data element (7102)	:	Component data element (7102)

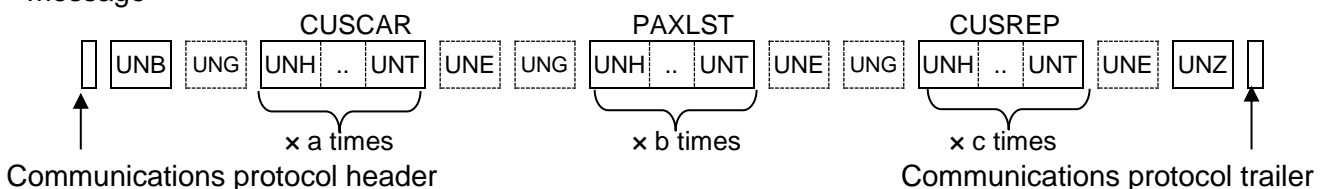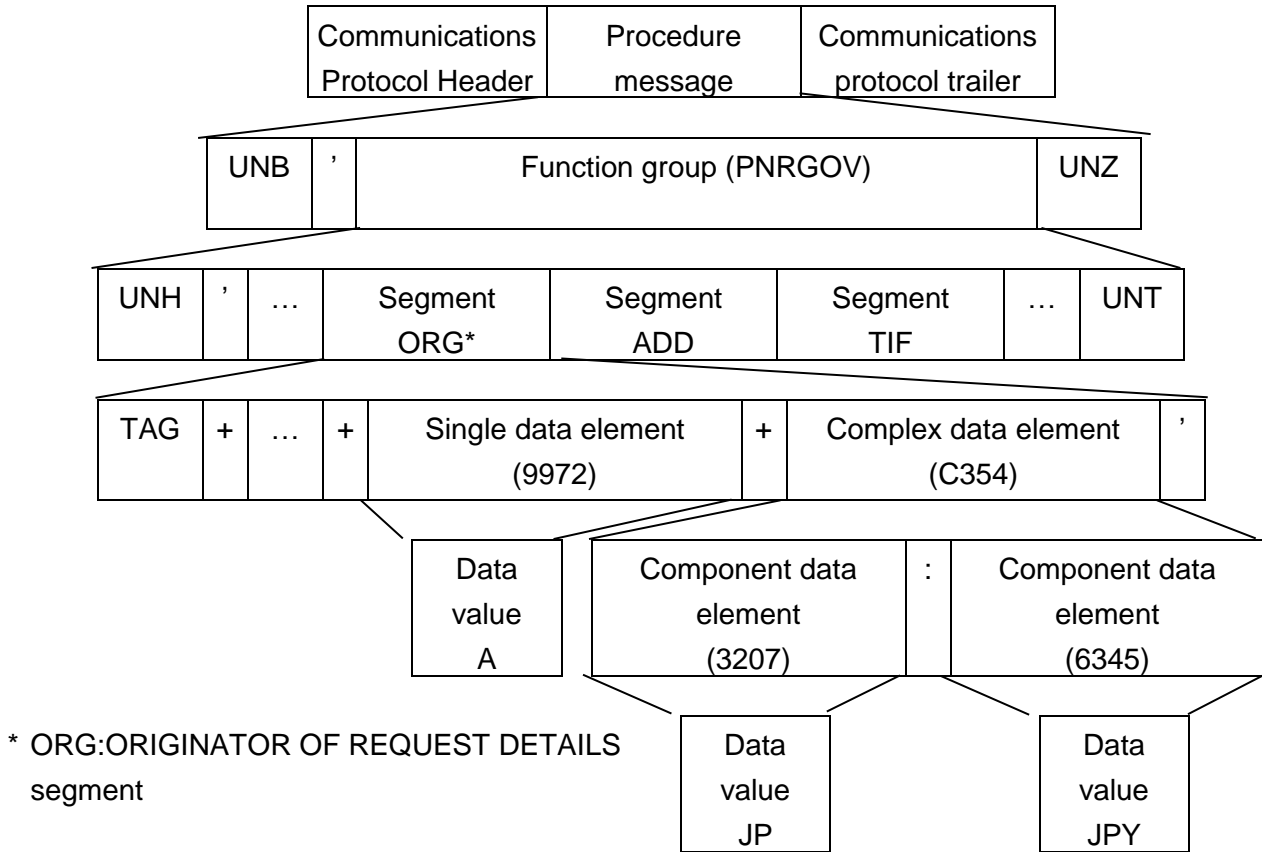| Data value APPLE		Data value USA

*PCI: Package Identification Segment

(Note) Function group header (UNG) and function group trailer (UNE) may not be used.

Figure 3.2.2.1   Message Structure of Processing Request Message

* Message example: When multiple messages of CUSCAR, PAXLST, and CUSREP are stored in 1 message

	UNB	UNG	UNH	..	UNT	UNE	UNG	UNH	..	UNT	UNE	UNG	UNH	..	UNT	UNE	UNZ	

CUSCAR × a times   PAXLST × b times   CUSREP × c times

Communications protocol header   Communications protocol trailer

(2) PADIS EDIFACT format

In message structure of PADIS EDIFACT messages for processing request messages, single function group can be stored in 1 procedure message.

In addition, PADIS EDIFACT messages can use only the single-message.

However, the maximum length per procedure message is 10MB (10,000,000 bytes).

For transmission/receipt of PADIS EDIFACT messages, e-mail style processing mode (gateway computer) is used and a communications protocol header and a trailer are added.

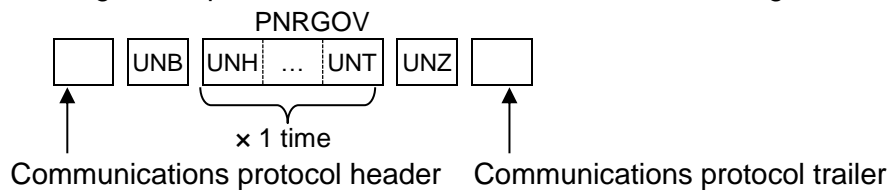Figure 3.2.2.2 shows the message structure of PADIS EDIFACT messages for processing request messages.

Communications Protocol Header	Procedure message	Communications protocol trailer

UNB	'	Function group (PNRGOV)	UNZ

UNH	'	…	Segment ORG*	Segment ADD	Segment TIF	…	UNT

TAG	+	…	+	Single data element (9972)	+	Complex data element (C354)	'

Data value A	Component data element (3207)	:	Component data element (6345)

* ORG:ORIGINATOR OF REQUEST DETAILS segment

Data value JP	Data value JPY

Figure 3.2.2.2   Message Structure of Processing Request Message

Message example: When 1 PNRGOV is stored in 1 message

PNRGOV

	UNB	UNH	…	UNT	UNZ	

× 1 time

Communications protocol header   Communications protocol trailer

3.2.1.2.3.2 Processing result message

Processing is carried out by each message, B/L, or container, and a processing result notification massage and an output message are output by each message, B/L, or container.
  In other words, in message structure for processing result messages, 1 message is stored in 1 procedure message.
  For transmission/receipt of EDIFACT messages, e-mail style processing mode (gateway computer) is used and a communications protocol header and a trailer are added to a message.
  Figure 3.2.3 shows the message structure of EDIFACT messages for processing result messages.
  Note that processing result messages are returned only to processing request messages with UN/US EDIFACT format. Processing result messages are not returned to processing request messages with PADIS EDIFACT format.

Communications Protocol Header	1 Procedure Message	Communications protocol trailer

UNB	'	1 message (CUSRES)	UNZ

UNH	'	Segment NAD*	Segment GIS	Segment MEA	UNT

TAG	+	Single data element (3035)	+	Complex data element (C058)	'

Data value CA	Component data element (3124)	:	Component data element (3124)

*NAD:Name And Address segment

Data value AAA CORP.	Data value TOKYO
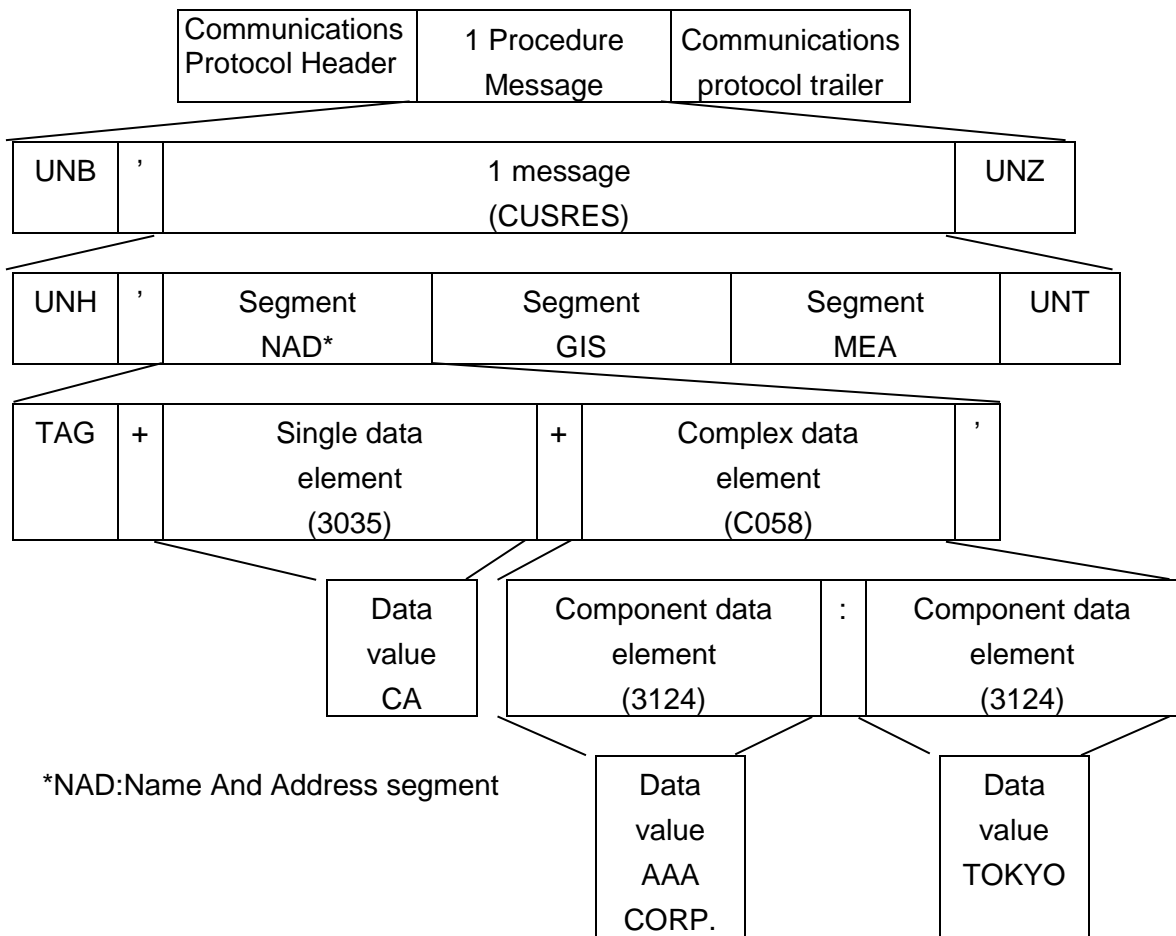
Figure 3.2.3   Message Structure of Processing Result Message

* Message example: When 1 CUSRES is stored in 1 message

CUSRES

	UNB	UNH … UNT	UNZ	

× 1 time

Communications protocol header   Communications protocol trailer
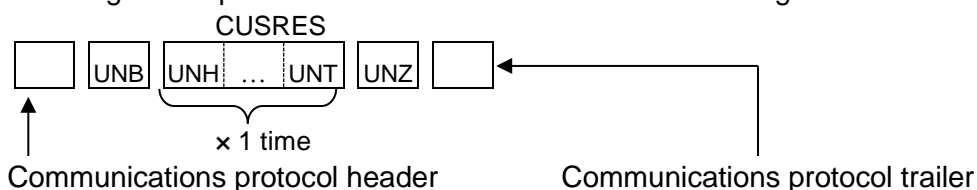
(Term description)

UNB: Exchange header. (mandatory)
    A EDIFACT message must start with this segment.

UNG: Function group header. (can be omitted)
    When storing multiple telegraphic segments within one message,group messages
    by similar segments.

UNH: Message header. (mandatory)
    1 message within a message must start with this segment.

UNT: Message trailer. (mandatory)
    1 message must end with this segment.

UNE: Function group trailer. (can be omitted)
    1 function must end with this segment.

UNZ: Exchange trailer. (mandatory)
    A message must end with this segment.

3.2.1.2.4   Message processing mode

3.2.1.2.4.1   Processing mode for single-message

Figure 3.2.4 shows process image when one EDIFACT message is stored (single-massage) in one EDIFACT message.
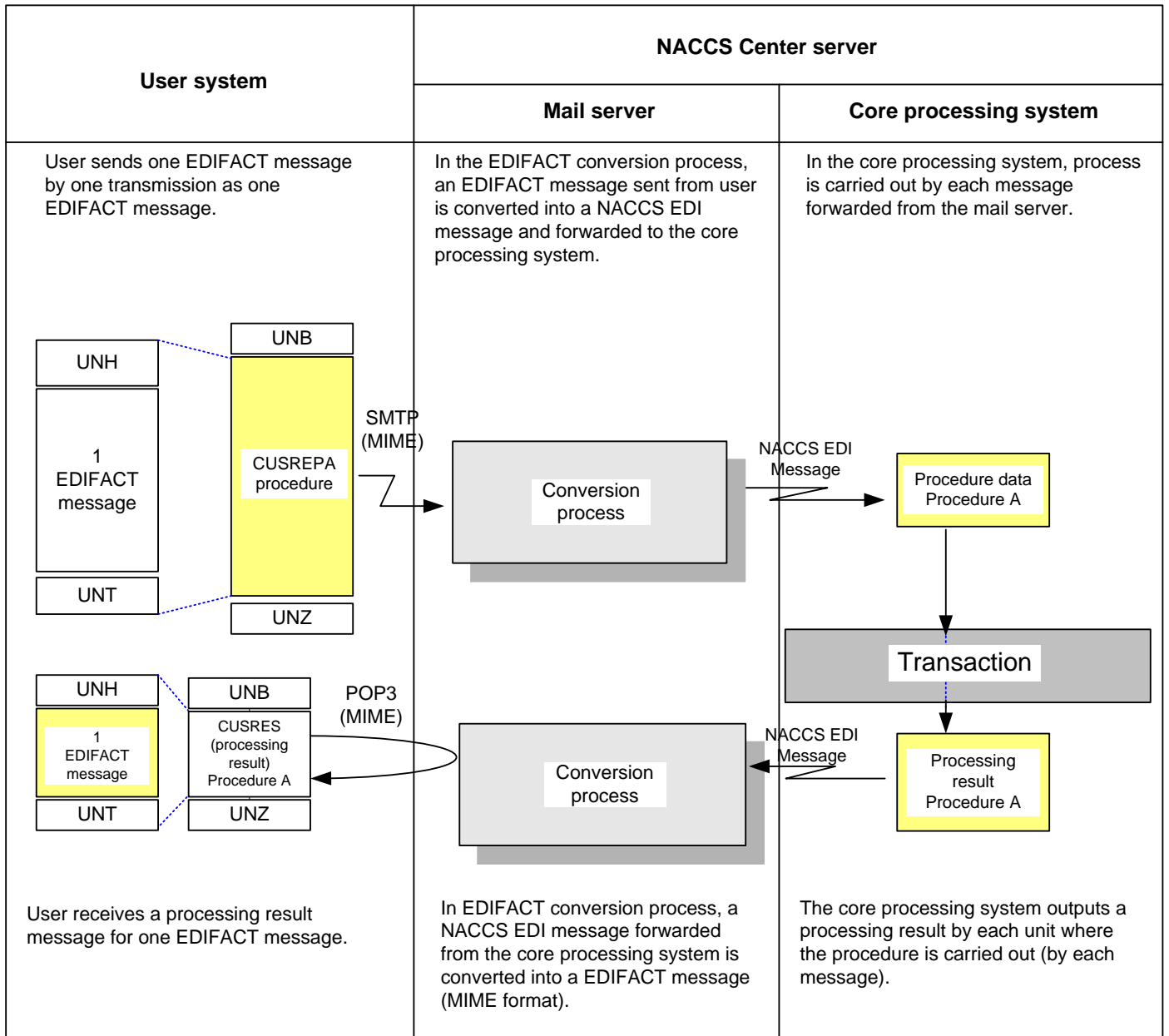
Figure 3.2.4   Image of Single-Message Processing

3.2.1.2.4.2 Processing mode for multiple-message

Figure 3.2.5 shows outline of image of processing mode when multiple-message is used.

User system	NACCS Center server	
	Mail server	**Core processing system**
User sends multiple EDIFACT message by one transmission as one EDIFACT message. (Note) The maximum number of messages which can be sent in one exchange is 99.	In EDIFACT conversion process, a EDIFACT message sent from user is converted into a NACCS EDI message and the message is divided into processing unit of the core processing system (by each message).	In the core processing system, process is carried out by each message divided by the mail server.
(diagram)	_(diagram)_	_(diagram)_
User receives a processing result message for each EDIFACT message.	In EDIFACT conversion process, a NACCS EDI message forwarded from the core processing system is converted into a EDIFACT message (MIME format).	The core processing system outputs a processing result by each unit where the procedure is carried out (by each message).

Figure 3.2.5   Image of Multiple-Message Processing

3.2.1.2.4.3　Processing Mode for Multiple B/L Message

Figure 3.2.6 shows image of processing mode when multiple B/L is used.　The Number of B/L that can be registered in one message of multiple B/L Messages is up to max 2000 times. The error occurs when the message is registered in the number of B/L more than 2000 times
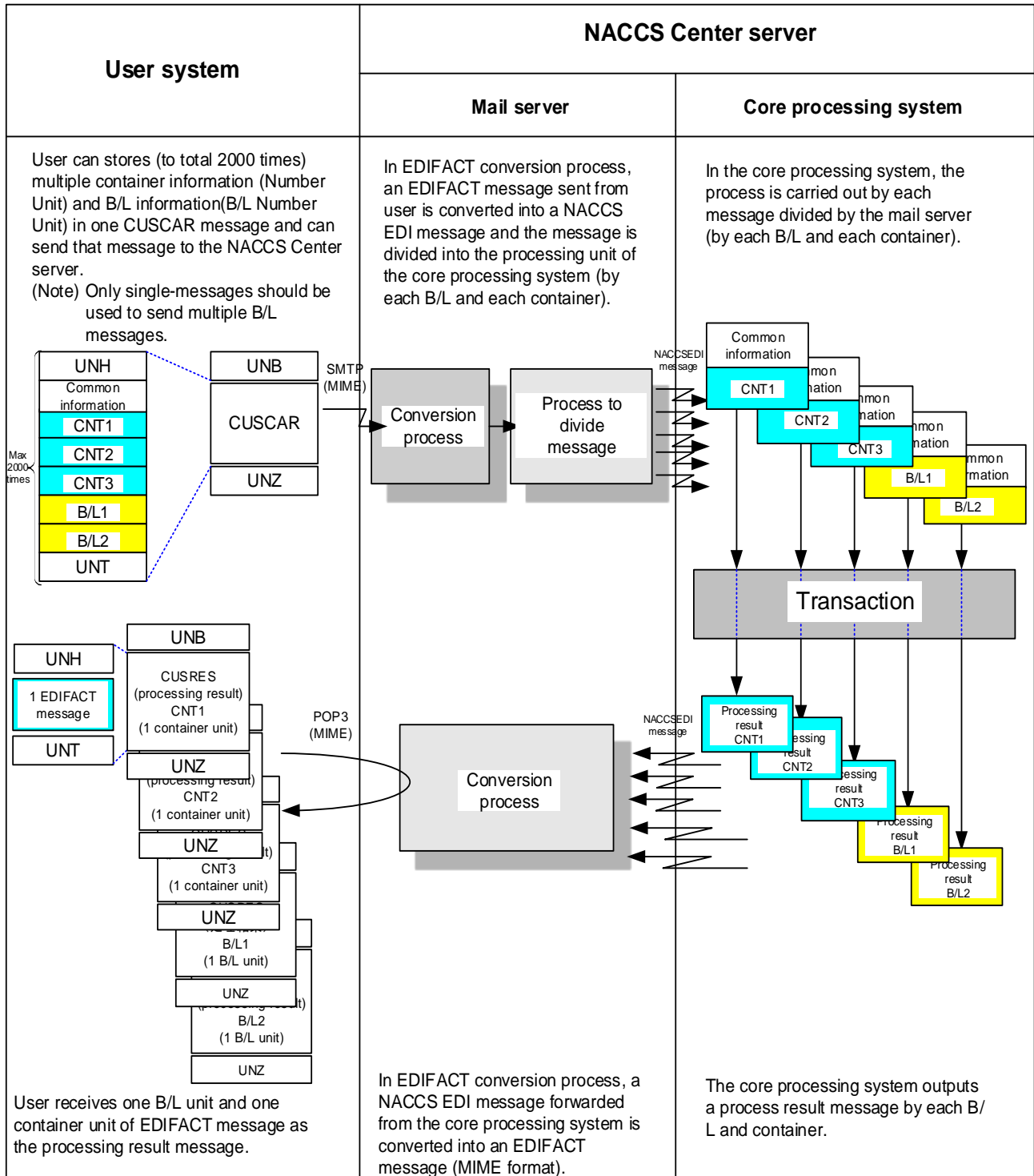
Figure 3.2.6　Image of Multiple B/L Processing

3.2.1.3   Receipt confirmation for EDIFACT message

3.2.1.3.1   Timing of receipt confirmation

The following 3 measures can be considered as measures to confirm that an EDIFACT sent by user is received by the NACCS Center server.

    (1) Send a receipt confirmation at the time when the mail server on the Center side receives the message.

    (2) Send a receipt confirmation to the user at the time when conversion from an EDIFACT message to a NACCS EDI message is completed in the mail server on the Center side.

    (3) Send a receipt confirmation to the user at the time when the core processing system of the NACCS Center server completes the procedure.

In (1), the fact where the EDIFACT message is recorded at the mail server will be demonstrated. However, when an error occurs in subsequent message exchanges, a receipt error message will be sent to the user during the (2) time.

In (3), "processing result notification" will be sent to the user as a result of the procedure process, so it is pointless to send a receipt confirmation to the user at this time.

Therefore, the time to send a receipt confirmation for the EDIFACT message (Note) should be when conversion to a NACCS EDI message described in (2) is completed.

(Note) In this case, the time to send a receipt confirmation does not have a meaning used for laws and regulations.

3.2.1.3.2   Measure for receipt confirmation

CONTRL message is used as a measure to confirm receipt of a EDIFACT message sent from user. User chooses whether receipt confirmation function is used. A CONTRL message will be returned as receipt confirmation when user specifies "1" in the "receipt confirmation request classification" column of UNB segment of the EDIFACT message (processing request message).

In addition, a CONTRL message is used not only for receipt confirmation but also for notification when syntax errors occur in an EDIFACT message (processing request message) sent by user (CONTRL message used for error notification is output to user even when "1" is note specified in the "receipt confirmation request classification" column).

However, in "Passenger Manifest Report (PLR01)" procedure, "Surname/Given Name Report (NLR01)" procedure, and "Passenger Reservation Record Report (PNR01)" procedure, "Advance Cargo Information Registration (ADM01)" procedure and "Advance Cargo Information (House Manifest) Registration (HDM01)" procedure, reply sent from NACCS using response message (CONTRL, etc.) is not performed.

(Refer to "Appendix 14.2.4 Error Handling for EDIFACT messages")

3.2.1.3.3   Notification of receipt confirmation

CONTRL messages are stored in the user's mailbox for incoming messages within the mail server. Therefore, receipt confirmation is carried out by retrieving messages from the user's mailbox for incoming messages within the mail server.

3.2.2　Attachment file message

3.2.2.1　Message format for attachment file message

Message format for attachment files used in NACCS is MIME format message. Encode format is Base64.

3.2.2.2　Message structure of attachment file
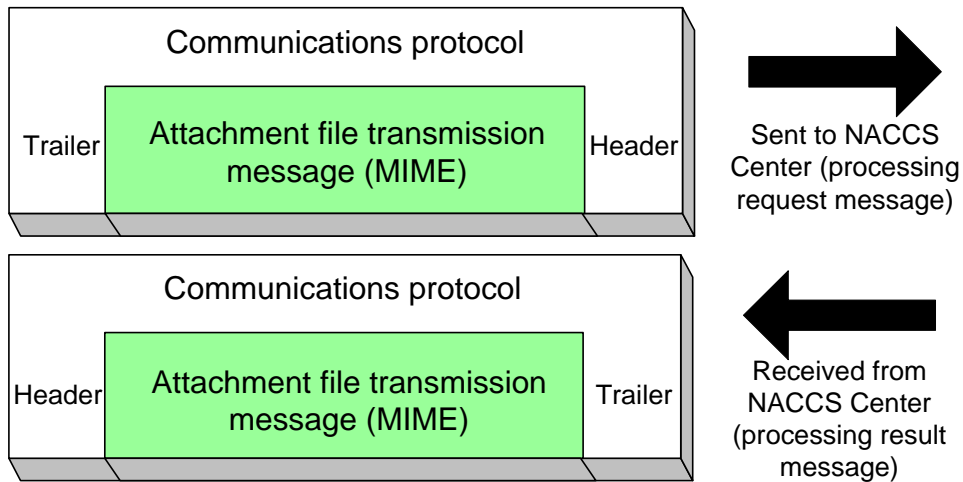Figure 3.2.7 and Figure 3.2.8 show message structures for attachment files procedure.

Figure 3.2.7　Attachment File Transmission Message

Protocol header/trailer												
System header /procedure data												
MIME Header	content Field	boundary	content field	NACCS message	boundary	content field	Attachment file Data 1	boundary	…	content field	Attachment file Data n	boundary

Figure 3.2.8　Attachment File Transmission Message (MIME format)

3.2.2.3 **Implemented mode**

Data transmission processing mode for transmission of attachment files are all processing mode (interactive processing mode (interactive), interactive processing mode (netNACCS), interactive processing mode (SMTP two-way), interactive processing mode (ebMS), WebNACCS processing mode (Web browser), and e-mail style processing mode (gateway computer)).

When sending attachment files, multiple attachment files can be sent at once as long as those do not exceed the maximum message length for attachment file (10,000,000 bytes). Transmission of a file should not be carried out when the file exceeds the maximum message length by one file. User should transmit a message after dividing the message into multiple procedures so that it does not exceed the maximum message length.

The maximum message length which can be transmitted varies depending on procedures, so refer to the "Procedure Specifications".

Figure 3.2.9 shows illustrated image of divided transmission of attachment files.

(When this is transmitted in one message, the maximum message length will be exceeded)

MIME Header, etc.	NACCS message	Attachment file Data 1	Attachment file Data 2	Attachment file Data 3	Attachment file Data 4	Attachment file Data 5

→ When 5 files are attached, the maximum message length will be exceeded.
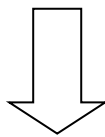
Divide the attachment files so that one message does not exceed the maximum message length, and transmit it in multiple messages. (In the example, 5 files are divided into 3 files and 2 files)

(Message 1 ⇒ 3 files are attached, which enables it to be kept within the maximum message length.

MIME Header, etc.	NACCS message	Attachment file Data 1	Attachment file Data 2	Attachment file Data 3

(Message 2 ⇒ 2 files are attached, which enables it to remain within the maximum message length.

MIME Header, etc.	NACCS message	Attachment file Data 1	Attachment file Data 2

Figure 3.2.9   Illustrated Image of Divided Transmission of Attachment File

3.2.2.4   Processing sequence
3.2.2.4.1   Interactive processing mode
Figure 3.2.10 shows processing sequence for attachment files in interactive processing mode (software package), and Figure 3.2.11 shows the processing sequence for interactive processing mode (SMTP two-way).
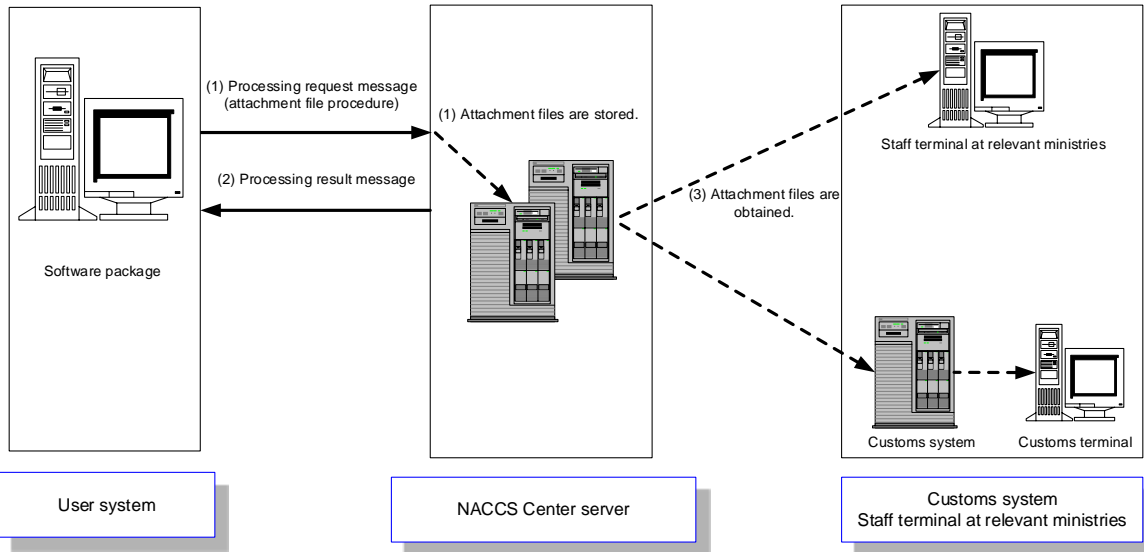

Figure 3.2.10 Attachment File Processing sequence in Interactive Processing Mode (Software Package)
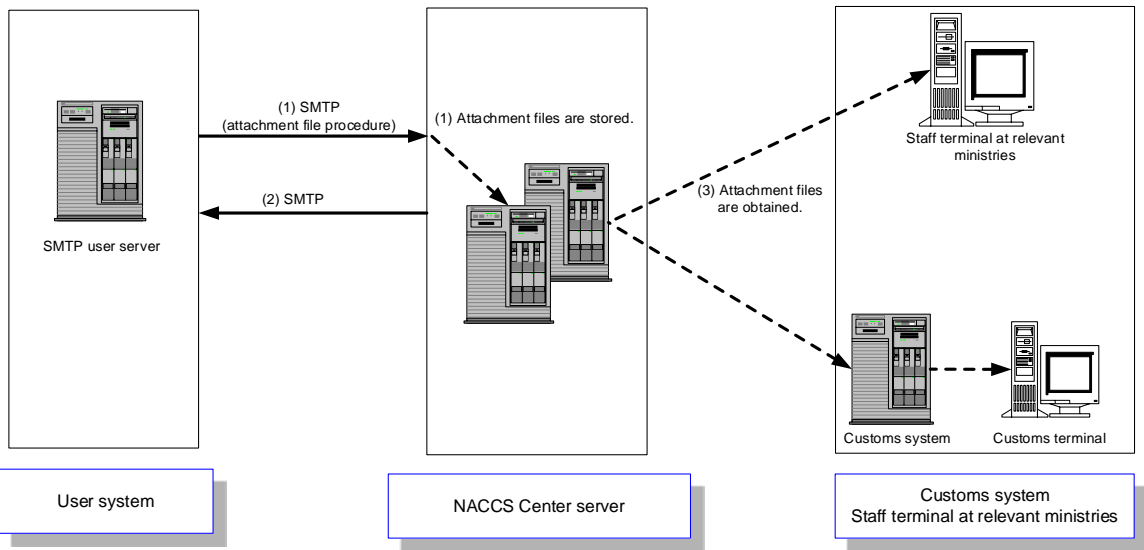

Figure 3.2.11 Attachment File Processing Sequence in Interactive Processing Mode (SMTP Two-Way)

(1) User sends a procedure message with attachment files to the NACCS Center server through the procedure dedicated to attachment files.
The NACCS Center server issues an acquisition key for attachment files and stores transaction output messages with attachment files and the acquisition key for attachment files.
(2) User receives a processing result message from the NACCS Center server.
(3) Staff terminal at other relevant ministers or customs system retrieves stored messages.

3.2.2.4.2 WebNACCS processing mode

Figure 3.2.12 shows processing sequence for attachment files in WebNACCS processing mode (web browser).
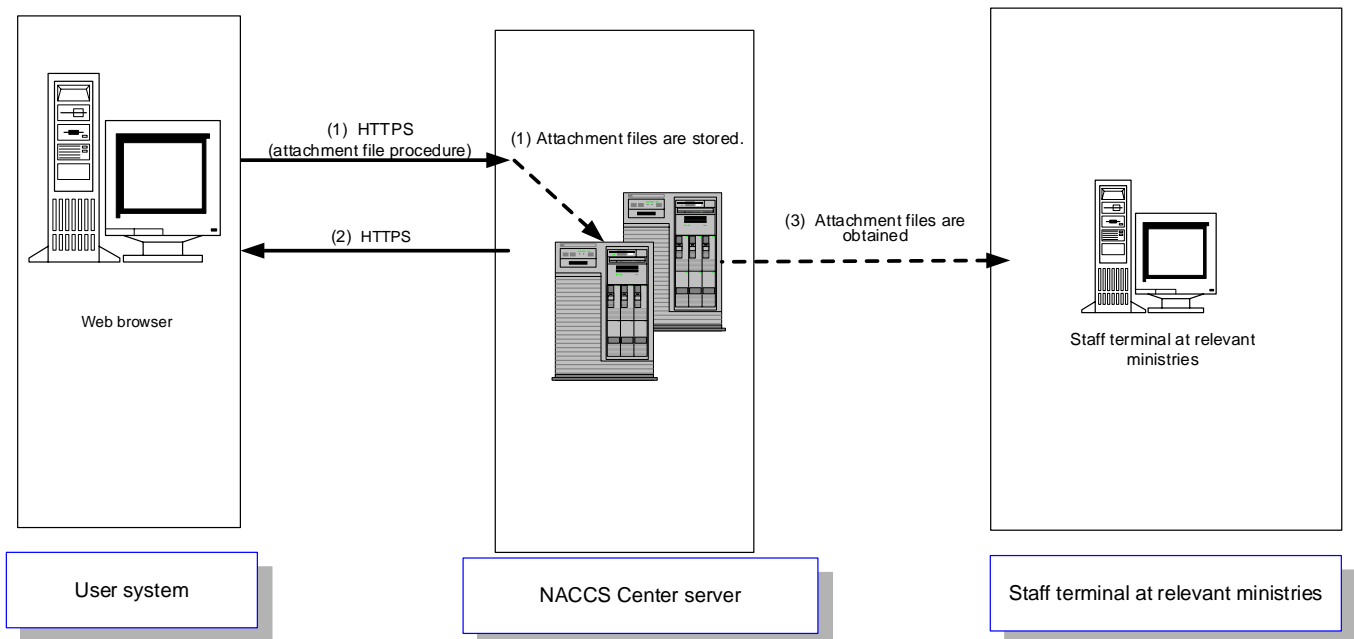

(1) HTTPS (attachment file procedure)

(1) Attachment files are stored.

(2) HTTPS

(3) Attachment files are obtained

Web browser

Staff terminal at relevant ministries

User system

NACCS Center server

Staff terminal at relevant ministries

Fig. 3.2.12 Attachment File Processing Sequence in the WebNACCS Processing Mode (Web Browser)

(1) User sends business messages with attachment files to the NACCS Center server over HTTPS through the service dedicated to attachment files.
The NACCS Center server issues an acquisition key for attachment files and stores transaction output messages with attachment files and the acquisition key for attachment files.
(2) User retrieves a processing result message from the NACCS Center server over HTTPS.
(3) Staff terminal at relevant ministers retrieves stored attachment files.

3.2.2.4.3 E-mail style processing mode

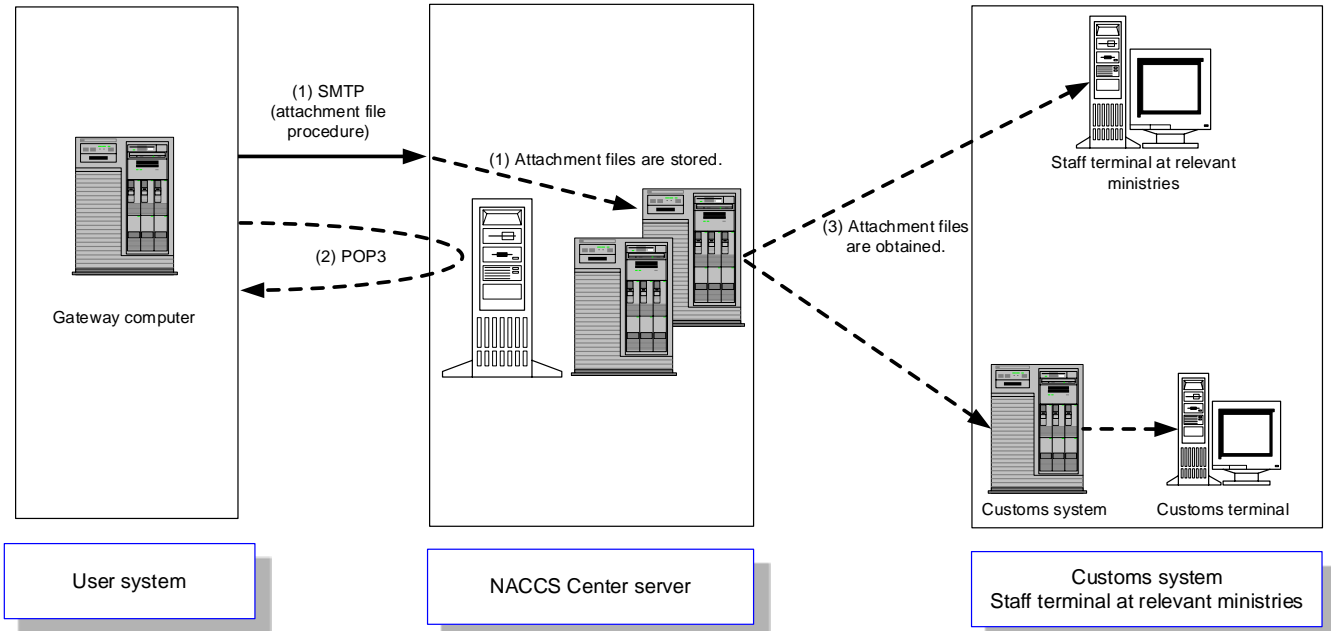Figure 3.2.13 shows processing sequence in e-mail style processing mode (gateway computer):

Figure 3.2.13   Attachment File Processing Sequence in E-Mail Style Processing Mode (Gateway Computer)

(1)   User sends a procedure message with attachment files to the NACCS Center server (mail server) over SMTP through the procedure dedicated to attachment files.
The NACCS Center server issues an acquisition key for attachment files and stores transaction output messages with attachment files and the acquisition key for attachment files.
(2)   User retrieves a processing result message from the NACCS Center server (mailbox) over POP3.
(3)   Staff terminal at other relevant ministers or customs system retrieves stored messages.