

Version: 14 June 2002

INMARSAT-C

User manual



This edition of this Inmarsat-C User Manual has been updated with information available at the date of issue. This edition supersedes all earlier versions of this manual.

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1 INTRODUCTION

1.1 About Inmarsat-C

1.1.1 Introduction

Inmarsat-C is an advanced two-way packet-data communications system making use of the store-and-forward principle. For this system the Inmarsat organisation, of which Xantic is a founding member, operates four satellites in geo-stationary orbits some 36,000 km above the equator. Each of these satellites covers an area as big as about a quarter of the earth. Together they provide complete global coverage with the exception of the extreme polar regions. The Land Earth Station (LES) of Xantic in Burum and Perth and similar stations in other parts of the world link the satellites with the international standard telex, telephone and data networks. So mobile terminals-called Mobile Earth Station (MES), Ship Earth Station (SES) or transceivers are able to communicate via the satellites and Xantic with any user of these networks and vice versa. Communication between mobile terminals via Xantic is possible too.

1.1.2 Flexible and reliable

Inmarsat-C is a flexible system. One of the advantages is the compactness and low weight of the equipment required by mobile terminals. The actual transceiver is hardly bigger than a car radio. A laptop or even smaller computer may be used as a terminal. The antenna is omnidirectional and can be as small as a tea pot. Total energy consumption is very low. All this makes it hard to think up a situation in which utilising Inmarsat-C is absolutely impossible. The system can serve many varied user requirements and has proved to be extremely useful under various circumstances. It is absolutely reliable and you may use it at any time, 24 hours per day. On sea as well as on land.

1.1.3 Store-and-forward

Inmarsat-C uses the store-and-forward principle in both directions. There is no real time connection between the sender and the receiver. Each message is stored by Xantic and sent to its destination a few minutes later. There are two advantages in doing so. It enables Xantic to use the system very efficiently. Thus keeping your communications costs down. Furthermore, because Xantic acts as a buffer between the mobile station and the base, you can send and receive messages to and from any international standard message or data network. This means that your existing communications systems can work with Inmarsat-C without any problem. Files can be transferred from one computer to another and you can exchange electronic mail. Your conventional telex terminals remain in use without any modification. Thanks to the store-and-forward principle Xantic is also able to link Inmarsat-C to other Electronic Messaging systems such as the Internet.

1.2 About Xantic

1.2.1 General

Xantic was formed by the merger between Station 12, Telstra Global Satellite, SpecTec and KPN Broadcast. By combining the knowledge, expertise and skills of four top companies, Xantic has created an unrivalled portfolio of solutions in an area known as CAT: Content, Applications and Transactions. As a result, Xantic is one of the world's leading satellite communication providers, offering high level ICT and CAT oriented solutions to all those who work in a business to business environment.

Xantic operates two Land Earth Stations - one in Burum, The Netherlands, the other in Perth, Australia. With offices and agents in more than 29 countries, Xantic provides customers with premium service and quality, wherever they are in the world.

Among other services, Xantic offers you the most complete range of Inmarsat services (A, B, C, M, mM, GAN and Fleet) plus business enhancing Value Added Services.

You can rely on Xantic for clear, quality communications because we connect you directly to a state-of-the-art international phone, telex and data communications system. On top of the services we offer, you can also rely on the highest quality at competitive prices.

Xantic also offers you free, 24-hour service from our own Customer Services team.

1.2.2 Global service

The four Inmarsat satellites cover the following regions:

- Atlantic Ocean Region-West (AOR-W)
- Atlantic Ocean Region-East (AOR-E)
- Indian Ocean Region (IOR)
- Pacific Ocean Region (POR)

Xantic serves all four Inmarsat satellites via its two LES Ids: 12 and 22. This means that by choosing Xantic you can always communicate via Inmarsat-C. Xantic will automatically reroute "to-mobile" messages which are addressed to the wrong Ocean Region. This feature does substantially increase the rate of success for messages in the to-mobile-direction.

Xantic is using Land Earth Stations in two locations:

- Burum (The Netherlands) serving the Atlantic-East and Atlantic-West Ocean regions
- Perth (Australia) serving the Pacific and Indian Ocean Regions.

Xantic Inmarsat-C LES IDs

LES-ID	AORW	AORE	IOR	POR
12	012	112	312	212
22	022	122	322	222

1.3 Xantic Inmarsat-C Services

Xantic offers a number of high quality services. Not only all basic Inmarsat-C services like messaging, data reporting, polling and enhanced group calling, but also the most extensive range of service options.

The following Inmarsat-C services are available:

1.3.1 C-messages

Basic message services include:

From mobile

Messages can be sent to virtually any subscriber to the various international telecommunications networks:

- The telex network
- The telephone network (PSTN):
 - (Telefax machine, Modem + PC, Modem + printer, Mailbox)
- The X.25 Public Switched Packet Data Network (PSDN)
- Internet SMTP (e-mail)
- C-SMS: short messages to GSM mobile phones

To mobile:

a. One stage selection

This is a way of public access to the system for all telex subscribers, available through national telex networks. Messages must be offered to Xantic via the telex network, using ordinary telex procedures. Charging via your telex bill. No Xantic registration is required.

b. Two stage selection

Two stage selection is available for registered users only. Identification with a username and password is necessary (possible but not necessary for e-mail access as legitimation can be done by checking on the e-mail address). Registration with Xantic is free of charge. Registered users have the benefit of special services and other advantages. Two-Stage selection includes:

- Messages offered to Xantic via the telex network (PTN)
- Messages offered to Xantic via the telephone network (PSTN) with PC + modem
- Messages offered to Xantic via the data network (PSDN: X25)
- Messages offered to Xantic via the Internet SMTP protocole (email).
- Messages offered to Xantic via the Internet using Telnet over TCP/IP.
- C-SMS: short messages from GSM phones to Inmarsat-C mobiles.

Mobile to mobile

Via Xantic messages can be sent to other mobiles in all regions. Communications with Inmarsat-A, -B, M, mM, GAN and Fleet mobile terminals are also possible.

Service options

- Messages from a mobile may be sent to multiple addresses.
- Mobile terminals can use Special Access Codes. These short codes give easy access to a number of useful services.
- It is very important to know that your message has arrived at its destination. Therefore Xantic offers two types of delivery notification for messages sent from and to mobile terminals. Xantic always sends a Non Delivery Notification (NDN) in case the message cannot be delivered. If you want to know whether your message has arrived, a Positive Delivery Notification (PDN) is possible with one stage as well as with two stage selection. This PDN must specifically be requested.

1.3.2 C-data reporting

The data reporting facility allows for the fast and cost-saving transmission of small packets of data from the mobile to a base (terrestrial or other mobile destination). These can be sent manually or automatically at pre-arranged intervals. It is also possible to initiate / stop the sending of the data by means of a polling call.

1.3.3 C-Poll

With this facility it is possible to send a command or request for action to a mobile terminal. A mobile can, for example, automatically send its location and/or speed (if it is equipped with a Global Positioning System, GPS), its fuel consumption, the temperature of the cargo, weather data etc. after a polling call. It is even possible to switch functions in the mobile on or off.

1.3.4 C-FleetNET

This is an Enhanced Group Calling (EGC) service, meant to broadcast a message from a base to multiple mobiles. Receiver addressing may be carried out on the basis of an Enhanced Group Call ID (ENID) or pre-assigned geographical area codes.

1.3.5 C-File Transfer

Inmarsat-C may be used for transferring complete data files.

1.3.6 Safety/emergency alerting / C-SafetyNET

Inmarsat-C services fulfil the heavy requirements as stated in the Global Maritime Distress and Safety System(GMDSS). Marine Inmarsat-C terminals can be programmed to send a pre-recorded distress message, automatically incorporating the vessel's latest position, to a Marine Rescue co-ordination centre (MRCC) by just pressing a few buttons.

An important safety item incorporated in the system is Xantic Services SafetyNET. This is a special service for authorised organisations to broadcast marine safety information.

Although safety services are particularly important for maritime users, similar capabilities can be adapted for land mobile use whenever the necessary land-based support facilities are available.

1.4 Registration

To benefit the full potential of communications with Inmarsat-C mobiles via Xantic you have to register with Xantic as an Inmarsat-C user. Registration is necessary for Two Stage to-mobile communications and for to-mobile communications from Internet (e-mail). **Registration of mobile terminals for SAT.400 is not necessary.**

Only registered users may use special services besides the basic messaging service. Registration forms are available at Xantic website: <u>www.xantic.net</u> or at Xantic Customer Services (service@xantic.net).

Registered users receive a monthly bill from Xantic for the communication costs. Especially heavy users can save on communication costs by means of a direct registration at Xantic.

1.5 Xantic Customer Services

Xantic not only offers excellent satellite communication services, but also a 24 hours 7 days a week whole year Customer Services. Experienced communication officers are ready to provide you with information on our services and to help you solving your problems in using your Inmarsat-equipment.

Xantic Customer Services

E-mail: service@xantic.net

Access via the Netherlands Tel: +31 70 343 4543 Fax: +31 70 343 4796

Access via Australia Tel: +61 7 5498 0000 Fax: +61 7 5498 0098 Telex: (71) 22432 TELCSC AA

Xantic website: www.xantic.net

From an Inmarsat-C mobile: Special Access Code SAC 68 (toll free)

2 ABOUT THIS MANUAL

2.1 Information

Inmarsat-C is a versatile and flexible communications system. The many possibilities are described in this user's manual extensively. The aim of Xantic has been to do so as clearly as possible. For this reason in the lay-out a difference is made between information and procedures. Apart from the information the procedure to be followed in practice is explained in detail with each available way of Inmarsat-C communication. This manual describes Inmarsat-C procedures but does not replace your Inmarsat-C terminal manual.

2.2 Procedures

For using the different communication possibilities of Inmarsat-C you have to follow certain procedures. In this manual the procedures are described step by step, so that you will be able to use these in practice without any problem.

Each step has a consecutive number. There are sometimes two columns: "You" and "Xantic". In the column "You" is described what you have to do while the column "Xantic" informs you about the reaction of the LES to your actions. What you have to do or how Xantic reacts is printed normal.

- What you see on your screen (or on paper) is printed in **bold**.
- Explanations etc. are printed in *italic*.

At the end of many descriptions of a procedure, one or more examples are given of a complete session as seen on your screen (or on paper). In these examples your entries are printed in **bold**.

All examples and procedures show the LES 12 access numbers/ addresses and Burum LES 12 legends, as well as LES 12 identification strings.

Although the same procedures apply to access / use LES 22, the access numbers / addresses for LES 22 are different.

Appendix A provides a list of the current Xantic Inmarsat-C Access dial-in / addresses for both LES Ids 12 and 22

2.3 Suggestions to improve this manual

We hope that this manual is a useful tool for you when using the Xantic Inmarsat-C services. The idea to write a manual that can be used by "beginners" and experienced users as well may sometimes cause some explanations being redundant for certain categories of users.

Please send your comments and ideas to improve this manual to Xantic Customer Services per email to service@xantic.net.

2.4 Updated information

This edition of this manual includes:

Information about global service by Xantic; revised addressing from Internet and updated tables of destination codes.

3 COMMUNICATIONS TO A MOBILE TERMINAL

Store-and-forward

Inmarsat-C uses the store-and-forward principle with both to mobile and from mobile communications. There is no real time connection between the sender and the receiver. Each message is stored by Xantic and forwarded to its destination a few minutes later.

To mobile communications

Access to Xantic for sending messages to mobiles is possible from the international communications networks. There are two ways of entrance:

• One stage selection (public access)

This is a way of public access to the system for all telex subscribers, available through national telex networks. Messages must be offered to Xantic via the telex network, using ordinary telex procedures. Charging via your telex bill. No Xantic registration is required.

• Two stage selection

Two stage selection is available for registered users only. Identification with a username and password is necessary (possible but not necessary for e-mail access as legitimation can be done by checking on the e-mail address). Registered users have the benefit of special services. Besides messaging they are able to use other facilities like Polling, FleetNET and data transfer.

Two stage selection includes:

- Messages offered to Xantic via the telex network (PTN)
- Messages offered to Xantic via the telephone network (PSTN) with PC + modem
- Messages offered to Xantic via the data network (PSDN: X25)
- Messages offered to Xantic via the Internet SMTP protocole (email).
- Messages offered to Xantic via the Internet using Telnet over TCP/IP .
- C-SMS: short messages from GSM phones to Inmarsat-C mobiles.

Communications from a Telefax machine to a mobile terminal are not possible.

3.1 One Stage - Telex

Public access

One stage selection via Xantic is available from an increasing number of national telex networks. It gives all telex subscribers access to the system, whether they are registered with Xantic or not. Messages must be offered via the telex network, using ordinary telex procedures. Costs will be charged via the telex bill.

Procedure for sending a message by one stage telex:

You

Xantic

Choose the international region code followed by the 9-digit Inmarsat-C number of the mobile you want to send your message to, e.g.: **0581492040530+** *International region codes:*

0581 = Atlantic Ocean Region East (AOR-E)

0582 = Pacific Ocean Region (POR)

0583 = Indian Ocean Region (IOR)

0584 = Atlantic Ocean Region West (AOR-W)

Checks immediately whether the mobile is accessible. If everything is OK:

<identification number of MES>

sends a request for your answerback $(\mathbf{\Phi})$ If not:

NP = MES unknown or not (yet) commissioned

NA = MES excluded from all traffic

ABS = MES logged-out

After 8 seconds Xantic sends its station identification + date/time and a go-ahead signal: **burum land earth station 92-10-10 11:39** ga +

You can now start sending your message. If you start sending your message within 8 seconds the information of Xantic and the ga+ signal are suppressed. You can also suppress this and any other information of the LES by sending the service code **CI** within 8 seconds after your answerback.

After receipt of your message: If you do not send any character during 30 seconds:

ga+ (to urge you to go on)

After another 30 seconds without you sending anything the LES breaks up the connection: **bk**

The recommended way to finish your message is to use the End Of Transmission (EOT)-signal: + + + +

You may also use the End Of Message (EOM)-code: **n n n n**

If you want the LES to inform you that your message has been delivered to the MES you may request for a Positive Delivery Notification (PDN) by entering the code **.ack** at the first position of a new line before the message or to add **ack** to the EOM: **nnnack** If the LES cannot deliver your message (e.g. if the MES is switched off without logging-out the LES will automatically send an Negative Delivery Notification (NDN) After finishing your message correctly press your Who are You (WRU) key. If you are using a hand operated telex machine, the LES waits maximal 2 seconds for your WRU signal.

After the receipt of your WRU the LES sends the identification number of the MES and the ITD (date/time + reference number), e.g.: **492040530=pttn x**

itd 92-10-10 11:40:48 msg 897118

After sending the ITD the LES waits 8 seconds before ending the connection to enable you to do so yourself.

You can break-up a connection at any time by typing **.exit** on a separate line. After receiving this command the LES does not store the message and replies with itr (= message will not be sent).

Important:

To send a PDN or NDN a LES has to know your international telex number. Therefore Xantic looks at your answerback. However if this answerback does not comply with the international standard (e.g. without telex number and country code), Xantic will not be able to send PDN or NDN. Also, when you send a message from a mobile Inmarsat-A or -B terminal, Xantic cannot extract the senders' address. In these cases you must enter your telex number and country code yourself. You can do this with the code: .add space international telexnumber

Xantic will ignore the .add command when the answerback of the telex subscriber <u>does</u> comply with the international standard. In this case the line starting with .add will be considered to be a part of the message text and will therefore be transferred to the mobile terminal.

Example:

Your answerback is ferguson ny and your international telex number is 0237924761. Your answerback does not contain usable information for Xantic. So if you want Xantic to send a PDN or NDN (if any), after receipt of the station information and ga+ signal of Xantic you enter the code .add 237924761 (attention: do not enter the 0 before the countrycode!). The .add information is not sent to the MES.

Example: A complete session as seen on screen or paper (your entries in bold print): 0581492040530+ 492040530=pttn x \bigstar 41400 hdinm nl burum land earth station 92-10-15 11:39:21 ga+ to: captain from: head office next port of destination will be Rotterdam regards ++++ \bigstar 492040530=pttn x 41400 hdinm nl itd 92-10-15 11:40:00 msg 897118

Same example, but your answerback does not comply with the international standard:

0581492040530+ 492040530=pttn x \bigstar ferguson ny burum land earth station 92-10-15 11:39:21 ga+ .add 237924761 to: captain from: shipping agency ferguson new york next port of destination will be rotterdam regards ferguson ++++ \bigstar 492040530=pttn x ferguson ny itd 92-10-15 11:40:00 msg 897118

NOTE:

Some telex computers may disconnect before the LES is able to send the message reference number !

3.2 Two Stage

3.2.1 Telex - Two stage; general

Two stage selection

Two stage selection is an access method through which registered users first get access to Xantic. After identification by means of a Xantic Username (=User ID) and Password (=PIN) access to the service required is given in the second stage. Because the number used in the first stage is an ordinary telex number, no special routing arrangements between different countries (or telecommunications companies) are necessary. So in this way access to Xantic is possible from anywhere in the world.

Registration

Two stage selection telex is only available for users registered with Xantic. This registration is free of charge.

Services

With two stage selection telex you have a wide variety of services at your disposal. From anywhere in the world you can choose the telex number of "your" Xantic and indicate which service you like to use. Xantic checks whether you are registered for that particular service (if necessary).

The available service commands are:

MSG	To enter one or more messages for one or more mobile stations.
	In one session you may send a message to maximal 10 mobile stations.
DMSG	Like MSG, but with the priority of distress communications. This service is only available for Rescue
	Centres.
CHG	To change the address of a message you entered previously.
	If the message has already been delivered CHG has no effect.
	cmd: chg <message number="" reference=""> <old address=""> <new address=""></new></old></message>
	The old address 492040130+ of message number 069791 has to be changed into the new address
	492040540+ and completed with, for example, a delay in delivery of 2 hours and a request for
	confirmation of delivery:
	cmd: chg 069791 492040130+ 492040540+ d2,ack
DEL	To cancel a message you entered previously.
	if the message has already been delivered DEL has no effect.
	cmd: del 069791
STA	To ask for the status of a message you entered previously.
	Status information may be obtained on a single message, a series of messages or
	messages entered in a certain period. Status information is only given on messages
	offered by the caller. The status report can be interrupted by typing the letter T.
	Status of a message with reference number 089212:
	cmd: sta r 089211
	Status of all messages in the series with certain reference numbers:
	cmd: sta rr 089299 089215
	Status of all messages within a certain period, indicated by date and time:
	cmd: sta dr 17-dec-1994 08:00 17-dec-1994 10:00
	Status of all messages within a certain period (shortened):

	cmd: sta dr 08:00 16:00 (means today)
	Status of all messages within a certain period (shortened).
	If today is 12th January 1995 16:44:30, the result of cmd:
	sta dr 09-jan-1995 08:44:30 12-jan-1995 16:44:30 is the same as:
	cmd: sta dr 09 08 12 16
	The LES stops sending status information when it receives the letter T. Before interrupting the LES
	asks for confirmation:
	cmd: sta dr 08 16
	129356 492040530 msg 12-jan-1995 08:06 delivered, 1 attempts used
	130575 492012340 msg 12-jan-1995 T 14:23 del
	interrupt transaction (y/n)?:
VIEW	To look at the contents of a message you entered previously.
	If the message has already been delivered VIEW has no effect.
	VIEW can also be interrupted by typing the letter T:
	cmd: view <message number="" reference=""></message>
	cmd: view 495597
EGC	To enter an Enhanced Group Call for one or more mobile stations.
POLL	To enter a polling command to one or more mobile stations.
FRWD	To ask for the contents of a DNID (Data Network ID)-file.
CHGD	To change the automatic delivery time of a DNID-file.
	(only when you requested automatic delivery for a file)
PWD	To enter a user id and PIN-code (password) automatically.
PIN	To change your PIN-code (password).
	cmd: pin <user name=""> <old pin=""> <new pin=""></new></old></user>
ADD	To enter your international telex number if this is not incorporated in your answerback. (This number will
	supersede the normal answerback when your answerback does not comply with the CCITT standards
	This is necessary if you want to receive PDNs or NDNs)
HELP	To ask for a list of available service commands. With help <service> you can ask for detailed information</service>
	on a particular service.
EXIT	To end the telex connection.
	cmd: exit

Mobile not logged in

If one ore more of the addressed mobiles have not logged in at one of the four areas served by Xantic (AORE, AORW, IOR or POR), you will receive a notification: itd 95-01-12 15:37:40 msg 802410 rej 492040530+ abs

NOTE:

It is important that each line you enter is closed by at least a line feed. The combinations cr/lf, cr/cr/lf and cr/lf/cr are also valid for closing a line.

<u>NOTE:</u> Change your password (PIN) regularly! <u>NOTE:</u>

Some services require special authorisation.

3.2.2 Telex - two stage; interactive (manually)

With two stage interactive telex access you are prompted by Xantic through the complete session. The HELP command is available.

Procedure for sending a message by two stage interactive (manually) telex:

Remember general note made before: all examples / procedures show LES ID 12, LES Burum addresses / access numbers. The same procedure, but using different access numbers applies for LES ID 22 / LES Perth.

You	Xantic
Choose telex number of Xantic: 73100+	
(From outside the Netherlands: 044 73100+)	
	Answerback of Xantic and request for answerback
	of caller: 73100 busc nl ₩
	After 8 seconds Xantic sends its station
	identification+date/time and asks for your user id
	and password:
	burum land earth station 95-01-12 13:08:30
	enter user id and pin:
Enter user id + password, e.g.:	
5050safetran swordfish	
	After verification:
	cmd:
Enter service required, e.g.: msg	
(for other possibilities see section IV.2.2.1)	
	After checking whether you are registered for the
	service entered:
	ga+
If you start with 7. within 2 seconds after	
entering the service command, the ga+ signal of	

the LES is suppressed.

Enter selection information:

The selection information consists of one or more selection lines. Each line contains the following basic fields:

(by entering more than one line(max.10) you can send multi-address messages)

a. Address

This field is compulsory for each mobile addressed. It contains the 9-digit Inmarsat IDnumber of the mobile followed by +.

b. Request for PDN

This field is not compulsory. A PDN (Positive Delivery Notification) is requested by the code **ack** separated from the previous field by, (comma)

c. The expected answerback

This function is not supported any more in the present

software release.

d. Delay

In this field, which is not compulsory, you can indicate the required delay in the delivery of your message. The code is **d** <**xy**> separated from the previous field by, (comma). <**xy**> stands for the minimum delay in hours.

After entering the selection information type on the first position of the next line: **bt** (= begin text)

ga+

Enter the text of your message.

After entering your message close with + + + + (the End Of Transmission-signal)

Reference information of Xantic, e.g. itd 95-01-12 13:10:33 msg 025798 cmd:

You may enter a new service command, e.g. msg to send another message, or use **exit** to quit

Examples of the selection lines which are possible:

492040530+ or **492040530**+,**d06** or **492040530**+,**d06**,**ack** or **492040530**+,**ack**

Example of a complete session as seen on screen or paper (your entries in bold print):

04473100+

73100 busc nl 👁

41400 hdinm nl

burum land earth station 94-10-15 13:08:30
enter user id and pin: 5050safetran swordfish
cmd: msg
ga+
492040530+ (see other examples of selection lines above)
bt
ga+
to: captain
new port of destination will be rotterdam.
regards head-office
++++
itd 94-10-15 11:40:00 msg 897119
cmd: exit

3.2.3 Telex - two stage; non interactive (automatic)

Automatic

With non-interactive (automatic) access the telex message can be prepared prior to the session and submitted as a script. You will receive no prompts or help during a non-interactive session. Although you are not prompted, Xantic expects you to order your input as though you were responding to each prompt interactively.

Procedure for sending a message by two stage non-interactive telex:

You	Xantic
Choose telex number of Xantic:	
(044) 73100+	
	Answerback of Xantic and request for answerback of
	caller: 73100 busc nl ₩
Within 8 seconds the service code ci has to be	
entered to indicate an automatic session.	
After this your user id + password have to be sent,	
followed by the command for the service	
required:	
msg, poll or egc. In an automatic session user id +	
password have to be preceded by pwd	
If there is no reaction within 8 seconds, Xantic	
sends its station identification + date/time and	
asks for your user id + password. The procedure	
can then be continued only interactively.	

Example of a complete automatic session as seen on screen or paper (entries of your telex machine in **bold** print):

04473100+

73100 busc nl № 41400 hdinm nl ci pwd 5050safetran swordfish

msg 492040530+ bt

to: john whatsoever fm: home office

please send us your report as soon as possible. rgds willy ++++ itd 94-10-15 11:40:00 msg 897119

If the EOM-signal (nnnn) is used instead of the EOT-signal (++++), 9 more messages may be entered. Each consecutive message has to be closed by nnnn and the last one with ++++.

3.3 From PSTN

Two stage selection

Two stage selection is an access method through which registered users first get access to Xantic. After identification by means of a Xantic Username (=User ID) and Password (=PIN) access to the service required is given in the second stage. Because the number used in the first stage is an ordinary telephone number, no special routing arrangements between different countries are necessary.

So in this way access to Xantic is possible from anywhere in the world.

Registration

Only registered users can use the telephone network (PSTN) to send messages to a mobile. Registration is free of charge.

Requirements

You need a PC + modem + communication software (for instance Xantic SAT.PC or SAT.CAST) for sending messages via the telephone network.

Modem settings: 300, 1200, 2400, 9600 or 14.400 BPS (CCITT V21, V22, V22bis, V32 or V32bis) MNP5 or V42bis data compression MNP4 or V42 error correction 8-bits - NO parity - full duplex

Services

The available service commands are:

SEND	To enter one or more messages for one or more mobile stations. In one session you can send a
	message to maximal 10 mobile stations.
ADDRESS	To change the address of a message you entered previously.
DELETE	To cancel a message you entered previously.
SCAN	To ask for the status of (a) message(s) you entered previously.
	Type: scan <message number="" reference=""></message>
	or
	Type: scan -r <xxxxx> <yyyyy> (lowest and highest reference number)</yyyyy></xxxxx>
	or
	Type: scand <yymmdd> <yymmdd> (first and last date)</yymmdd></yymmdd>
	If you type: scan -u all undelivered messages will be shown
VIEW	To look at the contents of a message you entered previously.
	If the message has been delivered View has no effect.
	Type: view <message number="" reference=""></message>
MAIL	To request a list of the contents of an Inmarsat-C PSTN-mailbox (see section V 3.4).
READ	To read the messages in an Inmarsat-C PSTN-mailbox (see section V 3.4).
EGC	To enter an Enhanced Group Call for one or more mobile stations.
POLL	To enter a polling command to one or more mobile stations.

DNID	To ask for the contents of a DNID (Data Network ID)-file or to change the automatic
	delivery time of a DNID-file.
USER	To enter a user name and password (=PIN).
PIN	To change your password (=PIN code).
	Type: pin <user id=""> <old password=""> <new password=""></new></old></user>
HELP	To ask for a list of available service commands.
	With help <service> you can ask for detailed information on a particular service.</service>
QUIT	To end the connection.

NOTE:

Some services require special authorisation.

NOTE:

Change your password (PIN) regularly!

Xantic SAT.PC and SAT.CAST user friendly communication software

Xantic offers two user-friendly PC software packages, especially designed for communications with Inmarsat-C mobiles via Xantic. SAT.PC is tailor-made for basic Xantic messaging services; SAT.CAST offers all functions of SAT.PC plus useful functions for FleetNet groupcalls. All you need is a PC, modem and a telephone line. It's easy convenient and economical, often saving you up to 50 % over conventional telex costs. And it features user friendly tools, including pulldown menus, function keys and mouse support. You can send messages and data files to one or more terminals, you can receive messages through your Xantic mailbox. You can even check outgoing messages to make sure they are safely delivered. And you can do it all from your own PC

With SAT.PC you don't need to use the above mentioned commands, as the package is completely menu-driven. For more information: ask Xantic Customer Services.

Proce	Procedure for sending a message via the telephone network (direct) with PC + modem		
	You	Xantic	
	Choose the telephone number of Xantic.		
	In The Netherlands: (0594) 24 93 10		
	In other countries: +31 594 24 93 10		
		Welcome to BURUM LES PSTN service	
	Enter user name	Please enter username:	
		Please enter password:	
	Enter your password		
	For security reasons your password is not shown		
	on the screen.	>	
	You may now enter any service you are		
	for (if necessary), e.g.:		
	Type: send to <id-number></id-number>		
	If you want to use the X-modem protocol:		
	Type: send -x to <id-number></id-number>		
	For details on the X-modem protocol see		
	Appendix B and the manual of your		
	communication software.		
	If multiple mobiles (max. 10) have to be		
	addressed:		
	type: send to <id-number>, cc<2nd ID-</id-number>		
	number>,		
	cc<3rd ID-number> etc.		
		Text:	
	Enter message. Finish your message with .s on		
	the first position of the next line after the last		
	word of the message.		

xxx characters

Storing message ... Submitted <date> <time> reference number <ref.no>

Write down the message reference number! Type: **Quit** (if you want to end the connection

with Xantic)

Options

The following optional commands may be added, either in the send-command-line or in the message text, in that case they should be preceded by a dot (.) and be placed at the beginning of a new line in the text.

CC <ID-number>

Sends a copy to multiple destinations (max. 10 destinations)

ITA2

By default the 7 bit IA5 alphabet is used on the satellite link, but with the ITA2 command you can force the LES to use the 5 bit compressed alphabet on the satellite link. This option can only be selected when the message contains only characters from the 5 bit Baudot (telex) alphabet.

BIN

By default the 7 bit IA5 alphabet is used on the satellite link, but with the SEND BIN command you can force the LES to use the 8 bit binary format on the satellite link. This format must be used when you want to transfer binary files.

However, we recommend to use the X-modem transfer option (send -x) which automatically selects the 8 bits binary format and prevents line errors on the terrestrial link.

3.4 From PSDN

Two stage selection

Two stage selection is an access method through which registered users first get access to Xantic. After identification by means of a Xantic Username (=User ID) and Password (=PIN) access to the service required is given in the second stage. Because the number used in the first stage is an ordinary data network number, no special routing arrangements between different countries (or telecommunications companies) are necessary. So in this way access to Xantic is possible from anywhere in the world.

Registration

Registered users who are subscriber to an X.25 public data network may offer their messages to Xantic via this network directly. Registration is free of charge.

Services

The available service commands are:

SEND	To enter one or more messages for one or more mobile stations. In one session you can send a
	message to maximal 10 mobile stations.
ADDRESS	To change the address of a message you entered previously.
DELETE	To cancel a message you entered previously.
SCAN	To ask for the status of (a) message(s) you entered previously.
	Type: scan <message number="" reference=""></message>
	or
	Type: scan -r <xxxxx> <yyyyy> (lowest and highest reference number)</yyyyy></xxxxx>
	or
	Type: scan -d <yymmdd> <yymmdd> (first and last date)</yymmdd></yymmdd>
	If you type: scan -u all undelivered messages will be shown
VIEW	To look at the contents of a message you entered previously.
	If the message has been delivered View has no effect.
	Type: view <message number="" reference=""></message>
MAIL	To request a list of the contents of an Inmarsat-C PSDN /PSTN-mailbox
	(See section 4).
READ	To read the messages in an Inmarsat-C PSDN/PSTN-mailbox (see section 4).
EGC	To enter an Enhanced Group Call for one or more mobile stations.
POLL	To enter a polling command to one or more mobile stations.
DINID	To ask for the contents of a DNID (Data Network ID)-file or to change the
	automatic delivery time of a DNID-file.
USER	To enter a user name and password (=PIN-code) (change to other user account
	on LES).
PIN	To change your password (= PIN-code).
	Type: pin <user id=""> <old password=""> <new password=""></new></old></user>
HELP	To ask for a list of available service commands.
	With help <service> you can ask for detailed information on a particular service.</service>
QUIT	To end the connection.

NOTES:

- 1. Some services require special authorisation.
- 2. Change your password (PIN) regularly!

Procedure for sending a message via a public data network

You	Xantic
Choose the NUA of Xantic: 1594044	
(8-bits, no parity). From outside the	
Netherlands:	
02041594044 (8-bits, no parity)	
	Welcome to BURUM LES PSDN service
Enter user name	riease enter username:
	Please enter password:
	First the first second s
Enter your password	
For security reasons your password is not	
shown	
on the screen.	
	>
You may now enter any service you are	
for (if necessary), e.g.:	
I ype: send to <id-number></id-number>	
addrassed	
type: send to <id-number> cc <2nd ID-</id-number>	
number>, cc <3rd ID=number>, etc.	
	Text:
Enter message. Finish your message with .s on	
the first position of the next line after the last	
word	
of the message.	
	xxx characters

Storing message ... Submitted <date> <time>. Reference number <ref.no>

Write down the message reference number! Type: **Quit** (if you want to end the connection

with Xantic)

NOTE: All commands have to be followed by "Enter" or "Return" !

Options

The following optional parameters may be added, either in the send-command-line or before the message text, in that case they should be preceded by a dot (.) and be placed at the beginning of a new line.

CC <ID-number>

Sends a copy to multiple destinations. (Max. 10 addresses incl. the original address)

ITA2

Forces the LES to use the ITA2 alphabet on the satellite link. By default the 7 bit IA5 alphabet is used on the satellite link, but with this command you can force the LES to use the 5 bit compressed alphabet on the satellite link. This option should only be selected when the message contains characters from the 5 bit Baudot (telex) alphabet only.

DAR

Data Acknowledgement Requested. The LES will send an acknowledgement when the delivery has taken place or has failed. Without this option notification will be sent only if the LES failed to deliver the message.

DATA <number of bytes>

Forward to the mobile terminal using 8-bits binary format.

All bytes received from the next line on will be perceived as 8 bits data.

In order to avoid any misinterpretation of the CR LF or CR ending the keyword line you may optionally include a STX (02 HEX) character after the CR LF or CR to signal the start of data. The STX character will not be forwarded to the mobile terminal. When the LES has received the specified number of bytes, the LES will commence forwarding the data.

3.5 C-Poll

Polling

With the polling facility it is possible to send a short message, command or request for action to a mobile terminal. Quite often head offices ask for status reports from ships or trucks. A mobile can, for example, automatically send its location and/or speed (if it is equipped with a Global Positioning System, GPS), its fuel consumption, the temperature of the cargo, weather data etc. after a polling call. It is even possible to switch functions in the mobile on or off. Polling calls (or briefly "polls") may be sent via Telex, PSTN, PSDN, Internet Telnet via TCP/IP or Internet e-mail. Besides the individual poll to a single mobile, (code I) it is possible to send the same poll to a number of mobiles by a group poll (code G). Polls are broadcast messages; this means that polls are received only if the "addressed" terminals are switched on and within reach of the satellite.

Polling with text

The polling service allows to add text messages (up to 256 bytes) to the poll. For broadcasting larger messages to a group of mobiles use the Xantic FleetNet service. (see section 3.6)

Registration

Polling is available for registered users only. For the polling registration a special subscription is required. Registered users are provided with a Data Network ID (DNID) and a special mailbox (also called DNID file), where data reports, sent by the mobile after the poll, can be stored. All polling messages have to include the DNID. The DNID has to be downloaded to the individual mobile once, so that it is recognisable for polling calls with that particular DNID. After downloading the DNID and checking whether it has been received, the polling facility is operational.

More sources

Several sources of data may be connected with each Inmarsat-C terminal. Therefore each Inmarsat-C address has a number of sub-addresses. With each poll one has to indicate from which source (sub-address) the data has to be sent.

Type of reaction

With a polling call different reactions from the mobile may be requested:

- data reports
- messages
- no reaction (the poll is used to send a short message, or a remote control command)

Poll commands

A poll command has to be followed by a number of parameters: POLL [-X]<0cean><P1><P2><P3><P4><P5><P6><P7>

Para meter	Significance	Description / possible values
<ocea n></ocea 	the ocean region	0 = AOR-W; 1 = AOR-E 2 = POR 3 = IOR
P1	poll type	g = group poll i = individual poll
P2	DNID	up to 5 digits
Р3	response type	d = data report m = message channel n = no response
P4	sub-address	0 – 255
Р5	Address	for a group poll: 0; for an individual poll: the mobile's Inmarsat-C ID number
P6	command type	 00 = send unreserved report as required 04 = program unreserved data reporting 05 = initiate unreserved data reporting 06 = stop unreserved data reserving 09 = data transmission
P7	member number used in download DNID poll command	1 - 255 (1 = default)
P8	start frame	4 digits (0001 – 9999) start frame number to program regular unreserved data reporting. (0 = default)
P9	number of reports per 24 hours	3 digit number which indicated the number of data reports to be sent over 24 hours period (maximum 500)
P10	Acknowledgement	0 - 1 (0 = default / no acknowledgement)

Separation of poll parameters can be done by comma, colon or space.

Text or data

If the poll command has been entered with the proper parameters, Xantic will prompt you to enter your text or data. After entering text or data, you have to type **.s** on the first position of the next line.

8-bits data can be sent by typing **.DATA** followed by the number of bytes on the first line of the data entry. From the next line all bytes will be perceived as 8-bits data. To avoid any misinterpretation of the CR LF or CR of the keyword line you may optionally include a STX (02 HEX) character after the CR LF or CR to indicate the beginning of the data. This STX character will not be sent. Xantic will start forwarding the data when the specified number of bytes has been received.

Procedure for sending a poll (with text) via two stage telex

You	Xantic
Connnect to the LES and enter username (user	
ID) and password (=PIN) as described for	
messaging.	
	cmd
Type: poll <parameters>,</parameters>	
e.g. poil 1,g,54321,a,7,0,00,1,0,10,0,5	
	ga+
Enter message	
+++++	
	itd 94-02-28 11:02:32 msg 786790

If you want to repeat a poll, type: **rpoll <reference number>**.

Procedure for polling via PSTN

You	Xantic
Connnect to the LES and enter username (user	
ID) and password (=PIN) as described for	
messaging.	
	cmd
Type: poll <parameters>,</parameters>	
e.g. poll 1 g 54321 d 7 0 00 1 0 10 0 3	
Enter your message.	
Type: .s	
To finish, type: QUIT	
If you want to repeat a poll, type: poll – r < reference number >.	

If you want to use the X-modem protocol, type: **poll-x**, followed by the parameters. For details on the X-modem protocol see Appendix B and the manual of your communication software.

Procedure for polling via PSDN

You Connect to the LES and enter username (user ID) and password (=PIN) as described for messaging.

Xantic

cmd

Enter: **poll <parameters>**,

e.g. **poll 1 g 54321 d 7 0 00 1 0 10 0 3** Enter your message. Type: **.s** Type: **QUIT** if you want to end the connection with Xantic.

If you want to repeat a poll, type: **poll -r <reference number>**.

3.6 FleetNET and SafetyNET

3.6.1 General information

The Inmarsat-C network offers the possibility of addressing groups of mobile terminals: The **Enhanced Group Call** (**EGC**) service. With this service messages can be addressed to:

- All Inmarsat-C terminals in an Ocean Region.
 e.g. service announcements by Inmarsat or LESs (system EGC)
- All Inmarsat-C terminals belonging to a group or fleet in an Ocean Region. - The FleetNET service
- All Inmarsat-C terminals in a circular or rectangular geographical area.
 the SafetyNET service for the distribution of maritime safety information.

3.6.2 FleetNET registration and ENID downloading.

The FleetNet service is available to registered users only. Registered users are provided with an ENID (Enhanced Network Identity) This ENID has to be downloaded to each mobile once, so mobile terminals can recognise FleetNET messages addressed to them. ENID downloading is done by the LES operator. After downloading the ENID, that particular mobile terminal is able to receive FleetNET messages. Please contact Xantic Customer Services if you want to register for the FleetNET service.

3.6.3 Xantic SAT.CAST

SAT.CAST is a user friendly FleetNET managing software program, tailor-made for the Xantic two-stage PSTN user. SAT.CAST will let you:

- manage groups of mobiles (add and delete members),
- create, archive edit and send messages to groups of Inmarsat-C terminals

Contact Xantic Customer Services for more information.

3.6.4 SafetyNET

An important item incorporated in the system is SafetyNET. This is a special EGC service for authorised organisations to broadcast maritime safety information. No special arrangements to mobile terminals are required to receive these messages. For maritime terminals reception of certain SafetyNET messages is compulsory, on other terminals these messages can be rejected. Please consult the manual of your terminal.

Ocean region (AOR-W=0; AOR-E=1; POR=2; IOR=3)

Commands for sending FleetNET messages

An EGC command for FleetNET has to be followed by some parameters:

EGC < ocean > < C1 > < C2 > < C3 > < C4 > < C5 >

ocean

- **C1** Priority. For FleetNET only "routine" (= 0) is available.
- C2 Service code. With FleetNET this code is always 02.
- C3 Address (ENID)
- C4 Repetition code
- C5 Presentation

Separation of FleetNET parameters can be done by comma, colon or space.

Repetition (parameter C4, see above)

FleetNET is a broadcast service, so <u>no</u> notes of delivery (PDN or NDN) can be sent. To be sure that a message will be received it is to be advised to send a message repeatedly. Once a message has been received by a mobile terminal error free, all repeated transmissions received thereafter will be ignored by the mobile terminal. With FleetNET the sender may choose from the following sequences:

Code Meaning

- 01 send once
- 11 send and after 6 minutes another time
- 61 send and after 1 hour another time
- 62 send and after 2 hours another time
- 63 send and after 3 hours another time
- 64 send and after 4 hours another time
- 66 send and after 12 hours another time
- 67 send and after 24 hours another time
- 70 send, after 12 hours again and after 24 hours another time
- 71 send, after 24 hours again and after 36 hours another time

Presentation (parameter C5, see above)

- 0 7 bit (IA 5)
- 6 5 bit (ITA 2)
- 7 8 bit data (no message header will be added by the LES !)

Procedure for Enhanced Group Calling via two stage telex

You	Xantic
Contact Xantic and enter	
user ID + PIN as described with messaging.	cmd:
Туре:	
egc <ocean>,<c1>,<c2>,<c3>,<c4>,<c5> e.g.: egc 1,0,02,300,01,0</c5></c4></c3></c2></c1></ocean>	
<message></message>	ga+
++++	itd 94-02-28 10:54:16 msg 786715

Procedure for Enhanced Group Calling via PSTN	
You	Xantic
Choose the telephone number of Xantic.	
In The Netherlands: (0594) 24 93 10	
In other countries: +31 594 24 93 10	
	Welcome to BURUM LES PSTN
	service Please enter username:
Enter user name	
	Please enter password:
Enter your password	
For security reasons your password is not	
shown	
on the screen.	
Type:	>
egc <ocean> <c1> <c2> <c3> <c4> <c5></c5></c4></c3></c2></c1></ocean>	
e.g.: egc 1 0 02 300 01 0	
	Text:
Enter message. Finish your message with .s on	
the first position of the next line after the last	
word	
of the message.	
egc -x <ocean> <c1> <c2> <c3> <c4></c4></c3></c2></c1></ocean>	
<c5></c5>	
	Start your X-Modem protocol
	xxx characters
	Storing message
	submitted <date> <time> Keterence</time></date>
	(Date format: yy-mm-dd HH:mm)
Write down the message reference number!	
Type: Quit (if you want to end the connection	
with	

Xantic)

Xantic - Inmarsat-C user manual

Procedure for Enhanced Group Calling via PSDN

You Choose the NUA of Xantic: 1594044	Xantic
(8-bits, no parity). From outside the Netherlands 02041594044 (8-bits, no parity) Enter user name	Welcome to BURUM LES PSDN service Please enter username:
Enter your password	Please enter password:
Type: egc <ocean> <c1> <c2> <c3> <c4> <c5></c5></c4></c3></c2></c1></ocean>	>
e.g.: egc 1 0 02 300 01 0 Enter message. Finish your message with .s on	Text:
the first position of the next line after the last word of the message. xxx characters	
Write down the message reference number! Type: Quit (if you want to end the connection with Xantic)	Storing message Submitted <date> <time> Reference number <ref no=""></ref></time></date>

NOTE:

All commands have to be followed by "Enter" or "Return" !

3.7 File transfer

Xantic offers file transfer facilities to as well as from mobile terminals, so all kinds of data (word processor files, spreadsheets etc.) can be exchanged. File transfer is transparent. Your data will not be altered by the addition of a header. Although it is not absolutely necessary, it is strongly recommended to use the X-modem protocol for file transfer via PSTN. Data files are quite vulnerable, so in practice the data transmitted has to be checked for errors. This is what the X-modem protocol does.

In some cases the use of X-modem can slightly increase the chargeable length of your message.

Procedure for sending data via the telephone network using the X-modem protocol

You	Xantic
Choose the telephone number of Xantic.	
In The Netherlands: (0594) 24 93 10	
In other countries: +31 594 24 93 10	
	Welcome to BURUM LES PSTN
	Service
	Please enter username:
Enter user name	
	Please enter password:
Enter your password	
For security reasons your password is not	
shown	
on the screen.	
	>
Type: send -x to <id-number></id-number>	
If multiple mobiles (max. 10) have to be	
addressed,	
type: send -x to <id-number>, cc <2nd ID-</id-number>	
number>, cc <3rd ID-number>, etc.	
	Start your local XModem transfer
Start the XModem transfer on your PC	
For most Com programs: Press the [PageUp]	
key	
When the automatic XModem starts you will	
nave to enter the name of the file you want to	
ualisici.	xxx characters
	Storing message

Submitted <date> <time> Reference number <ref no>

Type: **Quit** (if you want to end the connection with Xantic)

Procedure for sending data via a public data network (X.25)

You	Xantic
Choose the NUA of Xantic: 1594044	
(8-bits, no parity). From outside the	
Netherlands	
02041594044 (8-bits, no parity)	
	Welcome to BURUM LES PSDN
	service
	Please enter username:
Enter user name	
	Please enter password:
Enter your password	
	>
Type: send	
Enter ID-number of terminal addressed.	
Enter data file preceded by	
.DATA <number bytes="" of=""></number>	
By beginning the file with .DATA, you force	
Xantic to transmit your data in 8-bits format.	
To avoid any misinterpretation of the CR LF or	
CR of the keyword line you may optionally	
include a STX (02 HEX) character after the	
CR LF or CR to indicate the beginning of the	
data.	
Finish the file with .s on the first position	
of the next line.	<nr> characters</nr>
	Staring massage
	Submitted <data> <tima> Reference</tima></data>
	Number <ref no=""></ref>
Write down the message reference number!	

Type: Quit (if you want to end the connection

with Xantic)

Mobile

When the mobile has received the file, it must be copied to the application (word processor, spreadsheet etc.). Most mobile Inmarsat-C terminals will rename the file (e.g. IN.004). Some applications do not accept the file because of the new name. In such cases you have to rename the file properly (e.g. REPORT1.TXT or REPORT1.DOC or SHEET.XLS).

Cost-effective file transfer

Word processor files contain much more information than just plain text, such as date, lay-out etc. By saving a word processor file as "text" (most word processors offer this possibility), the size of the file is reduced and so are the transmission costs too.

The use of X-modem for very short messages is not recommended because of the minimum block-size of used by this protocol.

NOTE:

A message sent in 8-bits data format may be received by the Mobile in 7-bits ASCII because Xantic assumes that a Mobile cannot receive <u>8-bits</u> unless shown otherwise. In such cases let the Mobile send an 8-bits message via Xantic. Xantic will then automatically register that the Mobile is able to receive 8-bits DATA messages.

3.8 C-email (Sat400)

C-email (Sat400): The Inmarsat-C email gateway service from Xantic.

C-email (also known as Sat400) is the first fully standardised gateway service between the Inmarsat-C network and the Internet. With C-email (Sat400), you have a direct link at your disposal between the mobile terminal and the Internet e-mail applications in your corporate network. The great advantage of C-email (Sat400) is that information is sent end-to-end in electronic format, and hence directly available for further processing, unlike telex or fax. C-email (Sat400) allows the sending of attachments as well as Polls and EGCs.

Requirements for C-email (Sat400)

On the mobile site, all you need is a standard Inmarsat-C terminal. At the office or home, your need an Internet e-mail address. This e-mail address (domain names are also possible) need to be registered at Xantic for legitimation purposes.

3.8.1 Registration for C-email (Sat400)

Please visit our web site <u>www.xantic.net</u> to register or contact Xantic Customer Services (service@xantic.net). Fill in the C-email (Sat400) registration form and send it to Xantic. Once we have received and processed your registration you will receive our confirmation of your status as registered user of Xantic C-email (Sat400) as well as the users' manual.

Registration of mobile terminals is not necessary any more.

3.8.2 C-email (Sat400) manual / instructions

Procedure to send an email to an Inmarsat-C terminal

Address to email to <Inmarsat-C ID>@c.xantic.net Example: To: <u>412345678@c.xantic.net</u> Subject:

Your text

For more features / tips please download the **latest version of the C-email (Sat400) manual** from our website: <u>www.xantic.net</u> \rightarrow portfolio \rightarrow Inmarsat-C \rightarrow C-email (Sat400) link \rightarrow C-email (Sat400) manual (pdf file).

For instructions on **Polls or EGCs via C-email** please go to the Inmarsat-C links "Data Reporting & Polling" and "SafetyNET" / "FleetNET". You will find there the instructions for both systems.

3.9 C-SMS: short messages from GSM mobile phones to C terminals

C-SMS is Xantic Short Messaging Service between the Inmarsat-C network and GSM mobile phones. With a minimum of effort you can send short messages to every GSM user. The same applies the other way around for GSM-users registered at Xantic.

Benefits

- No additional hard- or software is needed
- Direct link between two worldwide networks: the Inmarsat-C satellite network and GSM phones.
- If your message is longer than 160 characters, we will split it into the necessary number of SMS messages to be delivered at the GSM phone.
- Messages can be sent in 5 bits to save satellite communications costs.

What do you need?

The mobile phone you are sending an SMS to / from must work with the GSM network. The GSM mobile phone sending SMS to Inmarsat- C terminals must be registered at Xantic.

3.9.1 Registration

Inmarsat-C terminals do not need to be registered to send SMS's to GSM phones.

GSM mobile phones must be registered at Xantic to be able to send messages to Inmarsat-C terminals.

Xantic offers you two forms of registration for your GSM phones (based on GSM number only or based on GSM and INMC number).

To register your GSM phone(s), please contact your Xantic sales manager or Xantic Customer Services. Send in your completed registration form to service@xantic.net. You will be able to start using the service as soon as you receive our activation-confirmation message.

3.9.2 Procedure for sending a SMS from GSM to Inmarsat-C

Only registered GMS phones, authorised by businesses, can use this service. Please contact service@xantic.net for registration or visit www.xantic.net

- To send an SMS from a GSM to an Inmarsat-C terminal type: <the letter ''i''><space><Inmarsat number><space><message text>
- and send it to +4795222333

Example:

i 425949710 To: Capt Johnson. Parts to be delivered tomorrow on 1000 am as agreed. Rgds. VanVelzen, Stork NL

4 COMMUNICATIONS FROM A MOBILE TERMINAL

4.1 General

Store and forward

Inmarsat-C uses the store-and-forward principle for both from mobile and to mobile communications. There is no real time connection between the sender and the receiver. Each message is stored by Xantic and forwarded to its destination a few minutes later.

To international networks

Messages can be sent to virtually any subscriber of the various international telecommunications networks:

- The telex network .
- To the telephone network (PSTN) for messages to: Telefax machine, Modem + PC, Modem + printer or Mailbox
- The data network PSDN (X25).
- The Internet SMTP protocole (e-mail)
- To a DNID file at the Xantic LES for later retrieval by terrestrial user.
- To the GSM mobile phone network (SMS)

Multi-addressing

Messages may be sent to multiple addresses. This depends on the capabilities of your terminal and software. See your terminal manual. Multiple addressed messages must be of the same kind: to Telex <u>or</u> to PSTN <u>or</u> to PSDN <u>or</u> to E-mail.

Formats

Messages may be sent in three formats, known as 5 bit, 7 bit and 8 bit presentation:

5 bit

Also known as Baudot or Telex presentation (ITA2). This format reduces transmission costs by about one third (compared to 7 or 8 bits presentation). Only valid telex characters are transmitted.

7 bit

Xantic and all other LESs support this format, also known as ASCII presentation. All characters represented by the values 0-127 are transmitted.

8 bit

Known as data. In principle all characters are transmitted. Most LESs (not Xantic !) add a "header" (stationinformation etc.) to the message and charge you for it too (not Xantic !) In case of file transfer the receiver has to remove this header before he can use the file.

Message status information

Xantic sends a confirmation at two levels:

- 1. Confirmation of the message transfer from the mobile terminal to the LES.
- Confirmation of the delivery of the message to the final destination. Most mobile terminals offer the option to request for this confirmation.

Status field on the monitor*	Meaning	
Sending	Message transmission to the LES in progress .	
Acknowledged	Message has been received by the LES.	
Confirmation requested	Message has been received by the LES but has not	
	yet been delivered to its final destination.	
Confirmation OK	Message has been delivered to the final destination.	
Failed	The LES failed to deliver the message.	
Rejected	Transmission was rejected by the LES (no message	
	was sent).	
Pending	The LES has postponed the transmission.	

- * Status fields may vary depending on the software and hardware of the mobile terminal.
- * The status "Confirmation requested" and "Confirmation OK" will only be given <u>if you have requested for a confirmation.</u>
- * Xantic will <u>automatically</u> inform you when a message could <u>not</u> be delivered to the addressee, even when you did not request for a confirmation. All other status messages mentioned here may appear on your monitor without further status request.

Charges for optional message confirmations

You will be charged a small fee for a positive delivery notification as a result of a confirmation request. The confirmation request will not be charged when you requested for a confirmation and eventually the message could not be delivered. (Failed). You will also not be charged for acknowledgements and negative delivery notifications.

Confirmation requests for messages to an Inmarsat-C mailbox

If you address a message to an Inmarsat-C mailbox, the status "Confirmation OK" will be given when the message has been delivered to the mailbox.

4.2 To Telex

Terminal manual

Consult your terminal manual for more details.

Procedure for sending a message to telex

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name

- Number of destination (Including country code, also for sending a telex message to the Netherlands or Australia). The country code is never preceded by a 0 !

- Message type TELEX
- Presentation: 5 bit (preference), 7 bit or 8 bit.
- 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station 12". Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's

4. Select message.

5. Send your message.

4.3 To PSTN

4.3.1 To PSTN- telefax

Terminal manual

Consult your terminal manual for more details.

Procedure for sending a message to a telefax machine

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name
 - Number of destination (Including country code, also for sending a fax message to The Netherlands or Australia. The country code is never preceded by the international access code 00 !)
 - Message type FAX
 - Presentation (5 bit, 7 bit or 8 bit)
 - 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station 12". Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's

- 4. Select message.
- 5. Send your message.

Restriction

A small number of Inmarsat-C terminals are not yet able to send messages to telefax machines. In most cases this can be cured by installing new software. Ask the supplier of your terminal.

NOTE:

It is not possible to use a telefax machine to send a message to a mobile terminal.

Alternatively, you may advise people, with whom you frequently correspond by Inmarsat-C, to consider using C-email (Sat400) (see Section 3.8).

4.3.2 To PSTN - PC + modem

Terminal manual

Consult your terminal manual for more details.

Procedure for sending a message to a PC + modem

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name
 - Destination address telephone number (Including country code, also for sending a message to The Netherlands or Australia. The country code is never preceded by the international access code 00 !)
 - Message type PSTN
 - Presentation (5 bit, 7 bit or 8 bit)
- 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station 12". Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's

- 4. Select message.
- 5. Send your message.

Receiver

After receipt of your message Xantic shall call the telephone number you have indicated.

On the receiving side a PC running communications software has to be standby. The modem must use auto answer (no host mode!) and the following modem settings:

300, 1200, 2400, 9600 or 14.400 BPS (CCITT V21, V22, V22bis, V32 or V32bis)

MNP5 or V42bis data compression

MNP 4 or V42 error correction

8-bits - NO parity - full duplex

4.3.3 To PSTN - modem + printer

Without PC

If a suitable serial printer is available it is possible to connect this printer directly to the modem without using a PC. The message sent by the mobile will then be printed immediately when it is received. The setting of the baud rate of the printer has to match the baud rate of the modem.

NOTE:

If the printer is out of paper you may loose incoming messages !

Terminal manual

The procedure for sending a message to a modem + printer is the same as when on the receiving side a modem + PC is used. See for details your terminal manual!

Procedure for sending a message to a modem + printer

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name
 - Destination address(Telephone number including country code, also for sending a message to the Netherlands or Australia. The country code is never preceded by the international access code)
 - Message type PSTN
 - Presentation (5 bit, 7 bit or 8 bit)
- 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station12" Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's

- 4. Select message.
- 5. Send your message.

Receiver

The modem your message is sent to must use auto answer (no host mode!) and one of the following modem settings: 300, 1200, 2400, 9600 or 14.400 BPS (CCITT V21, V22, V22bis, V32 or V32bis) MNP5 or V42bis data compression; MNP 4 or V42 error correction; 8-bits - NO parity - full duplex.

4.3.4 To PSTN - mailbox

Inmarsat-C mailbox

Two stage users registered with Xantic are provided with an Inmarsat-C mailbox. This mailbox is used for temporary storage of messages to be delivered via the telephone network.

Terminal manual

Consult your terminal manual for more details.

Procedure for sending a message to an Inmarsat-C mailbox

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name
 - Number of the mailbox
 - Message type PSTN
 - Presentation (5 bit, 7 bit or 8 bit)
- 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station 12". Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's

- 4. Select message.
- 5. Send your message.

Retrieving messages from the mailbox

Messages in the mailbox can be read via PSTN or via PSDN. For users who are authorised to use an Inmarsat-C mailbox the commands **MAIL** and **READ** are available. With MAIL a list of messages in the mailbox may be requested. This offers you the possibility to read only selected messages. With READ the messages in the mailbox can be read.

Maximum mailbox storage time

Messages stored in the Xantic Inmarsat-C mailbox will be kept for at least one month from date of receipt. Messages older than one month can be deleted by Xantic.

Retrieving messages from the mailbox via PSTN

Mail

With the **mail** command, the mailbox contents can be viewed. One line for each message will show you the characteristics for the message. An overview of all your mailboxes is given if no mailbox number is selected.

- Contact Xantic in the same way as required for sending a message to a mobile via PSTN direct. See section IV.3
- To view the contents of your mailbox: type: MAIL <mailbox number>

Read

With the **read** command, the mailbox contents can be retrieved. The messages in the mailbox will all be sent with a header inserted above the message. If a reference number is given on the command line, then only that message will be forwarded from the mailbox.

- Contact Xantic in the same way as required for sending a message to a mobile via PSTN direct. See section IV.3
- 2. To read all messages in your mailbox:

type: READ <mailbox number>

To read a specific message:

type: READ <mailbox number> <message reference number>

Error correction by X-Modem protocol

If you want to read the mailbox using the X-modem protocol:

type: READ -X <mailbox number>

If you want to read a specific message in the mailbox using the X-modem protocol:

type: READ -X <mailbox number> <message reference number>

For details on the X-modem protocol see Appendix B and the manual of your communication software.

Mailbox Empty

If the mailbox contains no messages, the text Failed: No Message(s) is displayed on the screen.

Note:

With SAT.PC (see section IV.3) Xantic offers a user friendly communication package for your PC, which also enables you to retrieve messages from your mailbox via a PSTN modem.

Retrieving messages from the mailbox via PSDN

Mail

With the **mail** command, the mailbox contents can be viewed. One line for each message will show you the characteristics for the message. An overview of all your mailboxes is given if no mailbox number is selected.

- Contact Xantic in the same way as required for sending a message to a mobile via PSDN direct. See section IV.4
- 2. To view the contents of your mailbox: type: MAIL <mailbox number> PSTN

Read

With the **read** command, the mailbox contents can be retrieved. The messages in the mailbox will all be sent with a header inserted above the message.

If a reference number is given on the command line, then only that message will be forwarded from the mailbox.

- Contact Xantic in the same way as required for sending a message to a mobile via PSDN direct. See Section 3.4.
- 2. To read all messages in your mailbox: type: **READ <mailbox number> PSTN**

To read a specific message:

type: READ <mailbox number> <message reference number> PSTN

Mailbox Empty

If the mailbox contains no messages, the text Failed: No Message(s) is displayed on the screen.

4.4 To PSDN

Terminal manual

Consult your terminal manual for more details.

Restriction

Messages can only be sent to so-called "open systems". It is not possible to send messages to systems using a dialogue or interactive admission procedure with or without passwords.

Procedure for sending a message to PSDN

- 1. Prepare your message.
- 2. Prepare address and select:
 - Name
 - DNIC + Network Terminal Number (NTN).

Do not let the international access code (0) precede the DNIC.

E.g. For messages to the Netherlands the DNIC of the Dutch Datanet 1 (2041) must precede the NTN !

Example for a message to The Netherlands: 204123456789

The same applies for messages via Perth to PSDN destinations

(DNIC Australia = 5052)

- Message type PSDN
- Presentation (5 bit, 7 bit or 8 bit)
- 3. Select the Xantic LES-ID:

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

Some type of Inmarsat-C terminals display a table of Land Earth Stations in the region you are logged in to. In that case select "Xantic" or "Burum / LES 12" or "Perth / LES 22" or "TGS" or "Station 12". Sometimes you can even edit the table for easy recognition of LESs and associated LES-ID's.

- 4. Select message.
- 5. Send your message.

4.5 C-data reporting

C-data reporting is a facility which allows for the transmission of small packets of data by a mobile. The data can be sent in short data reports manually or automatically. It is also possible to have a data report sent after a polling call. The packets may contain data from various sources (e.g. instruments) coupled with the Inmarsat-C terminal. The length of a data report is limited to a maximum of 32 bytes (=256 bits). You are charged per report. The charges depend on the destination and the size of the report:

- small (1-8 bytes),
- medium (9-20 bytes)
- or large (21-32) bytes.

The data reporting facility uses the Inmarsat-C system resources very efficiently. This results in fast transmissions and consequently economical rates.

DNID's

C-data reporting can only be used by registered users with a Data Network ID number (DNID). This DNID has to be downloaded into the mobile terminal to enable it to send data reports. The downloading is done by Xantic by sending an encoded message via the satellite to the mobile. The new DNID is stored in the mobile terminal's memory and it may be used until it is deleted by Xantic. For sending data reports a mobile terminal needs a DNID for each destination. So more DNIDs may be issued to the same mobile. It is also possible that one DNID is issued to multiple mobiles. This enables one address to receive data reports from different mobile terminals (e.g. a fleet owner receiving data reports from all his mobiles). To make discrimination possible, Member Numbers are issued to mobile terminals using the same DNID.

Registration

Xantic reroutes each data report to the address indicated by the registered user. Data reports may be sent to PSDN, PSTN (data or fax), mailbox (DNID file), telex subscribers or Internet e-mail destinatiosn. When registering for data reporting the correct "destination" address has to be filled in on the registration form. After having received your registration form, Xantic will contact you for downloading. When downloading takes place the mobile terminal has to be logged in at the AOR-E, AOR-W or IOR. You will be notified after the DNIDs have been downloaded and then you may start using the data reporting facility.

Programming data reports

The latest versions of Inmarsat-C terminals offer the possibility to program the frequent sending of position reports using the data reporting facility. The transmission of other sorts of data is possible with dedicated hardware and software.

Note:

Some Inmarsat-C terminals with older terminal software cannot send data reports. In case of doubt please consult your terminal manual.

Note:

For larger projects using the Datareporting Service, Xantic can offer you the best mix of possible options regarding delivery mode, frequency, downloading of DNIDs etc. In this way the optimal price performance ratio can be realised. Please ask your Xantic sales representative or contact Xantic Customer Services.

For more information on Data Reporting and Polling, please visit our web site <u>www.xantic.net</u> \rightarrow portfolio \rightarrow Inmarsat-C \rightarrow link to Data Reporting and Polling.

4.6 File transfer

Xantic offers file transfer facilities from as well as to mobile terminals. All kinds of data (word processor files, spreadsheets etc.) can be exchanged. File transfer is transparent, which means that no "header" will be added to your data.

Mailbox

For file transfer the Inmarsat-C mailbox is very useful. You are strongly advised to use the X-modem protocol (see Appendix B) when retrieving data files from this mailbox via PSTN.

Procedure for sending data

- 1. Select 8-bits DATA.
- Send the file to a PSTN or PSDN subscriber.
 PSTN and PSDN subscribers may receive the file directly or via an Inmarsat-C mailbox.

To PSTN

The modem your file is sent to must use auto answer (no host mode!) and the following modem settings: 8-bits - 1 stop bit - no parity. The communication software at the receiving end has to be prepared for auto-answer mode, 8 bits, no parity.

To PSDN

Data files (and messages) can only be sent to so-called "open systems". It is not possible to send messages or data files to systems using a dialogue admission procedure with or without passwords. At the receiving end the X.25 application has to be able to receive 8 bits data.

4.7 C-email (Sat400)

C-email (Sat400): The Inmarsat-C email gateway service from Xantic.

C-email (also known as Sat400) is the first fully standardised gateway service between the Inmarsat-C network and the Internet. With C-email (Sat400), you have a direct link at your disposal between the mobile terminal and the Internet e-mail applications in your corporate network. The great advantage of C-email (Sat400) is that information is sent end-to-end in electronic format, and hence directly available for further processing, unlike telex or fax. This system is very easy to use. Mobiles just need to send the message (made according to a certain format: see procedures below) to Special Access Code SAC 28 or EMAIL.

Requirements for C-email (Sat400)

On the mobile site, all you need is a standard Inmarsat-C terminal. At the office or home, your need an Internet e-mail address. This e-mail address (domain names are also possible) need to be registered at Xantic for legitimation purposes.

4.7.1 Registration for C-email (Sat400)

Registration of mobile terminals is not necessary.

Please visit our web site <u>www.xantic.net</u> to register or contact Xantic Customer Services (service@xantic.net). Fill in the C-email (Sat400) registration form and send it to Xantic. Once we have received and processed your registration you will receive our confirmation of your status as registered user of Xantic C-email (Sat400) as well as the users' manual.

4.7.2 C-email (Sat400) manual / instructions

Procedure to send an email from an Inmarsat-C mobile to an Internet e-mail address

- Create your message with the text editor in your terminal software. If you use a different text editor be sure to save your file in a flat ASCII format (or telex mode ITA2 format) before transmission
- Indicate at least destination address (in field: TO). Other fields like subject and carbon copy are optional. Example C-email (Sat400) message:

TO: j.martinez@lycos.com CC: (optional) SU: (subject=optional) (press ENTER) Message Text...

- Select Xantic LES ID
- Send your message to SAC 28 or SAC EMAIL

For more features / tips please download the **latest version of the C-email (Sat400) manual** from our website: <u>www.xantic.net</u> \rightarrow portfolio \rightarrow Inmarsat-C \rightarrow C-email (Sat400) link \rightarrow C-email (Sat400) manual (pdf file). **Special characters**

C-email (Sat400) supports the use of the standard ASCII character-set. Xantic cannot guarantee the use of "extended" ASCII (most accented characters, or language dependent characters).

In some cases the conversion of a message containing these characters may be impossible. These messages can not be delivered and you will be notified by a non-delivery report. In other cases accented characters will be converted to their non-accented equivalents (e.g. ä becomes a). It is possible that some unrecognised characters may be replaced by an "?".

4.8 C-SMS: short messages from GSM mobile phones to C terminals

C-SMS is Xantic Short Messaging Service between the Inmarsat-C network and GSM mobile phones. With a minimum of effort you can send short messages to every GSM user. The same applies the other way around for GSM-users registered at Xantic.

Benefits

- No additional hard- or software is needed
- Direct link between two worldwide networks: the Inmarsat-C satellite network and GSM phones.
- If your message is longer than 160 characters, we will split it into the necessary number of SMS messages to be delivered at the GSM phone.
- Messages can be sent in 5 bits to save satellite communications costs.

4.8.1 Registration

Inmarsat-C terminals do **not need to be registered** to send SMS to GSM phones. GSM mobile phones must be registered at Xantic to be able to send messages to Inmarsat-C terminals (see more details in Section 3.9).

Procedure for sending a SMS from Inmarsat-C to GSM

- Be sure you are logged into 12 (or 22 from November 1st, 2002) (This service is only available when logged into Xantic's 012, 112, 212 or 312. It will become available for 022 and 122 as of July 1st, 2002, and for 222 and 322 as of November 1st, 2002).
- Prepare the message as follows, starting on the first line:
 <country code mobile number all together><space><body text>
- Send the message to Xantic via Special Access Codes 696 or SMS

Example:

31620848338 Stork Pls deliver spare parts engine on Rotterdam dock7 ship Potomac tomorrow before 1100 am Thanks Capt Johnson

where in the example are 31:country code; 620848338: GSM number; the rest is body text

You may use the 5- or 7-bit mode, depending on whether your terminal will allow the use of special characters in 5bit mode. If the message is longer than 160 characters it will be split into the necessary number of SMS.

Inmarsat-C users can find this information also through Xantic's special access code 814 (free of charge).

5 MOBILE TO MOBILE COMMUNICATIONS

5.1 Inmarsat-C to Inmarsat-C

Extensive area

Because Xantic serves all four regions (AOR-W, AOR-E and IOR and POR), communications between Inmarsat-C terminals can be realised, even if they are not active in the same region, and at very competitive charges. From the users point of view the Land Earth Stations in Burum, The Netherlands (AOR-W and AOR-E) and in Perth, Australia (IOR and POR) act as one Land Earth Station for both Xantic LES Ids 12 and 22.

Procedure for sending a message to another Inmarsat-C terminal

- 1. Prepare your message.
- 2. Select **Xantic** LES ID

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

- 3. Address the message to the other Inmarsat-C terminal:
 - Select region code: AOR-E = 581, POR = 582, AOR-W = 584 and IOR = 583 (not preceded by 0).
 - Select the Inmarsat-C number of the addressee. Example of an address: **581492040530**
- 4. Select type: MOBILE
- Select data format:
 - 7 bits ASCII (default)
 - 8-bits DATA
 - 5 bits packed (telex alphabet)
- 6. Store all data and send your message as usual.

NOTES:

- It is not possible to send a message to another Inmarsat-C terminal as a fax!
- You can easily test your mobile terminal by sending a message to yourself.

5.2 Inmarsat-C to Inmarsat-A, -B, -M, -mM, GAN and Fleet

Besides the Inmarsat-C services Xantic offers Inmarsat-A, -B, -M, -mM, -GAN and -FLEET too. Therefore it is possible to send Inmarsat-C messages to an Inmarsat-A terminal in a simple way. You can send your message as a telex or as a telefax if a telefax machine is connected with the Inmarsat-A, -B or -M terminal. You can send data to the other terminals as well.

We advise you to use the telex transmission route if the Inmarsat-A or -B terminal is equipped with telex.

Procedure for sending a telex message to an Inmarsat-A or -B terminal

- 1. Prepare your message.
- 2. Select **Xantic** LES ID

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

3. Address the telex message to the Inmarsat-A, or -B terminal:

Select region code (not preceded by 0!): AOR-E: **581** POR: **582** IOR: **583** AOR-W: **584**

followed by the Inmarsat-A or -B number of the addressee.

Example of an Inmarsat-A address: 5831234567

(583 is the region code for the AOR-E and 1234567 is the number of the Inmarsat-A terminal)

- 4. Select type: TELEX
- 5. Select data format (5 bit or 7 bit or 8 bit).
- 6. Store all data and send your message as usual.

Procedure for sending a telefax message to an Inmarsat-A, -B, -M, -mM, -GAN or -Fleet terminal

- 1. Prepare your message.
- 2. Select Xantic

LES ID	AOR-West	AOR-East	POR	IOR
12	012	112	212	312
22	022	122	222	322

3. Address the telefax message to the Inmarsat-A, -B or -M terminal:

Select region code. Because telefaxes are sent via the telephone network you have to use the Inmarsat-A -region code for telephone calls (not preceded by 0!):

AOR-E: **871** IOR: **873** AOR-W: **874** POR: **872**

followed by the Inmarsat-A, -B or -M number of the addressee.

- An Inmarsat-A number always begins with 1 and consists of 7 digits.
- An Inmarsat-B number always begins with 3 and consists of 9 digits.
- An Inmarsat-M number always begins with 6 and consists of 9 digits.

To obtain a more reliable connection for fax or data between the Inmarsat-A LES and the mobile Inmarsat-A terminal, it is recommended to insert the code 81 before the Inmarsat-A number. Then a satellite channel without companders will be used.

Example of an address: 871811234567

871 is the region code for the AOR-E, 81 is the code for a channel without companders and 1234567 is the number of the Inmarsat-A terminal.

Code 81 may not be used for Inmarsat B and -M.

- 4. Select type: FAX
- 5. Select data format (5 bit, 7 bit or 8 bit).

Procedure for sending an e-mail to an Inmarsat-A, -B, -M, -mM, -GAN or -Fleet terminal

For sending e-mails to these terminals, you have to send the message to a terminal "mailbox" using the normal C-email (Sat400) from mobile procedures.

For more details on these systems "mailbox", please consult the Xantic Weblink instructions. Weblink provides these A, B,M, mM, GAN and Fleet users (not C) with a "mailbox" on the Internet. The A, B, M, mM, GAN and Fleet users can retrieve their "email" messages from this mailbox.

Please visit our website or consult Xantic Customer Services for more details about Weblink.

APPENDIX A – Dial-in numbers / addresses

Access mode	Access number in	Dial in numbers for LES 12 T&T platform	Dial in numbers for LES 22 T&T platform From 21/6/02
PSDN (X25)	Netherlands	02041594044	None
	Australia	0505293150012 (b)	0505293050022
PSTN	Netherlands	ISDN /Asynchronous Domestic Netherlands: 0594 249 310 International: + 31 594 249 310	None
	Australia	None	ISDN / Asynchronous Domestic Australia: 08 9302 6344 International +61 8 9302 6344
Two Stage	Netherlands	Domestic NL: 73100 International +4473100	None
Access Telex	Australia	None	(c) Domestic Australia: 105050 International: +71105050
One stage Telex	Netherlands & Australia	Nr. Region + InmC ID AORW: 5844xxxxxxx AORE: 5814xxxxxxx POR: 5824xxxxxxx IOR: 5834xxxxxxx	AORW: 5844xxxxxxx (d) AORE: 5814xxxxxxx (d) POR: 5824xxxxxxx IOR: 5834xxxxxxx
Internet TCP/ IP Unencrypted	Australia & Netherlands	203.38.76.152	203.38.76.154 (a)
Internet E-mail	Normal messages	4xxxxxxx@c.xantic.net	4xxxxxxx@c.xantic.net
	Polls	poll@c12.xantic.net	poll@c22.xantic.net (e)
	EGC (FleetNET, SafetyNET)	egc@c12.xantic.net	egc@c22.xantic.net (e)

Xantic INMARSAT-C terrestrial access dial-in numbers for both LES Ids 12 and 22

(a) Available from 21 June 2002 for the Atlantic Ocean Regions East and West and from 24 October 2002 for IOR and POR.

(b) Asia-Pacific PSDN (X25) access to LES id 12 planned to be ready on 21st June 2002

(c) Available 21^{st} June 2002.

(d) During 21/6 until 25/10, messages sent to the Atlantic Regions will not be redirected to the IOR/POR in case the terminal is not in the Atlantic regions; the sender will receive a negative delivery notification; in this case re-send your message to the IOR/POR. Same remark applies in the reverse case. Users are advised to send the messages to the right Ocean Region to minimize inconveniences. From 25/10 we will offer automatic global location (e.g. if message sent to the AORE and vessel not there, our systems will locate it and send the message to the correct ocean regions).

(e) Not available yet. Planned to be ready in November / December 2002.

APPENDIX B – Error correction methods for PSTN users

Error correction methods for PSTN users

The telephone network (PSTN) was not designed for data communications. Therefore data transfer via telephone lines cannot be guaranteed to be error-free. Especially at high speed even a minor interruption can lead to loss of data. To avoid this, modern communication software offers one ore more protocols for data transmission without errors. One of these is the X-modem protocol. MNP is used for error correction. MNP however must be implemented in your modem's hardware, while the X-modem protocol is controlled by your communication software.

X-modem

Since most commercial and shareware software packages offer the X-modem facility, we recommend using the X-modem protocol for retrieving files from the Inmarsat-C mailboxes and for sending files from a PC with modem to a mobile Inmarsat-C terminal.

X-modem transfers only a single file at a time. The protocol uses two way communications and either a checksum or a cyclic redundancy check (CRC) for error checking. X-modem can handle text or executable files. CRC checking is always attempted first. The checksum method is used if CRC is not acknowledged by the sender. X-modem settings are 8 data bits, 1 stop bit and no parity (N/8/1). If set to other parameters, most software will automatically switch to N/8/1 and return to the original parameters after transfer. Because X-modem eliminates transmission errors, the net throughput will be slightly lower because of the protocol-overhead.. For messages to Inmarsat-C terminals a small increase of message length may be observed. This is due to the minimum block-length as used with X-modem.

MNP

Modern modems are able to transmit with a speed up to 14.400 bits per second and higher. Especially at those high speeds an adequate way of error correction is necessary. Therefore modern modems also support the MNP-3 error correction protocol and so does Xantic. The MNP-4 and MNP-5 protocols which increase the effective transmission speed, are also supported by the modems of Xantic. When Xantic detects that the modem which is used by the calling subscriber is supporting the MNP standard(s), the MNP options are automatically activated by the modem in Xantic. Consult your modem's manual for more information how to activate the MNP options.

6 APPENDIX C – Glossary

++++	Used in telex: End of transmission signal.				
AAB	Automatic Answer Back, see answer back.				
ABS	Absent. Used in telex communications to indicate that the mobile station				
	Is logged out or not present in the area of which the telex number has				
	been chosen.				
answerback	Station identification, mainly used in telex to identify the party on the line.				
AOR-E	Atlantic Ocean Region-East: Area served by the satellite above the				
	eastern part of the Atlantic Ocean.				
AOR-W	Atlantic Ocean Region-West: Area served by the satellite above the				
	western part of the Atlantic Ocean.				
ASCII	American Standard of Coded Information Interchange.				
bit	Binary digit, element of the binary numbering system.				
BPS	Bits per second.				
bt or BT	Begin text, indicates that at that position the text of a message starts.				
byte	Group of bits (mostly 8) designating a character.				
C-email	Name to Xantic's C-email gateway service, connecting the Inmarsat-C				
	network to the Internet (formerly called Sat400).				
CES	Coast Earth Station, also called LES or Land Earth Station for land				
	mobile use.				
CI	Conversation impossible.				
cmd or CMD	Command.				
Compander	Compression-Expander, system to reduce noise in an Inmarsat-A voice				
	channel(not used for Inmarsat-C)				
DNIC	Data Network Identification Code.				
DNID	Data Network IDentification.				
EGC	Enhanced Group Call				
ENID	Enhanced Network IDentity. Identification for groups of mobiles,				
	enabling them to receive EGC messages.				
EOM-signal	End Of Message signal as used in telex communications (NNNN).				
EOT-signal	End Of Transmission signal as used in telex communications (++++).				
FleetNET	One of the EGC services of Inmarsat-C, used to send selective				
	broadcast-messages to groups of mobiles.				
ga or GA	Go Ahead: you may transmit.				
GMDSS	Global Maritime Distress and Safety System. Inmarsat-C is one of the				
	communication systems supporting GMDSS.				
GPS	Global Positioning System. Navigation system based on satellite				
	technology.				
HEX	Hexadecimal.				
ID	Identification.				
IOR	Area served by the satellite above the Indian Ocean.				
itd	Input transaction accepted for delivery.				
itr	Input transaction rejected.				
LES	Land Earth Station, also called CES or Coast Earth Station for maritime				
	use.				

lf or LF	Line feed.		
MES	Mobile Earth Station, mobile terminal for land use.		
Modem	Modulator DEmodulator, used to transmit and receive digital signals		
	via analogue telephone lines.		
MSG	Message.		
NA	Not Admitted. (In Inmarsat C telex communications to indicate that		
	the mobile station is excluded from all traffic).		
NDN	Non Delivery Notification.		
NNNN	Used in telex: End of message signal.		
NP	No Party. Used in telex communications to indicate that the mobile		
	station is unknown or not yet commissioned.		
NUA (X.25)	Network User Address.		
PC	Personal Computer.		
PDN	Positive Delivery Notification.		
PIN	Personal Identification Number (used for security).		
Poll	A short message transmitted to one or more mobiles to generate an		
	action by the mobile(s). This may be used to program a mobile terminal		
	or to initiate a data report.		
POR	Area served by the satellite above the Pacific Ocean.		
PSDN	Public Switched Data Network.		
PSTN	Public Switched Telephone Network.		
PTN	Public Telex Network.		
rej	Rejected.		
SAC	Special Access Code: short code replacing a terrestrial address		
SafetyNET	One of the Inmarsat-C Enhanced Group Call services, used for the		
	distribution of maritime safety information.		
Sat400	Former name to Xantic's C-email gateway service, connecting the		
	Inmarsat-C network to the Internet.		
SAT.PC	Xantic's user friendly PC software package for the office and at home.		
SES	Ship Earth Station, mobile terminal for maritime use.		
store-and-forward N	Messages are temporarily stored for later transmission, opposed to real		
	time or "on-line" communications.		
STX	Start of Text.		
STX-character	Start of Text indicator.		
Tcp / IP	Abbreviation for Transmission Control Protocl / Internet Protocol. Two		
	interrelated protocols that are part of the Internet protocol suite. TCP		
	operates on the OSI transport layer and breaks data into packets. IP		
	operates on the OSI network layer and routes packets		
Telnet	The TCP/IP standard network virtual that is used for remote terminal		
	connection service and that allows a user at one site to interact with		
	systems at other sites as if that user terminal were directly connected to		
	computers at those sites.		
WRU	Used in telex: Who are you.		
X-modem protocol	Transmission protocol for file transfer via PSTN with automatic error		
	detection and correction.		
X.25	Access protocol for a packet switched data network.		