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Suppliers' Information Note

For The BT Network

Next Generation Text Service also called Text Relay
Service Description

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1. Introduction

This SIN describes the Next Generation Text (NGT) Service (The Service) which also known as Text Relay service that is provided for PSTN customers who need to use real-time text in association with phone calls because of their disabilities.

The Service offers the option of routing calls that will or could involve real-time text communications through The Service. The NGT Platform is accessed on a per call basis by prefixing the full telephone number with a NGT Prefix.

The Service provides the following features:

- uses V.18[1] compliant modems
- automated access to a relay assistant
- access to operator assistance and Directory Information Services using the existing short code numbers prefixed with 18001 and a Public Emergency Call Service using 18000
- call progress voice announcements in a form suitable for text-users
- allows communications between incompatible textphones
- the Calling Line Identification (CLI) number of the calling line, or the reason for its absence, is passed through The Service
- an app that provides a real-text channel in parallel with a telephone call.

1.1 Text-device protocols

Real-time text-devices can connect to The Service using either:

- a textphone that is compatible with the ITU-T V.18 Recommendation.
- or the NGT App in parallel with a standard telephone call.

1.2 Text-devices

In this document the term ‘text-device’ is used to describe both a textphone and the NGT App.

1.2.1 Textphones

While the NGT modems support the protocols within the V.18 Recommendation it is advantageous to the customers if they use the carrier based protocol such as native V.18 or V.21 [2].

If non-carrier based textphone protocols, such as Baudot, are used some characters have to be typed in order to detect the protocol being used. To prompt the user an announcement will be sent to the textphone saying “NGT Please type hello GA”.

Additionally, for textphones which do not generate tones during a state change i.e. from voice to text or from text to voice, a signal will have to be typed or keyed by the text-user.

1.2.2 NGT End-user App

As well as supporting the textphones that were previously supported by Text Relay and TextDirect NGT provides an app that is used in parallel with a phone call. The NGT App can be downloaded from the appropriate app store or the NGT Website and run on a compatible smartphone, tablet or personal computer.

1.3 Announcements

Call status announcements from The Service to the customer are delivered in a form appropriate to that customer's communication mode at that moment in time. A text-user will receive announcements in text using a protocol compatible with their textphone or the NGT App, and a phone-user will receive announcements as tones or voice.

All text announcements from The Service will be prefixed with "NGT" so that the text-user can identify that the announcement has been sent by The Service and not by the distant end. An example of such an announcement would be "NGT The number you called is busy, please try later."

1.4 Call Types

The Service provides automatic access to a relay assistant for voice-to-text and text-to-voice calls. The Service also supports both text-to-text and voice-to-voice calls.

2. Call Set-up

2.1 Calls from a Text-user

To use The Service a text-user will prefix the full telephone number they are calling with the NGT Prefix, 18001. The Service requires that the originating network presents the NGT Prefix together with the destination number as the dialled digits. If a text-user wants to call a number such as 0207 946 0123 then the number they will dial will be 18001 0207 946 0123 and this will be presented to The Service.

Before The Service makes the second leg of the call The Service must connect to a text-device either a textphone or the NGT App. This connection is then used to convey call status information.

When the call is connected through to the called telephone, and that telephone 'rings', The Service sends a text announcement "NGT ring ring" to the caller indicating that the telephone they are calling is ringing.

If the phone number being called is busy the caller will receive the following text announcement "NGT The number you called is busy, please try later.".

When the call is answered The Service will detect whether there is a text-device present or not. If there is no text-device then a relay assistant will be connected into the call. If there is a text-device then real-text communication can commence between the two parties (See: Text-through – textphone & NGT App).

2.2 Calls from a Phone-user

For telephone-users the NGT Prefix is 18002. Phone-users should use The Service when they wish communicate with a text-user or when they think there is the possibility that the call may be answered by a text-user, as in the case of a household of people with mixed ability i.e. text-users and telephone-users in the same household.

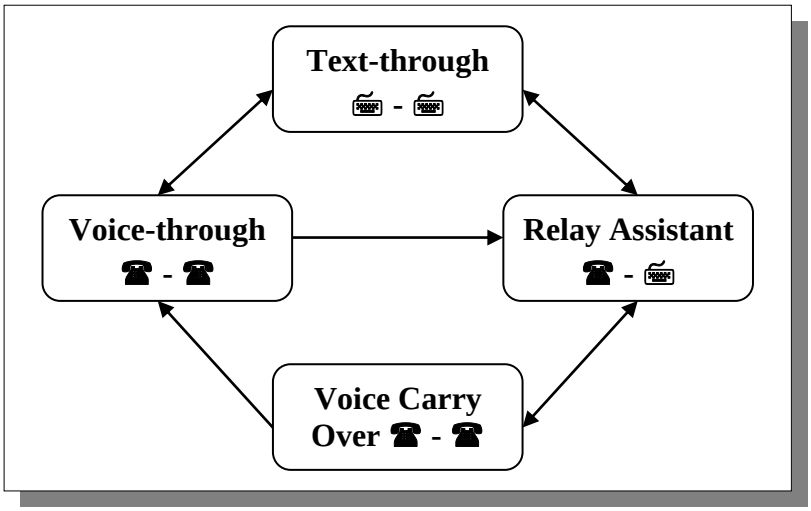
A telephone caller will dial the NGT Prefix 18002 followed by the full telephone number, so that a call to 0207946 0123 will become 180020207946 0123.

When the call is connected through to the called number the caller will hear ringing, busy or failure tones or they will receive an equivalent NGT voice announcement.

When the call is answered The Service will detect whether there is a text-device present or not. If there is a text-device then a relay assistant will be connected in to the call. If no text-device is present then the voice path is switched through allowing the voice conversation to commence.

3. Conversation

Once a call has been established and the called party answers The Service supports four different modes or ways of communicating, each of these modes is described below. A call will stay in each mode until one or both of the terminals change i.e. one party switches from text to voice or vice versa. At this point The Service decides which mode to move the call into, dependent on the terminals that are present at each end of the call. The next mode is also dependent on the previous mode as shown in the diagram.



3.1 Voice-through - textphone

In this mode The Service connects the voice path through between the two parties enabling them to talk to each other.

3.2 Text Relay – textphone & NGT App

A NGT Relay Assistant will be connected into a phone conversation when one party is a text-user and the other is a phone-user. Text from the text-user is read and spoken to the phone-user by the relay assistant. In the other direction the relay assistant types the spoken message from the phone-user to the text-user. When The Service detects that a relay assistant is required both parties are informed, using the appropriate means, that a relay assistant is being connected.

The relay assistant will remain connected in to the call until the end of the call, however if they are no longer required the relay assistant will release themselves from the call.

3.3 Voice Carry Over - textphone

This is when a textphone user switches from using text to speaking or hearing mode when there is a relay assistant associated with the call. When the textphone user switches to voice they are able to talk to the other person. From Voice-through mode the call can either return to the relay assistant or if they are no longer required it will go into Voice-through.

3.4 Voice Carry Over – NGT App

The NGT App works in parallel with a phone call and there is a permanent voice path between the calling party, called party and the relay assistant. This means that a text-user can speak direct to the other party, or hear the other party without needing to go via the relay assistant.

3.5 Text-through – textphone & NGT App

When in Text-through mode The Service enables real-time text communications to take place between two text-users. The text-devices do not have to be compatible with each other as The Service decodes and translates the protocols being used by the two text-devices. When two textphones, two NGT Apps, or a textphone and NGT App are connected together through The Service the textphones do not actually connect directly to each other.

4. TextNumbers

NGT TextNumbers are alternative access numbers that can be associated with a text-user's fixed or mobile phone number. When a TextNumber is dialled the call is routed through The Service without the 18002 prefix being used. More information is available at: http://ngts.org.uk/textnumber_index.php.

5. Calling Line Identification

As with other network nodes The Service passes the Calling Line Identification (CLI), Calling Line Identification Presentation (CLIP) and Withheld flag through to the destination network.

As with a standard call the CLI/CLIP can be withheld or released by dialling 141 (per call withhold) or 1470 (per call release) **before** the NGT Prefix e.g. 141 18001 0207 946 0123.

6. Call Return

By dialling 18001 1471 the test-user can see the CLI of their last incoming call provided that call used The Service and the CLI was not withheld. The text-user has the option of keying 3, which will instruct The Service to attempt a return call. This facility operates independently of the PSTN Call Return service.

7. International Calls

Text Relay will allow both text-user and phone--users to make calls to international telephone numbers by using the NGT Prefix. Language translation is not provided by The Service and character-set compatibility cannot be guaranteed.

8. Call Rejection

Under normal circumstances The Service will attempt to connect all calls to the destination indicated in the dialled digits presented to The Service. However in the following circumstances calls will be rejected:

- when the call does not have a valid Network CLI (except for 18000 calls)
- when the destination is an international or premium rate number and the Basic Service Marks from the originating network indicate that the call type is barred

- when there is a known fraud issue involving either the calling number or the destination

9. Further information

Further information about The Service can be obtained from the website at http://ngts.org.uk. More detailed information aimed at Communications Providers can be found at: http://ngts.org.uk/cp_index.php

If you have enquiries relating to the contents of this document then please e-mail sinet.helpdesk@bt.com

10. References

ITU-T Recommendation

[1]	V.18	Recommendation V.18 - Operational and interworking requirements for DCEs operating in the text telephone mode
[2]	V.21	Recommendation V.21 - 300 bits per second duplex modem standardized for use in the general switched telephone network

For copies of referenced documents please see the document sources page at http://www.btplc.com/sinet/

11. Abbreviations

CLI	Calling Line Identification
ITU-T	International Telecommunication Union - Telecommunications Standardization Sector
NGT	Next Generation Text Service that replaces Text Relay and TextDirect
PSTN	Public Switched Telephone Network
SIN	Suppliers' Information Note
TXD	BT TextDirect (the original name for the Text Relay)

12. History

Issue 1 0	November 2000	
Issue 1.1	September 2002	Editorial update.
Issue 1.2	September 2004	Clause covering compliance of terminal equipment removed. Editorial changes.
Issue 1.3	April 2009	Name change from TextDirect to Text Relay
Issue 1.4	December 2011	Call Rejection section added

Issue 1.5	June 2016	Changed to reflect NGT changes Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/

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