STENTOR
The Power of Telecommunications

Interface Document
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Calling Card Swipe Mode Access
("Card Swipe Access")

Terminal-to-Network Interface

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DOCUMENT HISTORY

1	January 1997	Initial issue

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1.0 SERVICE DESCRIPTION - "Card Swipe Access"

1.1 Summary

Calling Card Swipe Mode Access (**"Card Swipe Access"**) provides the capability for Stentor Carrier public telephones equipped with magnetic card readers to read a toll-free number (1-800 or 1-888) that is encoded on the magnetic stripe of a calling card (the format of which is defined in this specification) and to automatically dial that number and, optionally, transmit the card account number.

1.2 Definitions

"Calling Card" means a card which is accepted by an interexchange carrier, reseller or sharing group as a payment method for calls. Calling cards may either be pre-paid or post-paid.

"Pre-paid Calling Card" is a calling card for which usage has been pre-paid. The tracking of the usage for the pre-paid cards is performed through a remote platform which is accessed through a toll-free connection.

"Post-paid Calling Card" is a calling card for which call charges are recorded by a remote platform and subsequently billed to the customer.

"Card Platform Provider" is a company that operates one or more platforms that interface with users of either pre-paid or post-paid calling cards.

"Bong Tone" means an audible signal that the telephone industry uses to acknowledge a procedure prior to the "Bong Tone". The Bong Tone is a composite signal which has the frequencies of 941 Hz and 1477 Hz for 60 milliseconds followed by the frequencies of 440 Hz and 350 Hz for 940 milliseconds (exponentially decaying at time constant of 200 milliseconds). This is at a tone level of 10 dBm0 @ - 3 TLP (-7 dBm0 total).

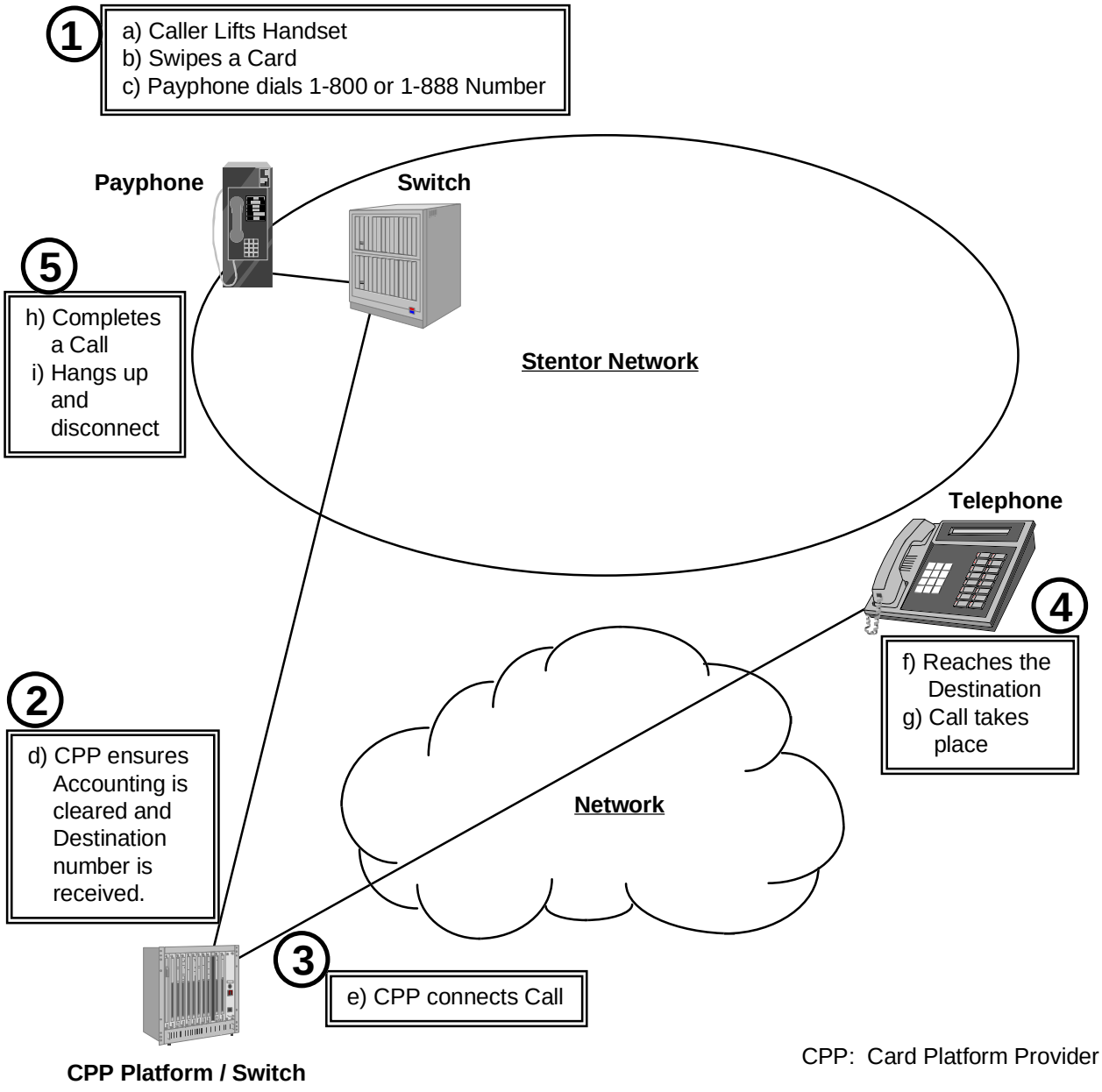

Figure 1: An Example of Card Swipe Access Call Flow

2.0 FEATURE DESCRIPTION

2.1 Summary

There are two types of card format defined - "Type A" and "Type B". Both Type A and Type B will accommodate "Card Swipe Access" capabilities for Card Platform Providers (CPP's).

The Stentor Carrier public telephones equipped with card readers (hereafter referred to as "Stentor Carrier payphones") will read a Card Platform Provider's (CPP's) toll-free number (1-800 or 1-888) from the Type A or Type B card, and automatically dial that number.

The selection of Type A or Type B is dependent upon the call sequence the CPP's platform prefers. The main difference between Type A and Type B is described next:

Type A processes the call sequence as follows:

a) a caller swipes a card
b) Stentor Carrier payphone outdials 1-800-XXX-XXXX or 1-888-XXX-XXXX (CPP platform number)
c) upon receipt of Bong Tone, (or time out of 6 seconds immediately after the completion of the last digit transmission of item (b) above), the payphone automatically spills the caller's account number
d) the caller is prompted by the CPP platform to enter a destination telephone number

Type B differs from the above steps (c) and (d), as follows:

a) a caller swipes a card
b) Stentor Carrier payphone outdials 1-800-XXX-XXXX or 1-888-XXX-XXXX (CPP platform number)
c) CPP's platform prompts the caller to key in a destination number
d) the CPP's platform then asks the caller to key in his/her account number

The reason for this provision is that some Card Platform Providers may wish to use this sequence, instead of Type A sequence.

Note:

In this sequence, the caller's account number is not available to be spilled. Therefore, the caller in Type B needs to key-in the caller's account number.

Automatic account information spilling is only available to CPP's which use Type A.

The following sections describe the specific **Card Format** for **Type A** and **Type B**. **Call Sequence Definitions** follow after the card format definitions.

2.2 Card Format Definitions

The Type A and Type B (*"the card"*) shall conform to the International Standards in the following:

The physical characteristics of *"the card"* shall conform to Card Type ID-1 of ISO/IEC 7810: 1995 (E).

The recording technique for the magnetic stripe for *"the card"* shall conform to ISO/IEC 7811-2: 1995 (E).

To improve resistance to erasure, *"the card"* may be encoded by "High coercivity" encoding technique, specified in ISO/IEC 7811-6: 1996 (E).

The recording track *"the card"* uses shall be Track 2 defined in ISO/IEC 7811-4: 1995 (E).

The Numbering System for *"the card"* shall meet the following Card Format(s) defined in Sections 2.2.1 and 2.2.2.

2.2.1 "Type A" Magnetic Stripe Format (in Track 2)

	Primary Number (PN) First Half			Primary Number (PN) Second Half			Card Account Number												
STX	**8**	**9**	**1**	**X**	**X**	**X**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**LUHN**
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

		CPP Id.			CPP Platform Tel. Number												
FS	**FS**	**C**	**P**	**P**	**1**	**8**	**0**	**0**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**ETX**	**LRC**
					1	**8**	**8**	**8**									
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

Definitions

Position

1	**STX**	Start Sentinel	(Hex B)	1 digit
2-4	**891**	First half of PN (Primary Number)		3 digits
5-7	**XXX**	Second half of PN (Primary Number) (Stentor will provide this number. See: Section 2.2.3)		3 digits
8-19	**NNNNNNNNNNNN**	Card Account Number		12 digits
20	**LUHN**	Check Digit (See: ISO/IEC 7812-1: 1993 (E) Annex B for Luhn Formula. Luhn calculates between positions 2 and 19 inclusive.)		1 digit
21	**FS**	Field Separator	(Hex D)	1 digit
22	**FS**	Field Separator	(Hex D)	1 digit
23-25	**CPP Id.**	CPP Identifier (Stentor will provide this number. See: Section 2.2.3)		3 digits
26-36	**CPP Tel.**	CPP Platform Phone number		11 digits
37	**ETX**	End Sentinel	(Hex F)	1 digit
38	**LRC**	Longitudinal Redundancy Check		1 digit

2.2.2 "Type B" Magnetic Stripe Format (in Track 2)

	Primary Number (PN)						
	First Half			Second Half			
STX	**8**	**9**	**1**	**X**	**X**	**X**	**LUHN**
1	2	3	4	5	6	7	8

		CPP Id.			CPP Platform Tel. Number												
FS	**FS**	**C**	**P**	**P**	**1**	**8**	**0**	**0**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**ETX**	**LRC**
					1	**8**	**8**	**8**									
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Definitions

Position

1	**STX**	Start Sentinel	(Hex B)	1 digit
2-4	**891**	First half of PN (Primary Number)		3 digits
5-7	**XXX**	Second half of PN (Primary Number) (Stentor will provide this number. See: Section 2.2.3)		3 digits
8	**LUHN**	Check Digit (See: ISO/IEC 7812-1: 1993 (E) Annex B for Luhn Formula. Luhn calculates between positions 2 and 7 inclusive.)		1 digit
9	**FS**	Field Separator	(Hex D)	1 digit
10	**FS**	Field Separator	(Hex D)	1 digit
11-13	**CPP Id.**	CPP Identifier (Stentor will provide this number. See: Section 2.2.3)		3 digits
14-24	**CPP Tel.**	CPP Platform Phone Number		11 digits
25	**ETX**	End Sentinel	(Hex F)	1 digit
26	**LRC**	Longitudinal Redundancy Check		1 digit

2.2.3 Numbers Provided by Stentor

2.2.3.1 Part of Primary Number (PN)

Stentor (Carrier Services Group) will provide the number for positions 5-7 (Sections 2.2.1 and 2.2.2) upon registration.

2.2.3.2 Card Platform Provider Identifier (CPP Id.)

Stentor (Carrier Services Group) will provide the number for positions 23-25 in Section 2.2.1, or the positions 11-13 in Section 2.2.2 upon registration.

2.3 Call Sequence Definitions

The Call Sequence and associated parameters differ between Type A and Type B.

The following sections define **Call Sequence** for each Type separately.

2.3.1 Call Sequence for Type A

1. Caller lifts the handset of Stentor Carrier payphone.

2. The Caller inserts and removes the Type A card (defined in Section 2.2.1).

3. The Stentor Carrier payphone disables the key pads and handset.

4. The Stentor Carrier payphone outdials the 1-800-XXX-XXXX or (1-888-XXX-XXXX) obtained from the card (CPP's platform number).

5. The Stentor Carrier payphone waits for Bong Tone for 6 seconds:

   5a. When a Bong Tone is received within 6 seconds, the payphone then proceeds to Step 6, with a **positive confirmation** from the CPP's platform.

   5b. If a Bong Tone is not received within 6 seconds, the payphone then proceeds to Step 6, **without any confirmation** from the CPP's platform.

6. Upon receipt of "Bong" tone (or after 6 seconds of time out), the payphone spills the Card Account Code (defined in Section 2.2.1) to the CPP's platform and enables the key pads and handset.

7. The CPP platform validates the account number:

   7a. If the CPP platform is not reached or denies the request, then the CPP platform or caller disconnects the call. (This proceeds to Step 11 below.)

   7b. If the CPP platform accepts the request, then the CPP platform delivers a dial tone. Proceed to Step 8.

8. Upon receipt of the dial tone, the caller enters the destination number he/she wants to call. (The number will be directly received by the CPP platform.)

9. The CPP platform connects the call.

10. A call takes place.

11. Hang up and disconnect.

2.3.2 Call Sequence for Type B

1. Caller lifts the handset of Stentor payphone.

2. The Caller inserts and removes the Type B card (defined in Section 2.2.2).

3. The Stentor Carrier payphone disables the key pads and handset.

4. The Stentor Carrier payphone outdials the 1-800-XXX-XXXX or (1-888-XXX-XXXX) obtained from the card (CPP's platform number).

5. The Stentor Carrier payphone waits for Bong Tone for 6 seconds:

   5a. When a Bong Tone is received within 6 seconds, the payphone then proceeds to Step 6, with a **positive confirmation** from the CPP's platform.

   5b. If a Bong Tone is not received within 6 seconds, the payphone then proceeds to Step 6, **without any confirmation** from the CPP's platform.

6. The Stentor Carrier payphone enables the key pads and handset. The Stentor Carrier payphone user follows the voice instruction of the CPP platform.

7. The caller enters the destination number he/she wants to call. (The number will be directly received by the CPP platform.)

8. The CPP platform prompts for an account number. Upon the CPP platform's request for the caller to key in the account number, the caller keys in the account number. The CPP platform validates the account number.

   8a. If the account number is invalid, then the CPP platform may ask for another account number and reprocess the validation (which goes back to Step 8) or disconnect the line (which goes to Step 11).

   8b. If the account number is valid, then proceed to Step 9.

9. The CPP platform connects the call.

10. A call takes place.

11. Hang up and disconnect.