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## Foreword

This final draft European Telecommunication Standard (ETS) has been produced by the Human Factor (HF) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Voting phase of the ETSI standards approval procedure.

<b>Proposed transposition dates</b>	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

## Introduction

The use of machine readable ID-1 cards (MRC) in telecommunications applications, i.e. telephone prepayment cards and Subscriber Identity Modules (SIM) for GSM telephones, can present problems for all users; namely to orientate and turn the card so that it may be correctly inserted in the card operated device. For older people and blind or severely visually-impaired people, the task of orienting a machine readable ID-1 card can be a substantial obstacle.

At least four different tactile identifier designs are in concurrent use on telephone prepayment cards in Europe (even two different designs in a single country) so there is a high risk of users being confused. Standardization of the Man-Machine Interface (MMI) will facilitate the inter-sector and cross-border interoperability of all machine-readable cards. There is, therefore, an urgent need for a single, international standard for a tactile identifier on machine readable cards to aid all users, especially blind and visually-impaired people, to orientate the cards quickly and correctly. A standard tactile identifier will also substantially aid visually unimpaired users to insert cards faster and with fewer errors.

The purpose of this ETS is to specify the form, dimensions and position of an edge indentation for a single standard tactile identifier for ID-1 type telephone prepayment cards and SIM cards. It is hoped that, eventually, a common standard for a single tactile identifier for all machine readable ID-1 cards can be achieved through harmonization with CEN in Europe and with ITU-T and ISO for a world wide standard. TC HF intends to follow up this ETS with a recommendation on how to insert the ID-1 card in the terminal card reader with reference to the tactile identifier on the card.

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## 1 Scope

This European Telecommunication Standard (ETS) specifies the form, dimensions and position of an edge indentation for a single standard tactile identifier for machine readable ID-1 type telephone prepayment cards and GSM telephones SIMs, i.e. cards which otherwise conform with the ISO standards for machine readable ID-1 cards, and to specify the test procedure for verifying conformance with this ETS.

This tactile identifier is meant to facilitate the correct orientation and insertion of telephone prepayment cards and SIMs in the card-operated terminals, especially for people who are blind and visually impaired, but also for older people, minors and other users.

This ETS does not apply to telephone prepayment cards which do not require to be inserted in any specific orientation in the terminal nor to plug-in SIMs or to Thin Flexible Cards (TFC-1). National differences in the delivery of instruction material to blind and visually impaired people places the provision of packaging, labelling and instructions in the use of telephone prepayment cards and SIMs outside the scope of this ETS.

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ISO 7810 (1985): "Identification cards - Physical characteristics".
- [2] ISO 7811-4 (1985): "Identification cards. Recording technique. Part 4: Location of read-only magnetic tracks - Tracks 1 and 2".
- [3] ISO 7811-4 (1985): "Identification cards. Recording technique. Part 5: Location of read-write magnetic track - Track 3".
- [4] ISO 7816-2 (1988): "Identification cards. Integrated circuit(s) cards with contacts. Part 2: Dimensions and location of contacts".
- [5] ETS 300 608 (GSM 11.11): "Digital cellular telecommunications system (Phase 2); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
- [6] ETR 165: "Human Factors (HF); Recommendation for a tactile identifier on machine readable cards for telecommunication terminals".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of this ETS, the following definitions apply:

**front side (of card):** The face of an ID-1 card bearing the integrated circuit contacts (if fitted) and opposite the side bearing the magnetic stripe (if fitted).

**ID-1 card:** A personal identification card, made from solid or laminated PVC (or similar material), 85,60 mm wide × 53,98 mm high × 0,76 mm thick with 3,18 mm radius corners (cf. ISO 7810 [1]).

**integrated circuit card:** A machine readable ID-1 card bearing an electronic read-write memory microchip (IC) with surface contacts (cf. ISO 7816-2 [4]).

**integrated circuit:** An electronic read-write memory microchip with surface contacts (cf. ISO 7816-2 [4]).

**left edge (of card):** The short edge of an ID-1 card of the end bearing the IC contacts (if fitted).

**lower (bottom) edge (of card):** The long edge opposite the magnetic stripe of an ID-1 card.

**machine readable card:** An ID-1 card which stores information in magnetic or electronic format which can be read by a magnetic or electronic card reading device.

**magnetic card:** An ID-1 card bearing a read-only (ISO 7811-4 [2]) or a read-write (ISO 7811-5 [3]) magnetic stripe.

**magnetic stripe:** A stripe of magnetic material on an ID-1 card on which information can be stored and read (read-only, cf. ISO 7811-4 [2]) or recorded (read-write, cf. ISO 7811-5 [3]) in analogue or digital form.

**personal identification number:** A secret, multi-digit (usually four-digit), personal, security number to be entered by the user to authenticate and authorize the use of a machine readable ID-1 card.

**plug-in SIM:** A smaller format of the ID-1 SIM (25 mm × 15 mm) according to ETS 300 608 (GSM 11.11 [5]).

**rear side (of card):** The face of an ID-1 card bearing the magnetic stripe (if fitted) and opposite the face bearing the integrated circuit contacts.

**right edge (of card):** The short edge of an ID-1 card opposite the end bearing the IC contacts.

**subscriber identity module:** An ID-1 card bearing an integrated circuit to be inserted in GSM mobile equipment and primarily used to uniquely identify a subscriber.

**tactile identifier:** Any physical marking on an ID-1 card, e.g. edge indentation, cut-out, embossing, surface treatment or other device, which can be perceived and recognized by the sense of touch.

**telephone prepayment card:** A prepaid ID-1 card with a specified number of telephone tariff units stored in machine readable form. When the card is used in a terminal, tariff units are subtracted until card expires.

**thin flexible card:** A machine readable personal identification card of the same dimensions as an ID-1 card (85,60 mm × 53,98 mm), but thinner and flexible, usually bearing the machine readable information on a magnetic stripe.

**upper (top) edge (of card):** The long edge of an ID-1 card closest to the magnetic stripe (if fitted).

### 3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

GSM	Global System for Mobile communication
IC	Integrated Circuit
ID-1	IDentification card
MRC	Machine Readable Card
MS	Magnetic Stripe
PIN	Personal Identification Number
SIM	Subscriber Identity Module
TFC-1	Thin Flexible Card

## 4 Requirements of a standard tactile identifier

The requirements in this ETS are based on the results of user trials with different tactile identifier-designs and positions (ETR 165 [6]) and allows for technical constraints imposed by different card-reading technologies, but otherwise comply with current standards for ID-1 cards (cf. ISO 7810 [1]).

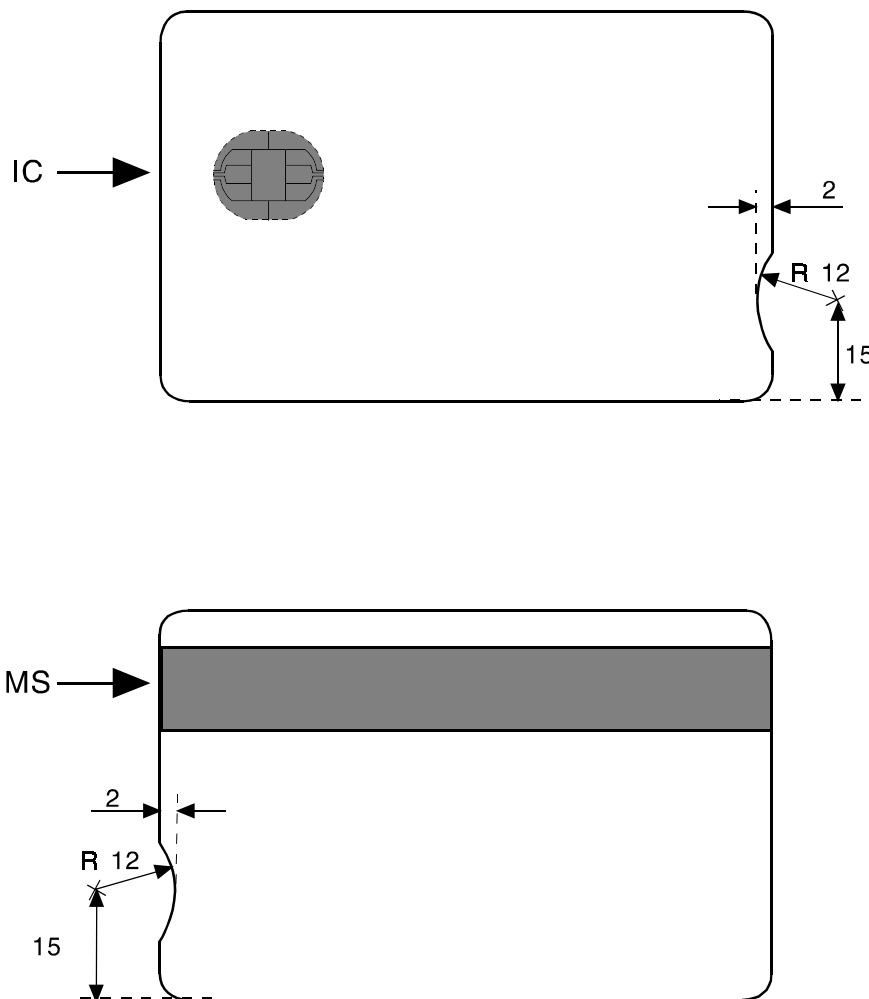
The following are the most desirable requirements of a common standard tactile identifier for machine readable ID-1 cards which need to be inserted in a specific orientation in the card operated terminal.



- **clearly distinguishable by touch:** the tactile identifier shall be easy to feel and recognize tactually by all users, including elderly, blind and visually-impaired people;
- **clearly visible:** the tactile identifier shall be easy to see and recognize by non-visually impaired users;
- **asymmetrical position:** the tactile identifier shall have an asymmetrical position so that the orientation of the card is unequivocally defined;
- **user testing:** a tactile identifier should be selected on the basis of user testing to verify that the design meets the requirements of the intended user groups;
- **compliance with existing standards:** a standard for a common tactile identifier for ID-1 cards needs to comply in all other respects with existing standards for such cards;
- **machine reading compatibility:** the tactile identifier should be designed and positioned so that it will not interfere with the functioning of existing card-reading technologies, e.g. magnetic stripes, integrated circuit contacts, or with the mechanical card-handling, e.g. card feeding mechanisms, swipe-card readers.

## 5 Form, dimensions and position of a standard tactile identifier

The tactile identifier, when used, shall conform with the form, dimensions and location shown in figure 1.



**Figure 1: Tactile identifier position and geometry**

Figure 1 shows the position and the geometry of the tactile identifier for telephone prepayment (ID-1) cards in two views: The upper view shows the front side of the card; the bottom view shows the rear side of the card (not to scale). All measures are in millimetres.

The standard tactile identifier shall be a 2 mm ( $\pm 0,1$  mm) deep, segment-shaped edge indentation with a radius of 12 mm ( $\pm 0,1$  mm) in the right hand short edge of the card, its centre located 15 mm ( $\pm 0,1$  mm) from the lower long edge and 10 mm ( $\pm 0,1$  mm) outside the right hand short edge of the card. The corners of the indentation where it meets the straight edge shall be rounded ( $r \cong 0,5$  mm) to avoid sharp corners that might cause injury.

## **6 Testing for conformance with this ETS**

The provision of a tactile identifier on telephone prepayment cards and SIMs does not require specialist measurement procedures to test for conformance with the standard.

ISO 7810 [1] specifies the procedures for measuring the physical characteristics of ID-1 cards. These procedures should be used to test for conformance with the specifications set out in this ETS.

## **7 Labelling and packaging**

No special labelling or packaging is required by this ETS. However, it is the intention that instructional figures showing how to present and insert the card clearly show the edge indentation to aid the users in orientating the card for presentation to the card operated terminal.

## History

Document history			
July 1996	Public Enquiry	PE 110:	1996-07-22 to 1996-11-15
April 1997	Vote	V 9726:	1997-04-29 to 1997-06-27