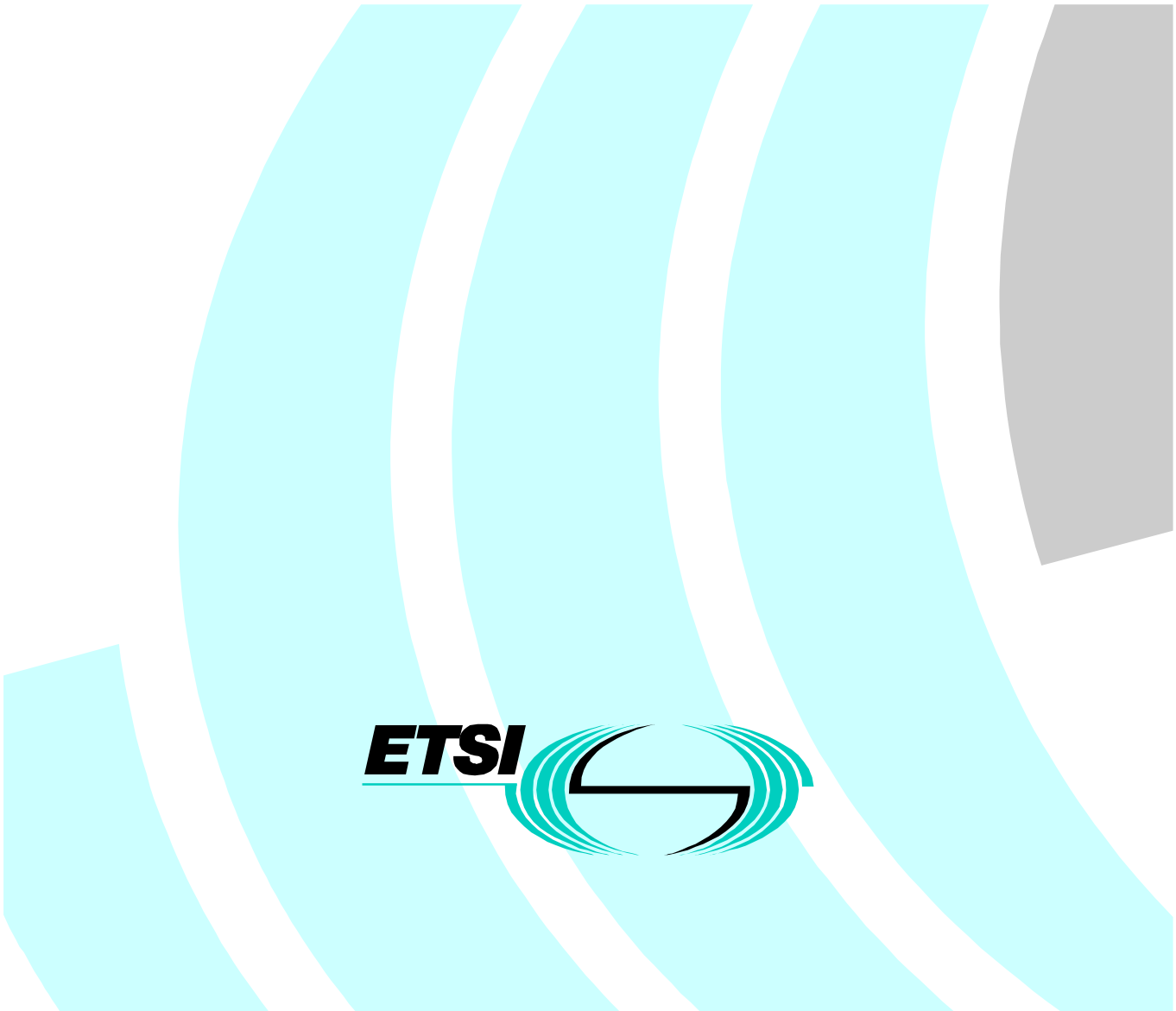
ETSI TS 101 220 V3.3.0 (2001-07)

Technical Specification

Integrated Circuits Cards (ICC);
ETSI numbering system
for telecommunication application providers
(Release 1999)



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Smart Card Platform (SCP).

The contents of the present document are subject to continuing work within EP SCP and may change following formal EP SCP approval. If EP SCP modifies the contents of the present document, it will then be republished by ETSI with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x indicates the major release (3 indicates Release 1999, 4 indicates the subsequent release (called "Release 4")).
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the specification.

1 Scope

The present document describes the numbering system for Application IDentifiers (AID) for ETSI and 3G telecommunication Integrated Circuits (IC) card applications according to ETSI and 3GPP documents and Application Providers (AP).

The numbering system described in the present document provides a means for an application and related services offered by a provider to identify if a given card contains the elements required by its application and related services.

An AID is used to address an application in the card. It consists of a Registered application provider IDentifier (RID) and a Proprietary application Identifier eXtension (PIX).

The present document describes the coding of the PIX.

The present document also defines the Toolkit Application Reference (TAR) values for the different toolkit applications. The TAR is used to uniquely identify a second level application (e.g. Toolkit Application).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ISO/IEC 7816-5 (1994): "Identification cards - Integrated circuit(s) cards with contacts - Part 5: Numbering system and registration procedure for application identifiers".

[2] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[3] ISO/IEC 7816-4 (1995): "Information technology - Identification cards - Integrated circuit(s) cards with contacts - Part 4: Interindustry commands for interchange".

[4] ITU-T Recommendation E.118: "The international telecommunication charge card".

[5] ETSI TS 101 181: "Digital cellular telecommunications system (Phase 2+) (GSM); Security mechanisms for the SIM application toolkit; Stage 2 (GSM 03.48)".

[6] ETSI TS 100 977: "Digital cellular telecommunications system (Phase 2+) (GSM); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (GSM 11.11)".

[7] ETSI TS 101 267: "Digital cellular telecommunications system (Phase 2+) (GSM); Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (GSM 11.14)".

[8] ETSI TS 101 476: "Digital cellular telecommunications system (Phase 2+) (GSM); Subscriber Identify Module Application Programming Interface (SIM API); SIM API for Java Card (TM); Stage 2 (GSM 03.19)".

[9] ETSI ETS 300 812: "Terrestrial Trunked Radio (TETRA); Security aspects; Subscriber Identity Module to Mobile Equipment (SIM - ME) interface".

[10] ETSI TS 131 101: "Universal Mobile Telecommunications System (UMTS); UICC - Terminal Interface; Physical and Logical Characteristics (3GPP TS 31.101)".

[11] ETSI TS 131 102: "Universal Mobile Telecommunications System (UMTS); Characteristics of the USIM Application (3GPP TS 31.102)".

[12] ETSI TS 131 111: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); USIM Application Toolkit (USAT) (3GPP TS 31.111)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Application IDentifier (AID): data element, which identifies an application in a card

NOTE 1: An AID may contain a Registered application provider IDentifier (RID). If it contains either a RID or an issuer identification number, then this identification is unambiguous (see ISO/IEC 7816-5 [1]).

Application Provider (AP): entity, which provides those components of an application on a card, required to perform the respective application

NOTE 2: See ISO/IEC 7816-5 [1].

telecommunication IC card application (TAR): application described by an ETSI document

Toolkit Application Reference: data element, which identifies an application in the toolkit mechanisms (e.g. SMS Data Download)

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AID	Application IDentifier
AP	Application Provider
DECT	Digital Enhanced Cordless Telecommunications
GSM	Global System for Mobile communication
IC	Integrated Circuit(s)
ICC	IC Card
ID	IDentifier
PIX	Proprietary application Identifier eXtension
RID	Registered application provider IDentifier
TAR	Toolkit Application Reference
TC	Technical Committee (in ETSI)
TETRA	TErrestrial Trunk RAdio
UPT	Universal Personal Telecommunications

4 Structure of the Application IDentifier (AID)

In accordance with ISO/IEC 7816-5 [1], the AID has the following structure:

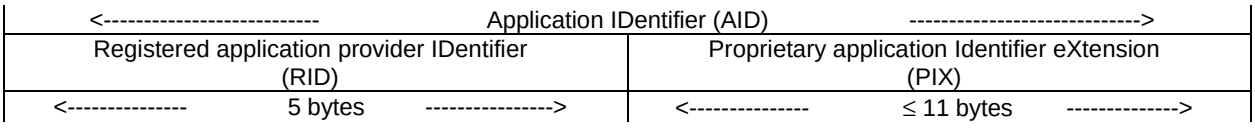


Figure 4.1: AID structure

The AID consists of a Registered application provider IDentifier (RID) of 5 bytes and a Proprietary application Identifier eXtension (PIX) of up to 11 bytes.

4.1 Registered application provider IDentifier (RID)

The RIDs dealt with in the present document, as registered by ISO/IEC according to ISO/IEC 7816-5 [1], are:

- 'A000000009' for ETSI;
- 'A000000087' for the 3GPP.

4.2 Proprietary application Identifier eXtension (PIX)

The PIX is used at the discretion of ETSI and can contain between 7 and 11 bytes of information. The PIX is coded in hexadecimal. Hexadecimal digit 1 is the most significant digit.

Digit 1 to 4 **Application code**

Purpose: To be used for identification of the standardized ETSI or 3G card application (e.g. GSM, DECT, UPT, pre-paid application). Different versions of an application may have individual codings.
Management: Assigned by ETSI on request from the ETSI or 3G technical body responsible for the document in question.
Coding: Hexadecimal. The coding indicates the ETSI or 3G document that specifies the standardized ETSI or 3G card application and the PIX number.
The correspondence between digits 1 to 4 and the ETSI or 3G document in question can be seen in a list maintained by the ETSI Secretariat (see annex A). Escape value '0000' is reserved for use by the ETSI Secretariat for proprietary ETSI or 3G applications.

Digits 5 to 8 **Country code**

Purpose: To indicate the country of the application provider of the ETSI or 3G standardized application.
Coding: According to ITU Recommendation E.164 [2]. The coding is right justified and padded with 'F' on the left.

NOTE: List of actual country codes is published by ITU.

Digits 9 to 14 **Application provider code**

Purpose: Individual code for the application provider of the ETSI or 3G standardized application.
Coding: According to ITU Recommendation E.118 [4]. Hexadecimal. The coding is right justified and padded with 'F' on the left.

Digits 15 up to 22 **Application provider field. Optional. Up to 8 digits**

Purpose: The use of this field is entirely up to the application provider. It may, for instance, be used to indicate "local" versions, revisions, etc. of the ETSI or 3G standardized application. According to ISO/IEC 7816-5 [1], if the AID is 16 bytes long, then the value 'FF' for the least significant byte (digits 21 and 22) is reserved for future use.
Management: Application provider.
Coding: Hexadecimal.

Digits 1 to 14 are assigned and registered by the ETSI Secretariat upon request by the responsible ETSI technical body.

5 Use of the Application IDentifier (AID)

The use of the AID is specified in ISO/IEC 7816-4 [3] and ISO/IEC 7816-5 [1].

6 Toolkit Application Reference (TAR)

The Toolkit Application Reference (TAR) is used to uniquely identify a second level application (e.g. Toolkit Application).

To be addressed, the Toolkit Application needs a first level application (e.g. GSM, USIM application) running.

A second level application may have several TAR values assigned.

The TAR values in the range '00 00 00' to 'AF FF FF' and 'C0 00 00' to 'FF FF FF' are under the responsibility of the first level application issuer.

The TAR values in the range 'B0 00 00' to 'BF FF FF' are reserved for allocation (by the ETSI Technical Body responsible for the present document) to generic second level application independent of the first level application issuer.

It is not mandatory for a second level application to have a TAR value assigned. If a TAR value is assigned to a second level application it is not mandatory for this value to be included in the AID. As a consequence, the AID coding of the second level application might not always comply to the current specification (see annex B).

Table 6.1 lists the TAR values or range and their associated Application Categories.

Table 6.1: TAR and Application Categories

Toolkit Application Reference	Application Category
'00 00 00'	Card Manager
'00 00 01' to 'AF FF FF'	Allocated by the 1st level application issuer
'B0 00 00' to 'B0 FF FF'	Remote File Management (see annex D)
'B1 00 00' to 'B1 FF FF'	Payment application (see annex D)
'B2 00 00' to 'BF FE FF'	RFU
'BF FF 00' to 'BF FF FF'	Proprietary toolkit application
'C0 00 00' to 'FF FF FF'	Allocated by the 1st level application issuer

Annex A (informative): Allocated ETSI PIX numbers

Table A.1: Allocation of ETSI PIX

Application	AID			ETSI document (see note 2)
	RID (see note 1)	ETSI App Code	PIX	
GSM	'A000000009'	'0001'	see annex B for further coding details	TS 11.11 [6]
GSM SIM toolkit	'A000000009'	'0002'	see annex B for further coding details	TS 11.14 [7]
GSM SIM API for Java™ Card	'A000000009'	'0003'	see annex C for further coding details	TS 03.19 [8]
TETRA	'A000000009'	'0004'	see annex C for further coding details	ETS 300 812 [9]
	'A000000009'			
	'A000000009'			
	'A000000009'			
	'A000000009'			
	'A000000009'			
	'A000000009'			

AID Application IDentifier
PIX Proprietary application Identifier eXtension
RID Registered application provider IDentifier

NOTE 1: The ETSI RID, as registered by ISO according to ISO/IEC 7816-5 [1], is 'A000000009'.
NOTE 2: It is the responsibility of the ETSI technical body, in charge of the application standardization, to inform the ETSI Secretariat when the respective ETSI document is withdrawn or renumbered.

Annex B (normative): Coding of the PIX for GSM and TETRA Applications

The following codings apply for the structure of the PIX when the application is either:

- the GSM application (i.e. ETSI application code = '0001' as shown in annex A); or
- a GSM SIM Toolkit Application (i.e. ETSI application code = '0002' as shown in annex A); or
- the TETRA application (i.e. ETSI application code = '0004' as shown in annex A).

Digit 1 to 4 **ETSI application code**

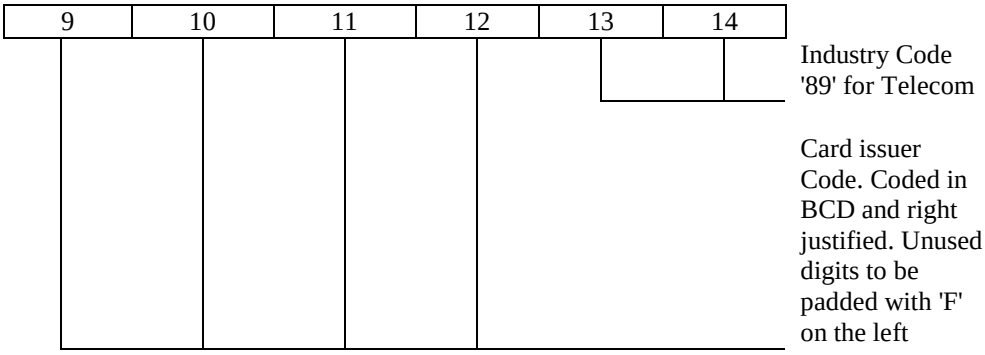
Coding: '0001' or '0002' as specified in clause 4.2.

Digits 5 to 8 **Country code**

Coding: As specified in clause 4.2 of the present document.

Digits 9 to 14 **Application provider code**

Coding: As defined below.

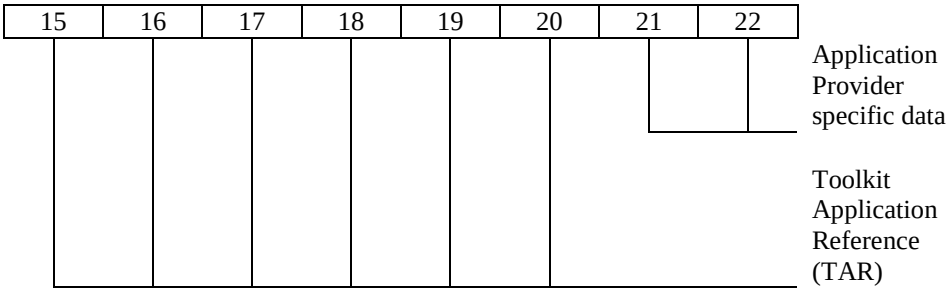


Card issuer code and Industry code are coded in line with ITU-T Recommendation E.118 [4].

Digits 15 up to 22 **Application provider field. 8 digits**

Digits 15 to 22 shall be used only if the ETSI application code is '0002' (i.e. GSM SIM toolkit).

Coding: Hexadecimal. If the application is a SIM Toolkit application (as defined in TS 101 267 [7]), the coding is as defined below.



application Toolkit Application Reference (TAR) as specified in GSM 03.48 [5], is managed by the provider.
Application Provider specific data: For application administration purposes.

Annex C (normative): Coding of the PIX for SIM Toolkit API Packages

The following coding apply for the structure of the PIX when the application is a SIM Toolkit API package (i.e. ETSI application code = '0003' - as defined in annex A):

Digit 1 to 4 **ETSI application code**

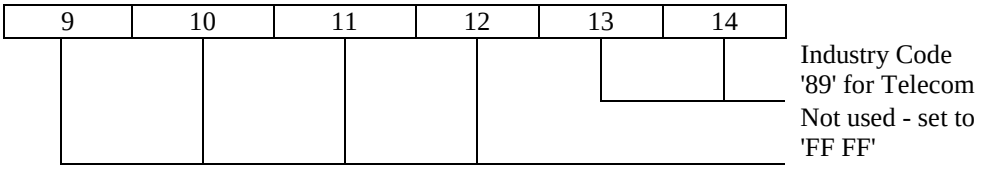
Coding: '0003' as specified in clause 4.2 of the present document.

Digits 5 to 8 **Not used**

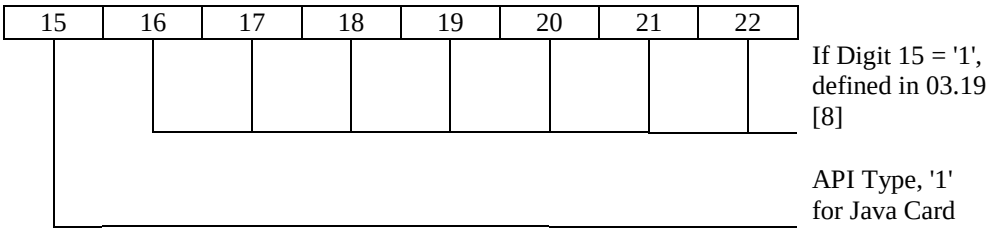
Coding: set to 'FF FF'.

Digits 9 to 14 **Industry code**

Coding: As defined below.



Digits 15 up to 22 **Application provider field. 8 digits**



Annex D (normative): Allocated TAR Values

Table D.1: Allocation of TAR values

Application	TAR	Document (see note 1)
Card Manager		
Card Manager	'00 00 00'	3G (GSM 03.48 [5])
1st level application issuer specific values		
Allocated by the 1st level application issuer	'00 00 01' to 'AF FF FF'	
Allocated by the 1st level application issuer	'C0 00 00' to 'FF FF FF'	
Remote File Management Applications		
UICC Shared File system	'B0 00 00'	3G (GSM 03.48 [5])
USIM File system (see note 2)	'B0 00 01'	3G (GSM 03.48 [5])
RFU	'B0 00 02' to 'B0 FF FF'	
Payment Applications		
RFU	'B1 00 00' to 'B1 FF FF'	
Reserved for future categories		
RFU	'B2 00 00' to 'BF FE FF'	
Prorietary toolkit application		
Prorietary toolkit application	'BF FF 00' to 'BF FF FF'	
NOTE 1: It is the responsibility of the technical body, in charge of the toolkit application standardization, to inform the ETSI Secretariat when the respective document is withdrawn or renumbered.		
NOTE 2: The USIM file system may include the UICC Shared file system.		

Annex E (normative): Allocated 3GPP PIX numbers

Table E.1: Allocated 3GPP PIX numbers

3G Application Identifiers				
Application	**AID**			**3G document (see note 2)**
	RID (see note 1)	**3G App Code**	**PIX**	
3GPP UICC	'A000000087'	'1001'	see annex F for further coding details	TS 31.101 [10]
3GPP USIM	'A000000087'	'1002'	see annex F for further coding details	TS 31.102 [11]
3GPP USIM toolkit	'A000000087'	'1003'	see annex G for further coding details	TS 31.111 [12]

NOTE 1: The 3GPP RID, as registered by ISO/IEC according to ISO/IEC 7816-5 [1], is 'A000000087'.
NOTE 2: It is the responsibility of the 3GPP technical body, in charge of the application standardization, to inform the ETSI Secretariat when the respective 3G document is withdrawn or renumbered.

Annex F (normative): Coding of the PIX for 3G UICC and USIM Applications

The following codings apply for the structure of the PIX when the application is a 3G telecommunication Integrated Circuits (IC) card application.

Digit 1 to 4 **3G application code**

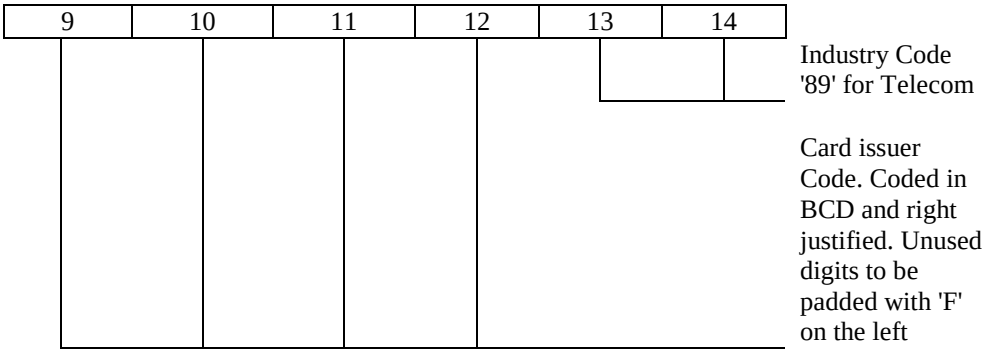
Coding: As specified in clause 4.2 of the present document, and as shown in annex A.

Digits 5 to 8 **Country code**

Coding: As specified in clause 4.2 of the present document.

Digits 9 to 14 **Application provider code**

Coding: As defined below.



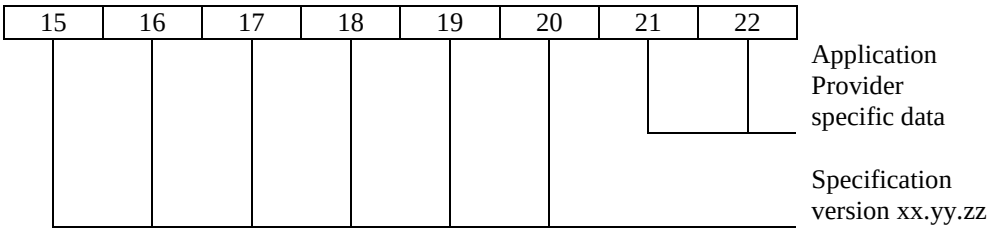
Card issuer code and Industry code are coded in line with ITU-T recommendation E.118 [4].

Digits 15 up to 22 **Application provider field. 8 digits**

Coding: Digit 15 to 20, coded in BCD, refer to the specification version xx.yy.zz. The coding of xx, yy, and, zz is right justified and padded with '0' on the left. For example, if the version is 3.5.0 then specification version is '03 05 00'.

Digit 21 to 22 are coded in hexadecimal

The application provider field format is as defined below:



Application Provider specific data: for application administration purposes.

Annex G (normative): Coding of the PIX for 3G USIM Toolkit applications

The following codings apply for the structure of the PIX when the application is a 3G USIM Toolkit Application.

Digit 1 to 4: **3G application code**

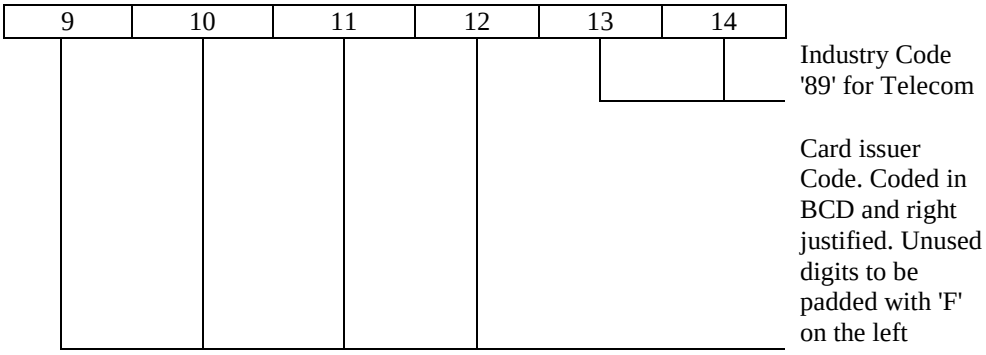
Coding: As specified in clause 4.2 of the present document, and as shown in annex A.

Digits 5 to 8: **Country code**

Coding: As specified in clause 4.2 of the present document.

Digits 9 to 14: **Application provider code**

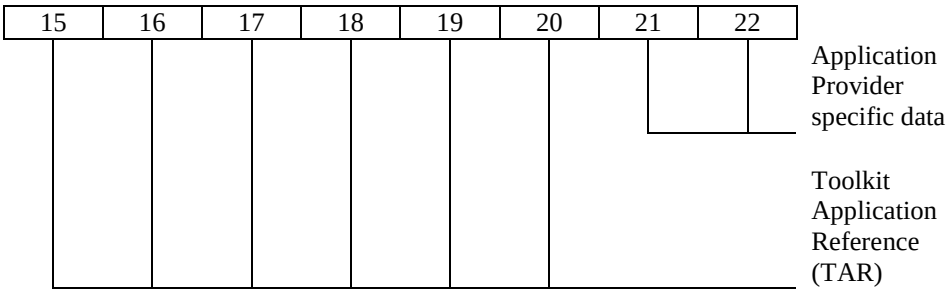
Coding: As defined below.



Card issuer code and Industry code are coded in line with ITU-T recommendation E.118 [4].

Digits 15 up to 22: **Application provider field. 8 digits**

Coding: Hexadecimal, as defined below.



application Toolkit Application Reference (TAR) as specified in GSM 03.48 [5], is managed by the provider (i.e. operator in that case) except for TAR values beginning with hexadecimal value 'B' (most significant bits of digit 15) which are reserved for future use by the 3GPP and the TAR value '000000' which is reserved for the card manager (see GSM 03.48 [5]).
Application Provider specific data: for application administration purposes.

Annex H (informative): Change history

The table below indicates all changes that have been incorporated into the present document since it was placed under change control.

Change history								
Date	**Meeting**	**Plenary Doc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**Old**	**New**
1997-10						TC ICC published version 1.2.1. The on-going maintenance of this deliverable was subsequently transferred from TC ICC to TC SMG when TC ICC was closed in early 1998.		1.2.1
1998-10	SMG #27	98-0673			B	Addition of Normative Annex C, introducing AID coding for GSM and Toolkit applications	1.2.1	1.3.0
1999-09	SMG #29	P-99-415			B	Addition of Normative Annex D, introducing AID coding for SIM Toolkit packages	1.3.0	1.4.0
2000-05	SMG# 31	P-00-142			F	Alignment of the AID allocation procedure	1.4.0	3.0.0
		P-00-142			B	Definition of an AID for TETRA		
						NOTE: At SMG #31, it was agreed it would be more appropriate for the present document to be classified as an "ETSI Technical Specification" rather than an "ETSI Guide". This resulted in the deliverable number being changed from EG 201 220 to TS 101 220. Furthermore, to align the specification version numbering system with that of the 3GPP, the new version number became 3.0.0.		
2000-12	SCP-03	9-00-0443			F	Correction of the AID coding for the SIM API packages	3.0.0	3.1.0
2001-03	SCP-05	SCP-010137	007		B	Toolkit Application Reference (TAR) management	3.1.0	3.2.0
		SCP-010138	008		B	Incorporation of 3GPP AID specification		
2000-12	SCP-06	SCP-010174	009		F	Clarification of the specification number of the application provider code in annex F	3.2.0	3.3.0

History

Document history		
V3.0.0	May 2000	Publication
V3.1.0	January 2001	Publication
V3.2.0	May 2001	Publication
V3.3.0	July 2001	Publication