

Services and Data Definitions



Revision History

Version	Date	Author	Description of Changes
2.0	29/09/09	O McLaughlin	Ratified by LASSeO
1.3	13/07/09	O McLaughlin	Addition of Licencing Service USID 000F. Amendment to Length value of CCDA item DF57
1.2	06/05/09	O McLaughlin	Amendments to some Special Needs service items lengths and data definitions
1.1	12/12/08	S Bennetts	Alteration to Car Parking service item DF02 'Parking Reference' Addition of tags DF06 'Concession' and DF07 'Concession Expiry Date' to Leisure service.
1.0	22/09/08	O Mc Laughlin	Ratified by LASSeO Related Documents section amended
0.7	28/08/08	O Mc Laughlin	Addition of services for Cash Collection, Car Parking and Cycle Parking
0.6	28/05/07	O Mc Laughlin	Adopted by LASSeO
0.5	10/12/06	O Mc Laughlin	Addition of Pan-London Numbering system Addition of enumerated types for gender
0.4	25/05/06	O Mc Laughlin	Addition of 'DOB Valid' to CCDA
0.3	10/02/06	O Mc Laughlin	Addition of 'Last Edit Date' to CCDA Addition of Employment Service Format of Cardholder Number Removal of maximum length information
0.2	21/11/05	O Mc Laughlin	Addition of 'UPRN' and 'Card Expiry Date' to CCDA Addition of T-Scheme Authentication Level service Addition of Membership Service Updating of Special Needs Tags
0.1	21/07/05	E Tennant	Initial version for review.

Preface

Scope

This document is intended as a single reference for all NSCP services regardless of the card platform.

Intended Readership

Developers requiring to integrate with cards providing NSCP services.

Related Documents

- [1] Smart Card Systems: Interoperable Citizen Services: Extended User Related Information: Part 1 – Definition of User Related Information and Implementation (CWA 13987-1)
- [2] UK Government Data Standards Catalogue
- [3] EN-1332-4 Identification Card Systems – Man-Machine Interface – Part4: Coding of user requirements for people with special needs.
- [4] ‘Your London’ Card Numbering Scheme
- [5] ISO 7816-4 Inter-industry command for Interchange Annex D
- [6] ISO 5218 – Gender Codes
- [7] ISO 7812 – Card Numbering System for the Identification of issuers
- [8] HMGs minimum requirements for the verification of identity of individuals
- [9] NSCP Mifare 4k Specification

Glossary

<i>Term</i>	<i>Definition</i>
AID	Application Identifier
CCDA	Common Cardholder Data Application
NSCP	National Smartcard Project
RFU	Reserved For Future Use
NSCP	Generic product name for outputs from the NSCP
TLV	Tag, Length, Value
UCI	Universal Card Holder Information
USID	Unique Services Identifier
'XY'	Notation using the hexadecimal digits '0' to '9' and 'A' to 'F', equal to XY to the base 16

Contents

1	NSCP Services.....	1
1.1	CCDA.....	1
1.2	Health	2
1.3	Organ Donor	2
1.4	Leisure	3
1.5	Trust	3
1.6	Sure Start.....	3
1.7	Special Needs.....	4
1.8	tScheme Authentication Level.....	5
1.9	Membership	5
1.10	Employment.....	6
1.11	Driver Permit.....	6
1.12	Cash Collection.....	7
1.13	Car Parking.....	7
1.14	Cycle Parking.....	8
1.15	Licensing.....	8
1.16	UCI	9
2	Data Format Encoding	10
3	Unique Service Identifiers	11
4	CardHolder Number	12
4.1	Standard Numbering System	12
4.2	Multi-Issuer Numbering System	12

1 NSCP Services

1.1 CCDA

USID: 0001 'CCDA'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'5F20'	Name	Var*	ASCII	O	Y	Y
'5F2B'	Date of Birth	4	DATE	M	Y	Y
'5F35'	Gender	1	BCD	O	Y	Y
'DF23'	Cardholder Number*	8	BCD	M	Y	Y
'DF31'	Title	Var*	ASCII	O	Y	Y
'DF32'	Forename	Var*	ASCII	M	Y	Y
'DF33'	Surname	Var*	ASCII	M	Y	Y
'DF39'	Home Tel	Var*	BCD	O	N	Y
'DF3A'	Mobile	Var*	BCD	O	N	Y
'DF3C'	Email	Var*	ASCII	O	N	Y
'DF53'	Initials	Var*	ASCII	O	Y	Y
'DF56'	House Number / Name	Var*	ASCII	O	N	Y
'DF57'	Postcode	Var*	ASCII	O	N	Y
'DF59'	Work Tel	Var*	BCD	O	N	Y
'DF5B'	Resident	1	ASCII	O	Y	Y
'DF5A'	Ethnicity	1	BCD	O	N	Y
'DF5C'	Password	Var	ASCII	O	N	Y
'DF5D'	Car Registration	Var	ASCII	O	N	Y
'DF5E'	Notes	Var	ASCII	O	N	Y
'DF64'	Local Authority	Var	ASCII	O	Y	Y
'DF65'	Concession	Var	ASCII	O	Y	Y
'DF66'	Sub-dwelling	Var	ASCII	O	N	Y
'DF67'	Street Name	Var*	ASCII	O	N	Y
'DF68'	Locality	Var*	ASCII	O	N	Y
'DF69'	Post Town	Var*	ASCII	O	N	Y
'DF6A'	County	Var	ASCII	O	N	Y
'DF6B'	Address Valid	1	ASCII	O	N	Y
'DF6C'	UPRN	8	BCD	O	Y	Y
'DF6D'	Card Expiry Date	4	DATE	M	N*	Y
'DF6E'	DOB Verified	1	BCD	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

Notes:

Data Lengths:

For items marked Var*, the maximum lengths are those defined in related document [2].

Data Items:

Cardholder Number* – see section 4 for further information on how this number is constituted.

Mandatory/Optional:

The mandatory items are the recommended minimum for local authority issued citizen cards.

Card Expiry Date:

The mandatory data items are the recommended minimum for local authority issued cards. It is mandatory that it be encoded in the card, but not mandatory that it appear within the CCDA. See related document [9].

Gender Enumerated Types:

Value	Meaning
0	Unknown
1	Male
2	Female
9	Unspecified

As defined in related document [6].

1.2 Health

USID: 0002 'Health'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Allergies	Var	ASCII	M	Y	Y
'DF02'	Blood Group	3	ASCII	M	Y	Y
'DF03'	Serious Illness	Var	ASCII	M	Y	Y
'DF04'	NHS Number	10	BCD	M	Y	Y
'DF05'	Medical Practice	Var	ASCII	M	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.3 Organ Donor

USID: 0003 'Organ Donor'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Ethnic Origin	Var	ASCII	M	Y	Y
'DF02'	Donate Kidney	1	ASCII	M	Y	Y
'DF03'	Donate Heart	1	ASCII	M	Y	Y
'DF04'	Donate Liver	1	ASCII	M	Y	Y
'DF05'	Donate Cornea	1	ASCII	M	Y	Y
'DF06'	Donate Lungs	1	ASCII	M	Y	Y
'DF07'	Donate Pancreas	1	ASCII	M	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.4 Leisure

USID: 0004 'Leisure'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Site No	Var	ASCII	O	Y	Y
'DF02'	Site Name	Var	ASCII	O	Y	Y
'DF03'	Mgmt System	Var	ASCII	O	Y	Y
'DF04'	Member Id	Var	ASCII	M	Y	Y
'DF06'	Concession	Var	ASCII	O	Y	Y
'DF07'	Concession Expiry	4	DATE	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.5 Trust

USID: 0005 'Trust'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Authentication Level	1	BCD	M	Y	Y
'DF02'	Verified Date	4	DATE	M	Y	Y
'DF03'	Expiry Date	4	DATE	M	Y	Y
'DF04'	Age Verified	1	ASCII	O	Y	Y
'DF05'	Student	1	ASCII	O	Y	Y
'DF06'	Student Expiry Date	4	DATE	O	Y	Y
'DF07'	Special Needs Code	1	BCD	O	Y	Y
'DF08'	Mobility Code	1	BCD	O	Y	Y
'DF09'	Mobil Expiry Date	4	DATE	O	Y	Y
'DF0E'	Address Verified	1	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.6 Sure Start

USID: 0006 'Sure Start'

Tag	Data Label	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Expiry Date	4	DATE	M	Y	Y
'DF02'	Child ID1	2	BCD	M	Y	Y
'DF03'	Child Name1	Var*	ASCII	M	Y	Y
'DF04'	Child ID2	2	BCD	O	Y	Y
'DF05'	Child Name2	Var*	ASCII	O	Y	Y
'DF06'	Child ID3	2	BCD	O	Y	Y
'DF07'	Child Name3	Var*	ASCII	O	Y	Y
'DF08'	Child ID4	2	BCD	O	Y	Y

'DF09'	Child Name4	Var*	ASCII	O	Y	Y
'DF0A'	Child ID5	2	BCD	O	Y	Y
'DF0B'	Child Name5	Var*	ASCII	O	Y	Y
'DF0C'	Child DOB1	4	DATE	M	Y	Y
'DF0D'	Child DOB2	4	DATE	O	Y	Y
'DF0E'	Child DOB3	4	DATE	O	Y	Y
'DF0F'	Child DOB4	4	DATE	O	Y	Y
'DF10'	Child DOB5	4	DATE	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.7 Special Needs

USID: 0007 'Special Needs'

Tag	Data Label	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF50'	Symbols	1	BINARY	O	Y	Y
'DF51'	Character Size	1	BCD	O	Y	Y
'DF52'	Screen Colour	1	BINARY	O	Y	Y
'DF53'	Colour Avoidance	1	BINARY	O	Y	Y
'DF54'	Position of Screen	1	BCD	O	Y	Y
'DF55'	Speech Output	1	BINARY	O	Y	Y
'DF56'	Sound Amplification	1	BINARY	O	Y	Y
'DF57'	High Frequency Amplification	1	BINARY	O	Y	Y
'DF58'	Low Frequency Amplification	1	BINARY	O	Y	Y
'DF59'	Input Requirements	2	BINARY	O	Y	Y
'DF5E'	Keyboard Characteristics	2	BINARY	O	Y	Y
'DF5F'	SMS Communication	1	BINARY	O	Y	Y
'DF6B'	Non-Keyboard Input Requirements	1	BINARY	O	Y	Y
'DF5A'	Touch Screen	1	BINARY	O	Y	Y
'DF5B'	Position of Input Device	1	BCD	O	Y	Y
'DF5C'	Time-outs	1	BCD	O	Y	Y
'DF2D'	Language Preferences	Var	ASCII	O	Y	Y
'DF5D'	Interface Complexity Level	1	BINARY	O	Y	Y
'DF61'	Screen Reader	1	BINARY	O	Y	Y
'DF62'	Links	1	BINARY	O	Y	Y
'DF63'	Speech Rate	1	BCD	O	Y	Y
'DF64'	Screen Enhancement Software	1	BINARY	O	Y	Y
'DF65'	Font	1	BINARY	O	Y	Y
'DF66'	Icons	1	BINARY	O	Y	Y
'DF67'	Mouse Buttons	1	BINARY	O	Y	Y
'DF68'	Pointer	1	BINARY	O	Y	Y

	Characteristics					
'DF69'	On-screen Keyboard	1	BINARY	O	Y	Y
'DF6A'	Numeric, Time and Date Presentation	1	BINARY	O	Y	Y
'DF6C'	ALT Text	1	BINARY	O	Y	Y
'DF6D'	Speech Output of non-alphanumeric characters	1	BINARY	O	Y	Y
'DF6F'	Braille Display	1	BINARY	O	Y	Y
'DF70'	Captions	1	BINARY	O	Y	Y
'DF71'	Audio Description	1	BINARY	O	Y	Y
'DF72'	Clean Audio	1	BINARY	O	Y	Y
'DF73'	Menu Selection Mode	1	BINARY	O	Y	Y
'DF74'	Scrolling Mode	1	BINARY	O	Y	Y
'DF76'	Animation	1	BINARY	O	Y	Y
'DF77'	Biometric Characteristics	2	BINARY	O	Y	Y
'DF6E'	Visible Output of Audible Promptings	1	BINARY	O	Y	Y
'DF7A'	Duration of Visible Signal	1	BCD	O	Y	Y
'DF78'	Pre-stored Message	1	BINARY	O	Y	Y
'DF79'	Variable Message	Var	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

See related document [.3] for a full description of special needs codings.

1.8 tScheme Authentication Level

USID: 0008 'Authentication'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Level	1	BCD	M	Y	Y
'DF02'	Verified Date	4	DATE	M	Y	Y
'DF03'	Expiry Date	4	DATE	M	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

See related document [8] for a description of tScheme Authentication levels.

1.9 Membership

USID: 0009 'Membership'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Library Number	Var	ASCII	O	Y	Y

'DF02'	Leisure Number	Var	ASCII	O	Y	Y
'DF03'	Access Number	Var	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.10 Employment

USID: 000A 'Employment'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Pay Number	Var	ASCII	O	Y	Y
'DF02'	Primary Assignment	Var	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

1.11 Driver Permit

USID: 000B 'Driver Permit'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF03'	Employment Dept	Var	ASCII	O	O	Y
'DF04'	Employment Section	Var	ASCII	O	O	Y
'DF05'	Occupation	Var	ASCII	O	O	Y
'DF06'	Driver Licence Number	16	ASCII	O	O	Y
'DF07'	Driver Licence Expiry Date	4	DATE	O	O	Y
'DF08'	Driver Licence Category	Var	ASCII	O	O	Y
'DF09'	Driver Licence Type	Var	ASCII	O	O	Y
'DF0A'	Driver Conviction	Var	ASCII	O	O	Y
'DF0B'	Driver Penalty	Var	ASCII	O	O	Y
'DF0C'	Driver Main Category	1	BCD	O	O	Y
'DF0D'	Driver Category A	Var	ASCII	O	O	Y
'DF0E'	Driver Category B	Var	ASCII	O	O	Y
'DF0F'	Driver Category C	Var	ASCII	O	O	Y
'DF10'	Driver Category D	Var	ASCII	O	O	Y
'DF11'	Driver Category E	Var	ASCII	O	O	Y
'DF12'	Driver Category F	Var	ASCII	O	O	Y
'DF13'	Driver Category G	Var	ASCII	O	O	Y
'DF14'	Driver Category H	Var	ASCII	O	O	Y
'DF15'	Driver Category I	Var	ASCII	O	O	Y
'DF16'	Driver Category J	Var	ASCII	O	O	Y
'DF17'	Driver Category K	Var	ASCII	O	O	Y
'DF18'	Driver Category L	Var	ASCII	O	O	Y

'DF19'	Driver Category M	Var	ASCII	O	O	Y
'DF1A'	Driver Category N	Var	ASCII	O	O	Y
'DF1B'	Driver Permit Towing	Var	ASCII	O	O	Y
'DF1C'	Department Supervisor	Var	ASCII	O	O	Y
'DF1D'	Driver Permit Issue Date	4	DATE	O	O	Y
'DF1E'	Driver Permit Expiry Date	4	DATE	O	O	Y
'DF1F'	HGV Licence Expiry Date	4	DATE	O	O	Y
'DF7F'	Last Edit Date	4	DATE	O	O	Y

1.12 Cash Collection

USID: 000C 'Cash Collection'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Primary Account Number	Var	ASCII	M	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

Notes:

DF01 must be present and identifies the Primary Account Number (PAN).

1.13 Car Parking

USID: 000D 'Car Parking'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Parking Indicator	1	BINARY	M	Y	Y
'DF02'	Parking Scheme Reference	2	BCD	M	Y	Y
'DF03'	Last Used Date/Time	7	BCD	M	Y	Y
'DF04'	Vehicle Registration	Var	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

Notes:

'DF01' is a single byte indicator showing if the service is active or inactive. The valid values for this field are:

TRUE							
b7	b6	b5	b4	b3	b2	b1	b0
0	0	0	0	0	0	0	1

FALSE							
b7	b6	b5	b4	b3	b2	b1	b0
0	0	0	0	0	0	0	0

'DF03' is a 7 byte field containing a date and a time. The date component is in the conventional DATE format, and the time element is 3 byte field forming hour:minutes:seconds in BCD format.

Example. 2nd of June, 2008 at 12 minutes and 59 seconds after 11pm.

1.14 Cycle Parking

USID: 000E 'Cycle Parking'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Parking Indicator	1	BINARY	M	Y	Y
'DF02'	Parking Scheme Reference	Var	ASCII	M	Y	Y
'DF03'	Last Used Date/Time	7	BCD	M	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

Notes:

'DF01' – as for Service 000D

'DF03' - as for Service 000D

1.15 Licensing

USID: 000F 'Licensing'

Tag	Data Item	Length (bytes)	Data Format	Mandatory / Optional	Mifare™ 4K Yes/No	Javacard Yes/No
'50'	Service Label	Var	ASCII	M	Y	N
'DF01'	Alcohol	Var	ASCII	O	Y	Y
'DF7F'	Last Edit Date	4	DATE	O	Y	Y

Notes:

'DF01', and all subsequent tags in this service, will contain a Licence Number or Identifier.

1.16 UCI

USID: 0065 'UCI'

Constructed data object using tags defined in related document [1].

2 Data Format Encoding

Data Format	Value	Definition
ASCII	'00'	Text data coded using ASCII codes.
BCD	'01'	Standard unsigned BCD encoded number. The most significant byte shall be encountered first in the data stream, also known as "big endian".
DATE	'02'	Unsigned BCD encoded as CCYYMMDD.
BINARY	'04'	Binary coded data.

3 Unique Service Identifiers

USID	Service
0001	CCDA
0002	Health
0003	Organ Donor
0004	Leisure
0005	Trust
0006	Sure Start
0007	Special Needs
0008	tScheme Authentication Level
0009	Membership
000A	Employment
000B	Driver Permit
000C	Cash Collection
000D	Car Parking
000E	Cycle Parking
000F	Licensing
0065	UCI

4 CardHolder Number

4.1 Standard Numbering System

The cardholder number is a 16-digit value, stored on the card in BCD format. The first 6 digits are the IIN number, acquired from APACS, which identifies the scheme. This 6 digit pre-fix is identical for all cards within a scheme, and allows other schemes to be recognized.

The next 7 digits are the card sequence number which identifies the citizen.

This is followed a check digit calculated across the preceding 13 digits.

Finally there is a 2 digit issue number. This increments every time a citizen is issued a replacement card.

Example: Card holder number 6336890000010503

633689	0000010	5	03
APACS Number	Sequence Number	Check Digit	Issue Number

See related document [7] on card numbering.

4.2 Multi-Issuer Numbering System

Some authorities may wish to join with other authorities to create schemes where there is a single scheme identifier, but individual configuration and identity remain.

The London SmartCard Executive Group (LSEG) has established a precedent for this by providing a single Pan-London APACS number, and a numbering system which allows all the London Boroughs their own unique identifier within the number format.

Example: Card holder number 6337680300000105

633768	03	0000010	5
London APACS Number	Issuer Number	Sequence Number	Check Digit

The Issuer Number identifies a specific local authority, making it possible for all the London boroughs to participate in a single scheme. LSEG has allocated issuer numbers for all 33 London boroughs. Other regional or urban groups may wish to adopt a similar strategy. See related document [4].

To maintain compatibility with the existing 16 digit card numbering system within NSCP, the Issue Number has been removed from this alternative. However, the range of the Sequence Number available to each issuer (0 – 9,999,999) leaves ample scope for cardholders to be given new numbers for replacement cards.

**** End of Document ****