

	SCG Guidance on Telecommunication Standards			
	Programme	NPFIT	Document Record ID Key	
	Sub-Prog / Project	Standards Consulting Group	NPFIT-FNT-TO-SCG-0023.05	
	Prog. Director	Ken Lunn	Status	Approved
	Owner	Keith Naylor	Version	1.0
	Author	Davie Hay	Version Date	28/07/08

SCG Guidance on Telecommunication Standards

Amendment History:

Version	Date	Amendment History
0.1	17/06/08	First draft based on DSD-150, feedback and review of related documents.
0.2	27/06/08	Second draft for comment
0.3	03/07/08	Third draft for comment
0.4	16/07/08	Forth draft after external review comments
1.0	28/07/08	Approved

Forecast Changes:

Anticipated Change	When
Annual Review	July 2009

Reviewers:

This document must be reviewed by the following:

Name	Signature	Title / Responsibility	Date	Version
Keith Naylor	K. Naylor	Standards Consultant Lead	27/06/08	0.2
Steve Bentley		Lead Clinical Consultant	27/06/08	0.2
Laura Sato		Informatics Standards Lead	27/06/08	0.2
Rae Long	R. Long	Standards Consultant – Data Quality	27/06/08	0.2
Philippa Benson		Project Support Officer		
Ian Townend		Interoperability Designer/Developer	03/07/08	0.3
Martin Tallis	M. Tallis	Technical Architect / SCR	03/07/08	0.3
Nick Apperley	N. Apperley	PDS Technical Analyst	03/07/08	0.3
Simon Farrow	S. Farrar	Technical Architect / Demographics	03/07/08	0.3
Tim Chearman		Application UI Architect / Common User Interface	03/07/08	0.3
Alan Pimm	A. Pimm	User Experience Engineer / Common User Interface	03/07/08	0.3

Approvals:

This document must be approved by the following:

Name	Signature	Title / Responsibility	Date	Version
Ken Lunn	K. Lunn	Director of Data Standards and Products	16/07/2008	0.4
Keith Naylor	K. Naylor	Standards Consultant Lead	16/07/2008	0.4

Distribution:

This document will be distributed to all Local and Existing Systems Providers and their suppliers to support the 2008-B release of the PDS.

Document Status:

This is a controlled document.

Whilst this document may be printed, the electronic version maintained in FileCM is the controlled copy. Any printed copies of the document are not controlled.

Related Documents:

These documents will provide additional information.

Ref no	Doc Reference Number	Title	Version
1	NPFIT-SHR-QMS-PRP-0015	Glossary of Terms Consolidated.doc	13
2	NPFIT-FNT-TO-DPM-0798	Telecommunication Address Formats in PDS Messaging	0.6
3	NPFIT-FNT-TO-DSD-0150	Telecommunication Address Display Requirements for CSA	0.3
4	n/a	CUI Design Guidance Telephone Number Input and Display http://www.mscai.net/DesignGuide/TelephoneNoDisplay.aspx	
5	n/a	Ofcom - A User's Guide to Telephone Numbering http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/num_guide.htm#1b	07/05/2003
6	n/a	Ofcom – The National Telephone Numbering Plan http://www.ofcom.org.uk/telecoms/oi/numbers/	29/04/2008

Glossary of Terms:

List any new terms created in this document. Mail the NPO Quality Manager to have these included in the master glossary above [1].

Term	Acronym	Definition
Message Implementation Manual	MIM	
Office for Communications	Ofcom	Office for Communications is the regulator for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.
Personal Demographics Service	PDS	NHS wide demographics service which can be used by all NHS systems to identify a Service User and to supply that Service User's personal details to Authorised Users.
Telecommunications Address	TEL	Telephone numbers, fax, textphone, mobile and email addresses

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1 Purpose

The purpose of this document is to provide guidance on the common approach for telecommunication standards and the rules needed for processing and displaying the MIM¹ data type TEL for telephone numbers and email addresses.

2 Audience

This guidance has been written for architects and designers of all systems involved in the processing and display of telecommunication information from the Spine.

3 Background

The Demographics Design Steering Group requested that the Standards Consulting Group provide guidance on telecommunication standards and the display rules in order to support the “on the wire” publication - NPFIT-FNT-TO-DPM-0798 Telecommunication Address Formats in PDS Messaging.

Note: This document supersedes the publication - NPFIT-FNT-TO-DSD-0150 Telecommunication Address Display Requirements for CSA.

3.1 HL7 Representation

Telephone numbers, pager and email addresses, and references to external data by the Encapsulated Data (ED) data type are all expressed using the URL syntax as described in HL7 documentation. Note that specification of the type of the address (e.g. fax or email) is built into the URL itself.

The NPfIT implementation of the HL7 standard allows for the representation without the location (i.e. country) being specified. Where no international dialling code is present, as in the MIM examples, the telephone number must be assumed to be a UK number.

CAVEAT LECTOR. The “on the wire” examples in this document are provided for illustrative purposes only; the latest version of the MIM is the authoritative source and must be consulted.

MIM Examples:

```
<!-- To indicate a home telephone number -->  
<telecom use="HP" value="tel:01392251289"/>
```

```
<!-- To indicate a work fax number -->  
<telecom use="WP" value="fax:01392251689"/>
```

```
<!-- To indicate a mobile telephone number with from date -->
```

¹ <http://commsg1lds.npfit.nhs.uk/mim/index.htm>

```
<telecom use="MC" value="tel:07700012345">  
  <useablePeriod>  
    <low value="20040401"/>  
  </useablePeriod>  
</telecom>  
  
<!-- To indicate an e-mail address -->  
<telecom value="mailto:joe.bloggs@myisp.co.uk"/>
```

4 Display Requirements

4.1 Contact Method Types

Where the contact method type is one of those detailed below, the following colon (:) or preceding semi-colon (;) should be removed from the display value and used to derive the appropriate label.

4.2 Telephone, Fax and Textphone

Where the contact method type is “tel”, “fax” or “textphone” then the telephone number display requirements apply.

Use of brackets and spaces aids readability by using the groupings recommended by Ofcom² (see also Appendix 2 – Ofcom - Guidance on natural spaces within telephone numbers.) and CUI Design Guidance – Telephone Number Input and Display.

4.3 Email Addresses

Where the contact method is “mailto” then the email address shall be displayed precisely as received displaying all characters following “mailto:”.

Example:

“on the wire”

```
<telecom value="mailto:joe.bloggs@myisp.co.uk"/>
```

Display

joe.bloggs@myisp.co.uk

4.4 Unexpected Contact Methods

Where the contact method is other than one of the expected values (“mailto”, “tel”, “fax”, “textphone”) it shall be retained and the value displayed as received.

² http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/num_guide.htm#1b

5 Telephone Number Display Requirements

- If the value starts with a plus sign (+) or “00”, then
 apply 5.1 International Number Prefix Rules
otherwise
 apply 5.3 UK Telephone Number Representation Rules.

5.1 International Number Prefix Rules

- If the value starts with “+44”, and the following digit is not “0” then
 replace “+44” with “0”
 apply 5.3 UK Telephone Number Representation Rules
- If the value starts with “0044”, and the following digit is not “0” then
 replace “0044” with “0”
 apply 5.3 UK Telephone Number Representation Rules
- If the value starts with “+” then
 apply 5.2 International Number Representation Rules
- If the value starts with “00” then
 replace “00” with “+”
 apply 5.2 International Number Representation Rules
- If the value starts with “+44” or “0044” and the following digit is “0” then
 this is invalid
 display the entire value as received.

5.2 International Number Representation Rules

- Add a space after the international dialling code element which can be determined using the International Telecommunications Union standard³
- If the remainder contains any non numeric characters other than “;ext=” then
 display the remainder of the value as received
- If the remainder contains “;ext=” then

³ <http://www.itu.int/oth/T0202.aspx?parent=T0202>

replace these separator characters and if the extension number is not displayed as a separate data item, it should be separated from the telephone number by the preferred label "x"

- Finally

for the remainder of the number (not the extension) introduce spaces preceding every four characters, from the right, so that there are never more than 6 characters without a break, and never fewer than 3 characters in a group.

Examples:

"on the wire"

`<telecom use="HP" value="tel:+13214566789"/>`

`<telecom use="HP" value="tel:+35684374667"/>`

`<telecom use="WP" value="tel:+3445678890;ext=222"/>`

Display

+1 321 456 6789

+356 8437 4667

+34 4567 8890 x222

5.3 UK Telephone Number Representation Rules

The rules in the subsections below are mutually exclusive. The first deals with non-numeric values that might occur because the value contains separator characters or because of invalid data. The subsequent sections deal with fully numeric values where the required formatting is dependent on the number range as determined by the initial characters.

5.3.1 Non-Numeric Values

- If the value contains any non-numeric characters other than “;ext=” then display the value without further transformation

otherwise

apply the transformation rules as specified in the following sections.

5.3.2 Geographic Area Numbers

If the numeric value begins with “01” or “02”, then test these geographic area number representation rules in the following order. Only apply one rule.

1. If the code starts “02” then insert a space after the 3rd digit.
2. If the code has a “1” in the 3rd or 4th position then insert a space after the 4th digit.
3. If the first 6 digits match any of the following 11 codes, then insert a space after the 6th digit.

013873 Langholm

015242 Hornby

015394 Hawkshead

015395 Grange-Over-Sands

015396 Sedbergh

016973 Wigton

016974 Raughton Head

017683 Appleby

017684 Pooley Bridge

017687 Keswick

019467 Gosforth

4. For all other codes insert the space after the 5th digit.

- If the remainder of the number, i.e. following the area code space, contains “;ext=” then replace these separator characters and if the extension number is not displayed as a separate data item, it should be separated from the telephone number by the preferred label “x”

- If the remainder of the number, i.e. following the area code space and excluding any extension, contains more than 6 digits, then introduce a space preceding the final 4 digits.
- Finally all area codes shall be displayed within brackets.

Examples:

“on the wire”

`<telecom use="HP" value="tel:02072262082"/>`

`<telecom use="HP" value="tel:01132806500"/>`

`<telecom use="HP" value="tel:01273654321"/>`

`<telecom use="WP" value="tel:01768354321;ext=1234"/>`

Display

(020) 7226 2082

(0113) 280 6500

(01273) 654321

(017683) 54321 x1234

5.3.3 Mobile Numbers

- If the numeric value begins with “07” then
add a space after the first 5 digits (including the initial 0)
- If the remainder contains more than 6 digits then
introduce a space preceding the final four digits.

Example:

“on the wire”

`<telecom use="MC" value="tel:07745123456"/>`

Display

07745 123456

5.3.4 UK-wide and Special Services Numbers

- If the numeric value begins with “03”, “04”, “05”, “06”, “08” or “09”
add a space after the first 4 digits (including the initial 0)
- If the remainder contains more than 6 digits then
introduce a space preceding the final four digits.

Note that UK numbers beginning 04, 05 or 06 are not currently allocated but have been included here for purposes of consistency⁴.

⁴ <http://www.ofcom.org.uk/consumeradvice/landline/adviceno/>

Examples:

“on the wire”

`<telecom use="WP" value="tel:0300123333"/>`

`<telecom use="HP" value="tel:08701241292"/>`

Display

0300 123 3333

(UK-wide number)

0870 146 1292

(e.g. student accommodation)

5.3.5 Other Values

- If the numeric value does not begin with “0” then display the value without further transformation.

Examples:

“on the wire”

`<telecom use="HP" value="tel:118118"/>`

`<telecom use="HP" value="tel:374287"/>`

Display

118118

(unexpected value)

374287

(invalid - local number omitting area code)

6 Summary

- UK numbers should never be displayed with the international prefix
- International numbers should always be displayed with the + prefix to the country code
- UK area codes should be displayed within brackets
- Long numbers should be visually broken into elements of no longer than 6 characters separated by spaces; and this provides some degree of future proofing
- Invalid values should be displayed unchanged.

7 Appendix 1 – Additional Reference Materials

Message Implementation Manual	http://commsg1lds.npfit.nhs.uk/mim/index.htm
Ofcom - A Users' Guide to Telephone Numbering	http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/num_guide.htm#1b
International Telecommunications Union – National Numbering Plans	http://www.itu.int/oth/T0202.aspx?parent=T0202
Ofcom – Telephone Numbers and Codes	http://www.ofcom.org.uk/consumeradvice/landline/adviceno/

8 Appendix 2 - Ofcom - Guidance on natural spaces within telephone numbers

The following is an email from Ofcom which itself is an extract from its own publication - A Users' Guide to Telephone Numbering.⁵

⁵ http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/2003/num_guide.htm#1b

From: [Information Requests](#)
To: davie.hay@nhs.net
CC: [Information Requests](#)
Subject: Guidance on natural spaces within telephone numbers
Date: Wednesday, June 11, 2008 12:01:50 PM
Attachments:

Dear Mr Hay

Thank you for your request.

Please see the following information for your guidance:-

Code and number lengths and layout

1.9 The UK is currently split into over 600 area codes. (BT publishes a phone book companion that lists area codes). Most area codes start with the digits '01' and are followed by 3 further digits, and in most code areas the local numbers following the area codes are 6 digits.

1.10 Since the code and number changes in the year 2000, some numbers in the UK have a 3-digit code beginning '02X' followed by an 8-digit local number e.g. '020' for London, '028' for Northern Ireland, etc.

1.11 However, the lengths of area codes and local numbers can vary across the UK. The table below sets out the various combinations of area code and number lengths currently diallable within the UK:

Area Code length

Local number length (digits)

Example:

Area Code and Number (National Format Layout)

Code Area

02X

8

(029) XXXX XXXX

Cardiff

01XX

7

(0151) XXX XXXX

Liverpool

01XXXX

5

(01204) XXXXXX

Bolton (Daubhill)

01XXXX

6

(01865) XXXXXX

Oxford

01XXXX

5

(015396) XXXXXX

Sedburgh

01XXXX

4

(016977) XXXX

Brampton

1.12 Local numbers in geographic areas typically start with any digits except '0', '1' or '99'. In each code area with 6-digit local numbers there is approximately 790,000 numbers available, 7.9 million numbers in 7-digit areas, and 79 million numbers in 8-digit areas.

1.13 Ofcom believes that confusion can be minimised by displaying a consistent number layout. Ofcom recommends the layout for national format as shown in the table above, and international format (using the same examples) as follows (note that the leading '0' of the area code should be omitted when calling UK numbers from abroad):

International Format Number Layout

Code Area

+44 29 XXXX XXXX

Cardiff

+44 151 XXX XXXX

Liverpool

+44 1204 XXXXX

Bolton (Daubhill)

+44 1865 XXXXXXX

Oxford

+44 15396 XXXXXX

Sedburgh

+44 16977 XXXXX

Brampton

(Note: '44' is the international code for the UK, and should only be dialled from outside the UK. The '+' indicates that there are digits dialled before the '44' to make an international call e.g. '00' are the digits dialled to make international calls from the UK. Many other countries e.g. all of Europe, also use '00' for international calls).

I hope you find this information useful.

Kind regards

Ofcom is the independent regulator and competition authority for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services.

For further details and to register for automatic updates from Ofcom on key publications and other developments, please visit www.ofcom.org.uk

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