Infrared Data Association

IrDA Telecom Extensions to the IMC vCard Format

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CONTENTS:

1. INTRODUCTION

1.1 PURPOSE

The purpose of this document is to propose a set of extensions to the IMC vCard Electronic Business Card vCard Version 2.1 specification [VCARD] for the wireless telephony industry. The extensions will lead to a wider acceptance of the vCard specification, as they open new areas in which the [VCARD] specification can be utilized. These extensions to the vCard specifically concentrate on further defining the properties related to telephone and data services. These extensions will enable automatic selection of the most suitable service.

1.2 SCOPE

The scope of the proposal is limited to proposing the addition of optional telephone system type, data service type, and messaging service type property parameters to the definition of the telephone number property and to proposing the addition of optional electronic mail type property parameters to the definition of the electronic mail property in [VCARD], section 2.4 Telecommunications Addressing Properties and to proposing the addition of optional explanatory properties to the definition of explanatory properties in [VCARD], section 2.6 Explanatory Properties.

1.3 REFERENCES

[VCARD]   "vCard - The Electronic Business Card Exchange Format - Version 2.1", The Internet Mail Consortium (IMC), September 18, 1996, http://www.imc.org/pdi/vcard-21.doc.

2. BUSINESS CARD ADDITIONS

2.1 WIRELESS PHONE AND PAGING SYSTEM TYPES

The [VCARD] specification lists the Telephone types that can be used as identifiers for telephone numbers in section 2.4.1.1. To enable automatic selection of a wireless phone or paging system type, the following property parameter values are proposed to be included in the list of types.

It is important for devices that utilize the wireless systems to know which systems are available for communication; the data and messaging services in the systems are different from system to system, and it is impossible to do information exchange automatically without exact knowledge on the system available.

Property Parameter

2.1.1 Analog Cellular Telephones

AMPS: Advanced Mobile Phone System	**AMPS**
NAMPS: Narrowband Advanced Mobile Phone System	**NAMPS**
NMT: Nordic Mobile Telephone	
NMT450	**NMT450**
NMT900	**NMT900**
TACS: Total Access Communication System	**TACS**
ETACS	
NTACS	
JTACS: Japanese TACS system	**JTACS**
J-ANALOG: Japanese analog system (NTT)	**J-ANALOG**

A valid fallback for recipients that do not support these analog cellular telephone parameter types is to map such a telephone property into a telephone property value with the property parameter of "CELL".

2.1.2 Digital Cellular Telephones

CDMA: Code-Division Multiple Access; North American Digital Cellular	**CDMA**
DCS1800: GSM variant (on 1800 MHz)	**DCS1800**
GSM: Global System for Mobile Communications (GSM, on 900 MHz)	**GSM**
GSM1900: GSM variant (on 1900 MHz),	**GSM1900**
IRIDIUM: Satellite Phone System	**IRIDIUM**
PDC: Personal Digital Cellular	**PDC**
TDMA: Time-Division Multiple Access; North American Digital Cellular	**TDMA**
WCDMA: Wide-Band CDMA; Japanese Digital Cellular	**WCDMA**
iDEN Integrated Digital Enhanced Network	**IDEN**

A valid fallback for recipients that do not support these digital cellular telephone parameter types is to map such a telephone property into a telephone property value with the property parameter of "CELL".

2.1.3 Analog Cordless

CT0: Cordless Telephone 0   **CT0**

CT1: Cordless Telephone 1   **CT1**

JCT: Japanese Cordless Telephone   **JCT**

PPS: Personal Phone Series   **PPS**

A valid fallback for recipients that do not support these analog cordless telephone parameter types is to map such a telephone property into a nominal telephone property value without these property parameters.

2.1.4 Digital Cordless

CT2: Cordless Telephone 2   **CT2**

DECT: Digital European Cordless Telephone   **DECT**

PHS: Personal Handy Phone System   **PHS**

A valid fallback for recipients that do not support these digital cordless telephone parameter types is to map such a telephone property into a nominal telephone property value without these property parameters.

2.1.5 Paging

One Way: Paging   **1WAY**

Two Way: Two-Way Paging   **2WAY**

A valid fallback for recipients that do not support these paging telephone parameter types is to map such a telephone property into a telephone property value with the property parameter "PAGER".

2.2 DATA SERVICE TYPES

To enable automatic selection of data service types, the following property parameter values are proposed to be included in section 2.4.1.1 of [VCARD].

2.2.1 Access Rates

The data number in a versit business card may contain none, only the highest access rate, subset of the supported data rates, or all supported data rates. The supported access rate is proposed to be indicated in the following way:

Access Rate   **DRATE=** <rate>[,<rate>[,...]]

where rate is indicated in kbit/second with format a[.b]; where 'a' represents integer part, and 'b' represents decimal part of the access rate in kbit/second. Extended format a[.b]/c[.d] is used when downlink (a.b), and uplink (c.d) access rates differ from each other.

The following list gives the typical rates that can be expected. Other rates may also be indicated, as long as the given format is used.

	Rate
0.3 kbit/sec	**0.3**
1.2 kbit/sec	**1.2**
1.2/0.075 kbit/sec	**1.2/0.075**
2.4 kbit/sec	**2.4**
4.8 kbit/sec	**4.8**

7.2 kbit/sec	**7.2**
9.6 kbit/sec	**9.6**
12 kbit/sec	**12**
14.4 kbit/sec	**14.4**
19.2 kbit/sec	**19.2**
24 kbit/sec	**24**
28.8 kbit/sec	**28.8**
38.4 kbit/sec	**38.4**
48 kbit/sec	**48**
56 kbit/sec	**56**
64 kbit/sec	**64**

A valid fallback for recipients that do not support these access rate telephone parameter types is to map such a telephone property into a nominal telephone property value without these property parameters.

2.2.2 Data Formats

The supported data format is proposed to be indicated in the following way:

Data Format   **DFORM= <d><p><s>**

where <d> is the number of data bits, <p> the parity, and <s> is the number of stop bits

data bits	= 5, 6, 7, or 8	; Number of data bits in serial representation
parity	= O, E, N, M, or S	; Odd, even, none, mark, or space parity
stop bits	= 0, 1, 1.5, or 2	; Number of stop bits in serial representation

A valid fallback for recipients that do not support these data format telephone parameter types is to map such a telephone property into a nominal telephone property value without these property parameters.

2.2.3 Supported Modem V-series Specifications

CCITT V.21	**V21**
CCITT V.22	**V22**
CCITT V.22bis	**V22bis**
CCITT V.26ter	**V26ter**
CCITT V.32	**V32**
CCITT V.32bis	**V32bis**
CCITT V.34	**V34**
CCITT V.110	**V110**

A valid fallback for recipients that do not support these MODEM V-series telephone parameter types is to map such a telephone property into a telephone property value with the property parameter "MODEM".

2.2.4 Access Structure

Asynchronous modem	**ASYNC**
Synchronous modem	**SYNC**
PAD access	**PAD**
Packet access	**PACKET**

A valid fallback for recipients that do not support these access structure telephone parameter types is to map such a telephone property into a telephone property value with the property parameter "MODEM".

2.3 MESSAGING SERVICE TYPES

To enable automatic selection of messaging service types, the following property parameter values are proposed to be included in section 2.4.1.1 of [VCARD].

2.3.1 Message Entry Protocols

Short Message Service	**SMS**
Pager Alphanumeric Message Entry	**TAP**
Pager Advanced Message Entry	**TDP**

The protocols to be used with these dial-up access methods are defined by the respective protocol maintenance organizations (e.g., TAP (Telocator Alphanumeric Protocol) and TDP (Telocator Data Paging Suite of Protocols) are defined by the Personal Communications Industry Association) as defined in the section on Reference Information.

A valid fallback for recipients that do not support these telephone parameter types is to map such an email property into a nominal telephone property value without any email address type property parameter.

2.3.2 Message Entry or System Type Protocol Revision Level

This property parameter specifies the revision level of the message entry protocol or cellular or paging system type. The revision level is proposed to be indicated in the following way:

Revision Level　　　　　　　　　　　　　　　　　　　　　　　　WREV=<wrev>

where wrev is indicated as a number with format a[.b]; where 'a' represents integer part, and 'b' represents decimal part of wrev.

Examples of this property as used with a pager using TAP for alphanumeric entry follow:

> TEL;PAGER;1WAY;TAP;PIN=987-6543;MODEM;DRATE=2.4;ASYNC;DFORM=7E1:+1 (555) 323-3223
>
> TEL;PAGER;TAP;WREV=1.8;PIN=(555) 987-6543:+1 (555) 323-3223

A valid fallback for recipients that do not support these message entry or system type protocol revision level telephone parameter types is to map such a telephone property into a nominal telephone property value without these property parameters.

2.4 SERVICE CENTER DEFINITION

To enable automatic two-stage dialing[1], the following property parameter value is proposed to be included in section 2.4.1.1 of [VCARD].

Service Center   **SC=** <phone nbr>

where <phone nbr> is as defined in 2.4.1 of [VCARD].

A valid fallback for recipients that do not support these service center telephone parameter types is to map such a telephone property into a nominal telephone property value without this property parameter.

2.5 DEVICE ID DEFINITION

To enable page entry dialing[2] in paging systems requiring both a paging system access number (SC) and a pager identification number (PIN) instead of the single PAGER access number, the following property parameter value is proposed to be included in section 2.4.1.1 of [VCARD].

Personal Identification Number   **PIN**=<phone nbr>

where <phone nbr> is as defined in 2.4.1 of [VCARD].

A valid fallback for recipients that do not support these device identifier telephone parameter types is to map such a telephone property into a nominal telephone property value without this property parameter.

2.6 WIRELESS ELECTRONIC MAIL TYPES

The [VCARD] specification lists the Electronic Mail types that can be used as identifiers for electronic mail access methods in section 2.4.2.1. To enable automatic selection of wireless electronic mail types, the following property parameter values are proposed to be included in the list of types.

2.6.1 One and Two Way Paging Types, Protocols, and Revision Information

To enable automatic alphanumeric and data message entry to paging systems through email-like Internet access methods (e.g., name@domain or URL), the following paging protocol property parameter values are proposed to be included in section 2.4.2.1 of [VCARD]

SMS:	Short Message Service	**SMS**
TAP:	Telocator Alphanumeric Protocol	**TAP**
TDP:	Telocator Data Paging Suite	**TDP**
One Way:	Paging	**1WAY**
Two Way	Two-Way Paging	**2WAY**
Revision Level		**WREV**
Personal Identification Number		**PIN**

---

[1] Two-stage dialing procedure is one of three procedures proposed for access to CDMA data services. In this procedure it is required that a Mobile Terminating data call is made by first dialing a service center number, and then dialing the cellular number of the subscriber. The phone number of the service center identifies the intended data service type, and the phone number of the subscriber identifies the intended handset.

[2] Two-stage dialing procedure is required when sending a message to a paging device in a paging system with a common access number for all paging devices. The paging access call is made by first dialing a service center number, and then dialing the personal identification number of the subscriber device.

where these property parameter values are as defined in [VCARD] section 2.4.1.1.

Carrier Address   **CARRIER**

where the Carrier Address is an address in the form of a specific addressing type.

Examples of these properties as used with ReFLEX(tm) two-way pagers using TDP for message entry follow:

> EMAIL;TDP;CARRIER=carrier.net;John.Public
>
> EMAIL;TDP;WREV=3.0;2WAY:110-1245@carrier.net

A valid fallback for recipients that do not support these wireless email parameter types is to map such an email property into a nominal email property value without these property parameters.

2.7 EXPLANATORY PROPERTY EXTENSION

2.7.1 Version

The vCard datastreams containing these extensions need to be clearly identified. Therefore, any implementations conforming to these specifications must specify the VERSION property with a value of "2.1-IrDA". For example:

> VERSION:2.1-IrDA

A valid fallback for recipients that do not support this version of the vCard is to assume the nominal vCard version 2.1 datastream and process all extensions associated with this proposal as proposed in the above sections.

2.8 INFORMATIVE TELEPHONE TYPE EXAMPLES

The vCard formats for wireless device numbers are defined in [VCARD] as follows:

> TEL;**CELL:**+1 (555) 123-4567 and
>
> TEL;**PAGER:**+1 (555) 765-4321

which does not enable indication of the type of the cellular system or pager access method. To be able to indicate which cellular or paging system is associated with a phone number, a note could be grouped with a phone number declaration.

> A.TEL;CELL:+1 (555) 123-4567
>
> A.NOTE:This is my AMPS (analog) phone
>
> B.TEL;CELL:+1 (555) 345-6789
>
> B.NOTE:This is my TDMA (digital) phone
>
> C.TEL;PAGER:+1 (555) 987-6543
>
> C.NOTE:This is my FLEX(tm) (roaming) pager

However, the contents of the note are not structured and this makes it difficult to parse the note to check if it contains information on the cellular or paging system type. To enable automatic identification of the phone numbers and the services associated with them, this section of this paper defines additions that can be utilized the following way:

To indicate an AMPS cellular phone number:

> TEL;CELL;**AMPS:**+1 (555) 123-4567

To indicate a TDMA cellular phone number:

> TEL;CELL;**TDMA:**+1 (555) 345-6789

To indicate a numeric message paging phone number with PIN:

> TEL;PAGER;**PIN=(555) 987-6543:**+1 (555) 234-5678

To indicate a TAP-based alphanumeric message paging phone number with PIN (555) 987-6543 and with access rate 2400 BPS, asynchronous, data format 7E1:

> TEL;PAGER;**TAP;PIN=(555) 987-6543;MODEM;DRATE=2.4;ASYNC;DFORM=7E1:**+1 (555) 323-3223

To indicate a GSM1900 Short Message Service phone number:

> TEL;CELL;**GSM1900;MSG;SMS:**+1 (555) 234-5678

To indicate a GSM1900 modem number with access rate 9600 BPS, asynchronous, data format 7E1:

> TEL;CELL;**GSM1900;MODEM;DRATE=9.6;ASYNC;DFORM=7E1:**+1 (555) 456-7890

To indicate a CDMA modem number with access rate 9600 BPS, accessed using two-stage dialing:

> TEL;CELL;**CDMA;MODEM;DRATE=9.6;SC=+1(555)123-4321:**+1(555)123-6789

2.9 FORMAL DEFINITION

The following extensions to the formal definition in section 3.9 of [VCARD] are proposed to be added:

proposed_param =   param

/ "DRATE" [ws] "=" [ws] drateval

/ "DFORM" [ws] "=" [ws] dformval

/ "SC" [ws] "=" [ws] 7bit

/ "PIN" [ws] "=" [ws] 7bit

/ "WREV" [ws] "=" [ws] wrevval

proposed_knowntype = knowntype

/ "AMPS" /"NAMPS" / "TACS" /"JTACS" / "J-ANALOG"

/ "NMT450" / "NMT900"

/ "TDMA" / "CDMA" / "WCDMA" / "GSM" / "DCS1800" / "GSM1900"

/ "IRIDIUM" / "PDC" / "IDEN"

/ "CT0"/ "CT1" / "JCT" /"PPS" / "CT2" / "DECT" / "PHS"

/ "1WAY" / "2WAY"

/ "V21" / "V22" / "V22bis" / "V26ter" / "V32" / "V32bis" / "V34" / "V110"

/ "ASYNC" / "SYNC" / "PAD" / "PACKET"

/ "SMS" / "TAP" / "TDP" / "CARRIER"

bitparts   =   "5" / "6" / "7" / "8"

parityparts   =   "O" / "E" / "N" / "M" / "S"

stopparts	=	"0" / "1" / "1.5" / "2"
dformval	=	bitparts parityparts stopparts
drateval	=	"0.3" / "1.2" / "1.2/0.075" / "2.4" / "4.8" / "7.2" / "9.6"
		/ "12" / "14.4" / "19.2" / "24" / "28.8" / "38.4" / "48"
		/ "56" / "64"
		/ *(7bit ".") 7bit
		/ (*(7bit ".") 7bit "/" *(7bit ".") 7bit)
		/ drateval "," drateval
wrevval	=	*(7bit ".") 7bit