Near Field Communication (NFC) Developer Comparison

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Version 1.4, 19. September 2013

While many parts of NFC have been standardized by the NFC Forum, the level of platform and developer API support varies.
This document helps you decide which technologies you can use to achieve a maximum cross-platform NFC use case,
as well as if it's possible to implement your idea on a specific target platform.

Peer-to-peer mode

	Windows (Phone) 8	Android	BlackBerry Java 7.1	BlackBerry Native 10	Qt on Nokia N9 (MeeGo)	Qt on Symbian	Symbian Native
SNEP		Android >= 4.0, before only NPP	No support in 7.0		With LibNDEFPush on PR 1.2+	Manual implementation, no OS integration. Only URN, no port.	Manual implementation, no OS integration. Only URN, no port.
NPP (Google NDEF Push Protocol)			Manual implementation, no OS integration	Manual implementation, no OS integration	Manual implementation, no OS integration	Manual implementation, no OS integration	Manual implementation, no OS integration
LLCP	No API support (only SNEP)	No API support (only SNEP and NPP)	No support in 7.0		URN for connection-oriented, port for connection-less	URN for connection-oriented, port for connection-less	

Tags (Reader/writer mode)

	Windows (Phone) 8	Android	BlackBerry Java 7.1	BlackBerry Native 10	Qt on Nokia N9 (MeeGo)	Qt on Symbian	Symbian Native
Type 1 NDEF							
Type 2 NDEF							
Type 3 NDEF							
Type 4 NDEF							
Type 1-4 direct commands (except anti-collision and activation commands)			Type 2 and 4, unknown for others				

Feature	Col2	Col3	Col4	Col5	Col6	Col7	Col8
MIFARE Classic NDEF	WP8: so far supported by all existing devices (all existing WP8 devices have NXP chipsets) Windows 8: only supported if chipset supports MIFARE reader emulation (e.g. NXP chipsets)	Only supported if chipset supports MIFARE reader emulation (i.e. special framing and CRYPTO-1, only NXP chipsets, e.g. no support on Nexus 4/Nexus 10 and other devices with Broadcom chipset)					
MIFARE Classic direct commands (using MIFARE reader commands of the chipset) incl. security (keys)		Only on NXP chipsets, e.g. no support on Nexus 4/Nexus 10 and other devices with Broadcom chipset)		API has support, not tested (but assumed not to work due to non-NXP chipset)			
MIFARE Classic UID (no data, only serial number)		Possible even on non-NXP chipsets, except for Galaxy S4 (possibly other future Samsung devices too) On Galaxy S4 (Samsung's original ROM): MIFARE Classic tags are blocked completely (applications can neither detect such tags nor get their UID)				Not tested	
ISO 14443-4							
ISO 14443-3 (except anti-collision and activation commands)							
FeliCa (JIS X 6319-4)				Called ISO/IEC 18092			
ISO 15693	Not tested	Known issues with delayed EOF on NXP chipset			Not tested	Not tested	Not tested
ISO 15693 NDEF	Not tested	Android < 4.0: not supported Android >= 4.0 + libnfc-nxp: Only NXP ICODE supported Android >= 4.1 + libnfc-nci: unknown Android >= 4.3 + libnfc-nci: supported		Not tested	Not tested	Not tested	Not tested
KOVIO NFC Barcode	Not tested	Android >= 4.2: supported for Broadcom chipset only		API has support, not tested	Not tested	Not tested	Not tested

	Windows (Phone) 8	Android	BlackBerry Java 7.1	BlackBerry Native 10	Qt on Nokia N9 (MeeGo)	Qt on Symbian	Symbian Native
Locking NDEF tags (some platforms may support only soft-lock as per NFC Forum Tag Type Platform specifications)		API has support for all NDEF tags libnfc-nxp: only limited support, for most tags manual implementation required libnfc-nci: unknown	API has lock() method, not tested	API has nfc_lock_tag() method, not tested		Manual implementation	Manual implementation
NDEF Formatting		API has support for all NDEF tags libnfc-nxp: only limited support (MIFARE Ultralight, but not necessarily other Type 2; MIFARE Classic; not tested with DESFire; no support for unformatted Topaz in Android < 4.0, not tested with >= 4.0) libnfc-nci: unknown	Not tested	Not tested	By writing an empty message	By writing an empty message	By writing an empty message

Software card emulation

	Windows (Phone) 8	Android	BlackBerry Java 7.1	BlackBerry Native 10	Qt on Nokia N9 (MeeGo)	Qt on Symbian	Symbian Native
Emulation of NDEF tags							
Emulation of ISO 14443-4 Type A targets		No support on stock Android NXP chipsets: supported on CyanogenMod >= 9.1 and SuperSmile from www.usmile.at					
Emulation of ISO 14443-4 Type B targets		No support on stock Android NXP chipsets: supported on CyanogenMod >= 9.1 and SuperSmile from www.usmile.at					
Emulation of ISO 14443-3 Type A targets							
Emulation of ISO 14443-3 Type B targets							
Emulation of FeliCa (JIS X 6319-4) targets							

NDEF Parsing API

	Windows (Phone) 8	Android	BlackBerry Java 7.1	BlackBerry Native 10	Qt on Nokia N9 (MeeGo)	Qt on Symbian	Symbian Native
Smart Poster	With free NDEF Library from ndef.codeplex.com	Manual implementation			With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	Manual implementation
URI							
Text	With free NDEF Library from ndef.codeplex.com	Manual implementation					
Microsoft LaunchApp		Manual implementation	Manual implementation	Manual implementation	With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	Manual implementation
Android Application Record	With free NDEF Library from ndef.codeplex.com	Method to create new AAR, but no method to parse a read AAR	Manual implementation	Manual implementation	With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	With open source code from Nfc Interactor for Qt: www.nfcinteractor.com	Manual implementation
External (general)	With free NDEF Library from ndef.codeplex.com						
MIME (general)							

Default handling of NFC Record Types on different OS Platforms

	Windows (Phone) 8	Android	BlackBerry 7.1	BlackBerry 10	Nokia N9 (MeeGo)	Symbian
Launching Apps	LaunchApp or Custom URI	App can register to launch on intent: URI WKT, Smartposter WKT (on contained URI), URI Type record, MIME Type record, External Type record (Android >= 4.0), Text WKT (is mapped to text/plain MIME type); App will always launch (or redirect to Play Store if not installed): Android Application Record	Not tested	Not tested	Custom record type	Custom record type
Installing Apps	LaunchApp or Custom URI	Android >= 4.0: Android Application Record Custom URI	Not tested	Not tested	Use multiple records, link to store URL in second record	Use multiple records, link to store URL in second record
URI	shows URI domain before launch of webbrowser	Android < 4.0: shows URI before launch of webbrowser Android >= 4.0: immediatly launches webbrowser	always shows URI before launch of webbrowser	Not tested	shows URI before launch of webbrowser	shows URI before launch of webbrowser

Feature						
Smart Poster	does not show title	Android < 4.0: shows URI & title before launch of webbrowser Android >= 4.0: does not show title unless multiple URIs are found on one tag	always shows URI & title before launch of webbrowser	Not tested	does not show title	
Text			Not tested	Not tested		
SMS		Android < 4.0: not supported due to bug (see research note by Michael Roland on that issue) Android >= 4.0: supported	Not tested	Not tested		
Telephone			Not tested	Not tested		
vCard			Not supported on BB 7.0, not tested on BB 7.1	Not tested		
vCalendar			Not tested	Not tested		
geo: URI scheme			Not tested	Not tested		
Handover (for Bluetooth)		Android >= 4.3: supported	Not tested but supported by API	Not tested but supported by API		