



# **Technical Committee Glossary**

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[GLOSS\_TC]

NFC Forum™

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# 1 Overview

This document provides an overview of the glossary terms used throughout document in the NFC Forum Technical Committee.

## 1.1 Objectives

Provide a single location for all defined glossary terms.

## 1.2 Scope

This document applies only to glossary terms used by the NFC Forum Technical Committee.

## 1.3 Audience

NFC Forum Members are the intended audience of this document.

## 1.4 Applicable Documents or References

[ACTIVITY]	Activity Technical Specification, NFC Forum
[ANALOG]	Analog Technical Specification, NFC Forum
[BLUETOOTH_CORE]	Bluetooth® Core Specification, Bluetooth SIG
[BTSSP]	Bluetooth® Secure Simple Pairing Using NFC, NFC Forum
[CH]	Connection Handover Technical Specification, NFC Forum
[DIGITAL]	Digital Protocol Technical Specification, NFC Forum
[LLCP]	Logical Link Control Protocol Technical Specification, NFC Forum
[NCI]	NFC Controller Interface (NCI) Technical Specification, NFC Forum
[NDEF]	NFC Data Exchange Format (NDEF) Technical Specification, NFC Forum
[RTD]	Record Type Definition (RTD) Technical Specification, NFC Forum
[RTD_DI]	Device Information RTD Technical Specification, NFC Forum
[RTD_SIG]	Signature RTD Technical Specification, NFC Forum
[RTD_SP]	Smart Poster RTD Technical Specification, NFC Forum
[RTD_TEXT]	Text RTD Technical Specification,

	NFC Forum
[RTD_URI]	URI RTD Technical Specification, NFC Forum
[RTD_VERB]	Verb RTD Technical Specification, NFC Forum
[T1T]	Type 1 Tag Technical Specification, NFC Forum
[T2T]	Type 2 Tag Technical Specification, NFC Forum
[T3T]	Type 3 Tag Technical Specification, NFC Forum
[T4T]	Type 4 Tag Technical Specification, NFC Forum
[T5T]	Type 5 Tag Technical Specification, NFC Forum

## 1.5 Administration

The NFC Forum Technical Committee Glossary is an open document supported by the Near Field Communication Forum, Inc., located at:

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The **Technical Committee** maintains this specification.

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## 2 Glossary Terms

### *Access Attribute*

The Access Attribute is part of each Service Code (the lowest 6 bits). This value determines the access control setting for the Blocks belonging to this Service.

[T3T]

### *Access Mode*

A field specified in the Block List Element that identifies the method of access to use when accessing Block Data.

[T3T]

### *Active Communication Mode*

A communication mode in which each device generates an Operating Field when it has to send a frame to a peer device.

[ACTIVITY], [ANALOG], [DIGITAL], [NCI]

### *Activity*

A process within an NFC Forum Device.

[ACTIVITY], [ANALOG], [DIGITAL]

### *Advertising and Scan Response Data / Bluetooth SIG*

A message providing information about the local Bluetooth device sent in an Advertising or Scan Response event from Bluetooth LE devices. Defined in **Error! Reference source not found.**

[BTSSP]

### *Alternative Carrier*

A communication technology that can be used for data transfers between a Handover Requester and a Handover Selector.

[BTSSP], [CH]

### *Application Identifier (AID)*

Defined in **Error! Reference source not found.**, this is a specific type of Dedicated File (DF) name that is used in a SELECT command to identify applications.

[NCI]

### *Application User*

A person who interacts with an application based on this specification through a user interface.

[RTD\_SIG]

### *Attribute Information*

A set of fields that contain information about the NDEF capabilities of the Type 3 Tag and about the length of stored NDEF data.

[T3T]

*Attribute Information Block*

The Block of a Type 3 Tag that is used to store the Attribute Information.

[T3T]

*Bail-out Option*

A configuration option that allows the NFC Forum Device to conclude the Technology Detection Activity, if the respective Bail-out parameter is set.

[ACTIVITY]

*Battery Off State*

State in which an internal battery or external power source is not available. For example, the battery is removed or empty, so the Device Host (DH) is switched off. The NFC Forum Device can only act in Listen Mode when the NFC Controller (NFCC) and certain NFC Execution Environments (NFCEEs) might be powered by a Remote NFC Endpoint via magnetic coupling.

[NCI]

*Big Endian*

A method of recording or transmitting numerical data of more than one byte, with the highest byte placed at the beginning.

[NCI], [NDEF], [RTD\_SIG], [T2T], [T3T], [T4T], [T5T]

*Block [DIGITAL]*

Unit of data bytes transmitted as part of the ISO-DEP Protocol.

[DIGITAL]

*Block [TxT]*

The smallest data unit written to or read from memory.

[T1T], [T2T], [T3T], [T5T]

*Block Data*

Command or Response parameter for the Data to be written to or read from a Block or a set of Blocks.

[T3T]

*Block List*

A sequence of Block List Elements.

[T3T]

*Block List Element*

Indicates the Block Number, the position of the Service within the Service Code List, and the Access Mode for one Block.

[T3T]

*Block Number*

Identifier of a Block in memory.



[T1T], [T2T], [T3T], [T5T]

*Bluetooth Device*

A device that implements **Error! Reference source not found..**

[BTSSP]

*Byte Sequence*

Concatenation of hexadecimal values.

[ACTIVITY]

*Card Emulator*

Role of an NFC Forum Device, reached when an NFC Forum Device in Listen Mode has gone through a number of States. In this mode the NFC Forum Device behaves as one of the Technology Subsets.

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T], [T5T]

*Carrier Configuration Data*

The information needed to connect to an alternative carrier. The exact information depends on the carrier technology.

[BTSSP] [CH]

*Clean-up*

Clean-up is the final step in a Poll Profile. It erases the Greedy Collection and the Operating Field is turned to the Operating Field Off condition.

[ACTIVITY]

*Collision*

For NFC-A, a collision is a superposition of a '0' and a '1' as defined in **Error! Reference source not found..**

For NFC-B, NFC-F and NFC-V, a collision is a superposition of multiple Responses, resulting in a Transmission Error.

[ACTIVITY]

*Command*

An instruction transmitted from one device to another device in order to move the other device through a state machine.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Command Message*

A request sent from the Device Host (DH) to the NFC Controller (NFCC) for action by the NFCC.

[NCI]

*Configuration Parameters*

Parameters that are determined before the first Activity of a Profile is performed. Configuration Parameters cannot be changed when performing the sequence of Activities belonging to a Profile.

[ACTIVITY]

*Connection Identifier (Conn ID)*

A unique 4-bit identifier for a Logical Connection.

[NCI]

*Connectionless Transport*

An unacknowledged data transmission service with minimal protocol complexity.

[LLCP]

*Connection-oriented Transport*

A data transmission service with sequenced and guaranteed delivery of service data units.

[LLCP]

*Control Message*

A generic name when referring to a Command, Response, or Notification Message, but not a Data Message.

The terms ‘Command’, ‘Response’, and ‘Notification’, as used in this document, are intended to mean the same as ‘Command Message’, ‘Response Message’, and ‘Notification Message’.

[NCI]

*Correct Frame*

A frame without Transmission Error.

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T], [T4T]

*Cyclic Redundancy Check (CRC)*

A checksum appended within the data segment before transmission, and verified afterward by the recipient to detect Transmission Errors.

[NCI], [DIGITAL]

*Data Link Connection*

A unique combination of source and destination service access point addresses used for numbered information transfer.

[LLCP], [PHDC]

*Data Message*

A message containing data carried over a Logical Connection.

[NCI]

*Destination Type*

Identifies an entity (NFCC, NFCEE, or Remote NFC Endpoint) for which a Dynamic Logical Connection is intended.

[NCI]

*Device Host (DH)*

An Execution Environment responsible for the overall management of the NFC Forum Device and any peripherals. This includes the management (e.g., initialization, configuration, power management, etc.) of the NFC Controller peripheral.

[NCI]

*Device Information*

Attributes describing information for a particular device

[RTD\_DI]

*DH-NFCEE*

An NFCEE residing on or connected to the DH. There is logically only one DH-NFCEE, but it might be composed of more than one environment (for example, an environment on the DH and an environment on a peripheral connected to the DH). The manner in which the DH manages the DH-NFCEE is implementation-specific.

[NCI]

*Dynamic Logical Connection*

A Logical Connection that is created and closed dynamically as needed.

[NCI]

*Extended Inquiry Response / Bluetooth SIG*

A response message providing information about the local Bluetooth device sent in response to an Inquiry from remote Bluetooth devices. Defined in **Error! Reference source not found.**

[BTSSP]

*Extended Memory*

Offers up to 65536 Blocks ( $n \leq 65535$ ) addressed by two bytes.

[T5T]

*File identifier*

Data element (two bytes) used to address a file

[T4T]

*Greedy Collection*

Temporary storage for information collected as part of the Activity and used during processing.

[ACTIVITY]

*Handover Mediator*

An NFC Forum Device that is currently intending to facilitate connection handover between two other NFC-enabled devices.

[CH]

*Handover Requester*

An NFC Forum Device that begins the Handover Protocol by issuing a Handover Request Message to another NFC Forum Device.

[CH], [BTSSP]

*Handover Selector*

An NFC Forum Device that constructs and replies to a Handover Select Message as a result of a previously received Handover Request Message, or an NFC Tag Device that provides a pre-set Handover Select Message for reading.

[CH], [BTSSP]

*HCI Network*

A Network as described in **Error! Reference source not found.**, consisting of a host controller and one or more hosts.

[NCI]

*HCI-NFCEE*

A specific type of NFCEE that is connected via the NFCC's HCI Network, as described in **Error! Reference source not found.**

[NCI]

*IEEE Agent*

A software component that uses the ISO/IEEE 11073-20601 Optimized Exchange Protocol to communicate with an IEEE Manager.

[PHDC]

*IEEE Manager*

A software component that uses the ISO/IEEE 11073-20601 Optimized Exchange Protocol to communicate with an IEEE Agent.

[PHDC]

*IEEE APDU*

IEEE APDUs are Application Protocol Data Units defined in [IEEE-20601] that are exchanged between an IEEE Agent and IEEE Manager.

[PHDC]

*Initiator*

Role of a Poller when it has gone through a number of Activities. In this mode, the NFC Forum Device communicates using the NFC-DEP Protocol.

[ACTIVITY], [ANALOG], [DIGITAL]

*ISO-DEP Protocol [DIGITAL]*

Half-duplex block transmission protocol defined in Section **Error! Reference source not found.** and based on **Error! Reference source not found.** and **Error! Reference source not found.**

[DIGITAL]

*ISO-DEP Protocol*

The half-duplex block transmission protocol as defined in **Error! Reference source not found..**

[NCI], [ACTIVITY], [T4T]

*Link MIU*

The maximum number of octets in the information field of any possible LLC protocol data unit.

[LLCP]

*Listen Frame*

A frame sent by a Listener.

[ANALOG], [DIGITAL]

*Listen Mode*

The mode of an NFC Forum Device where it receives Commands and sends Responses.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Listen Mode [NCI]*

The mode of an NFC Forum Device where it receives RF commands and sends RF responses as defined in **Error! Reference source not found..**

[NCI]

*Listen Profile*

A set of Listen Mode configuration parameter values and device response rules that together enable the NFC Forum Device in Listen Mode to operate as either a P2P Target or as a Card Emulator for one of the defined Tag Platforms.

[ACTIVITY]

*Listener*

An NFC Forum Device in Listen Mode.

[ANALOG], [ACTIVITY], [TxT]

*Little Endian*

A method of recording or transmitting numerical data of more than one byte, with the lowest byte placed at the beginning.

[NCI], [T1T], [T3T]

*LLCP Link*

The reliable communication channel between the local and the remote LLC that provides the transport for all data link connections and logical data links.

[LLCP]

*Ln*

Length of the NDEF data in bytes.

[T3T]

*Local LLC*

The LLC component running on the local device.

[LLCP]

*Logical Connection*

A communication channel between the Device Host (DH) and the NFC Controller (NFCC) that is used for data communication toward the NFCC itself, an NFCEE, or a Remote NFC Endpoint.

[NCI]

*Logical Data Link*

A combination of source and destination service access point addresses used for unnumbered information transfer.

[LLCP]

*Lower Level*

Term used in **Error! Reference source not found.** to mean  $V_2$  for NFC-A.

[ANALOG]

*Maximum Information Unit (MIU)*

The maximum length of the information field in a single LLC protocol data unit.

[LLCP]

*Mediated Handover*

The exchange of NDEF messages that allows a Handover Mediator to facilitate connection handover between two other NFC-enabled devices.

[CH]

*Message*

A generic term for a Command, Response, Notification, or Data object communicated between the DH and NFCC.

[NCI]

*Modulation Index*

The modulation index of an amplitude modulated signal

[ANALOG]

*Negotiated Handover*

An exchange of NDEF messages that allows two NFC Forum Devices to agree on a (set of) alternative carrier(s) to be used for further data exchange.

[CH]

*Nbc*

The number of Blocks used by the NDEF data stored on the Type 3 Tag.

[T3T]

*Nbr*

The number of Blocks that can be read by the CHECK Command at one time.

[T3T]

*Nbw*

The number of Blocks that can be written by the UPDATE Command at one time.

[T3T]

*NCI*

The logical interface between a Device Host (DH) and an NFC Controller (NFCC).

[NCI]

*NCI Core*

The basic NCI functionality between the Device Host (DH) and NFC Controller (NFCC).

[NCI]

*NCI Transport*

The physical connection (e.g., SPI, I2C, UART, USB, etc.) and any associated link level protocol between the DH and NFCC. Each supported NCI Transport has a Transport Mapping that defines the characteristics of the NCI Transport. An NCI Transport provides the ability to reliably transfer data without intimate knowledge of the data being transferred. The NCI specification defines multiple Transport Mappings.

[NCI]

*NDEF-NFCEE*

An NFCEE configured to emulate an NFC Tag Device. An NDEF-NFCEE always stores an NDEF message, which can be empty, as defined in **Error! Reference source not found..**

[NCI]

*NDEF application*

The logical, higher-layer application on an NFC Forum Device using NDEF to format information for exchange with other NFC Forum Devices.

[CH], [NDEF], [RTD], [RTD\_DI], [RTD\_SP], [RTD\_TEXT], [RTD\_URI]

*NDEF chunked payload*

Application data that has been partitioned into multiple chunks each carried in a separate NDEF record,

[NDEF]

*NDEF generator*

An entity or module that encapsulates application-defined payloads within NDEF messages.

[CH], [NDEF], [RTD], [RTD\_VERB]

*NDEF message*

The basic message construct defined by this specification. An NDEF message contains one or more NDEF records.

[NCI], [NDEF], [RTD], [RTD\_DI], [RTD\_SIG], [RTD\_SP], [RTD\_TEXT], [RTD\_URI], [RTD\_VERB], [TxT]

*NDEF parser*

An entity or module that parses NDEF messages and hands off the payloads to an NDEF application.

[CH], [NDEF], [RTD], [RTD\_DI]

*NDEF payload*

The application data carried in an NDEF record.

[CH], [NDEF], [RTD], [RTD\_DI], [RTD\_SP], [RTD\_TEXT], [RTD\_URI]

*NDEF payload identifier*

An optional URI that can be used to identify a payload.

[NDEF]

*NDEF payload length*

The size of the payload in a single NDEF record indicated as the number of octets.

[CH], [NDEF], [RTD\_SP], [RTD\_TEXT], [RTD\_URI]

*NDEF payload type*

An identifier that indicates the type of the payload.

[CH], [NDEF], [RTD\_TEXT], [RTD\_URI]

*NDEF record*

An NDEF record contains a payload described by a type, a length, and an optional identifier.

[CH], [NDEF], [RTD], [RTD\_DI], [RTD\_SIG], [RTD\_SP], [RTD\_TEXT], [RTD\_URI], [RTD\_VERB], [TxT]

*NDEF record chunk*

An NDEF record that contains a chunk of a payload rather than a full payload.

[NDEF]

*NDEF short record*

An NDEF record allowing payloads or chunks of up to 255 bytes to be carried.

[NDEF], [RTD\_URI]

*NDEF Tag application*

An application with AID D2760000850101h that contains all information related to storing and retrieving the NDEF Message.



[T4T]

*Negotiated Handover*

An exchange of NDEF messages that allows two NFC Forum Devices to agree on a set of alternative carrier(s) to be used for further data exchange.

[BTSSP], [CH]

*NFC Controller (NFCC)*

The entity responsible for the transmission of data via NFC. The NFC Controller has a connection to the Device Host (DH) and might have connections to additional NFC Execution Environments (NFCEEs). Those connections are out of scope of this specification, but the impacts to the NCI are in scope.

[NCI]

*NFC Execution Environment (NFCEE)*

An environment, either built into the NFCC or connected to the NFCC, where NFC applications are executed. The NFCEE might be included in entities with various form factors, some of which can be removable or replaceable.

[NCI]

*NFC Forum Device*

A device that supports at least one communication protocol for at least one communication mode defined by the NFC Forum specifications. Currently the following NFC Forum Devices are defined:

NFC Universal Device, NFC Tag Device and NFC Reader Device.

[ACTIVITY], [ANALOG], [BTSSP], [CH], [DIGITAL], [NCI], [NDEF], [RTD], [RTD\_DI], [RTD\_SIG], [RTD\_TEXT], [TxT]

*NFC Forum Reference Equipment*

A set of NFC Forum Reference Poller and NFC Forum Reference Listener devices in conjunction with which the RF characteristics of this specification are valid.

[ANALOG]

*NFC Forum Tag*

A contactless tag or (smart) card supporting NDEF.

[ACTIVITY], [DIGITAL], [ANALOG], [CH], [RTD], [RTD\_SP], [TxT]

*NFC Reader Device*

An NFC Forum Device that supports the following Modus Operandi: Reader/Writer. It can also support Initiator.

[CH], [NDEF], [RTD], [RTD\_DI], [RTD\_SIG], [RTD\_SP], [TxT]

*NFC Tag Device*

An NFC Forum Device that supports at least one communication protocol for Card Emulator and NDEF.

[ACTIVITY], [ANALOG], [CH], [DIGITAL], [NCI], [NDEF], [RTD\_DI], [RTD\_SIG], [RTD\_SP], [RTD\_TEXT], [TxT]

*NFC Universal Device*

An NFC Forum Device that supports the following Modus Operandi: Initiator, Target, and Reader/Writer. It also can support Card Emulator.

[ACTIVITY], [ANALOG], [BTSSP], [CH], [DIGITAL], [NDEF], [RTD], [RTD\_DI], [RTD\_SIG], [RTD\_SP], [TxT]

*NFC-DEP Initiator*

Role of an NFC Forum Device reached when a Poller has gone through a number of Activities. In this mode, the NFC Forum Device communicates using the NFC-DEP Protocol.

[NCI]

*NFC-DEP Protocol*

The half-duplex block transmission protocol as defined in **Error! Reference source not found..**

[ACTIVITY], [ANALOG], [NCI], [LLCP]

*NFC-DEP Protocol [DIGITAL]*

Half-duplex block transmission protocol defined in Section **Error! Reference source not found.** and based on **Error! Reference source not found..**

[DIGITAL]

*NFC-DEP Target*

Role of an NFC Forum Device, reached when the Listener has gone through a number of Activities. In this mode, the NFC Forum Device communicates using the NFC-DEP Protocol.

[NCI]

*NFCEE Discovery Process*

Functionality that allows detection of NFCEEs that are physically connected to the NFCC.

[NCI]

*NFCEE Interface*

A logical entity on the NFCC that communicates with the DH on one side and an NFCEE on the other side.

[NCI]

*NFCEE Protocol*

A protocol used in the communication between the NFCC and an NFCEE.

[NCI]

*NFCID<sub>x</sub>*

The identifiers NFCID0, NFCID1, NFCID2, NFCID3 and UID for NFC-B, NFC-A, NFC-F, NFC-DEP and NFC-V respectively. Identifiers subsumed under the term NFCID<sub>x</sub> always belong to the same Technology.

[ACTIVITY]

*Nibble*

Four bits, half of a byte.

[T1T], [T2T]

*NmaxB*

Maximum number of Blocks available for NDEF data on a Type 3 Tag.

[T3T]

*No Remote Field Sensed*

A condition that indicates the absence of the Remote Field for a certain time.

[ANALOG], [ACTIVITY], [T1T], [T3T]

*Notification Message*

A message that can only be sent by an NFCC to the DH. It is sent asynchronously and typically contains informational parameters.

[NCI]

*Operating Field*

The radio frequency field created by the NFC Forum Device.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Operating Field Off*

A condition of the Operating Field when the field strength is below a well-defined threshold.

[ACTIVITY], [ANALOG]

*Operating Field On*

A condition of the Operating Field when the field strength is equal to or higher than a well-defined threshold for a minimum period of time.

[ACTIVITY], [ANALOG]

*Operating Volume*

The three-dimensional space, as defined by the NFC Forum, in which an NFC Forum Device in Poll Mode can communicate with an NFC Forum Device in Listen Mode.

[DIGITAL], [ANALOG]

*OTHER*

A Protocol Error or Transmission Error:

[ACTIVITY], [T3T]

*Out-of-band / Bluetooth SIG*

Communication that belongs to but occurs outside of an intended communication channel or method. In this document, “out-of-band” refers to data transmission over NFC for the purpose of pairing devices using Bluetooth SSP and discovering Bluetooth services.

[BTSSP]

*Overlap Service*

A Service that shares the same Blocks with another service.

[T3T]

*Packet*

A structure that is used to transmit a Message over the NCI Transport. There are both Control Packets (for transporting Control Messages) and Data Packets (for transporting Data Messages).

[NCI]

*Passive Communication Mode*

A communication mode in which one device generates an Operating Field and sends Commands to a second device. To respond, this second device uses load modulation, which means that it does not generate an Operating Field but it draws power from a Remote Field.

[ACTIVITY], [ANALOG], [DIGITAL], [NCI]

*Peer*

A role either equal to the role of an Initiator or to the role of a Target.

[ACTIVITY], [PHDC]

*Peer Mode*

NFC operation mode using a LLCP Link to exchange data between an Initiator and Target

[CH], [PHDC]

*PHDC Agent*

A software component that communicates with a remote PHDC Manager to allow a local IEEE Agent to exchange data with a remote IEEE Manager.

[PHDC]

*PHDC Manager*

A software component that communicates with a remote PHDC Agent to allow a local IEEE Manager to exchange data with a remote IEEE Agent.

[PHDC]

*PHD Message*

A PHD Message is an NDEF Message that starts with a PHD Record and is exchanged between a PHDC Tag Agent and a PHDC Manager in NFC Forum Reader/Writer operation mode.

[PHDC]

*PHDC PDU*

PHDC PDUs are Protocol Data Units that are exchanged between a PHDC Agent and a PHDC Manager in NFC Forum Peer mode of operation.

[PHDC]

*PHDC Peer Agent*

A PHDC Agent that communicates with a remote PHDC Manager in NFC Forum Peer mode.

[PHDC]

*PHDC Tag Agent*

A PHDC Agent that communicates with a remote PHDC Manager in NFC Forum Reader/Writer mode.

[PHDC]

*PMm*

Manufacturer Parameter that is pre-configured by the Type 3 Tag manufacturer.

[T3T]

*Poll Command*

A Command to probe for Listeners

ALL\_REQ Command or SENS\_REQ Command for NFC-A

ALLB\_REQ Command or SENSB\_REQ Command for NFC-B

SENSF\_REQ Command for NFC-F

INVENTORY\_REQ Command for NFC-V

ATR\_REQ Command for NFC-ACM

[ACTIVITY], [ANALOG], [DIGITAL]

*Poll Frame*

A frame sent by an NFC Forum Device in Poll Mode.

[ANALOG], [DIGITAL]

*Poll Mode*

The mode of an NFC Forum Device where it sends Commands and receives Responses.

[ACTIVITY], [ANALOG], [DIGITAL], [PHDC], [TxT]

*Poll Mode [NCI]*

The mode of an NFC Forum Device where it sends RF commands and receives RF responses as defined in **Error! Reference source not found..**

[NCI]

*Poll Profile*

The combination of a Resolution Process managing a set of Activities, an Initialization that chooses a set of values as Configuration Parameters, and Clean-up.

[ACTIVITY]

*Poller*

An NFC Forum Device in Poll Mode.

[ANALOG], [ACTIVITY], [PHDC], [TxT]

*Profile*

A set of definitions that determines the behavior of the NFC Forum Device in either Poll Mode (Poll Profile) or Listen Mode (Listen Profile).

[ACTIVITY]

*Proprietary Command*

Any Command from one of the NFC technologies of which the meaning is outside of the scope of this specification. This applies in particular to the Type 1 Tag Platform, to the Type 2 Tag Platform, to the Type 3 Tag Platform and to the Type 5 Tag Platform.

[ACTIVITY]

*Proprietary Command [TxT]*

Any Command from one of the NFC technologies of which the meaning is outside of the scope of this specification.

[T1T], [T2T], [T3T]

*Proprietary Technology*

Any technology of which the Command(s) used in the Technology Detection Activity do(es) not move the NFC Forum Device (in Listen Mode) out of the IDLE State.

[ACTIVITY]

*Protocol Data Unit (PDU)*

The sequence of contiguous octets delivered as a unit to the adjacent lower layer or received as a unit from the adjacent lower layer.

[LLCP]

*Protocol Error*

A Semantic Error or Syntax Error.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Read Alike Command*

Set of Commands that do not change the persistent state of the Type 5 Tag.

[T5T]

*Reader/Writer*

Role of a Poller when it has gone through a number of Activities. In this mode the Poller communicates with Type 1 Tags, Type 2 Tags, Type 3 Tags, Type 4 Tags or Type 5 Tags.

[ACTIVITY], [ANALOG], [DIGITAL], [PHDC], [RTD\_VERB], [TxT]

*Reader/Writer Mode*

NFC operation mode using a communication link between a Reader/Writer and Card Emulator

[CH], [PHDC]

*Reference Listener*

Part of the NFC Forum Reference Equipment to evaluate RF characteristics of Pollers.

[ANALOG]

*Reference Poller*

Part of the NFC Forum Reference Equipment to evaluate RF characteristics of Listeners.

[ANALOG]

*Regular Memory*

Offers up to 256 blocks ( $n \leq 255$ ) addressed by one byte.

[T5T]

*Remote Field*

The radio frequency field generated by a remote device and sensed by the NFC Forum Device.

[ACTIVITY], [ANALOG], [T1T], [T3T], [T4T]

*Remote Field Off*

A condition where the Remote Field is below a certain threshold as defined in **Error! Reference source not found.**

[ACTIVITY]

*Remote Field On*

A condition of the Remote Field being stable and strong enough to put the NFC Forum Device in a state that it can operate. For the definition, see **Error! Reference source not found.**

[ACTIVITY], [ANALOG], [T1T], [T3T], [T4T]

*Remote LLC*

The LLC component running on the remote device.

[LLCP]

*Remote NFC Endpoint*

Refers to a remote device, card, or tag, connected wirelessly via NFC to the local NFC Forum Device.

[NCI]

*Reset*

For a polling device, switching off and on the carrier to cause the transition of a listening device to its NO\_REMOTE\_FIELD state and back to the IDLE state

For a listening device, the transition to its NO\_REMOTE\_FIELD state and back to the IDLE state caused by the polling device switching off and on the carrier.

[ANALOG]

#### *Resolution Process*

The part of the adjacent upper layer managing the Activities. The Resolution Process decides the next Activity to perform and hands over the Parameters needed.

[ACTIVITY]

#### *Resonance Frequency*

The frequency where the imaginary part of the impedance is zero is defined as resonance frequency. At this frequency the phase angle of the impedance is zero.

[ANALOG]

#### *Response*

Information sent from one device to another device upon receipt of a Command. The information received by the other device allows it to continue the data exchange.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

#### *Response Message*

Sent by the NFCC for each Command Message received from the DH. The Response Message might contain status information pertaining to the results of the Command Message.

[NCI]

#### *RF Discovery Process*

Functionality that allows detection of a Remote NFC Endpoint and detection by a Remote NFC Endpoint. The DH can configure the RF Discovery Process, which then runs autonomously within the NFCC.

[NCI]

#### *RF Interface*

Logical entities that might contain some protocol logic (e.g., an ISO-DEP RF Interface or an NFC-DEP RF Interface) or might be a transparent conduit (e.g. a Frame RF Interface). The DH can only communicate with a Remote NFC Endpoint via an RF Interface, designated as the “Active RF Interface”. The NFCC contains multiple RF Interfaces.

[NCI]

#### *RF Interface Extension*

An RF Interface Extension extends the functionality of an RF Interface. It is a defined set of tasks in the NFCC that can be invoked by the DH via NCI Commands. Each RF Interface Extension defines its own behavior. Each RF Interface Extension defines the conditions – e.g. active RF Interface(s), Protocol(s) and Mode(s) - under which the RF Interface Extension can be started and stopped. Each RF Interface Extension also defines relationships and conflicts, if any, with other RF Interface Extensions.

[NCI]



*RF Protocol*

A protocol used in the communication between the NFCC and a Remote NFC Endpoint.  
[NCI]

*RWflag*

Shows whether NDEF data on a Type 3 Tag is read-only or whether it can also be written.  
[T3T]

*R/W\_VNo*

Mapping Version number implemented in the NFC Forum Device.  
[T4T]

*Sector*

Part of the memory consisting of 256 contiguous blocks (1024 bytes or 1 KB).  
[T2T]

*Segment*

16 contiguous Blocks (128 bytes).  
[T1T]

*Semantic Error*

A Correct Frame with no Syntax Error is received when it is not expected.  
[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Service [LLCP]*

The capabilities and features provided to the adjacent upper layer.  
[LLCP]

*Service [T3T]*

A Service groups a set of Blocks and provides access control to those Blocks. A Type 3 Tag can contain more than one Service. Each Service is identified using its Service Code which is also required to address Blocks in Commands.  
[T3T]

*Service Block Count*

The number of Blocks assigned to a Service.  
[T3T]

*Service Code*

The value that uniquely identifies each Service.  
[T3T]

*Service Code List*

A field in the CHECK and UPDATE Commands that lists the Service Codes the Commands intend to access.

[T3T]

*Service Code List Order*

A field inside a Block List Element. Its value identifies the Service Code that the Block belongs to by providing the index of the corresponding entry in the Service Code List.

[T3T]

*Service Data Unit (SDU)*

The sequence of contiguous octets received as a unit from the adjacent upper layer or delivered as a unit to the adjacent upper layer.

[LLCP]

*Service Discovery Protocol (SDP)*

An application protocol to discover service access point users bound at the remote LLC.

[LLCP]

*Service User*

The user of a service provided by the adjacent lower layer.

[LLCP]

*State*

A state of the Listener.

[ACTIVITY], [ANALOG], [TxT]

*Static Handover*

Provision of “Handover Select” message on an NFC Forum Tag that allows a reading NFC Forum Device to select and use alternative carriers for further data exchange.

[BTSSP], [CH]

*Static RF Connection*

A Logical Connection with a fixed Connection Identifier that always exists after NFCC initialization and is never closed. It is used by the DH to communicate with a Remote NFC Endpoint via an active RF Interface.

[NCI]

*Status Flags*

Fields in some Type 3 Tag Responses which indicate error conditions occurred while executing the corresponding Command.

[T3T]

*Switched On State*

In this state, the DH, the NFCC, and all connected NFCEEs are switched on and powered either by internal battery or external power source. The NFC Forum Device can act in both Poll and Listen Modes. NCI is only applicable in Switched On State.

[NCI]

*Switched Off State*

In this state, the DH is switched off, and the NFCC and all connected NFCEEs are powered either by internal battery or external power source. The NFC Forum Device can only act in Listen Mode.

[NCI]

*Syntax Error*

A Correct Frame is received with invalid content. In this case, the coding of the Command or the block within the frame is not consistent with **Error! Reference source not found.**

[ACTIVITY], [ANALOG], [DIGITAL], [T2T], [T4T]  
 „...with this specification“: [T1T], [T3T]

*T4T\_VNo*

Mapping version number implemented in the Type 4 Tag.

[T4T]

*Target*

Role of a Listener when it has gone through a number of States. In this mode, the NFC Forum Device communicates using the NFC-DEP Protocol.

[ACTIVITY], [ANALOG], [DIGITAL]

*Technology*

A group of transmission parameters defined by the NFC Forum specifications that make a complete communication protocol. A non-exhaustive list of transmission parameters is: RF carrier, communication mode, bit rate, modulation scheme, bit-level coding, frame format, protocol, and command set. NFC Forum defines four groups and therefore four Technologies: NFC-A, NFC-B, NFC-F and NFC-V. The four Technologies use the same RF carrier (13.56 MHz). Each Technology uses its own modulation scheme, bit-level coding, and frame format, but can have the same protocol and Command set.

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T], [T5T]

*Technology Subset*

A legacy platform supporting a subset of a Technology. A Technology Subset supports at least the Poll Command of the Technology. The Technology Subsets are:

Type 1 Tag Platform, which uses a particular subset of NFC-A, excluding anti-collision

Type 2 Tag Platform, which uses a particular subset of NFC-A, including anti-collision

Type 3 Tag Platform, which uses a particular subset of NFC-F

Type 4 Tag Platform, which uses a particular subset of NFC-A or NFC-B, including anti-collision

Type 5 Tag Platform, which uses a particular subset of NFC-V, including anti-collision

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T], [T5T]

*Timeout Error*

No Response has been received within the Response Waiting Time (RWT). See **Error! Reference source not found.**

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T]

*Transmission Error*

An incorrect frame is received. In this case, the signal modulation, the bit coding, the frame format, the timing, or the checksum is not as specified with **Error! Reference source not found.**

[ACTIVITY], [ANALOG], [DIGITAL], [T1T], [T2T], [T3T]

*Transport connect indication*

The Indication that is received by IEEE Agent or IEEE Manager from PHDC Agent or PHDC Manager once the NFC Communication link is established.

[PHDC]

*Transport disconnect indication*

The Indication that is received by IEEE Agent or IEEE Manager from PHDC Agent or PHDC Manager once the NFC Communication link is terminated.

[PHDC]

*Type-Length-Value (TLV) [LLCP]*

A coding method for parameters where the Type field specifies the parameter type, the Length field specifies the length of the parameter value, and the Value field contains the actual parameter value octets.

[LLCP]

*Type-Length-Value Element*

A method of encoding optional information "elements" where each element has a different type, and some types are not fixed length (such as text strings). The value is prefixed with a type field and a length field, both of which have a fixed length.

[RTD\_DI]

*Type 1 Tag*

Role of a Listener when it has gone through a number of States. In this mode the Listener supports the execution of Type 1 Tag commands to read or write NDEF Messages.

[T1T]

*Type 1 Tag Platform*

A legacy platform supporting a subset of a Technology (also called Technology Subset). Type 1 Tag Platform uses a particular subset of NFC – Type A technology (for more information, see **Error! Reference source not found.**).

[T1T]

*Type 2 Tag*

Role of a Listener when it has gone through a number of States. In this mode, the Listener supports the execution of Type 2 Tag commands to read or write NDEF Messages.

[T2T]

*Type 2 Tag Platform*

A legacy platform supporting a subset of a Technology (also called Technology Subset). Type 2 Tag Platform uses a particular subset of NFC – Type A technology including anti-collision: For more information, see **Error! Reference source not found.**

[T2T]

*Type 3 Tag*

Role of a Listener when it has gone through a number of States. In this mode, the Listener supports the execution of Type 3 Tag commands to read or write NDEF Messages.

[T3T]

*Type 3 Tag Platform*

A legacy platform supporting a subset of a Technology (also called Technology Subset). Type 3 Tag Platform uses a particular subset of NFC – Type F technology including anti-collision (for more information, see **Error! Reference source not found.**).

[T3T]

*Type 4 Tag*

Role of a Listener when it has gone through a number of States. In this mode the Listener supports the execution of Type 4 Tag commands to read or write NDEF Messages.

[T4T]

*Type 4 Tag Platform*

A legacy platform supporting a subset of a Technology (also called Technology Subset), which uses a particular subset of NFC – Type A technology or NFC- Type B technology, including anti-collision. For more information, see **Error! Reference source not found.**

[T4T]

*Type 5 Tag*

Role of a Listener when it has gone through a number of States. In this mode, the Listener supports the execution of Type 5 Tag commands to read or write NDEF Messages.

[T5T]

*Type 5 Tag Area*

Area that is allocated for storing the NDEF Message. The size is declared in the Capability Container (CC) area.

[T5T]

*Type 5 Tag Platform*

A legacy platform supporting a subset of a Technology (also called Technology Subset). Type 5 Tag platform uses a particular subset of NFC – Type V technology including anti-collision (for more information, see [DIGITAL]).

[T5T]

*UICC*

A Smart Card that conforms to the specifications written and maintained by the TC ETSI Smart Card Platform. It is a platform to resident applications (e.g., USIM, CSIM, ISIM, banking, transport, etc.).

[NCI]

*Unmodulated Carrier*

A condition of the Operating Field with no modulation present. For the purposes of this specification an unmodulated carrier is defined as one with no discernible, detectable or measurable modulation.

[ANALOG]

*Unmodulated Carrier [ACTIVITY]*

A condition of the Operating Field with no modulation present. For the definition see [ANALOG].

[ACTIVITY]

*User Application*

See *NDEF Application*.

[NDEF], [RTD]

*Valid Block, Valid PDU*

A block or PDU without Protocol Error within a Correct Frame.

[ACTIVITY], [ANALOG], [DIGITAL]

*Valid Command, Valid Response*

A Command or Response without Protocol Error within a Correct Frame.

[ACTIVITY], [ANALOG], [DIGITAL], [TxT]

*Verb*

A capability for action and interaction.

[RTD\_VERB]

*WriteFlag*

A Flag in the Attribute Information that indicates whether a previous NDEF write procedure has finished or not.

[T3T]

*Write Alike Command*

Set of commands changing the persistent state of the Type 5 Tag Platform which allows also a long response time. For more information, see [DIGITAL].

[T5T]

### 3 Abbreviations

A2DP	Advanced Audio Distribution Profile	[BTSSP]
ABM	Asynchronous Balanced Mode	[LLCP]
ac	Alternative Carrier	[BTSSP]
AD	Advertising and Scan Response Data	[BTSSP]
AES	Advanced Encryption Standard	[LLCP]
AFI	Application Family Identifier	[ACTIVITY]
AGF	Aggregated Frame	[LLCP]
AID	Application IDentifier	[NCI], [T4T]
AID_NDEF	Application ID of NDEF Tag application, value D2760000850101h	[T4T]
ALL_REQ	ALL NFC-A REQuest	[ACTIVITY]
ALLB_REQ (AFI, N1)	ALL NFC-B REQuest with matching AFI and N equal to 1	[ACTIVITY]
ALLB_REQ (AFI, N>)	ALL NFC-B REQuest with matching AFI and N greater than 1 and if R is greater than 1	[ACTIVITY]
ALLB_REQ (nAFI)	ALL NFC-B REQuest with not matching AFI	[ACTIVITY]
AMS	Address Mode Selector	[T5T]
ANTICOLL	ANTICOLLision	[ACTIVITY]
APDU	Application Protocol Data Unit	[NCI], [PHDC], [T4T],
ASK	Amplitude Shift Keying	[ANALOG], [DIGITAL]
ATN	Attention	[DIGITAL], [LLCP]
ATR_REQ	Attribute Request	[LLCP]
ATR_RES	Attribute Response	[LLCP]
BCC	NFCID1 CLn check byte for NFC-A	[DIGITAL]
BD_ADDR	Bluetooth Device Address	[BTSSP]
BITR	BIT Rate	[ACTIVITY]
BLEN	Block Length	[T5T]
BNo	Block Number	[T5T]
BOM	Unicode Byte Order Mark	[RTD_TEXT]
BR	Basic Rate	[BTSSP]
BPSK	Binary Phase Shift Keying	[ANALOG]



bd	Bit Duration	[DIGITAL], [T3T]
C-APDU	Command APDU	[T4T]
CA	Certificate Authority	[RTD_SIG]
CC	Connection Complete	[LLCP]
CC	Capability Container	[T1T], [T2T], [T4T], [T5T]
CCM	Counter with CBC-MAC	[LLCP]
CE	Command End	[T1T]
CF	Chunk Flag	[BTSSP]
CLn	Cascade Level n ( $1 \leq n \leq 3$ )	[ACTIVITY], [DIGITAL]
CMD	CoMmanD	[ACTIVITY]
CMR	Common Mode Rejection	[ANALOG]
Conn ID	Connection Identifier	[NCI]
CONNECT	Connect	[LLCP]
CoD	Class of Device	[BTSSP]
CPS	Carrier Power State	[BTSSP], [CH]
CRC	Cyclic Redundancy Check	[DIGITAL], [NCI], [T1T], [T2T]
CRC_A	CRC error detection code for NFC-A	[DIGITAL]
CRC_B	CRC error detection code for NFC-B	[DIGITAL]
CRC_F	CRC error detection code for NFC-F	[DIGITAL]
CRC_V	CRC error detection code for NFC-V	[DIGITAL]
CRLF	Carriage Return – Line Feed	[RTD_TEXT]
CSN	Connect with Service Name	[LLCP]
CTF	Carrier Type Format	[CH]
CUP	Check Command or Update Command or Proprietary Command for the Type 3Tag Platform	[ACTIVITY], [NCI]
COLL	COLLision	[ACTIVITY]
DA	Device Activation	[ACTIVITY]
DC	Direct Current	[ANALOG]
DD	Device Deactivation	[ACTIVITY]
DDO	Discretionary Data Object (see <b>Error! Reference source not found.</b> )	[T4T]
DE	Data Exchange	[ACTIVITY]
DECL	DECLared	[ACTIVITY]

DEP_REQ	Data Exchange Protocol Request	[ACTIVITY], [LLCP]
DEP_RES	Data Exchange Protocol Response	[ACTIVITY], [LLCP]
DF	Dedicated File	[NCI], [T4T]
DH	Device Host	[NCI]
DID	Device Identification Number	[DIGITAL], [LLCP]
DISC	Disconnect	[LLCP]
D <sub>LISTEN→POLL</sub>	Divisor for communication direction Listen→Poll	[DIGITAL]
DM	Disconnected Mode	[LLCP]
DNS-SD	DNS Based Service Discovery [RFC6763]	[CH]
DPC	Data Protection Class	[LLCP]
D <sub>POLL→LISTEN</sub>	Divisor for communication direction Poll→Listen	[DIGITAL]
DPS	Data Protection Setup	[LLCP]
DSA	Digital Signature Algorithm	[RTD_SIG]
DSAP	Destination Service Access Point	[LLCP]
DSFID	Data Storage Format Identifier	[DIGITAL]
DSI	Data rate Send by Initiator	[ACTIVITY]
DSL	DeSeLect	[ACTIVITY]
DVR	Delta Vov Ratio	[ANALOG]
ECDH	Elliptic Curve Diffie-Hellman	[LLCP]
ECDSA	Elliptic Curve Digital Signature Algorithm	[RTD_SIG]
ECPK	Elliptic Curve Public Key	[LLCP]
EDR	Enhanced Data Rate	[BTSSP]
EIR	Extended Inquiry Response	[BTSSP]
EF	Elementary File	[T4T]
EMD	Electro-Magnetic Disturbance	[DIGITAL]
EoD	End of Data	[DIGITAL], [T3T]
EoF	End of Frame	[DIGITAL]
EoS	End of Sequence	[DIGITAL]
EPC	Electronic Product Code	[RTD_SP]
etu	Elementary time unit	[ANALOG]
<b>f<sub>c</sub></b>	Carrier Frequency	[ACTIVITY], [ANALOG], [DIGITAL], [T3T]

fs	Subcarrier Frequency	[ANALOG], [DIGITAL]
FDT	Frame Delay Time	[ACTIVITY], [T3T]
FID_CC-File	File identifier of CC Files, value E103h	[T4T]
FRMR	Frame Reject	[LLCP]
FWI	Frame Waiting Time Integer	[DIGITAL]
FWT	Frame Waiting Time	[ACTIVITY], [DIGITAL]
GB	General Bytes	[ACTIVITY]
GID	Group Identifier	[NCI]
GT	Guard Time	[ACTIVITY]
HCI	Host Controller Interface	[NCI]
HCP	Host Controller Protocol	[NCI]
HF	Hands-Free Unit	[BTSSP]
HFP	Hands-Free Profile	[BTSSP]
HR0	Header ROM byte 0	[T1T]
Hr	Handover Request Message	[BTSSP]
Hs	Handover Select Message	[BTSSP]
I	Information	[CH]
I	Information	[LLCP]
ICV	Integrity Check Value	[LLCP]
ID	Identifier	[ACTIVITY]
IEC	International Electrotechnical Commission	[ANALOG], [DIGITAL]
IEEE	Institute of Electrical and Electronics Engineers	[PHDC]
IETF	Internet Engineering Task Force	[RTD_TEXT]
IL	ID Length	[BTSSP]
IP	Internet Protocol	[CH]
Ipv4	Internet Protocol Version 4 [RFC791]	[CH]
Ipv6	Internet Protocol Version 6 [RFC2460]	[CH]
IRI	International Resource Identifier	[RTD_URI], [RTD_SP]
ISO	International Organization for Standardization	[ACTIVITY], [ANALOG], [DIGITAL], [NCI]
JIS	Japanese Industrial Standard	[ANALOG], [DIGITAL], [T3T]
KB	Kilobytes (1024 bytes)	[T2T], [T4T]

kb	Kilobits (1024 bits)	[T2T], [T4T]
LC	Link Connected	[PHDC]
LE	Low Energy	[BTSSP]
LLC	Logical Link Control	[LLCP]
LLCP	Logical Link Control Protocol	[ACTIVITY], [CH], [LLCP], [NCI], [PHDC], [SNEP]
LSB	Least Significant Byte	[DIGITAL], [NCI], [TxT]
LSC	Link Service Class	[LLCP]
LTO	Link Timeout	[LLCP]
Lc	Length command	[T4T]
Le	Length expected	[T4T]
LR	Length Reduction	[LLCP], [NCI]
lsb	Least Significant Bit	[DIGITAL], [NCI], [RTD_TEXT],[TxT]
M	Mandatory	[BTSSP]
MAC	Media Access Control	[LLCP]
MB	Message Begin	[BTSSP], [CH]
MBL	Maximum Buffer Length	[DIGITAL]
MBLI	Maximum Buffer Length Index	[DIGITAL]
MC	Message Counter	[PHDC]
ME	Message End	[BTSSP], [CH]
MIME	Multipurpose Internet Mail Extensions. A standard specifying the format of strongly-typed data transferred over the Internet. Defined in [RFC 2045-2049]	[RTD], [RTD_SP], [RTD_TEXT]
MITM	Man In The Middle	[BTSSP]
MIU	Maximum Information Unit	[LLCP]
MIUX	Maximum Information Unit Extension	[LLCP]
MLEN	Memory Length	[T5T]
MLc	Maximum data Length C-APDU	[T4T]
MLe	Maximum data Length R-APDU	[T4T]
MRT	Maximum Response Time	[DIGITAL], [T3T]
MRTI	Maximum Response Time Information	[DIGITAL], [T3T]
MSB	Most Significant Byte	[DIGITAL], [NCI], [TxT]
MT	Message Type	[NCI]

MTU	Maximum Transmission Unit	[NCI]
Max	Maximum	[ACTIVITY], [DIGITAL]
Min	Minimum	[ACTIVITY], [DIGITAL]
ms	millisecond	[ACTIVITY]
msb	Most Significant Bit	[DIGITAL], [NCI], [TxT]
N	Number of slots	[ACTIVITY]
N(R)	Receive Sequence Number	[LLCP]
N(S)	Send Sequence Number	[LLCP]
NAD	Node Address	[DIGITAL], [LLCP]
NB	Number of Blocks	[T5T]
NCI	NFC Controller Interface	[NCI]
NDEF	NFC Data Exchange Format	[BTSSP], [ACTIVITY], [CH], [DIGITAL], [NCI], [NDEF], [PHDC], [RTD], [RTD_DI], [RTD_SP], [RTD_URI], [RTD_SIG], [RTD_TEXT], [RTD_VERB],[SNEP], [TxT]
NFC	Near Field Communication	[ACTIVITY], [ANALOG], [BTSSP], [CH], [DIGITAL], [LLCP], [NCI], [PHDC], [RTD_URI], [SNEP], [T1T], [T2T], [T3T], [T5T]
NFC-A	Near Field Communication – Type A Technology	[ACTIVITY], [ANALOG], [DIGITAL]
NFC-ACM	Near Field Communication – Active Communication Mode (based on either NFC-A or NFC-F)	[ACTIVITY], [ANALOG], [DIGITAL]
NFC-B	Near Field Communication – Type B Technology	[ACTIVITY], [ANALOG], [DIGITAL]
NFC-F	Near Field Communication – Type F Technology	[ACTIVITY], [ANALOG], [DIGITAL]
NFC-V	Near Field Communication – Type V Technology	[ACTIVITY], [ANALOG], [DIGITAL]
NFCC	NFC Controller	[NCI]
NFCEE	NFC Execution Environment	[NCI]
NFCID0	NFC-B identifier. NFCID0 is always 4 bytes long.	[ACTIVITY], [DIGITAL]

NFCID1	NFC-A identifier. NFCID1 can be 4, 7, or 10 bytes long (simple, double, or triple size).	[ACTIVITY], [DIGITAL]
NFCID1 CL <sub>n</sub>	Contains the portion of the NFCID1 relative to the cascade level n. NFCID1 CL <sub>n</sub> is always 4 bytes long.	[ACTIVITY], [DIGITAL]
NFCID2	NFC-F identifier NFCID2 is always 8 bytes long.	[ACTIVITY], [DIGITAL], [T3T]
NFCID3	NFC-DEP identifier NFCID3 is always 10 bytes long.	[ACTIVITY], [DIGITAL]
NFCIP-1	Near Field Communication Interface and Protocol as specified in <b>Error! Reference source not found.</b>	[DIGITAL], [ANALOG]
NID	Namespace Identifier. Identifies uniquely an URN namespace. Please see [RFC 2141] for a full definition.	[RTD]
NMN	NDEF Magic Number	[T1T]
NoB	Number of Blocks	[T3T]
NoS	Number of Services	[T3T]
NRZ-L	Non-Return to Zero, (L for Level)	[ANALOG], [DIGITAL]
NSS	Namespace Specific String. The rest of the URN after the NID. See [RFC 2141] for a full definition.	[RTD]
n.a.	Not Applicable	[ANALOG], [ACTIVITY], [DIGITAL]
O	Optional	[BTSSP]
OBEX	Object Exchange	[BTSSP]
ODO	Offset Data Object (see <b>Error! Reference source not found.</b> )	[T4T]
OF	Option Flag	[T5T]
OID	Opcode Identifier	[NCI]
OOB	Out-of-Band	[BTSSP]
OOK	On-Off Keying	[ANALOG], [DIGITAL]
OPT	Option	[LLCP]
OTP	One Time Programmable	[T1T]
QoS	Quality of Service	[NDEF]
P2P	Peer-to-Peer	[ACTIVITY], [PHDC]
PAT	Passive ACK Timeout	[T2T]

PAX	Parameter Exchange	[LLCP]
PBF	Packet Boundary Flag	[NCI]
PC®	Receive Packet Counter	[LLCP]
PC(S)	Send Packet Counter	[LLCP]
PDU	Protocol Data Unit	[ACTIVITY], [CH], [NCI], [DIGITAL], [LLCP], [PHDC]
PEND	PENDING	[ACTIVITY]
PHD	Personal Health Device	[PHDC]
PHDC	Personal Health Device Communication	[PHDC]
PICC	Proximity Integrated Circuit Card	[T3T]
PIN	Personal Identification Number	[BTSSP]
PKI	Public Key Infrastructure	[RTD_SIG]
PSL_REQ (A)	Parameter SeLECTION REQuest with DSI indicating NFC-A	[ACTIVITY]
PSL_REQ (F)	Parameter SeLECTION REQuest with DSI indicating NFC-F	[ACTIVITY]
PTGT	Proprietary Technology Guard Time	[ACTIVITY]
PTYPE	Protocol Data Unit Type	[LLCP]
R	Randomly chosen slot number, NFC-B	[ACTIVITY]
R-APDU	Response APDU	[T4T]
R/W	Reader/Writer	[PHDC]
RATS	Request for Answer To Select	[ACTIVITY]
RC	Request Code	[DIGITAL], [T3T]
RD	Request Data	[ACTIVITY], [DIGITAL], [T3T]
REQU	REQUested	[ACTIVITY]
RF	Radio Frequency	[ACTIVITY], [ANALOG], [DIGITAL], [LLCP], [NCI], [TxT]
RFC	Request For Comments	[BTSSP]
RFU	Reserved for Future Use	[ANALOG], [CH], [DIGITAL], [LLCP], [NCI], [NDEF], [PHDC], [RTD_SP], [RTD_SIG], [RTD_TEXT], [RTD_URI], [TxT]

RLS	ReLeaSe	[ACTIVITY]
RN	Random Nonce	[LLCP]
RNR	Receive Not Ready	[LLCP]
ROM	Read Only Memory	[T1T]
RR	Receive Ready	[LLCP]
RRDD	Reader-Reader Data Delay	[DIGITAL]
RSA	Rivest-Shamir-Adleman encryption algorithm (public key encryption algorithm)	[RTD_SIG]
RTD	Record Type Definition	[CH], [PHDC], [RTD], [RTD_DI], [RTD_SIG], [RTD_SP], [RTD_TEXT], [RTD_URI], [T1T]
RTOX	Response Timeout Extension	[DIGITAL], [LLCP]
RW	Receive Window	[LLCP]
RWA	Read Write Access	[T1T]
RWT	Response Waiting Time	[DIGITAL], [LLCP]
SAP	Service Access Point	[LLCP]
SAR	Segmentation and Reassembly	[NCI]
SC	System Code	[ACTIVITY], [DIGITAL], [T3T]
SDD	Single Device Detection	[ACTIVITY], [DIGITAL], [NCI]
SDP	Service Discovery Protocol	[CH], [LLCP]
SDREQ	Service Discovery Request	[LLCP]
SDRES	Service Discovery Response	[LLCP]
SDU	Service Data Unit	[LLCP], [PHDC]
SDP	Service Discovery Protocol	[BTSSP], [CH]
SEL	SElection	[ACTIVITY]
SENSB_REQ (AFI, N1)	SENS NFC-B REQuest with matching AFI and N equal to 1	[ACTIVITY]
SENSB_REQ (AFI, N>)	SENS NFC-B REQuest with matching AFI and N greater than 1 and if R is greater than 1	[ACTIVITY]
SENSB_REQ (nAFI)	SENS NFC-B REQuest with not matching AFI	[ACTIVITY]
SFGI	Start-up Frame Guard time Integer	[DIGITAL]
SFGT	Start-up Frame Guard Time	[DIGITAL]



SHA-256	Secure Hash Algorithm	[RTD_SIG]
SIG	Special Interest Group	[BTSSP]
SLEEP_AF	SLEEP NFC-A and NFC-F	[ACTIVITY]
SLPV_REQ	SLEEP NFC-V	[ACTIVITY]
SMS	Select Mode Selector	[T5T]
SMS	Short Message Service	[RTD_SP]
SN	Service Name	[LLCP]
SNEP	Simple NDEF Exchange Protocol	[SNEP]
SNL	Service Name Lookup	[LLCP]
SNK	Sink	[BTSSP]
SR	Short Record	[BTSSP]
SSAP	Source Service Access Point	[LLCP]
SSP	Secure Simple Pairing	[BTSSP]
SWIO	Single Wire protocol Input/Output	[NCI]
SYMM	Symmetry	[LLCP]
SoD	Start of Data	[DIGITAL], [T3T]
SoF	Start of Frame	[DIGITAL]
SoS	Start of Sequence	[DIGITAL]
TECH	TECHnology	[ACTIVITY]
T1T	Type 1 Tag	[T1T]
T2T	Type 2 Tag	[T2T]
T3T	Type 3 Tag	[T3T]
T4T	Type 4 Tag	[T4T]
T5T	Type 5 Tag	[T5T]
T5T_Area	Type 5 Tag Area	[T5T]
T <sub>ID</sub>	Initial Delay Time	[ACTIVITY]
TID	Transaction Identifier	[LLCP]
TLV	Type-Length-Value	[LLCP], [RTD-DI], [T1T], [T2T], [T4T], [T5T],
TMS	Tag Memory Size	[T1T]
TNF	Type Name Format	[BTSSP], [CH]
TO	Timeout	[LLCP]
TRFW	RF Waiting Time	[ACTIVITY]
TSN	Time Slot Number	[DIGITAL], [T3T]

UART	Universal Asynchronous Receiver/Transmitter	[NCI]
UI	User Interface	[BTSSP]
UI	Unnumbered Information	[LLCP]
UID	NFC-V Unique Identifier	[ACTIVITY], [DIGITAL]
UID	Unique Identifier	[BTSSP], [T1T]
URI	Uniform Resource Identifier	[CH], [LLCP], [NDEF], [RTD], [RTD_SIG], [RTD_SP], [RTD_TEXT], [RTD_URI], [T1T]
URL	Uniform Resource Locator (a special case of a URI)	[RTD_SIG], [RTD_SP], [RTD_TEXT] [RTD_URI]
URN	Uniform Resource Name. A particular type of URI that is defined in [RFC 8141].	[RTD], [RTD_SIG], [RTD_URI]
UTF-8	8-bit Universal Character Set Transformation Format	[RTD_DI]
UUID	Universal Unique Identifier [RFC4122]	[BTSSP], [RTD_DI]
V(R)	Receive State Variable	[LLCP]
V(RA)	Receive Acknowledgement State Variable	[LLCP]
V(S)	Send State Variable	[LLCP]
V(SA)	Send Acknowledgement State Variable	[LLCP]
VERSION	Version Number	[LLCP]
VNo	Version Number	[T1T], [T2T], [T4T]
WKS	Well-Known Service List	[LLCP]
WT	Waiting Time, parameter to code RWT	[DIGITAL]
WTX	Waiting Time Extension	[LLCP]

## A. Revision History

Table 1 outlines the revision history of the Technical Committee Glossary.

**Table 1: Revision History**

<b>Document Name</b>	<b>Revision and Release Date</b>	<b>Status</b>	<b>Change Notice</b>	<b>Supersedes</b>
Technical Committee Glossary	1.0 24 Jan. 2018	Final	Initial version	
Technical Committee Glossary	1.0 20 Apr. 2018	Final	Alignment with PHDC 1.2	1.0 24 Jan. 2018
Technical Committee Glossary	1.0 9 May 2018	Final	Alignment with CH 1.4	1.0 20 Apr. 2018