NFC card type

[NFC] NfcA/NfcB/NfcF/NfcV/IsoDep/Ndef/Mifare/Felica/Pboc/ISOxxxx

If you are just getting started with NFC, you will be confused by these inexplicable abbreviations. What do so many proper noun abbreviations do? What is it? !

I have done a little research these past few days. It is my personal understanding to record it here. If there are discrepancies, please point out!

Let's talk about the common scenarios of NFC first: 1. Card reading, 2. Card writing, 3. Sharing content

Let's talk about ISO xxxx again. Everyone should know that ISO is the International Organization for Standardization. That means that for the peace of the world and the unification of the world, a rule that everyone agrees on needs to be agreed upon. Everyone should do things in accordance with this rule.

Common ISO standards related to NFC are:

ISO 14443	RFID card standard (non-contact IC card), which has many sub-standards
ISO 7816	Contact IC card standard
ISO 15693	Some kind of RF card standard, no information is found

ISO 18092	NFC standard

That is to say, if I want to implement an international RFID card, I need to meet the ISO14443 standard.

Let's talk about the solutions that are commonly used in RF cards: Philips' Mifare, Sony's Felica, and China's Bank of China's Pboc.

There are many versions of Mifare cards (see http://en.wikipedia.org/wiki/MIFARE for details). Common versions are MIFARE Classic and MIFARE DESFire, which are in accordance with ISO 14443-3 Type A and ISO 14443-4 Type A respectively to fulfill.

Felica card wanted to pass ISO 14443 Type C certification before, but failed for some reason, so he made his own set of standards called JIS: X6319-4

Pboc is a common payment card in China. Public transportation in most cities is based on the Pboc solution. According to my personal understanding, the Pboc card uses contact or non-contact IC cards based on the ISO7816 contact IC card standard.

Finally, we explain the common data format of NFC: NfcA/NfcB/NfcF/NfcV/IsoDep/Ndef, first look at a table:

Table 1. Supported tag technologies

Class	Description
TagTechnology	The interface that all tag technology classes must implement.
NfcA	Provides access to NFC-A (ISO 14443-3A) properties and I/O operations.
NfcB	Provides access to NFC-B (ISO 14443-3B) properties and I/O operations.
NfcF	Provides access to NFC-F (JIS 6319-4) properties and I/O operations.
NfcV	Provides access to NFC-V (ISO 15693) properties and I/O operations.
IsoDep	Provides access to ISO-DEP (ISO 14443-4) properties and I/O operations.
Ndef	Provides access to NDEF data and operations on NFC tags that have been formatted as NDEF.
NdefFormatable	Provides a format operations for tags that may be NDEF formattable.

Table 2. Optional supported tag technologies

Class	Description
MifareClassic	Provides access to MIFARE Classic properties and I/O operations, if this Android device supports MIFARE.
MifareUltralight	Provides access to MIFARE Classic properties and I/O operations, if this Android device supports MIFARE.

The meaning of this table means that the data format in different chips (solutions, implemented by different standards) is different. For example, the MIFARE Classic data format we mentioned earlier is NfcA, and the MIFARE DESFire data format is IsoDep. The second-generation ID card we use is NfcB, Felica uses NfcF, Texas Instruments 'VicinityCard uses NfcV, and Android file sharing is a practical Ndef format to transfer data.

Table2 is actually a supplement to table1, optional.

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