* Works within 4cm or less
* **NDEF** - NFC Data Exchange Format. The NFC Data Exchange Format (NDEF) specification defines a message encapsulation format to exchange information, e.g. between an NFC Forum Device and another NFC Forum Device or an NFC Forum Tag.
* NDEF is a lightweight, binary message format that can be used to encapsulate one or more application-defined payloads of arbitrary type and size into a single message construct. Each payload is described by a type, a length, and an optional identifier.
* Android supports most NDEF formats which is developed by [NFC Forum](http://www.nfc-forum.org/home)
* Phone should be unlocked to process nfc tasks
* NDEF data is encapsulated inside a message ([NdefMessage](http://developer.android.com/reference/android/nfc/NdefMessage.html)) that contains one or more records ([NdefRecord](http://developer.android.com/reference/android/nfc/NdefRecord.html))
* When an Android-powered device scans an NFC tag containing NDEF formatted data, it parses the message and tries to figure out the data's MIME type or identifying URI. To do this, the system reads the first [NdefRecord](http://developer.android.com/reference/android/nfc/NdefRecord.html) inside the [NdefMessage](http://developer.android.com/reference/android/nfc/NdefMessage.html) to determine how to interpret the entire NDEF message (an NDEF message can have multiple NDEF records).
* **Tag dispatch system**

1. Parsing the NFC tag and figuring out the MIME type or a URI that identifies the data payload in the tag.
2. Encapsulating the MIME type or URI and the payload into an intent. These first two steps are described in [How NFC tags are mapped to MIME types and URIs](http://developer.android.com/guide/topics/connectivity/nfc/nfc.html#ndef).
3. Starts an activity based on the intent. This is described in [How NFC Tags are Dispatched to Applications](http://developer.android.com/guide/topics/connectivity/nfc/nfc.html#dispatching).

* In a well-formed NDEF message, the first [NdefRecord](http://developer.android.com/reference/android/nfc/NdefRecord.html) contains the following fields:

1. **3-bit TNF (Type Name Format) -** Indicates how to interpret the variable length type field.
2. **Variable length type -** Describes the type of the record. If using [TNF\_WELL\_KNOWN](http://developer.android.com/reference/android/nfc/NdefRecord.html#TNF_WELL_KNOWN), use this field to specify the Record Type Definition (RTD).
3. **Variable length ID -** A unique identifier for the record. This field is not used often, but if you need to uniquely identify a tag, you can create an ID for it.
4. **Variable length payload -** The actual data payload that you want to read or write. An NDEF message can contain multiple NDEF records, so don't assume the full payload is in the first NDEF record of the NDEF message.

* Android-powered devices with NFC simultaneously support three main modes of operation:

1. **Reader/writer mode**, allowing the NFC device to read and/or write passive NFC tags and stickers.
2. **P2P mode**, allowing the NFC device to exchange data with other NFC peers; this operation mode is used by Android Beam.
3. **Card emulation mode**, allowing the NFC device itself to act as an NFC card. The emulated NFC card can then be accessed by an external NFC reader, such as an NFC point-of-sale terminal.