

Ecma/TC32-TG19/2005/013 (supersedes 2004/028)

Near field communication (NFC)

Rue du Rhône 114- CH-1204 Geneva - T: +41 22 849 6000 - F: +41 22 849 6001 - www.ecma-international.org



- Easy to use wireless communication interface for the last few centimeters
- Easy to use target selection, by simply holding two devices close to each other

NFC is as easy as....



... a touch



Wireless Short Range Communication Technology

- Based on RFID technology at 13,56 MHz
- Operating distance typical up to 10 cm
- Compatible with today's field proven contactless RFID technology
- Data exchange rate today up to 424 kilobits/s





Wireless short range communication technology

- *NFC is designed for short distance wireless communication*
- Allows intuitive initialization of wireless networks
- NFC is complementary to Bluetooth and 802.11 with their long distance capabilities
- NFC also works in dirty environment
- NFC does not require line of sight
- Easy and simple connection method
- Provides communication method to non-self powered devices



Near Field Communication Applications





Finalised NFC work items

ECMA-340: NFCIP-1 Interface and protocol (ISO/IEC 18092)

Key points:

- The NFC communication is based on an inductive RF link on 13.56 MHz
- Active and passive NFC mode at different transfer speeds from 106 to 424 kbps
- Backward compatibility with RFID systems
- Allows communication between
 - Two powered devices
 - Powered and non self-powered devices
- Standardization of
 - Communication signal interface
 - General protocol flow





Finalised NFC work items

ECMA-352: NFCIP-2 Interface and protocol (ISO/IEC 21481)





ECMA-356: NFCIP-1 – RF interface Test Methods (ISO/IEC 22536)

Key points:

- Basic standard to ensure interoperability on the RF interface for ECMA-340 devices
- Description of test equipment and procedures to perform interoperability tests on the RF interface
- Description of the tests to be performed on Initiator and Target side



ECMA-362: NFCIP-1 - Protocol Test Methods (ISO/IEC 23917)

Key points:

- Basic standard to ensure interoperability of ECMA-340 devices for:
 - the initialization
 - the single device detection
 - the transmission protocol
- Description of test equipment and procedures to perform tests
- Description of the tests to be performed on Initiator and Target side



- A mapping of NFC to other communication protocols including the Internet Protocol (IP), GSM and Bluetooth
 - Advanced Logical Link Control with addressing and segmentation support
- Support for Data Link and end-to-end security and key management
- Air-to-wired interface specification
- Application extensions in NFCIP-1
 - Power control as an example application extension



The following Ecma International member companies have nominated representatives to TC32-TG19:

• Avaya-Tenovis, Ericsson, Hitachi/Mitsubishi Electric, Hewlett Packard, Innovision, Philips, Samsung, Siemens, Sony, Texas Instruments

Convenor: Reinhard Meindl , Philips Semiconductors



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