



# NFC – Near Field Communications

Бесконтактные технологии, платежи и сервисы

Создание единой экосистемы

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Технология NFC – следующее поколение технологий беспроводной связи, основанных на физическом принципе взаимной индукции.

Создана на основе существующих стандартов и технологий бесконтактных смарт-карт:

- Несущая частота 13,56 МГц
- Дальность действия до 10 см
- Скорость передачи данных 106, 212, и 424 кбит/с
- Автоматическая инициация сеанса связи
- Конфигурирование канала связи менее 0,1 секунды

**Технология NFC совместима:**

- ISO 14443
- Mifare
- Felica



# What is NFC?

## **Reader/Writer mode**

In Reader/Writer mode an NFC device has the ability to read data from, and write data to, Contactless Smartcards (sometimes called 'tags'), this mode of operation may be used to read smartposters, information points, and cards containing links to web sites or other online resources.

Tags can also be used to store information needed to pair two devices which use such as WiFi or Bluetooth, in which case an NFC device can read this information and immediately pair with another device.

## **Card Emulation mode**

In Card Emulation mode an NFC device is able to behave like a Contactless Smartcard such as a payment card, travel ticket, or access control card.

An NFC device may have the ability to emulate more than one card, so your NFC device may emulate both a payment card and a travel card.

## **Peer to Peer mode**

Peer to Peer mode provides a balanced communication link between two devices where both devices are able to initiate communications when required, the communications link allows data flow in a full duplex manner (bi-directional) similar to Asynchronous balanced mode. This mode is typically used to allow two NFC devices to exchange data and to use wide spread protocols such as TCP/IP and OBEX etc. Peer to Peer mode may also be used to synchronise PDAs and mobile phones etc. with other devices.



# *What is NFC?*

- Near Field Communications (NFC) is a short range wireless technology, designed to provide simple communication between enabled devices.
- NFC operates at 13.56MHz over a typical range of a few centimeters.
- **NFC offers three main operating modes, these are:**
  - Reader/Writer
  - Card Emulation
  - Peer to Peer
- NFC will dramatically simplify the way consumer devices interact with one another.
- Many of the world's leading device makers, semiconductor producers, mobile network operators and applications companies support and encourage the use of NFC

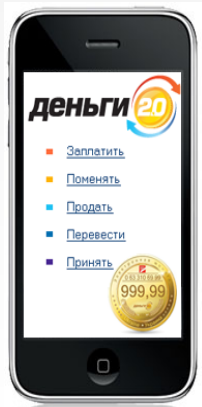


## Secure Element (SE)

- More than one card (SE) in one device!



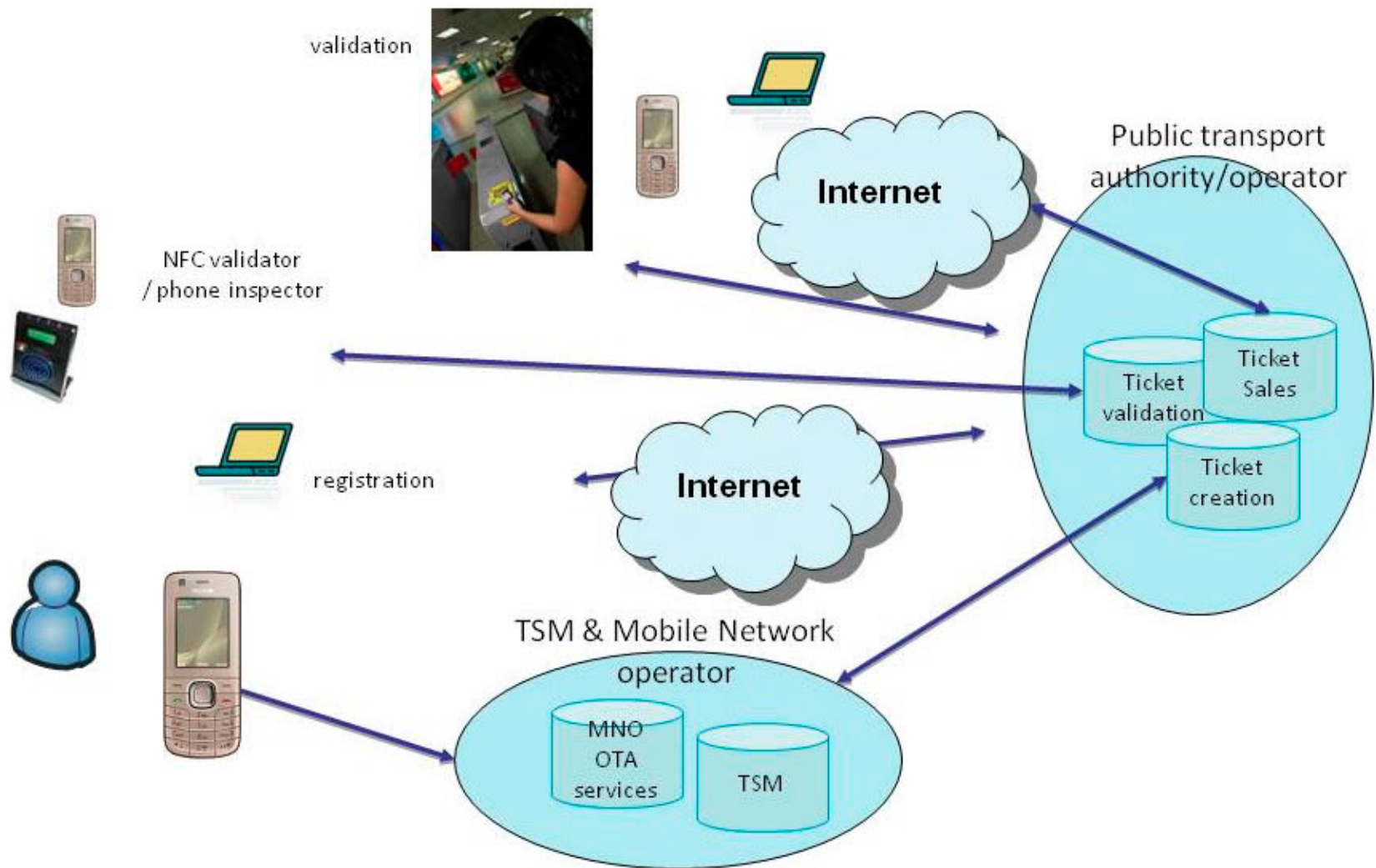
# Wide device range available







# Public transport ticketing with NFC phone







# Examples of NFC in Transport

- London – Testing Transport Ticketing on NFC Mobile Phones
- Germany – Touch&Travel Pilot Program
- San Francisco – NFC Mobile Payment for Rapid Transit
- Frankfurt – RMV-HandyTicket with NFC for Public Transportation



# Major Players

- Visa / MC – PayWave/PayPass
- Google Wallet – Mastercard
- NXP
- Barclays Bank

2 standarts:

Felica – Asia

Mirare – America, Europe



# Ukraine NFC hardware and service provider

## **Service provider:**

- Author (ООО Автор)
- Payment Systems, LLC
- MoneXy (Bank Contract)

## **Hardware distributor:**

- Author (ООО Автор)
- Infobezpeka



Thank You!  
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