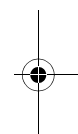
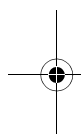
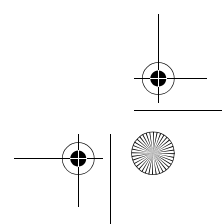
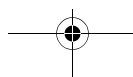
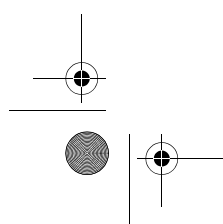


## User Guide for Nokia NFC shell for Payment and Ticketing for Nokia 3220

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0903611  
Issue 1



#### DECLARATION OF CONFORMITY

We, NOKIA CORPORATION declare under our sole responsibility that the product CC-239D is in conformity with the provisions of the following Council Directive: 1999/5/EC.  
A copy of the Declaration of Conformity can be found at  
[http://www.nokia.com/phones/declaration\\_of\\_conformity/](http://www.nokia.com/phones/declaration_of_conformity/).

**CE 168**

FCC ID: PYAR3  
IC: 661V-R3



The product must be taken to separate collection at the product end-of-life. This applies to your device but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste.

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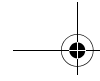
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Covered by one or more of the following U.S. patents: 6,790,396; 6,773,644; 6,816,083; 6,810,238; 6,771,981; 6,522,520; 6,487,397; 6,456,487. Readers attention is directed to the following U.S. Patents which may cover future implementations of the product described in this user guide: 6,594,472; 6,563,927; 6,608,996, 6,466,299, 6,327,153. Other patents pending.



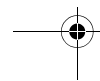
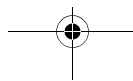
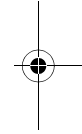
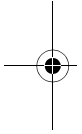
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FOR YOUR SAFETY

## FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous or illegal.  
Read the complete user guide for further information.



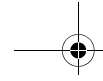
**QUALIFIED SERVICE**

Only qualified personnel may repair this device.



**WATER-RESISTANCE**

Your device is not water-resistant. Keep it dry.



## Overview

# 1. Overview

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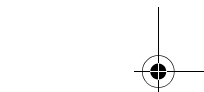
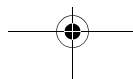
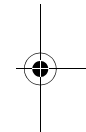
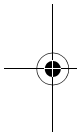
With the Nokia NFC shell for payment and ticketing, you can conduct local transactions with your mobile phone by touching a point of sales device or a ticket gate. Your payment credentials, such as a credit card and/or a transport ticket are securely stored in the integrated smart card chip. For information on the availability of and access to smart card applications, please consult your mobile operator and service provider.

Nokia NFC shell for payment and ticketing utilizes the existing contactless point-of-sales and mass transport ticketing infrastructure.

Nokia NFC shell for payment and ticketing includes a Java™ application called Service Discovery and four RFID tags. By touching Radio Frequency Identification (RFID) tags, you can launch the service shortcut contained in the tag (call dialling, web browsing, and SMS sending).

You can create your own service shortcuts and write the service shortcuts stored in your phone memory into the tags. You can also give the service shortcuts stored in your phone to another Nokia 3220 equipped with the Nokia NFC shell.

Nokia NFC shell for payment and ticketing is designed to be used in the Nokia 3220 phone that is available separately. For more information about the Nokia 3220 phone, see [www.nokia.com](http://www.nokia.com).



## Overview



**Warning:** Your device and its enhancements may contain small parts. Keep them out of reach of young children.  
To use any features in this device, other than the alarm clock, the device must be switched on. Do not switch the device on when wireless device use may cause interference or danger.



**Note:** This user guide contains information and instructions for Nokia NFC shell for payment and ticketing. For instructions on how to use your Nokia 3220 phone, see the Nokia 3220 user guide.

For examples of how you can use your Nokia NFC shell for payment and ticketing, see [www.nokia.com/nfc](http://www.nokia.com/nfc).

### ■ Smart card chip

The Nokia NFC shell for payment and ticketing includes an integrated smart card chip for storing payment and ticketing applications. The smart card chip can contain several smart card applications such as:

- Debit and credit cards
- Event tickets
- Public transport tickets
- Loyalty cards

## Overview

### ■ NFC reader and writer

Nokia NFC shell for payment and ticketing contains the NFC reader and writer that enables you to read tags and to write into them with your Nokia 3220 phone. The NFC reader and writer is located inside the lower part of the back cover of the shell (dark area in the picture).



**Note:** The Nokia NFC shell for payment and ticketing is only compatible with the Nokia 3220 phone. Do not try to use it with other phones.

The NFC reader and writer in the Nokia NFC shell for payment and ticketing takes its power from the phone battery. Using the RFID reader may slightly increase the phone battery consumption.

### ■ What are RFID and NFC?

#### RFID

RFID technology use radio waves to automatically identify individual objects. The most common method is to store a serial number that identifies the object on an RFID tag, and attach the tag to the object.

The RFID tag is able to transmit the information it contains to an RFID reader device. The RFID reader is a short-range device (reading range



## Overview

0–5 cm) and it converts the radio waves returned from the RFID tag into a format that can then be passed on to an application in the phone.

To transmit data from the RFID tag to the RFID reader, Nokia NFC shell for payment and ticketing uses the radio frequency 13.56 MHz, which is the most widely used globally available frequency for RFID.

### NFC

NFC (Near Field Communication) is a short-range radio frequency technology that evolved from a combination of contactless radio frequency identification (RFID) and interconnection technologies. By emitting a short-range radio signal, the NFC device supplies power to an otherwise inactive tag, allowing the device to read the tag or write data to the tag's memory. Operating over a distance of only very few centimetres, it allows users to read small amounts of data from tags, as well as to communicate with other devices, by a simple touch.

When touching a tag, the NFC device reads the data stored on the tag, and initiates the appropriate action after the user's confirmation. For example, it will open a web page, call a favourite number, or send an SMS. Small items such as web links can also be shared by touching another NFC device.

### ■ Service Discovery application

The Nokia NFC shell for payment and ticketing contains a preinstalled Service Discovery application, and the Cover browser application. When you install the Nokia NFC shell for payment and ticketing, the Cover browser application is automatically downloaded to the phone, after


### Installation

which you can use it to install the Service Discovery application. The Service Discovery application is used for accessing services with your Nokia 3220 phone.


The Service Discovery application enables you to read shortcuts from tags, save shortcuts to phone memory, write shortcut information into a tag, and give shortcuts to another Nokia 3220 phone with Nokia NFC shell for payment and ticketing.

### ■ Tags

Nokia NFC shell for payment and ticketing comes with four tags. The tags are used for reading and writing service shortcut information. A service shortcut is either call dialling, web browsing, or SMS sending. You can create your own service shortcuts and write and rewrite them into the tags.

 **Note:** The tags may set off the Electronic Article Surveillance (EAS) alarms used, for example, for theft-protection in shops.

## 2. Installation

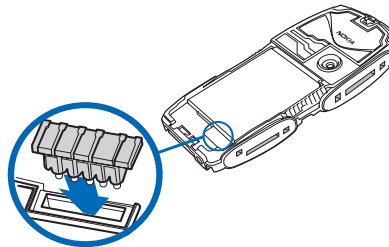
 **Note:** Before removing the cover, always switch off the power from your phone and disconnect the charger and any other device. Avoid touching electronic components while changing the covers. Always store and use the device with the covers attached.

## Installation

For general instructions on changing the back and front cover of your Nokia 3220 phone, see the user guide that came with it.

To install the Nokia NFC shell for payment and ticketing and its connector:

1. Remove the original back cover of your Nokia 3220 phone, remove the protective cover from the connector's slot, and insert the connector supplied with the shell into the corresponding slot in the phone.
2. Install the front cover of the Nokia NFC shell for payment and ticketing.
3. Install the back cover of the Nokia NFC shell for payment and ticketing.
4. Switch on the phone, and make sure that the time and date are set correctly in the phone.



The shell automatically installs the Cover browser application in the [Applications > Collection](#) menu in your phone. The shell also contains the Service Discovery application that you can now install. Installation may take several minutes.



#### Installation

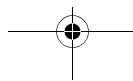
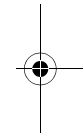
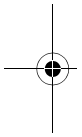
If you do not install the Service Discovery application when installing the Nokia NFC shell for payment and ticketing, you can install it later using the Cover browser application. This is done as follows:

5. Select **Menu** > **Applications** > **Collection** > **Select application** > **Cover browser** > **Open**.
6. Select **Service Discovery**. The application is downloaded into the Collection submenu in the phone. Downloading may take a few minutes.

#### ■ Check the phone's network settings

Ensure that your Nokia 3220 phone has the correct settings for using SMS and GPRS.

For information on the availability of an SMS or a GPRS service, related fees, and appropriate settings, contact your network operator or service provider.



### 3. Using payment and ticketing features

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Nokia NFC shell for payment and ticketing does not contain any factory-installed smart card applications, such as bus tickets or credit cards. The availability of smart card applications depends on individual service providers, for example, banks and mass transport providers and/or mobile operators.

You can download smart card applications to your phone over the mobile network or via an NFC connection. After installing the application, you can use your NFC shell for payment and ticketing as your payment card or ticket. For information on how to obtain smart card applications, please consult your service provider and mobile operator.

### 4. Service discovery tags

---

#### ■ Tag features

A tag can contain a shortcut which can be an SMS-based service, a URL of an Internet-based service, or a phone number of a telephone service.

For service discovery, Nokia NFC shell for payment and ticketing reads from and writes to non battery-powered (passive) tags. Use the following tag types: MIFARE® Standard, MIFARE® Standard 4k and MIFARE® Ultralight.

#### Service discovery tags


Nokia NFC shell for payment and ticketing sales package contains four tags. If you need more tags, please contact your vendor for compliant MIFARE® tags.

#### ■ Tag placement

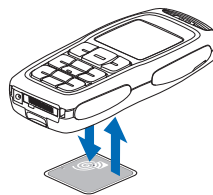
You can place tags on any non-conductive material, such as glass, plastic, or wood.

Do not place tags on metal or other conductive surfaces, as it may prevent the RFID reader from being able to read the tags.

#### ■ Touch tags with RFID reader

The RFID reader is located on the back of the lower part of the Nokia NFC shell for payment and ticketing, inside the area marked with .

When using the RFID reader, touch the tag with that area at close proximity. The reading range is typically 0–5 cm, depending on the tag type and size.



#### ■ Create your own service shortcuts

With the Service Discovery application, you can create your own service shortcuts that you can use as you would use a service shortcut that you have read from a tag.

## 5. Service Discovery application

### ■ Start and close the application



**Note:** If the application is not active when you touch a tag with the RFID reader, the phone automatically starts the application.


To manually start an application:

1. Press **Menu** > **Applications** > **Collection** > **Select application** > **Service Discovery** > **Open**.  
*Please touch tag* is displayed.



**Note:** If you receive an incoming call while using an application, you can answer the call normally and continue using the application after ending the call.

You can view basic information about the application in the *Please touch tag* view: select **Options** > **About**.

To close the application: in the *Please touch tag* view either press **Exit** or press .

### ■ Change application language

You can change the user interface language of the Service Discovery application by changing the language in your Nokia 3220 phone.

The supported languages are English, German, French, Spanish, Italian, Finnish, Norwegian, Polish, Danish, Dutch, Portuguese, and Swedish. If an

### Service Discovery application

unsupported language is selected as the phone language, the default language English is used for the application.

### ■ Read, view, and save a shortcut

Touching a tag with the RFID reader launches a shortcut contained in the tag.

To read a tag:

1. Touch the tag with the RFID reader.

The phone flashes green lights on the sides of the cover and displays the shortcut defined in the tag. If the Service Discovery application is not on when reading a tag, the RFID shell recognises the presence of a tag and launches the application.



**Note:** If the tag contains no information the phone flashes the red lights on the sides of the cover and gives an error message: *No shortcut on tag*, and prompts you to select a service shortcut to write to the empty tag: *Please select shortcut to write*. If the tag is empty and you don't yet have any shortcuts stored in your phone's memory, the phone prompts you to create a shortcut: *Please create a shortcut for writing*. If the empty tag is write-protected, the phone indicates this with the message: *Tag is write protected*.

2. Depending on the type of the shortcut, the phone either makes a phone call or sends an SMS to the predefined phone number, or connects to the predefined web site over a GPRS connection.



### Service Discovery application

Before completing the function defined in the shortcut, the phone asks you for a confirmation. To confirm, press **OK**, to decline, press **Cancel**.

3. To view the shortcut you read, perform step 1 and select **Options > Details**.
4. To save the shortcut you read into the phone memory, perform step 1 and select **Options > Details > Save**.

### ■ Create and edit a shortcut

You can create new shortcuts, and edit shortcuts saved in the phone memory. In the latter case, the old shortcut information and all related log data is deleted.

#### To create a shortcut:

1. In the *Please touch tag* view, select: **Shortcu... > Add**.

The options for the shortcut types you can create are displayed. If you already have shortcuts in your phone memory, you start creating new shortcuts by selecting **Shortcu... > Options > Add** in the *Please touch tag* view.

2. Select the type of shortcut you wish to create.
3. Enter the information for all the shortcut fields:

Having edited a field, press **OK**. If you wish to move back to a field you have already edited, select **Options > Back**.

- **Call** - enter the name of the shortcut and the number to which the phone call is to be made.

#### Service Discovery application

- **URL** – enter the name of the shortcut and the URL.
- **SMS** – enter the name of the shortcut, the number to which the SMS is to be sent, and the SMS text content.

When defining phone numbers for the **Call** and **SMS** functions, you can also use a phone number defined in your phone's **Contacts**:

1. When editing the phone number field, select **Options > Search**.
2. Select a contact on the list and press **Select**.
3. When the phone number is displayed, press **OK**.

If you later edit or delete the contact, this does not affect the information stored in the application in any way.

#### To edit a shortcut:

4. To edit a shortcut; in the *Please touch tag* view, select **Shortcutu... > Options**, scroll to the shortcut you want to edit and select **Edit**.
5. Edit the fields and select **OK**.

When editing the shortcut information, if you wish to return to the previous information field, select **Options > Back**. Selecting **Options > Back** in the first information field takes you back to the **Shortcutu...** field and restores the shortcut information to what it was before editing. If you wish to change the phone function for the shortcut, you must define the shortcut again.

## Service Discovery application

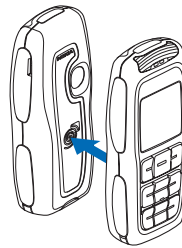
### ■ Give a shortcut

To give a shortcut into a compatible phone:

1. In the *Please touch tag* view, select *Shortcu....*
2. Scroll to the shortcut you want to give and select *Options > Give*.

The phone displays the text: *Please touch other phone*.

3. Hold your phone 0–3 centimetres from the shortcut recipient's phone so that the NFC logos face each other (see picture).  
If giving a shortcut succeeded, the phone displays the message: *Giving successful*.  
If giving a shortcut failed, the phone displays an error message.



### ■ Launch a shortcut and write into a tag

To launch a shortcut:

1. In the *Please touch tag* view, select *Shortcu....*
2. Scroll to the shortcut you want to launch and select *Launch*.  
The phone asks for a confirmation to perform the shortcut function. To confirm, press *OK*, to decline, press *Cancel*.

To write into a tag:

3. To write shortcut into a tag, perform step 1, scroll to the shortcut which you want to write, and select *Options > Write*.  
The phone displays the text: *Please touch tag*.

#### Service Discovery application

4. Hold your phone 0-3 centimetres from the tag into which you want to write. If writing the shortcut succeeded, the phone displays the message: *Writing successful*. If the writing failed, the phone displays an error message. You can overwrite the shortcut information in the tags you have created as many times as you wish.

#### ■ Delete a shortcut

To delete a shortcut:

1. In the *Please touch tag* view, select *Shortcu....*
2. Select the shortcut you wish to delete and select *Options > Delete*. If you wish to delete all shortcuts, select *Options > Delete all*.
3. When the phone asks you for a confirmation, press *OK*.

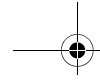
Information about the shortcut and all related log data is deleted.

#### ■ View the log

In the Service Discovery application log, you can view the phone calls that have been made, the SMS messages that have been sent, and the web sites that have been connected to through the application. The log stores the 20 most recent log events.

To view the log:

1. In the *Please touch tag* view, select *Options > Log*.  
A list of the events logged for the tag is displayed. Events are listed in chronological order, starting with the most recent event.

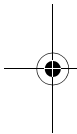


## Care and maintenance

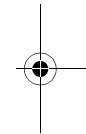


2. To delete a logged event, select the log event you wish to delete and select **Options > Delete**.
3. If you wish to delete all logged events, select **Options > Delete all > OK**.
4. To view detailed information about a logged event, select the event on the list and press **Details**.

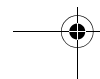
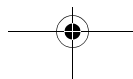
## Care and maintenance



Your device is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you protect your warranty coverage.



- Keep the device dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the device in dusty, dirty areas. Its moving parts and electronic components can be damaged.
- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.
- Your device may not fully function in temperatures under -15 Celsius and over + 40 Celsius.
- Do not attempt to open the device other than as instructed in this guide.





#### Care and maintenance

- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Do not paint the device. Paint can clog the moving parts and prevent proper operation.
- Use a soft, clean, dry cloth to clean any light sensors lenses.

If the device is not working properly, take it to your nearest authorized service facility for service.

#### FCC/INDUSTRY CANADA NOTICE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by Nokia may void the user's authority to operate the equipment.

Your device may cause TV or radio interference (for example, when using a device in close proximity to receiving equipment). The FCC or Industry Canada can require you to stop using your device if such interference cannot be eliminated. If you require assistance, contact your local service facility.

