Nokia N-Gage™ Mobile Game Deck FAQ

Version 2.0; March 13, 2003

Games

NOKIA

Contents

Change History

05 February 2003	V1.0	Initial document release
13 March 2003	V2.0	Added additional information on audio and information drawn from the consumer-facing FAQ.

Disclaimer:

The information in this document is provided "as is," with no warranties whatsoever, including any warranty of merchantability, fitness for any particular purpose, or any warranty otherwise arising out of any proposal, specification, or sample. Furthermore, information provided in this document is preliminary, and may be changed substantially prior to final release. This document is provided for informational purposes only.

Nokia Corporation disclaims all liability, including liability for infringement of any proprietary rights, relating to implementation of information presented in this document. Nokia Corporation does not warrant or represent that such use will not infringe such rights.

Nokia Corporation retains the right to make changes to this specification at any time, without notice. The phone UI images shown in this document are for illustrative purposes and do not represent any real device.

License:

Nokia N-Gage™ Mobile Game Deck FAQ

Version 2.0; March 13, 2003

1. Basic Questions

1.1 When will the Nokia N-Gage™ mobile game deck be available?

The Nokia N-Gage device will be available in the fourth quarter of 2003.

1.2 How much will the Nokia N-Gage mobile game deck cost?

The precise launch price has not yet been determined. As with other mobile devices, pricing may vary at the discretion of the mobile operations that offer the Nokia N-Gage mobile game deck.

1.3 In what markets will it be available?

It will be available where GSM 900/1800/1900 networks are available; in other words, on five continents, excluding China.

1.4 Where will it be possible to purchase the Nokia N-Gage game deck?

It will be available at the same points of sale as other Nokia mobile devices: in game shops and regular mobile phone delivery channels.

1.5 In what languages will it be available?

There will be three different languages in each device: English and two other languages. The languages are: English, German, French, Swedish, Finnish, Danish, Norwegian, Dutch, Italian, Spanish, Portuguese, Greek, Polish, Russian, Czech, Hungarian, Turkish, Bulgarian, Romanian, Estonian, Croatian, Icelandic, Latvian, Lithuanian, Serbian, Slovak, Slovene, Ukrainian, American English, American Spanish, Canadian French, and Brazilian Portuguese.

1.6 Is this a mobile phone or a portable handheld console?

The Nokia N-Gage device is a mobile game deck, supporting true multiplayer wireless game play through both Bluetooth and GSM/GPRS. It also supplies all the features expected on a mobile phone, as well as playing MP3s and FM radio. It supports both MMS and e-mail.

1.7 What are the commonalities between the Nokia N-Gage game deck and Series 60 phones?

The Nokia N-Gage mobile game deck is built on the same underlying technologies as Series 60 phones: Symbian OS and Series 60 extensions.

1.8 What are the differences between the Nokia N-Gage game deck and Series 60 phones?

The Nokia N-Gage mobile game deck has some gaming enhancements, like an eight-way rocker pad (plus "press"). Also, the Nokia N-Gage device has copy protection for games provided on a memory card. The Nokia N-Gage game deck has other features that are not provided on Series 60 phones; currently, this information is confidential, but shared with authorized Nokia N-Gage mobile game deck developers.

2. Hardware

2.1 How fast is the Nokia N-Gage game deck's processor?
It is a 104 MHz ARM925 MCU.

2.2 How much memory is available to applications?
The amount of free memory available to applications depends on what is installed on the Nokia N-Gage mobile game deck. Game data can be drawn from the memory card during play, so the full memory space of the card can be used.

2.3 How big is the memory card?
The Nokia N-Gage mobile game deck games come on memory cards that are 8 MB in size. Cards up to 128 MB in size are also available, but their use requires special authorization from Nokia. Game cards are read-only, but writable memory cards are also available to Nokia N-Gage game deck owners, allowing them to store music or other large files on the device.

2.4 How large is the display? What color depth does it provide? How many frames per second can it display?
The display is 176 x 208 pixels in size. It supports 4,096 colors (12 bits). The maximum frame rate is 30 frames per second.

2.5 Is the display backlit? Can it be turned off and on by the player?
Yes to both questions. As with other Series 60 devices, the default behavior is that the backlighting comes on when the device is in use, and turns off after a period of inactivity. However, applications can turn the backlighting off or on.

2.6 Does the Nokia N-Gage game deck have additional graphics hardware?
No. There is no graphics co-processor in the Nokia N-Gage mobile game deck. The Nokia N-Gage device has a relatively speedy CPU for a mobile device (104 MHz ARM925).

2.7 What input controls are available to game developers?
On the left side of the device, there is an eight-directional rocker (which can also be pushed). On the right side of the device, there is a T9 keyboard. The 5 and 7 keys are raised, making it easier for a player's thumb to find them. These keys (and the rocker) will be the primary keys used during fast-action game play, although four additional keys in the T9 keypad and two soft keys can be used as well.

The device also has End and Talk keys, which will be familiar to developers for mobile phones. These keys are not directly usable by a game, nor are the three special-purpose multimedia buttons below the rocker.

2.8 Does the device support multiple simultaneous key presses?
Yes, it does. Thus a player can "chord," triggering simultaneous events such as movement and fire.

2.9 What are the Nokia N-Gage game deck's audio capabilities?
The Nokia N-Gage mobile game deck supports the following formats:
.wav: 8- and 16-bit PCM, aLaw, _Law, IMA ADPCM, GSM 6.10 FR .au: same formats

It also supports AMR format, which stores compressed speech effectively, and can be used by games for spoken dialog. MIDI (including SP-MIDI) is supported, but the use of MIDI by games is not recommended, as the MIDI engine affects game performance. The Nokia N-Gage game deck supports MP3 decode and AAC encode/decode, as well as polyphonic ring tones. It also incorporates an FM radio.

2.10 What is the Nokia N-Gage game deck's battery life?

As with mobile phones, the battery life is much longer on stand-by than when the device is in active use. Battery life is comparable to that of other Series 60 devices. During continuous game play, battery life will be three to six hours, depending on how processor-intensive the game is and how frequently it uses Bluetooth, the GSM/GPRS network, or both.

2.11 Can several applications run simultaneously?

Yes. For example, when you play a game, you can answer a phone call and then continue the game, or you can play a game and listen to the radio at the same time.

2.12 Can the Nokia N-Gage game deck connect to a PC/laptop?

The Nokia N-Gage game deck can connect to a compatible PC or laptop via Bluetooth connection for calendar synchronization and application download, and USB cable for music and other file download to a memory card. The device will ship with PC Suite software for connection to a PC or laptop, as well as Nokia Audio Manager software to transfer and manage music files. These applications run on a PC or laptop under Windows 98, Windows 2000, Windows ME, and Windows XP.

2.13 What message types does the Nokia N-Gage game deck support?

SMS, MMS, e-mail, and Smart Messages are supported.

2.14 Can video clips be played/recorded/sent with the Nokia N-Gage game deck?

Video clips are playable using the RealOnePlayer included in the Nokia N-Gage game deck, but you cannot record video clips. The Nokia N-Gage game deck is MMS-capable and can be used to send video clips to another MMS-capable device.

2.15 Does the Nokia N-Gage game deck have a digital camera?

No, but screenshots can be captured, stored, and sent with the "screen capture" feature.

3. Developing for N-Gage Game Deck

3.1 What programming languages can be used to develop for the Nokia N-Gage game deck?

As a Series 60 Platform device, the Nokia N-Gage mobile game deck supports Java™ MIDP and C++ languages. Rich games distributed through retail channels will be developed in C++.

3.2 How can I develop for the Nokia N-Gage game deck?

As with game devices from other manufacturers, only Nokia-authorized Nokia N-Gage mobile game deck developers have access to proprietary information about the Nokia N-Gage device and to the Nokia Development Kit for Rich Games. However, the underlying technologies — Symbian OS and the Series 60 extensions to Symbian — are open, and information about them can be found on the Forum Nokia site and at www.symbian.com. Demos developed using Symbian OS and Series 60 are useful in demonstrating game concepts and the developer's ability to carry a Nokia N-Gage mobile game deck project to completion, and may be used during the Nokia N-Gage device developer application process. More information about becoming a Nokia N-Gage mobile game deck developer can be found in the document *Getting Started with the Nokia N-Gage™ Mobile Game Deck* on the Forum Nokia Web site at www.forum.nokia.com/games.

3.3 Is a software development kit (SDK) available?

Yes, an SDK is available to authorized Nokia N-Gage mobile game deck developers; it includes specific libraries, source code, and documentation for the Nokia N-Gage game deck's non-public features.

4. Business Concerns

4.1 How are games delivered to the Nokia N-Gage game deck?

Rich games are sold to customers in the form of read-only memory cards. Memory cards supply 8 MB of data, although 16 MB and larger cards can also be used by special arrangement with Nokia. The memory cards use a secure, protected, proprietary format. The MMCs used by other Nokia Series 60 devices will be usable with the Nokia N-Gage device, but Nokia N-Gage game deck memory cards cannot be used by other Series 60 devices.

4.2 What do you mean by a "rich game"?

A rich game is a compiled Symbian OS application with graphic and audio depth. It is typically multiple megabytes in size. For the Nokia N-Gage mobile game deck, rich games will be sold at retail, in the form of memory cards.

4.3 Can the Nokia N-Gage game deck play games that are not "rich games"?

Yes. Java MIDP games like those programmed for other Series 60 devices, and smaller Symbian OS games, can be transferred to the Nokia N-Gage mobile game deck in the same fashion as for other Series 60 devices — over the air, via Bluetooth, via MMS, and so on. However, the Nokia N-Gage mobile game deck is at present the only device that can play rich games provided via Nokia's memory card format with copy protection.

4.4 Is the business model for the Nokia N-Gage game deck games different from games for other Nokia devices?

Yes, the model is different for rich games. The business model for Nokia N-Gage device rich games is similar to the business model used for other games in the conventional games industry. Only authorized developers can develop rich games for the Nokia N-Gage mobile game deck; Nokia works to ensure a consistent level of quality for such games.

Generic Symbian OS games and Java MIDP games can be provided in the same fashion as for other Series 60 devices.

4.5 What is the target market for the Nokia N-Gage game deck?

It was created mainly for "active" and "hardcore" gamers, people who are into games, play games actively, and own games devices and consoles. These players also enjoy playing games with their friends, and therefore are interested in multiplayer and online gaming.

After extensive market research, Nokia has identified "social" and "entertainment" gamers — those who enjoy playing games with others, and those who play intermittently when they have some time to spare — as the primary target. Demographically, Nokia expects to reach both males and females between 18 and 35 — a somewhat different demographic from that catered to by other handheld game devices.

5. Multiplayer Gaming

5.1 How does the Nokia N-Gage game deck support networked multiplayer gaming?

The Nokia N-Gage mobile game deck supports multiplayer gaming in a number of ways:

Fast-action games can be played with others nearby (up to 10 ft. depending on conditions) via Bluetooth. Server-mediated games can be played via a GSM/GPRS data connection.

The Nokia N-Gage mobile game deck supports e-mail and messaging (SMS and MMS); Nokia N-Gage game deck applications can send and receive e-mail and messages. Thus, it is also possible to provide games that use e-mail or messaging to exchange data among players.

5.2 Can players talk with each other while playing?

Players can talk and play with each other when playing via Bluetooth. To place or receive a phone call when playing over the GSM/GPRS connection, players must first pause the game.

Build·Test·Sell

Developing and marketing mobile applications with Nokia

Go to Forum.Nokia.com

① Forum.Nokia.com provides the tools and resources you need for content and application development as well as the channels for sales to operators, enterprises, and consumers.

Forum.Nokia.com

Download tools and emulators

② Forum.Nokia.com/tools has links to tools from Nokia and other industry leaders including Borland, Adobe, AppForge, Macromedia, Metrowerks, and Sun.

Forum.Nokia.com/tools

Get documents and specifications

③ The documents area contains useful white papers, FAQs, tutorials, and APIs for Symbian OS and Series 60 Platform, J2ME™, messaging (including MMS), and other technologies. Forum.Nokia.com/devices lists detailed technical specifications for Nokia devices.

Forum.Nokia.com/documents
Forum.Nokia.com/devices

Test your application and get support

④ Forum Nokia offers free and fee-based support that provides you with direct access to Nokia engineers and equipment and connects you with other developers around the world. The Nokia OK testing program enables your application to enjoy premium placement in Nokia's sales channels.

Forum.Nokia.com/support
NKN.Forum.Nokia.com
Forum.Nokia.com/ok

Market through Nokia channels

⑤ Go to Forum.Nokia.com/business to learn about all of the marketing channels open to you, including Nokia Tradepoint, an online B2B marketplace.

Forum.Nokia.com/business

Reach buyers around the globe

⑥ Place your applications in Nokia Tradepoint and they're available to dozens of buying organizations around the world, ranging from leading global operators and enterprises to regional operators and XSPs. Your company and applications will also be considered for the regional Nokia Software Markets as well as other global and regional opportunities, including personal introductions to operators, on-device and in-box placement, and participation in invitation-only events around the world.

Forum.Nokia.com/business