

# SNAP Mobile: Game Development and Publishing Process

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# SNAP Mobile

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## Change history

July 9, 2007	Version 1.0	Initial document for release at <a href="http://www.forum.nokia.com">www.forum.nokia.com</a>
February 16, 2009	Version 1.1	Updated and clarified steps in the process.

# 1 Introduction

SNAP Mobile is Nokia's end-to-end turnkey solution for developing connected mobile games and creating mobile gaming communities. This document guides readers through the process from initial game concept to published game so they can take advantage of all available SNAP (Scalable Network Application Package) Mobile development resources and support.

For more overall information about SNAP Mobile, visit the [SNAP Mobile Web site](#) on Forum Nokia.

## 1.1 Intended audience and document objective

This guide is intended for game developers who use the SNAP Mobile API to develop SNAP Mobile games. It gives them a high-level overview of the SNAP Mobile development process in designing a mobile connected game, testing it, and ultimately bringing it to the market.

## 2 SNAP Mobile game development and publishing process

This chapter walks developers through the stages of the process from downloading the SDK to selling their SNAP Mobile-powered games. Please note that the description is an approximation of a typical third-party publishing process. Implementation may be different in some situations. The process flow follows each numbered step, moving from left to right to its completion.

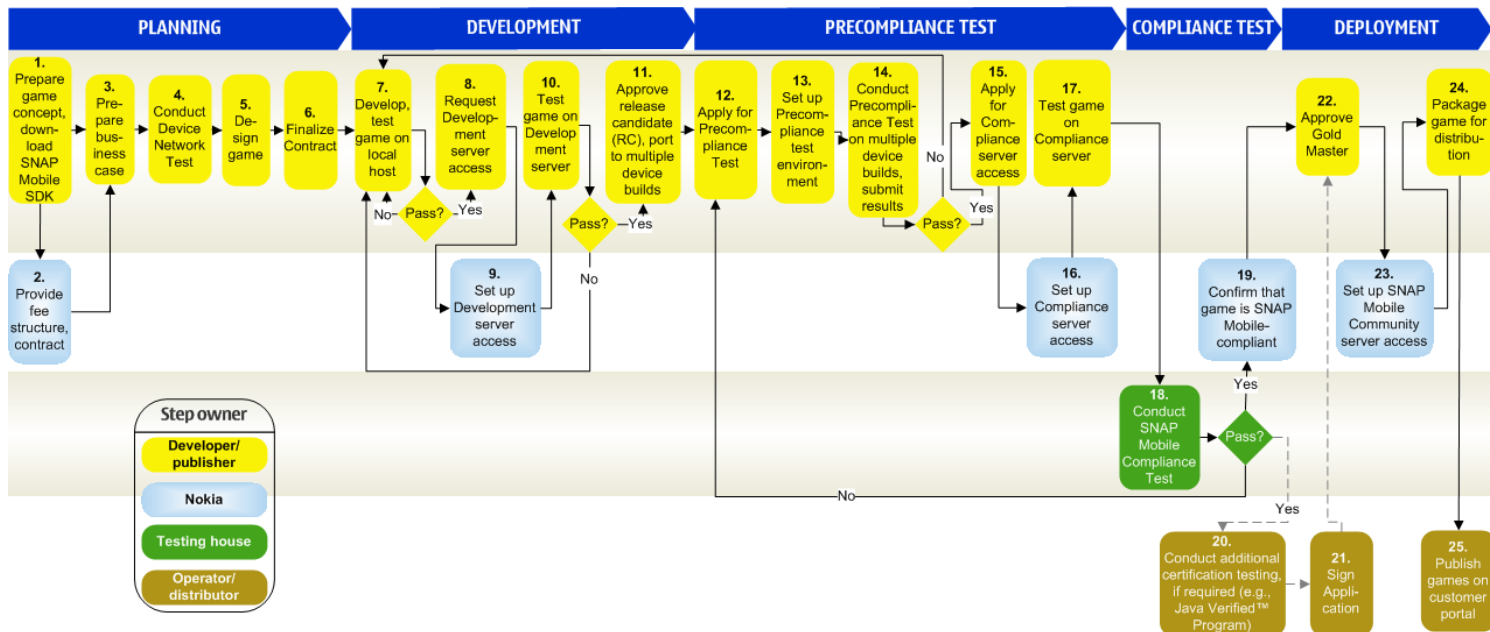


Figure 1: Game development and publishing process overview

### 2.1 Planning stage

The planning stage begins with an idea for a new game and ends with a SNAP Mobile-compatible game design that is supported by the game publisher's business case and is ready for development.

#### 2.1.1 Step 1. Prepare game concept and download SNAP Mobile SDK

The publisher comes up with a game concept and downloads the SNAP Mobile SDK from Forum Nokia ([forum.nokia.com/snapmobile/](http://forum.nokia.com/snapmobile/)). The SDK includes the API, tools, sample code, and documentation that explains the details of the development and testing process.

#### 2.1.2 Step 2. Provide fee structure and contract

SNAP Mobile Business Development provides a copy of the *SNAP Mobile Publisher License and Services Agreement* (contract), with information on potential fee structures once the game goes live on the SNAP Mobile hosted environment. These fees do not apply to game development, but are for the publisher to use to develop the business case. SNAP Mobile may also provide additional supporting documentation at this point.

#### 2.1.3 Step 3. Prepare business case

The publisher prepares the business case based on an evaluation of fee structures included in the *SNAP Mobile Publisher License and Services Agreement*.

#### 2.1.4 Step 4. Conduct SNAP Mobile Device Network test

The developer conducts the SNAP Mobile Device Network test on the target devices under the target operator's networks, using the MIDlet and instructions provided in the SNAP Mobile SDK, in order to determine whether there may be any problems with a particular device or network before beginning development. The test results are automatically uploaded to the SNAP Mobile Certification application.

#### 2.1.5 Step 5. Design the game

The developer creates a game design matching the game concept and refers to the SNAP Mobile documentation while creating the design and planning the connected features for the game. Typical connected features include multiplayer gameplay, rankings, friends list, presence, and chat.

#### 2.1.6 Step 6. Finalise contract

It is recommended that the game developer or publisher finalise the contract in the planning stage, before committing resources to development and testing. This step only applies to the first time the game developer or publisher begins this process. It does not apply for each game.

### 2.2 Development stage

This stage begins with the SNAP Mobile compatible game design and ends with an approved Release Candidate (RC) that the game developer and publisher expect to be the final version once it has completed SNAP Mobile compliance testing.

#### 2.2.1 Step 7. Develop, test game on local host

The developer starts game development using the SNAP Mobile Emulation Environment, which is designed to give an idea of how the real-live SNAP Mobile production environment functions.

Game developers and producers define their steps for testing and approving different versions based on their own process. Accordingly, the definitions shown in Table 1 are only general guidelines.

Game version	Description
Alpha	<ul style="list-style-type: none"> <li>• "Feature complete" per Game Design and Technical Design Documents.</li> <li>• In-game product features work; all mechanics and modules are integrated and working so gameplay can be tested.</li> <li>• All game levels work; a player can navigate through all levels from start to finish.</li> <li>• Title-screen placeholder is present, but demonstration mode is not needed; may still have placeholder art, music, voiceovers, and sound effects.</li> <li>• Contains copy protection of any SNAP Mobile content (if deemed necessary and agreed upon in writing by SNAP Mobile and the Publisher).</li> <li>• "Code complete," but may have programme-tuning and error-fixing changes as a result of testing and design revisions.</li> <li>• Should allow initial technical quality assurance of the game; the debugging tools and cheat codes may also still be present.</li> <li>• This version works in the SNAP Mobile Emulation Environment with all bugs resolved and no known new bugs that may cause the game to crash.</li> </ul>

Game version	Description
Beta	<ul style="list-style-type: none"> <li>• “Content complete” version contains all agreed-upon features per the applicable design documents; also contains title screen, demonstration mode, cut scenes, localised content, any SNAP Mobile content, and online and multiplayer features.</li> <li>• This version works in a live, online server environment<sup>1</sup> with all bugs found in the Alpha version resolved and no known new bugs that may cause the game to crash.</li> </ul>
Release Candidate	<ul style="list-style-type: none"> <li>• This version has been tested and all known bugs or issues have been dealt with.</li> <li>• Developers/publishers expect this to be the final version, ready for SNAP Mobile compliance testing and acceptance as a Gold Master.</li> </ul>

Table 1: Example descriptions of game versions

**Note:** If for any reason the game developer or publisher decides not to conduct testing internally during this stage, they may choose to use an external testing house to test different game versions, but this is completely optional.

From the beginning of game development Nokia can provide different levels of technical support when problems are encountered.

- Developers can visit the [SNAP Mobile Discussion Board](#) to share questions and answers with other developers. Most developers starting out with SNAP Mobile share the same questions and answers.
- Developers can send questions to Forum Nokia professional support. To do this, developers must first go to [Technical Support](#) and register (or sign in to) Forum Nokia and the Forum Nokia PRO eStore. Developers then receive a set of Forum Nokia Technical Support case vouchers with their account. These vouchers are used with each support case or question sent via the support system.

### 2.2.2 Step 8. Request Development server access

Once development and testing have progressed on the local host with the Emulation Environment to reach an “Alpha” version of the game, the developer requests access to the SNAP Mobile Development server. This step is recommended, but not required, in order for the developer to develop the game against a real-live development server.

**Note:** If developers decide not to use the SNAP Mobile Development server, they can use the Emulation Environment for game configurations that would otherwise be set up on this server.

### 2.2.3 Step 9. Set up Development server access

Nokia responds to this request with the account information that the developer needs for access to the Development server. This includes a Game Class ID (GCID) that is assigned to each SNAP Mobile game; a host name that is the developer’s unique link to the Development server; and a Compliance ID that enables uploading of compliance test results and access to the Certification application to see these results.

<sup>1</sup> This assumes that the developer has used the live server environment (i.e., the SNAP Mobile Development server), which is recommended but not required. If this is not the case, then this performance cannot be confirmed at the Beta stage.

## 2.2.4 Step 10. Test game on Development server

The developer takes advantage of the additional features of the live Development server environment to develop and test that the game will be a better candidate to pass compliance testing.

## 2.2.5 Step 11. Approve release candidate (RC), port multiple device builds

Once all known bugs and issues have been resolved, the publisher approves a final, complete release candidate (RC) version of the game that has passed quality control (either internal or with an external testing house, or both) and is expected to be the Gold Master after it has passed SNAP Mobile compliance testing.

Developers may port the RC to different builds. Porting is the process of developing a reference build with minor customisations to adapt the game to display and function on a particular combination of mobile device, operator network, operator plan, region, etc. Developers port builds for all combinations of mobile device, and these other variables that they anticipate will be part of the planned deployment.

Porting is optional at this point before the reference build is called the Gold Master. However, if the developer or publisher chooses to port additional reference builds after the game has been approved as the Gold Master, they will need to repeat compliance testing for each ported release candidate.

**Note:** If the game publisher chooses to use a testing house at this phase, the testing house will test each version of the game and submit results to the game publisher and developers as well as Nokia. Otherwise, whoever conducts the tests should submit the testing results at the end of each version.

## 2.3 Precompliance test stage

Precompliance testing begins with an approved Release Candidate and ends once the developer has tested the game on the SNAP Mobile Compliance server and confirmed that it is ready for the chosen external testing house to begin the SNAP Mobile compliance test.

### 2.3.1 Step 12. Apply for precompliance test

The developer completes an application form on the SNAP Mobile Certification application providing information about the target mobile devices in the planned deployment.

### 2.3.2 Step 13. Set up precompliance test environment

The developer must set up the Emulation Environment to function on a PC with a static IP address with access to the Internet. This is required for the game to pass all criteria in the compliance test and have these successful results uploaded to the SNAP Mobile Certification application.

### 2.3.3 Step 14. Conduct precompliance test on multiple device builds

The developer uses the Emulation Environment to conduct the complete set of compliance tests until the game passes and demonstrates all the required SNAP Mobile Community features. The developer then uploads the game configuration and the test results to the SNAP Mobile Certification application. The developer repeats this process for each device build in the game's planned distribution.

#### 2.3.4 Step 15. Apply for Compliance server access

Once these successful test results have been uploaded, the developer requests access to the SNAP Mobile Compliance server in order to conduct live server testing of the game using the same environment that the Testing House will use.

#### 2.3.5 Step 16. Set up Compliance server access

Nokia responds to this request with the account information that the developer needs for access to the Compliance server (GCID, host name, Compliance ID, etc.)

#### 2.3.6 Step 17. Test game on Compliance server

The developer takes advantage of the additional features of the live Compliance server environment to test the game using the same environment that the Testing House will use for final compliance testing. This ensures that there are no unanticipated differences in final compliance testing results.

### 2.4 Compliance test stage

The Compliance test stage begins when the chosen testing house conducts the SNAP Mobile compliance test on a selection of the game builds that passed the precompliance test and ends once the game is confirmed to be SNAP Mobile Compliant and has passed any additional operator-required certification.

#### 2.4.1 Step 18. Conduct SNAP Mobile compliance test

The chosen testing house conducts the Compliance Test based on the SNAP Mobile compliance test criteria (including both the Emulation Environment Criteria and the Server Criteria) and reports the test results back to the developers and Nokia.

If a single failure is recorded against any criteria in the Compliance Test, the developer will be required to fix the issue, redo the Precompliance Test process, and reapply for the Compliance Test. Upon resubmission of the fixed device builds, all tests (fixed device builds and newly sampled device builds), including the Precompliance Test, must be repeated entirely. If all the sampled device builds pass in all the test criteria, the rest of the device builds are certified as being able to run on SNAP Mobile Services.

#### 2.4.2 Step 19. Confirm SNAP Mobile-compliant game

Once the game has passed SNAP Mobile compliance testing, and the chosen testing house has confirmed these results, the game will be considered SNAP Mobile compliant. This is required for Nokia operations to be able to set up the game's GCID in the SNAP Mobile Community server in production.

#### 2.4.3 Step 20. Conduct additional certification testing (if required)

There may be an additional step for distributor certification (for example, some may require that the game pass Java Verified™ Program criteria). If this is required, the publisher submits the game for distributor certification to the operators.

### 2.5 Deployment stage

The deployment stage begins with a SNAP Mobile-compliant game that has passed any additional operator-required certification and ends with a game that is in production and available for customers.

### 2.5.1 Step 21. Sign application (if required)

Application signing is only needed when required by a distribution channel or an operator. Developers should send their application for signing to the appropriate party for the target distribution channel.

### 2.5.2 Step 22. Approve Gold Master

A Gold Master version means that a developer's release candidate of the game has passed SNAP Mobile compliance testing and is ready for distribution.

### 2.5.3 Step 23. Set up SNAP Mobile Community server access

After passing the SNAP Mobile compliance test, the publisher requests the game be set up in the production environment for the game launch.

Nokia sets up the game in the SNAP Mobile Community server and conducts the final configuration check. Nokia then provides access to this environment for the publisher so the publisher can conduct a one-week prelaunch check to ensure that the game is ready to be sold to users.

### 2.5.4 Step 24. Package game for distribution

The publisher packages the game for distribution.

### 2.5.5 Step 25. Publish games on customer portal

The publisher uploads the game assets to the operator's distribution system, as with any other game.

## 2.6 Operation stage

### 2.6.1 Step 26. Buy and play games

Publishers then see the results of their marketing strategy as customers purchase games through the planned sales channels.

### 2.6.2 Step 27. Support and report usage

Nokia's operations support consists of

- Hosting and managing the SNAP Mobile platform data centers.
- Managing a SNAP Mobile community Web site for SNAP Mobile gamers.
- Providing monthly usage reports including useful game metrics to the publisher with information about the game's success.
- Sending an invoice for using the SNAP Mobile Services.