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Intelligent Frac (iFRAC)

**For Nokia Series 60 (7650, 3650)
and Series 80 (Communicator 92x0)**

User Manual

Version 2.1.0
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Getting Started

Introduction

Frac is a 3D packing (TETRIS−like) game where you just pack rectangular prisms having at least two ribs of same size. A complete board layer (i.e. no spaces) is discarded, adding points to the score with a chance to see obscured board pieces. You can pick up score faster by:
- ♦ Dropping a block before it rests;
- ♦ Completing several layers at once;
- ♦ Switching to next speed before the game rules force you to;
- ♦ Starting game with a non−empty ("dirty") board;

The application can be operated by joystick or arrow keys, numeric phone keys, or keyboard according to availability and your preferences. It provides a variety of settings to get playing game more comfortable.

History

FRAC was invented by *Max Tegmark* and *Per Bergland*, two young and talented Swedes who also called themselves **Simsalabim Software** . The game was apparently named after Mandelbrot fractal, used as the background for the original release for Mac in 1990, and later MS DOS (EGA 640x350x16).

I was very frustrated when my new computer happened to be too fast for FRAC, and felt a need to do something about that ... which could also be a nice present for Linux community. The 'new generation' of FRAC (named **iFrac**, or **Intelligent FRAC**) was released in 2000 for Linux svgalib and X11. It supported a range of screen resolutions and colour modes (4 to 32 bpp). Though it was not planned originally, a Windows 95+ port of the game was released in 2001, which happened to become a kind of Linux rep in Windows world.

This implementation is based on the Palm port of the game released in August 2002 which is in turn derived from Linux (1999) and Windows(2000) releases .

Previous versions of Symbian OS release:

> v 1.0 – Oct 2002 supports 7650 only,
> v 1.1 – Dec 2002 supports Series 60 and Communicator,
> v 1.2 – Feb 2003 added sound effects,
> v 2.0 – Aug 2003 completely revised, added background music

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Credits.

The background images were created using **xaos 1.22** a real−time fractal zoomer/morpher by *Jan Hubicka* and *Thomas Marsh* Additional image processing: **gimp 1.2.1** by *Spencer Kimbal* , *Peter Mattis* and numerous contributors. The documentation was prepared using **Netscape 7.0** composer and HTMLDOC by *Easy Software Products* . All above development tools were running in **GNU/Linux 2.4**. Unfortunately I can't tell same about

Symbian development tools, which shamelessly borrowed GCC and other GNU software, but didn't leave a chance of using their native system for development.

Special thanks to **Mark Sloan**(UK) and **Enrico Binder** (Estonia) for testing, bug reports, and extremely valuable comments.

Supported Devices: S60 vs S80

This manual is concerned with Symbian OS ports of iFrac. The following platforms are currently supported:

- **Nokia**® **series 60**, including Nokia 7650 and 3650 models
- **Nokia**® **series 80**, including Nokia Communicator 9210i

These will be later referred as S60 and S80.

The two versions are avaiable as separate packages.

The application is also available on the following Java™ (J2ME) platforms (*discussed in a separate manual*):

- Nokia® series 40 , incl 7210, 6610, 6100 (tone).
- Nokia® series 30 with 50MB+ RAM, incl 3410, 3510i (tone)
- Siemens® all Java models (tone)
- Siemens® S55, SL55, M55 (MIDI sound)
- Motorola® T720, A830 (wave) , i95cl (MIDI)
- Sony Ericsson T610, P800 (wave)
- Any J2ME device screen size 120x140 or more
- Any MMAPI compatible device, screen size 176x203 or more

What Is New in Version 2

We are too busy for keeping track of all changes, but here are probably the most noticeable ones:

- Background music: set up your own tunes !
- Increased range of customised keys
- No more penalty for pausing
- Sound mode and volume can now be controlled while playing, or pausing
- Optional support for accented characters (like ö, ç, ñ, etc) in user and file names.
- New conditions for unregistered users
- Default key actions for Series 60 depend on the phonepad apperence (7650 or 3650)
- Permanent back lights, or power saving in Demo
- Bugs fixed:
    - ◊ no longer "sky scrapper" bug mentioned in previous releases
    - ◊ no more "bonus leak" with Down/Drop
    - ◊ back light effects now work with 3650
    - ◊ notification messages work OK with Series 60 devices
    - ◊ board scan interruption works OK with Series 80 devices
- This manual has been completely revised and rearranged:

◊ a clearer and less tedious presentation;
◊ new chapters and sections are added;
◊ numerous typos have been corrected.

Release notes version 2.1.0:
♦ Custom sound effects
♦ A patch for Symbian OS CMdaPlayer bug (Play after Stop does not always work)
♦ "Fuzzy logic" for *%continue* and *%restart* (see Music_File_Names)
♦ Test in Music Files screen now works OK

Application Support

The application web page is: htpp://ifrac.palmcrust.com/symb
Send your feedback (comments, bug reports) to Michael Glickman <palmcrust@yahoo.com>

Other links related to iFRAC:

Palm® and compatibles:	http://ifrac.palmcrust.com/palm
Java ™ (J2ME) devices:	http://ifrac.palmcrust.com/j2me
Linux™, X11 and Windows:	http://ifrac.palmcrust.com/pc
More software products from us:	http://www.palmcrust.com

Rules

Speed Levels and Level Count.

While a block is "in the air", it drifts down according to current speed level. Speed level is a number from 1 to 9 shown in the top left or right corner of the screen. The time–out between two consecutive drifts varies from 2.5 sec on level 1 to 0.2 sec on level 9. The speed level increments after a designated number of levels is completed, which for score below 10000 is:

Level	1	2	3	4	5	6	7	8	9
Layers	2	3	4	5	6	5	4	3	2

while number of layers is incremented by 1 with each 10000 of the score.

You can increase level before completing required number of layers, by entering *Next Level* command. Though this does not affect your score immediately, you will pick up score faster, because the remaining layers are completed at a higher speed level thus contributing more to the score.

After completing layers at level 9 the applications rolls back to starting level giving you a chance to relax..

As opposed to speed level, level count is a plain number that always goes up, e.g. level count 10 refers to speed level 1. after a rollover, count 19 refers to speed level 1 after two rollovers. Level count is shown in *Top Scores*.

Scoring.

Maximum Score.

The maximum score is **999999** . Game terminates if your score is over it. Hopefully this will never happen :=)

Score for a landed block.

Every landed (dropped or rested) block adds to score a value shown as Bonus. The bonus starts from 20, and decrements with any down drift, while being unaffected by a move down as a result of Down command.

Score for completed layers.

At speed level 1:

Layers:	1	2	3	4
Points:	100	300	600	1000

For higher speed levels the above numbers are multiplied by a factor:

Level	2	3	4	5	6	7	8	9
Factor	1.125	1.25	1.375	1.5	1.625	1.75	1.875	2

100 points are added to score with each rollover.

Bonus for a non–empty board

If a game starts with a non–empty board, you get an initial bonus depending on the number of "dirty" layers:

Layers	1	2	3	4	5	6	7	8
Bonus	500	1000	1750	3500	4500	6000	8000	10000

Before You Start Playing...

Key Names

The following key names are used in the manual:

Screen buttons	Two keys located just below the screen on Series 60 phones. Standard Nokia applications typically mark left screen button as `Options` , and right screen button as `Back` . Here the buttons are used in a different context. Communicator has four screen buttons located to the right from the screen numbered from top to bottom: topmost is button 1, lowest is button 4.
Arrows	Keys *Left*, *Right*, *Up* and *Down* (Communicator, 3650), or joystick movement (7650),
OK	3650: a key located in the centre of arrow keypad 7650: pressing joystick down S80: *Enter* key
Numeric keys (S60)	Keys 1, 2, 3, 4, 5, 6, 7, 8, 9, 0
Phone keys (S60)	Numeric keys , * and #.
Send	A key with a green handset picture
Shift	A key marked as *Shift* (Communicator), *ABC* (7650) or with a pencil picture (3650) normally used for changing letter case, though this application not always uses it this way.
Clear (Backspace)	A key marked as C on a phone pad or Backspace (<−) on a keyboard, normally used for deleting the last entered character.
Application keys	A key used for temporary leaving the application ("escape to system") . It looks like a recycle sign on Series 60 keypads, **End** (a key with **red** handset picture) works similarly. With Communicator device use key bottom screen key.

Main and Other Menus

You start the application with the Main Menu. when you can:

Start Game	this is what you are most often after
Start Demo	let the computer play itself
Top Scores	view local top scores and score submission details
Configuration	configure game options, customise keys, or register the application
Information	view help and other information

     Quit   you might consider that option as well ... occasionally :=)

To select an option press a phone key with the option number. Alternatively use Up and Down keys (also Buttons 2 and 3 with S80) to highlight an option, and then press Left / Top screen button, or **OK** to select it.

Right/Bottom screen button quits the application. Shift or Space is used for turning background music off and on.

Other menus (e.g . Configuration, Information indices) work similarly, while Right/Bottom button doesn't quit the application, but reverts to the Main Menu

Preferences (Settings, Key Assignment)

A Preference Screen (Settings, Key Assignment) is a list of items where each may have one of several predefined values.

As in case of menus, select an item using Up and Down, or entering an item number, then use Left and Right keys to modify the value of selected item. You can modify several items and then press OK, or Left/Top button (labeled *Accept)* to activate new values. Alternatively you can press Bottom/Right screen button (labeled *Cancel*) to discard all changes

Other keys:

    Clear or **Menu** – set all values to default. The values won't be accepted untill you press *Accept* button
    Send or **Space** – turn background music off/on

Entering Text

You need to enter text at the following screens

    Music Files screen
    New Top Score
    Registration screen

Use Up and Down keys to select an item to edit. *For the edited item a space appears as underline*. Use Left and Right arrows to change current position in the edited text. Clear / Backspace is used for deleting last character.

If the edited text is case–insensitive, you can enter only capital letters (e.g. registration code) or only small letters (e.g. music file name) Otherwise you can change letter case using Shift (all devices) , CapsLock (keyboard) , or [**#**] (phone pad).

Case settings are:

    `abc` – low case
    `Abc` – auto (S60)
    `ABC` – upper case

As usually, with a phone pad (S60) you may need to press a key several times to get the letter you want, and a one second timeout is set before the input is accepted. To get a number, you need to bypass the letters. Keys **0** and **1** are used for additional characters (space, punctuation marks). Starting from v 2.0.0 the application accepts *accented characters* (e.g. ö, ç, ñ). As opposed to majority of other applications, using accented characters with iFrac is optional, since most of downloaded files (including music files) use standard ASCII character set. This option applies to input only, therefore you can temporary enable accented characters to enter a particular name. Using accented characters is specified by *Character Set* option in Settings

Music Files screen

Music Files screen is used for entering music file names discussed in details in Music File Names section.

File names can be entered as text data. Since Symbian OS treats file names as case insensitive, all file names are entered in lower case. With a phone pad, a percentage sign % needed for entering special file names (`%none`, `%continue`, `%restart`) can be entered by repetative pressing **1** key.

Each time when you select Music Files screen, the application collects file names, including special names, and all supported files in lookup directories (see Music File Names). The list is then sorted alphabetically.

The following additional keys are used:

Phone pad (S60)	Keyboard (S80)	Action
*	Shift+Tab or <	Previous File Name (in alphabetic order)
#	Tab or >	Next File Name (in alphabetic order)
OK	Enter	Resolve: replace entered patten with first available file name following it, see comments below.
Send	Ctrl	Test (playback) on / off. When test is ON, music icon is shown and current file is played. The playback automatically changes with getting to next line, or selecting another file, or stops when special name is selected.

Resolve processes part of the name before (excluding) current cursor (highlighted) position. For example, assume the list on file names contains `beachboys.mid` followed by `beatles.mid`. If you enter `beatles`, you get `beatles.mid` only if current cursor is at **l** (`beatles`), or further. If the cursor is at **t** (`beatles`), only part 'bea' is processed, therefore `beachboys.mid` is retrieved as a closer match. We believe though this is often convenient, because of no need to clear the rest of edited text. As opposed to that, *Previous Name* and *Next Name* instructions always process full name.

Information (Help) Screens

Screen buttons:

Left / Top button – bring up next page
Buttons 2 and 3 – scroll current text up / down
Right / Bottom button –back to information index

Arrows:

Up / Down – scroll current text up / down
Left / Right – bring up previous / next page respectively

To scroll faster (up to 9 lines forward or back) use **Send** and `Clear` keys on a phone pad, or keep `Shift` button pressed with `Up` or `Down` on a keyboard.

Playing Game

Game screen appearence

Game screen contains the following fields:

Speed level – top left (S60) or right (S80) corner.

DEMO notice if the application plays by itself. Shown in **yellow** colour in normal mode (back lights are permanent), and in grey colour in power saving mode (back lights turn off after 15 seconds of no key presses), see <u>Demo</u> for more

Sound mode icon represents current sound mode

	Normal Sound Effects
	Annoying Sound Effects
	Background *Music*
no icon	Sound is *Off*

Below sound icon there is a **volume bar** that represents current sound volume.

In case sound is temporary *disabled* (with *Sound off/on* command), icon frame appears grey and volume bar is not shown.

Play board and **Next block** – leave that without comments for now :)

Status information:

Score	Current score
Layers	Number of completed layers
Bonus	Value that will be added to score if the block drops right now (see <u>Score for a landed block</u>).
Blocks	Total number of blocks processed from the start of the game (excluding current).
Remain	Number of layers to complete before the speed level advances automatically.
Place	Place of the current score in the local Top Score list (see <u>Top Scorer</u>).
Pauses (S80)	Number of pauses (includes using Pause mode and escapes to system).

Operating game

While playing a game the arrows and screen buttons and some predefined keys are used as given by the following diagram:

Series 60	Series 80	Action / Default Action
Left screen button	Screen Button 1	**Next Level**
	Screen Button 3	**Finish game**
Right screen button	Screen Button 4	**Pause**
Arrows *Left*, *Right*, *Up*, *Down*:		**Left**, **Right**, **Back**, **Forward** resp.
	B or **M**	**Sound off/on**
	N	**Turn**

However, most of the operation keys are now customised. Refer to Key Assignment section for the details.

Default key actions for a Series 60 are choosing accoring to keypad type: 7650 has a 'traditional' rectangular keypad, while on a 3650 device the keys are arranged circularly.

The default phone/letter key actions for a **7650** keypad and **Communicator** keyboard are:

1 Q Back−left	**2 W** Back	**3 E** Back−right
4 A Left	**5 S** Turn Reverse	**6 D** Right
7 Z Fwd−left	**8 X** Forward	**9 C** Fwd−right
* **Ctrl** Turn	**0** **Menu** Drop	**#** **Space** Down / Drop

Default phone key actions for 3650 keypad:

	1 Turn Reverse	**0** Down / Drop	
2 Back−left			**9** Back−right
3 Left	***** Back	**#** Forward	**8** Right
4 Fwd−left			**7** Fwd−right
	5 Pause	**6** Drop	

In Demo mode arrow keys and some command actions are used in a special way. Refer to Demo section for the details

Board scan

After compleing a layer in non−Demo mode the application starts scanning board layers. Though it is your only chance to see the hidden places, it is often annoying. You can stop scanning the board at any time by pressing either a screen button, or one of the following keys: **Send**, OK, [*], [0], [#] (Series 60), Space, Enter, Esc (Communicator).

Pause and Summary

You can pause a game by entering Pause command, or pressing Right / Bottom screen button. As opposed to pressing an application key ("escape to system") this doesn't leave the application, but brings you a pause screen where you can either terminate the game, ore resume it after a while.

Summary screen appears after a game terminates and *Summary after game* is enabled in Settings

The following pages are shown:

Game status information about current game and sound settings:

> Pause count (includes using Pause mode and escapes to system)
> Total duration of the game and "pure duration" – time spent on moving blocks
> Average time spent on a block
> Number of blocks: total and dropped
> Total score and "pure score" (accumulated bonus) – score obtained for placing blocks
> Average bonus per block
> Position of current score in the local score table
> Current sound settings (can be modified – see below)

Block statistics: number of blocks of each type appeared so far

Score table: top scores (before current game)

Current page changes in regular tile interval, while you can also force changing page forward and backward

While opening Pause/Statistics screen, sound is **suspended.** Using *Sound status* action, you can set status to one of the following:

> **Suspended (S)** – no sound while pausing, but resumed after leaving Pause mode.
> **Disabled (D)** – no sound in Pause mode and after leaving it
> **Enabled** – sound right now !

You can control pause mode using the following keys:

S60 Key	S80 Key	Action
Left		Go to previous display page.
Right		Go to next display page
Up		Increase sound volume
Down		Reduce sound volume
[*]	Tab	Sound mode

[#]	Space or Menu	Sound status
OK	Enter	Back to game (Pause only)
Send	Esc	Terminate game

Any key *not listed* in the above table and configured for *Sound off/on*, *Sound mode*, *Volume Up* and *Volume Down* operates in Pause according to its configuration (*Sound on/off* acts are *Sound status*).

New Top Score

If you reached a top score, you can either discard your result, or save it in the Local Score Table, to be seen later in *Top Scores* screen. Before saving the score, you may change scorer name. *Scorer name must be non−empty* .

To save the new top score, press *Accept* screen button, alternatively press *Discard* screen button to avoid saving your score.

Demo

Demo (demonstration) is a self play mode using a rather silly logic (probably the only part that remained completety unchanged since very first Linux release) for placing blocks. It might be useful for someone who is completely new to the game, as well as good for presentation ... and testing. When a demo finishes (it happens more often then you might expect), a summary screen appears for few seconds (even if summary screen is disabled in Settings), and then a new demo starts. You can get out of Demo mode by pressing *Pause* or *Quit*. Note that *Pause* command does not really pause a demo, whereas you can always pause using "escape to system".

In Demo mode you obviously can't control current block, instead you can use arrow keys to control sound options:

Arrow key	Action
Left	Change sound mode
Right	Sound off / on
Up	Volume Up
Down	Volume Down

Turn and *Turn Reverse* commands are used to toggle **power saving** mode. By default (**permanent lights**) back lights are always on, which is good for presentation but flattens your batteries and is not healthy for the screen. If you want to leave the application in Demo mode for a while, switch to power saving mode by pressing a key assigned to *Turn* or *Turn Reverse* action – as a result of that DEMO notice changes colour from yellow to grey to indicate power saving, and the back lights turn off after no more that 15 seconds. To get back to permanent lights mode press the key again.

The following key actions operate as usually in demo mode : *Next level*, *Sound on/fff*, *Sound mode*, *Volume Up/Down*, *Quit* .

Score Tables

Local Score Table and Top Scores screen.

Local Store Table keeps 10 best results for the current device stored in local data base. To view Local Score Table, select *Top Scores* from the Main Menu,

The following information is displayed:

S60:

> Position – a number from 1 to 10
> Name (max 3 characters)
> Level count (see Speed Levels and Level Count).
> Score
> Date in the default format

S80:

> Position – a number from 1 to 10
> Name (max 30 characters)
> Level count (see Speed Levels and Level Count).
> Level–layers – starting level and number of "dirty" layers separated by a hyphen(–)
> Score
> Date in the default format

World–Wide Score Table and Submission Details screen

If your score is at least 10000, not less than 1.5 the original score (in case you start the game with initial bonus, e.g. non–empty board at start), and among top 3 of your personal top scores (i.e. top scores stored on the current device), you are given a code for submitting your result to the World–Wide Score Table. In order to succeed, the result should be among 30 world top scores. You don't need to be a registered user for score submission.

The submission details (date, score and code) are stored in the local data base. To overview this information, select *Top Scores* from the Main Menu, and then press *Submission Details* (Left or Top) screen button. You can press the button again to get beck to Top Scores. Right or Botton screen button brings up Main Menu.

Starting from version 1.1.0, you can additionally **store full submission URL** (host name, user name, score and code) outside application data base . On S60 the URL is stored as a Notepad memo, while with S80 a link is placed on the Desk. When using full submission URL, you don't need to type in the data, however you still have a chance to disguise your name, or enter additional information (email, location, etc). As a disadvantage, you have to spend time on deleting the memo, or link. Storing full submission URL can be enabled, or disabled with **WW info in Notepad**, or **WW submission links** in Configuration / Settings.

Configuration

The Configuration menu item is available from the main menu.

It provides the sub−menu having the following items:

- ♦ Settings
- ♦ Key Assignment (2 items)
- ♦ Registration Screen

The features are discussed later in this chapter.

Settings

To settings select *Configuration* from the Main Menu, and then choose *Settings*.

Feature	Default	Description
Starting speed	1	Enable starting game from a higher level Also applies to demo. If starting level is higher than 1, the lower levels will also be skipped during a rollover. See Speed Levels and Level Count. and Scoring
Starting layers	0	Enable starting game from a non−empty board. Also applies to demo mode. See Scoring
Summary after game	Enabled	Whether on not to show Summary Screen after a game
Auto−repeat rate	Normal	How long a key has to be kept pressed, before its action is repeated. Three rates are accepted: **Slow** (the longest timeout), **Normal** and **Fast.** For *Down/Drop* action, auto−repeat rate affects the time a key needs to be kept pressed, before the block is dropped
WW info in Notepad (S60)	Enabled	Whether or not to store full submission URL as a Notepad memo. See World Wide Score and Submission Details for more informations.
WW submission links (S80)	Enabled	Whether or not to store full submission URL as a link on the Desk. See World Wide Score and Submission Details for the details.
Sound mode	Normal	**Off** great for playing at work :) **Normal** generate sound for the following events: *layer release*, *new level*, *game ended,* and *new top score* **Annoying** in addition to "normal" events, generate sound for *block drift down*, *block drop* and *block stop*. **Music** background music, no sound effects
Sound volume	Average	**Low** 1/4 of maximum volume **Average** 1/2 of maximum volume **High** 1/2 of maximum volume **Extreme** guess

Back light effects	Enabled	If enabled, and your device has back lights, the screen will flash while changing speed level.
Input device (S80)	Auto	If your device has a keyboard, you might pretend not having it. This silly feature is left for purely nostalgic reasons and might probably go in the next edition. Available values: **Phone Keys** assume there are only numeric keys (in particular, for entering a letter you need to press a key several times) **Keyboard** assume keyboard is present **Auto** check hardware for a keyboard, or assume keyboard when a letter key is pressed
Character set (S60)	Standard	**Standard** use standard ASCII character set **Extended** use standard ASCII and local characters (see <u>Entering Text</u>)

Key Assignment

Functionality of customised keys can be set up using the following screens:

Series 60:
> **Configuration**/**Numeric Keys** for numeric keys
> **Configuration/Other Keys** for other keys: [*], [#], OK, **Send**, Shift, Clear

Series 80:
> **Configuration**/**Letter Keys** for left letter keys: Q W E A S D Z X C
> **Configuration/Special Keys** for   Esc, Tab, Ctrl, Shift, Space, Menu, Enter, Backspace.

Be warned that some keys (Ctrl, Shift) do not generate auto−repeat events and are not recommended to be used for block movement, Down/Drop, or another action that depends on auto−repeat.

The following tables lists actions that can be assigned to any customised key. For the default key assignment refer to <u>Operating game</u> section.

Key action	Description
Not used	No use – no comments
Back−Left, **Back**, **Back−Right,** **Left**, **Right**, **Forward−Left**, **Forward**, **Forward−Right**	Move current block horizontally in specified direction. If a diagonal move cannot be implemented, the block will move along a non−blocked subdirection if available, e.g. Back−Left acts as Left if back movement is impossible but the way left is open, or as Back in the opposite situation.
Turn, **Turn Reverse**	Turn current block in one of two possible directions: if block dimensions are v1 x v2 x v3, you can get either v2 x v3 x v1, or v3 x v1 x v2 depending on the choosen direction. Note that since at least two of v1, v2, v3 are same, there are no more than 3 possible orientations (determined by position of the odd value in the triplet).

Down	Move current block down without decerementing bonus (see <ins>Score for a landed block</ins>)
Drop	Drop current block – this will add current bonus to the score and bring up next block
Down/Drop	A short–time press is equivalent to **Down**, if pressed for longer (causing auto–repeat) acts as **Drop.**
Pause	Pause a game, where you can check status, control sound mode and volume. While in pause mode you can either terminate the game, or continue after a while.
Quit	Terminate the game
Sound off/on	Temporary disable or re–enable sound. This does not affect settings.
Sound mode	For sound mode options refer to Settings.
Volume Up/Down	Increase/decrease volume (with roll over). For volume values refer to Settings.

Music File Names

To play background music set <ins>sound mode</ins> to music in `Configuration/Settings`. iFrac doesn't come with music files: you need to suply your own, but only ones you like the best :)

Files names are entered and stored without a path. Apart for an obvious convenience for users who have a vague idea of what a path is, this approach has another (probably more important advantage): you can freely copy a file from phone memory to your memory card, or to another appropriate directory without need to modify the music file configuration. As a disadvantage, your should avoid having same file name in different locations.

You can set a file for each speed level, Main Menu and other non–game screen, New Top Score screen. Music is automatically resumed after a 3 second time–out.. In the game you can turn music on and off using Sound off/on command.

Instead of a real file name, you can enter a special file name, started with % (actually you don't need to code the whole name, just one letter after % will do) . The following special names are accepted:

Special Name	Description
%continue	Just leave it as it is. Music (if any) will go on [*] This allows splitting same music file between several consecutive layers.
%none	Stop music if needed, don't play anything
%restart	Start playing last file (if any) from beginning [*]

[*] Starting from version 2.1.0 processing of special names for a higher starting level is a slightly more complex. When you start a game with level more than 1 and file name for the starting level is *%continue* or *%restart,* the

application looks backward to find the file (or silence) that would be played for that level, in case of starting from level 1.

For example, suppose the following file names are specified:

```
Intro: MusicIntro.mid
Lev1:  Music1.mid
Lev2:  %continue
Lev3:  %continue
```

If a game starts from level 3, version 2.1.0 plays Music1.mid, while version 2.0.0 continues playing MusicIntro.mid.

MIDI format is a definite advantage, unless your device has problems playing it. Other Symbian OS standard audio formats (like amr, or wav) are also supported, but may overload the system, therefore are not recommended. To enable music files, simply copy them to Sound Files directory on your memory card, or phone memory. With 3650 you may find more apporprate to use Digital subdirctory of Sound Files instead. Also you might prefer to create a separate subdirectory of Sound Files named NiFrac to be used exclusively by this application.

Entering file names is discussed in Music_Files_screen section.

If you are familiar with Symbian OS file system, this is the list of lookup directories in the order of preference:

```
\Sounds\NiFrac
\Nokia\Sounds\NiFrac
\Sounds\Digital
\Nokia\Sounds\Digital
\Sounds
\Nokia\Sounds
\System\Sounds\Digital
\System\Sounds
```

According to Symbian OS design (whether or not we like it), for each path drive C: is processed first, then all additional storage (including memory cards), and finally ROM drive.

Custom Sound Effects

Now you can also have custom sound effects (SFX), though you might find it less convenient then music files specification.

Currently *.wav* is the only supported format for SFX files, and file names are predefined:

File Name	Description
ifr_down.wav	Block drifts down after a timeout
ifr_drop.wav	Block is dropped with *Drop* command
ifr_fall.wav	Block stops (can't move down)

ifr_flash.wav	Flashing completed layers before release
ifr_level.wav	New speed level
ifr_ended.wav	Game ended
ifr_newScore.wav	New top score

You don't need to provide all custom files: the apllication will use its own sound effect, if a corresponding user file is unavailable. It is recommended to avoid using files with duration longer than 0.2 sec as *ifr_down.wav,* or longer than 0.4 sec as *ifr_drop.wav ifr_fall.wav* or *ifr_flash.wav*.

As in case of music, you can place an SFX file in any directory used for storing .wav files (i.e. *Sound Files*, or its *Digital* subdirectory) in phone memory, or memory card, however there are additional requirements:
- ♦ all files must be located in same directory (in particular, you can either store *all* SFX files in a memory card, or *all* SFX files in the pnone memory, but not mix them)
- ♦ any other sound file directory should not contain a *.wav* file name starting with **ifr_**

If you add / remove a custom SFX file, you need to restart the application to activate the changes.

Registration screen

To bring up registration screen select `Configuration / Register`. Same screen appears after an unregistered copy starts.

The registration screen allows entering registration details: user name and registration code. The registration is discussed in Registration chapter. Refer to Entering Text section for details regarding entering text. Press left screen button to save the registration details, or right screen button to postpone the registration.

A registered copy does show registration screen at start, while `Configuration / Register` brings up an information window with User Name, Registration Date, and related links..

Registration

Advantages of Registration

We would be happy to make iFrac free of charge (and get rid of this annoying section in the manual), but unfortunately our financial situation depends much on it :). Even though it isn't free, we believe our prices are cheap and affordable.

As mentioned in the introduction the conditions for an unregistered user are now different. The application will always roll over from level 9 to starting level, ... but you need to reach level 9 first :=)

When a game starts, and unregistered version selects a number between staring speed level and 9 (i.e. the last level number) as *cut−off level*. Once the game speed level gets over the cut−off level, the game terminates. You might be lucky enough to get 9 as the cutt−off level in which case the game will never terminate prematurely !

If you read the above lines carefully, you have noticed that your chance to get 9 as the cut−off level increases with starting speed level. In particular if you start from speed level 9 ... well, as you probably guessed, this "breach" is deliberate and meant to comfort someone who might argue that new conditions are tighter than previous: now you have a back way, while you didn't have any before. By the way, you still can submit your World Wide score without need to register !

The registered copy skips registration screen at start, shows `Licensed to`<user name> and does not show `UNREGISTERED` during a game.

And the last (but definitely not least) :
If you are comfortable with a unregistered copy, you may also consider registration, to support our effort in creating first class software for Palm and mobile phones running alternative platforms, and in particular encourage further iFrac development.

Where and how.

You can purchase the product from the following sites:

> http://www.softwaremarket.nokia.com
> http://www.handango.com
> http://www.mobile2day.de
> http://www.pdapointer.com
> http://www.smartsam.de

While registering the product, you will have to quote the ***user name*** . This name will appear as *Licenced to* name. You will be given a code (referred to as *registration code*), that you will have to enter along with the user name (see Register).*The registration code for the given user name is valid for all future releases of the application..*
The code consists of 12 capital letters or number. *It may include letters* **O** *and* **I** *, but never numbers* 0 *or* 1. To enter the registration code, select `Configuration` from the main

menu, then choose `Register` sub–item. You will have to restart the application to activate the registration code.

If you purchased version 1 ...

The registration code code for version 1 is incompatible, however ...

If your version 2 copy is registered for version 1, it will still operate as a registered copy, as long as you don't set Sound Mode to Music, while when Sound Mode is Music, it will work as un unregistered copy. You can always change Sound Mode to Music, or non–Music using <u>Settings</u> screen so that the application will change its behaviour accrodingly, but you can't change Sound Mode from non–Music to Music during a game.

In order to upgrade from v1 to v2 for a discounted price send us an email and quote your user name and current (v1– compatible) registration code. Once you get a new code, set Sound Mode to Music (so that the copy becomes unregistered) and enter registration details in the usual way.