# Contents

# Chapter 1

# Translation

## 1.1  Introduction

All texts of the game presented to the user are stored in separate data files. No text is hard-coded. These texts are distributed over many places for some reasons we will discuss later.

The game manages one variable that tells which language to use. So you can switch between various languages by just changing that index variable. There is no real limit for the number of languages.

Beside the problem to find every place where texts are encoded, translating *Danger from the Deep* to other languages is a straight forward and simple process. At the moment one needs to change some code in the main program to make newer languages available in the language selection menu, but this can (and will) be done better in the future. The game would just look for available languages in its data files and present a selection by itself.

## 1.2  Character encoding

There are many possible characters that can be used in languages. To make them all useable, the only choice is to use *Unicode* character encoding. Older games used 256 character together with a code-table for various languages, but that is very clumsy. *Danger from the Deep* uses the *UTF-8* character encoding, which is a special form to store 8-bit character texts (most compatible), but encode within them characters up to 16 bits or more. This is done by coding characters with Unicode number greater than 127 as multibyte characters.

Don't worry when reading this, as your editor will handle all the nasty details. Use a Unicode-compatible editor to read and write text files (OpenOf-

fice, any modern Unix or Windows editor etc.). Note that UTF-8 has become the defacto standard in the Linux world.

Beside encoding, the game must provide rendered bitmaps for each character. At the moment we only provide characters within the $0\ldots255$ range of Unicode. This range is identical with the 256 characters of the *ISO-8859-1* code table, which contains characters for central and west european languages. To support other languages from eastern europe or even asian languages we would need to add new bitmaps for those characters. This is planned, at least for east european languages (ISO-8859-2 or ISO-8859-3, conforming to Unicode range $256\ldots511$ or until 767), but not done yet.

## 1.3   Storage of the text resources

The main texts are stored in *csv* ("comma separates values") files. That is a human readable, simple text file format that can store tables. Each column is separated by a semicolon to its neighbour. Lines of the table are lines in the text file. Texts are embraced in double quotes, as usual.

It is *strongly* suggested to use a tool that can read, handle and write such files. The best tool for it is *OpenOffice*. Select appropriate values when opening or saving the file (UTF-8 encoding, semicolon as separators).

The files are stored in `dangerdeep/data/texts/`. There are at the moment two *csv* files, `common.csv` and `languages.csv`. The `common.csv` file stores the main texts while the `languages.csv` file stores language descriptions for each language in each language.

The first line of a table is the headline, that contains the language code for each column. The first column contains the number of the text resource, one resource per line. This is very simple, just open a file in OpenOffice and see yourself.

There are more places where texts are stored. Each object of the game (ship, submarine, torpedo, airplane etc.) and each mission has its own text resources. It would be difficult to store them centrally, because when new ships are added, new resource lines would need to get allocated. We could use a new *csv* file for all object resources. It is planned to regroup the data, so all files of a ship are stored in one subdirectory. It would make sense to store the ship related texts there as well and not in a central *csv* file.

So as translator you have to browse the data description files (stored as subdirectories of `dangerdeep/data/`, subdirectories `ships/`, `submarines/`, `airplanes/`, `torpedoes/`, etc.) and look for some language related XML tags within them (these files are XML files). Each tag has a language code attribute and the text itself. We know that this is the harder part of the

translation process as it is clumsy to locate each data file and look for the text. Maybe the texts are reorganized in the future.

## 1.4   Adding new languages

To add a new language to *Danger from the Deep* you have to add new columns to the existing *csv* files that contain the texts for that language. You have to choose a language code as well. And you must add a line in the `languages.csv` file for your language that contains the name of the language in all available languages.

The more difficult part, as decribed above, is to localize the data description XML files and their language related tags in them. You have to add tags for your language as well. You have to do the same for the missions. The best thing is to just open some files and have a look at them, you can see how it works by the way the current four languages are implemented.

If you find texts that are in English, but should be in another language, then its most probable that this text resource has been added recently, so the translator of that certain language hasn't updated the file yet.

Note that *Danger from the Deep* is constantly growing and thus new resources are added periodically. So you need check for changes sometimes and translate the new texts.

## 1.5   Specials

Languages have some other differences as well. Like the format of the date and time. We should handle it that way, that a date and time format string is stored as text resource, to make it easily changeable. But this is not implemented yet, so all languages use the english format or the german format for german language (the two original languages of the game).

## 1.6   Available translations

At the time of this writing, there are four available languages: English, German, Italian and Spanish. More languages are planned or people are working on it. Requests are pending for: Polish, Russian, French, Dutch.