

# **Specware to Isabelle User Manual**

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# Table of Contents

<b>1. Concepts.....</b>	<b>1</b>
<b>2. Usage.....</b>	<b>3</b>
2.1. Starting Up.....	3
2.2. Using The Translator .....	3



# Chapter 1. Concepts

This is the initial experimental release of a Specware interface that allows the use of Isabelle/HOL to discharge proof obligations that arise in developing Specware specifications. The interface is essentially just an emacs command that converts a Specware spec to an Isabelle theory, along with extensions in the Specware syntax to allow Isabelle proof scripts to be embedded in Specware specs, and to allow the user to specify translation of Specware ops and types to existing Isabelle constants and types. The translation translates Specware declarations, definitions, axioms and theorems to the corresponding Isabelle versions. The logics are similar that it is usually straightforward to compare the source and target of the translations. In addition, Specware has implicit type obligations, particularly sub-type obligations, that are explicated in the Isabelle target.



# Chapter 2. Useage

## 2.1. Starting Up

Specware and Isabelle can both be started up normally, each running under their own XEmacs job, but it convenient to run them under the same XEmacs. To do this run `SpecwareIsabelle`.

Currently Isabelle does not run under Windows so this script is not available there. However, the translator can run from Specware even if Isabelle is not running.

## 2.2. Using The Translator

The translator is called using the emacs command `c-c c-i`. The translation is written to a file in the `Isa` sub-directory of the current directory and the file is visited in a buffer. The user may then process the Isabelle theory providing proof steps as necessary. These proofs may then be copied back to the Specware spec so that the next time it is translated, the translation will include the proofs.

