SPECCHIO

User Guide

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# Introduction

SPECCHIO is a spectral database combined with user-friendly interface software designed to store spectral data acquired by spectroradiometers and associated metadata.

SPECCHIO was first developed at the Remote Sensing Labs at the Geography Department, University of Zurich to support long term usability and data sharing between researchers. It was then further enhanced through a project run by the University of Wollongong in 2012/2013. This project was supported by the Australian National Data Service (ANDS). ANDS is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy Program and the Education Investment Fund (EIF) Super Science Initiative.

SPECCHIO is an Italian word meaning “mirror” or “looking glass”. It can also be used to refer to a table of data or a scoreboard.

## Document scope

SPECCHIO uses a Client-Server architecture. This User Guide details operation of the Client component of SPECCHIO only.

## Intended audience

This document assumes that readers are familiar with...

* remote sensing and the disciplines and processes related to it.
* the general operation of their own computer.
* the general concept of a client-server architecture.

## SPECCHIO ownership and access

%%% INSERT ACCESS RIGHTS INFO ONCE RECEIVED FROM UOW

## Copyright and licensing

SPECCHIO is released under a Creative Commons licence. %%% which one? Therefore its source is readily available for inspection and development. It can be found at %%%where?.

%%%% Elaine will ask which CC licence version.

## For Further Information

Please refer to the following documents for more information about SPECCHIO. Unless otherwise stated, they can be found in the SPECCHIO Installation kit.

**SPECCHIO\_ReleaseNotes.txt** can be found in each Installation Kit and provides installation instructions for the SPECCHIO Client. %%% Confirm the name of this document. Nick

**SPECCHIO\_Tutorial.pdf** provides instruction in the operation of key areas of the SPECCHIO Client.

**SPECCHIO\_MatLabGuide.pdf** provides instructions on using MatLab to access SPECCHIO from a User’s computer. %%% Confirm the name of this document. Nick/Andy/Elaine

**SPECCHIO\_ServerGuide.pdf** provides system administrators with information to assist in managing and maintaining a SPECCHIO Server System. %%% Confirm the name of this document. Nick

**SPECCHIO Web Site** [www.specchio.ch](http://www.specchio.ch) General information about SPECCHIO. Some of this information may be related to other non-UOW versions of SPECCHIO. %%% Will there also be some info on the UOW website somewhere too? Elaine

**SPECCHIO GitHub** <https://github.com/IntersectAustralia/dc10> Installation kits for University of Wollongong version of SPECCHIO Client and documentation for that version. %%% This location is currently protected and not accessible. Nick suggests this may not be the final location. Elaine

See also Chapter for a list of academic articles related to SPECCHIO and its use.

# Installation and Configuration

%%% Revamp this chapter to complement final configuration of release doc.

## Before you install

SPECCHIO requires that Java Runtime Environment (JRE) version 1.6 or higher is already installed on your computer before installing SPECCHIO itself. %%% Confirm required Java version just prior to release.

To check the Java version on your system open a command window under Windows, or a terminal for Macintosh or UNIX systems, and type:

java -version

The output will be similar to:

java version "1.7.0\_17"

Java(TM) SE Runtime Environment (build 1.7.0\_17-b02)

Java HotSpot(TM) Client VM (build 23.7-b01, mixed mode, sharing)

If you do not have Java installed, or the version number is less than 1.6, you should install an appropriate version of the Java Runtime Environment (JRE) from the internet at <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.

## The SPECCHIO Application Bundle

The SPECCHIO application plus the libraries it uses are supplied as an application bundle in ZIP file format. The installation bundle is usable on Windows, Mac and Unix systems.

%%% The following was not consistent with my experience of installation. Is a doc change needed here, or will the production system actually match this process? Re-evaluate when the installation process is settled.

The files contained in the bundle are…

|  |  |
| --- | --- |
| Category | Purpose |
| Application Files | The SPECCHIO application is contained in a Java archive file: SPECCHIO\_App\_V<x.xx>.jar. <x.xx> stands for the version tag, e.g. 1.0c, i.e. the jar file would be named SPECCHIO\_App\_V1.0c.jar.  The file db\_config.txt contains database connection configurations. |
| Java Library Extensions | The following files are needed to run SPECCHIO:  jcommon-1.0.5.jar  jfreechart-1.0.2.jar  jgraph.jar  mysql-connector-java-3.1.13-bin.jar  qcchart3djava.jar  jhdf.jar  jhdf5.jar  jhdf5obj.jar  jhdfobj.jar  jsch-0.1.44.jar  ganymed-ssh2-build251beta1.jar  jcalendar.jar  The extensions are supplied in the same folder as the SPECCHIO application file. |
| Matlab Integration Files | The following files are supplied to simplify the access of SPECCHIO databases from Matlab:  get\_spectral\_data\_from\_specchio.m  getquery.fig  getquery.m  %%% Andy says these are not up to date for the new UOW version. |

## Microsoft Windows Installation

%%% What permissions are required to install, and which users can use it afterwards?

To install SPECCHIO on Microsoft Windows, unzip the entire contents of the ZIP file into a new directory on your computer. It is recommended to create a new folder in C:\Program Files, for example C:\Program Files\SPECCHIO V3.

To launch the SPECCHIO Application double click the SPECCHIO\_App\_V<x.xx>.jar icon or file.

You may wish to create a shortcut on your desktop. The process varies depending on your Windows version, but will be similar to the following.

* Right click on your desktop and select New and Shortcut from the menu which appears.
* Follow the prompts, entering C:\Program Files\SPECCHIO V3\SPECCHIO\_App\_V<x.xx>.jar as the location of the item, and the description of your choice.
* Move the new shortcut to your desired location, for example, your task bar.

## UNIX Installation

This installation procedure installs the software in a user directory. This implies that only users with access to this user account can run the software. To install so that all users can run SPECCHIO, you need administrator rights on the computer or need to have it installed by the system administrator. Alternatively, each user who wants to run SPECCHIO can install it separately themselves.

Copy the entire contents of the ZIP file to a new directory on your user account.

The preferred way to launch the software is to double-click the SPECCHIO\_App\_V<x.xx>.jar file. However this may not work on all UNIX systems. If it does not work, open a shell (terminal), navigate to the directory containing the applications and type...

java –jar SPECCHIO\_App\_V<x.xx>.jar

For remote execution when having installed the application in your home drive which is mapped on to the servers, type...

ssh –X <server\_name> java -jar <path>/ SPECCHIO\_App\_V<x.xx>.jar

E.g. to use terra as server with version 1.0c of the SPECCHIO application:

ssh –X terra java -jar /home/rsl1/ahueni/SPECCHIO/SPECCHIO\_App\_V1.0c.jar

You must be using XWindows on your local computer for the above ssh command to work.

## Apple Macintosh Installation

%%% Is there a file access permission issue here too?

Double click the ZIP file. This will create a new folder and copy the entire ZIP file contents into it.

Copy the unzipped folder into the Applications (or some other directory of your choice).

Double click the SPECCHIO\_App\_V<x.xx>.jar file to run SPECCHIO.