



Seismic-radar toolbox GUI

Administrator Manual

Dr. Chris Gerbi

Team Penobscot
Adam Farrington, Alex Thacker, Jens Hansen, Nathan Gazey
April 14, 2020
Administrator Manual, Version 1.0.0

Administrator Manual	1
1. Introduction	3
1.1 Purpose of This Document	3
1.2 References	3
2. System Overview	3
2.1 Background	3
2.2 Hardware and Software Requirements	3
3. Administrative Procedures	4
3.1 Installation	4
3.2 Routine Tasks	4
3.3 Periodic Administration	4
3.4 User Support	5
4. Troubleshooting	5
4.1 Dealing with Error Messages and Failures	5
4.2 Known Bugs and Limitations	5

1. Introduction

1.1 Purpose of This Document

This document covers the relevant information for an administrator looking to use SeiDarT in a professional or educational setting. This document goes over the uses of SeiDarT both professional and education, and shows how to begin working with the software. This document also covers the installation process for SeiDarT and its dependencies, directing the user to where each dependency can be found. Lastly this document helps guide an administrator in managing day-to-day operation of the software, including user support and dealing with limitations in the software.

1.2 References

1. Team Penobscot's own Software Requirements Specification.
2. Team Penobscot's own System Design Document.

2. System Overview

2.1 Background

The SeiDart GUI application is two-fold. The GUI and CLI versions require two separate install processes. The main graphical version requires no additional work on a routine basis to maintain. This version will only require changes after completion of new features to the CLI version of the application. For additional information regarding this process, please refer to section 3.3 of this document.

2.2 Hardware and Software Requirements

Use of SeiDart can be done via the enclosed executable, titled "GUI", or via the python script, "GUI.py". Each of these methods requires the installation of:

- Mac:
 - Homebrew
 - Xcode (Installed via Homebrew)
 - GCC (Installed via Homebrew)
 - Ghostscript (Found at <https://www.ghostscript.com/download.html>)
 - ImageMagick (Found at <https://imagemagick.org/index.php>)
- Windows:
 - Ghostscript (Found at <https://www.ghostscript.com/download.html>)
 - ImageMagick (Found at <https://imagemagick.org/index.php>)

- GCC (Found at <https://sourceware.org/cygwin/>)
- Fortran95 (Found at [Here](#))
- Linux:
 - Ghostscript (Found at <https://www.ghostscript.com/download.html>)
 - ImageMagick (Found at <https://imagemagick.org/index.php>)
 - Fortran95 (<http://www.g95.org/>)

Further, if you choose to use the python script rather than the executable, you will also be required to install Python3 (Version 3.7 or greater). Once installed, the following libraries must be installed:

- Numpy
- Scipy
- Matplotlib
- Glob3
- Mplstereonet

Installation of the above packages is most easily accommodated using pip.

3. Administrative Procedures

3.1 Installation

The program will be provided as a portable executable for each major desktop operating system. The Microsoft Windows, Apple OSX, and Linux versions will be incompatible with other systems and should be used only on the respective system.

3.2 Routine Tasks

Our software is a GUI for the SeiDart software. Since the GUI is a standalone product no routine administrative tasks are required. If any maintenance or change needs to be made to the SeiDart GUI they will be made through a software update.

3.3 Periodic Administration

The SeiDart GUI will require minimal administration and maintenance. As the backend software is updated the GUI will have to be changed to accommodate any backend changes. This should only occur when any IO data is changed or when the application programming interface (API) is altered.

3.4 User Support

There will be three sources for user support for SeiDart . There will be a help page built into the software which will include basic instructions for operating the software. In addition, a complete User Manual that will include more detailed instructions on how to operate the software will be provided by the Team Penobscot. If neither of those supply the needed information for the user they will be instructed to contact the software admin, which at the time of this documents creation would be Dr. Gerbi. He can be reached at earthclimate@maine.edu.

4. Troubleshooting

4.1 Dealing with Error Messages and Failures

There are no error messages programmed into the SeiDart software. If an error message is encountered, attempt to restart the SeiDart software. If the error recurs then note how the process leading up to the error and report it as a bug to Dr. Gerbi.

4.2 Known Bugs and Limitations

Caution is needed when choosing images to process through the software. Specifically, images using anti-aliasing as a way to smooth the edges on images cause a very strange effect in SeiDart. Anti-Aliasing is a method to smooth the edges on graphics by averaging the colors between edges, putting for example a grey gradient along the border of a black line and a white background. This causes a drastic increase in colors detected, as each part of the gradient is seen as a unique RGB combination when creating the prj file used by the GUI.

Appendix A – Team Review Sign-off

By signing below all team members agree they have reviewed this document. Signing below, team members agree to all content in this document aside from any comments in the space provided below. Signing below, team members agree that the format used in this document is agreeable aside from any comments in the space provided below. Singers acknowledge that the comment area below is not a place to voice major points of contention, only minor points of disagreement in this document.

Team Member #1:

Name (Printed): Adam Farrington Date: 4/14/2020

Comments: _____

Signature: Adam Farrington

Team Member #2:

Name (Printed): Alexander Thacker Date: 4/14/2020

Comments: _____

Signature: Alexander Thacker

Team Member #3:

Name (Printed): Jens Hansen Date: 4/14/2020

Comments: _____

Signature: Jens Hansen

Team Member #4:

Name (Printed): Nathan Gazey Date: 4/14/2020

Comments: _____

Signature: Nathan Gazey

Appendix B – Document Contributions

Below is the list of all contributions to the Administrator Manual by each member of Team Penobscot.

Adam:

- Wrote section 1.X, 4.2
- Reviewed and edited whole administrator manual

Alex:

- Wrote section 3.2, 3.3, 3.4, 4.1
- Header formatting
- Created the appendices and title page
- Reviewed and edited whole administrator manual

Jens:

- Wrote section 2.2
- Reviewed and edited whole administrator manual

Nathan:

- Wrote section 2.1, 3.1
- Document format unification
- Reviewed and edited whole administrator manual