

Spatial Aspect Map Locator

User Manual

Content

1. Introduction.....	2
2. Modes of operation	2
3. Switchboard window	2
4. Install Maps window	3
5. Launch Maps window	5
6. Installation guide over default scheme	6
6.1. Assigning root path for repository.	6
6.2. Installation of scheme.	7
6.3. Recognizing data usability for a map.....	9
6.4. Installation of layers.....	10
6.5. Installation of raster data.....	12
6.6. Raster map completion checking.	15
6.7. Finalizing of map installation.	15
6.8. Checking completion of installed map.	16

1. Introduction

The Spatial Aspect Map Locator targeted for assisting users in tasks of installation of map data prepared by author for using with Spatial Aspect Viewer and Spatial Aspect Explorer software products. Advanced users can accomplish such tasks manually, but the program provides more convenient way for it. Other target of the program is providing convenient way for launching installed maps.

2. Modes of operation

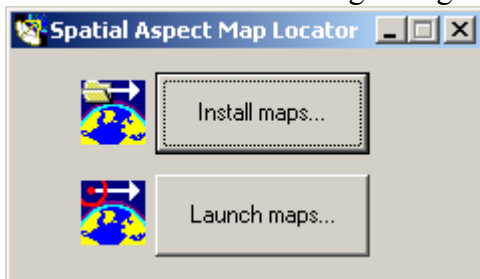
The program has three kinds of its main window: **Install Maps** window for tasks of map installations, **Launch Maps** window for tasks of launching installed maps and root window, which services as switchboard for launching other mentioned windows. Each of such windows runs in its own process with single tone limitations, so no more than one window per each kind can be existed on desktop of user. So if user will try to start the program with any of mentioned kind of its appearance, running instance of it simple will be called up to foreground.

The program initially launched in form of switchboard root window. Also, the program can be launched by passing one of two flags to its command line for prescribed appearance as follows:

- **-install** flag will execute the program in form of **Install Maps** window;
- **-launch** flag will execute the program in form of **Launch Maps** window.

3. Switchboard window

The window has following dialog box appearance:



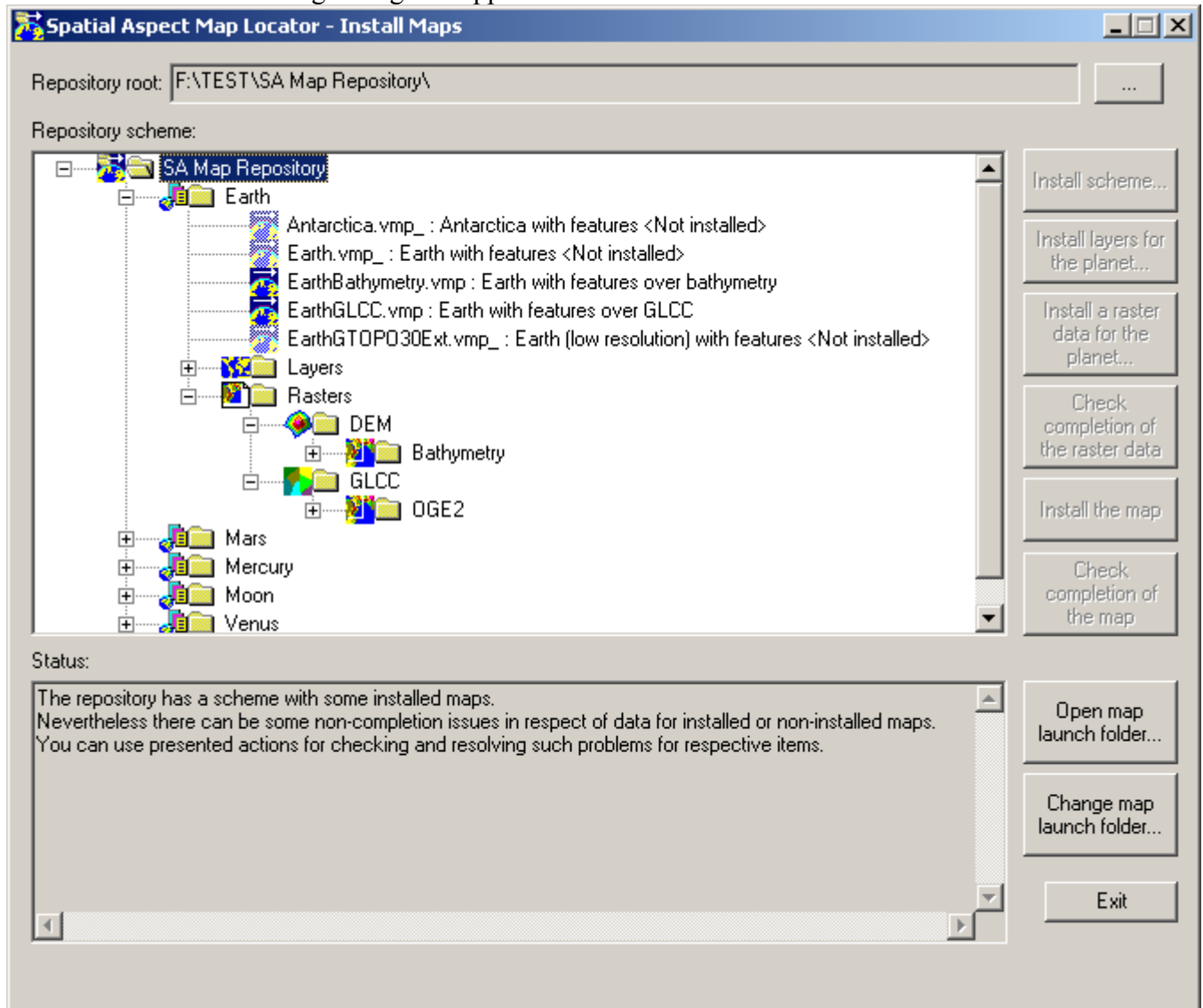
Upper button will execute the program in form of **Install Maps** window.

Bottom button will execute the program in form of **Launch Maps** window.

Minimizing the window will follow any of such actions.

4. Install Maps window

The window has following dialog box appearance:



A **Repository root** edit box displays path to root of managed repository of maps. Initially the path is not assigned. A "...” button on right side of it used for selecting or changing the root, by calling standard folder selection dialog.

A **Repository scheme** tree view exposes entire content of the managed repository in respective appearance of each file and folder recognized as part of scheme. The word “scheme” has there a dual meaning. For one side entire displayed structure considered as scheme. But there exists also narrow meaning, referenced to an initial scheme, which can be installed by the program to empty repository.

A **Status** window provides feedback to user about respective features of many items of repository upon their selection in the tree, and result of particular actions. Such content can be used as narration upon installation, which accompanied with additional messages from appearing message box in some cases.

Buttons on right side from the tree are used for performing particular installation task, dependently from current selected item in the tree and its state. Enabling of such buttons performed automatically, reflecting logic of the installation. Those buttons provide following actions in particular (from up to down):

- Installing scheme (means initial scheme) by selecting a particular zip-file. The default scheme file is available in directory of the program.
- Installing layers for a respective planet by selecting a particular zip-file.
- Installing a raster data for a respective planet by selecting a particular zip-file. It also includes option for incremental installing some part from multipart installation. The action will be followed by prompt of creating shortcut to the new raster map.
- Checking completion of selected map of raster data in the repository.
- Installing a selected map kind of Vector Map Project, which considered have completing content by user. The action checks the completion before and reports details about possible violations of it in other case. The action will be followed by prompt of creating shortcut to the new map. The installation itself is simple changing extension of map project file of installed scheme from “vmp_” to simple “vmp”.
- Checking completion of a selected map kind of Vector Map Project with detail reporting of result of such checking.

Two big buttons on right side from the status window provide following actions (from up to down):

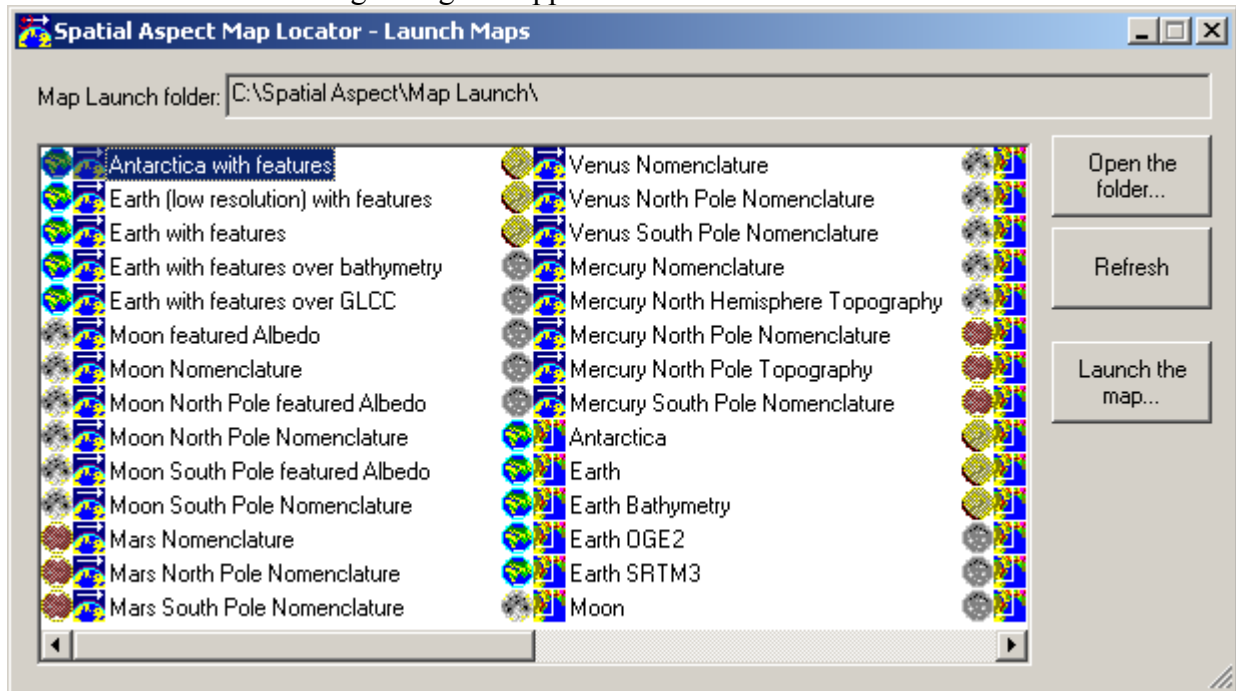
- Opening a folder, which registered for storing shortcuts to installed maps. The folder is referred as **Map Launch folder** and should be selected in some space, which is friendly for access by any user of computer. But the folder should be out scope of limitation of User Account Control (UAC) of Windows, excluding also All Users Desktop. So installation of the programs creates such empty folder as C:\Spatial Aspect\Map Launch\ in advance.
- Changing path for the Map Launch folder by calling standard folder selection dialog.

An **Exit** button will close the window and quit from the installation mode of operation of the program.

Also the window has some differed appearance upon time of a particular intermediate installation. For the case a progress bar with percentage string will be shown on bottom the window, and all controls will be disabled. Also additional **Abort** button will be shown on right side from the progress bar, providing way for terminating the particular installation by user's demand.

5. Launch Maps window

The window has following dialog box appearance:



A **Map Launch folder** edit box displays path to registered folder for shortcuts to maps. This path can be changed from Install Maps window.

A **list view** reflects content of the Map Launch folder in respect of Spatial Aspect maps. It means, the displayed content is filtered in respect of possibility of opening target files of such shortcuts by Spatial Aspect Viewer or Spatial Aspect Explorer, including followed extensions of files: *.vmp, *.zrs, *.spe, *.dem, *.bil, *.img, *.hgt and *.hgt.zip. Shortcuts in the folder can be created by any way, including creating by Install Maps window as mainstream. The view also performs sophisticated sorting of shortcuts after trying to classify they by planets and kind of maps. The sorting order has preference for VMP-maps over raster maps. Maps for non-recognized planets will be listed in remainder, having icon with question sign.

Open the folder... button provides way for inspection the Map Launch folder.

Refresh button provides synchronization content of the list view with content of the Map Launch folder by user's demand. It is useable after manual changing content of the Map Launch folder. Also the window will change its content automatically after installation any map by the Install Maps window. So user can use the window as feedback for such installation.

Launch the map... button will perform launching of a map selected in the list view. Also the action can be performed by simple double-clicking the selected map or by pressing Enter button on keyboard. Mode of the launching is differed for same action performed in the Map Launch folder. The action will always create a new instance of appropriate map program, instead of behavior of standard shortcut launch. The last will try to utilize already running program, resulting with close of an opened map, which can be adverse for user. So user can open by the Map Launch window as many map program instances as need. Also the launch keeps preference for launch third party programs, registered for launch files with extensions: *.dem, *.bil, *.img and *.hgt.

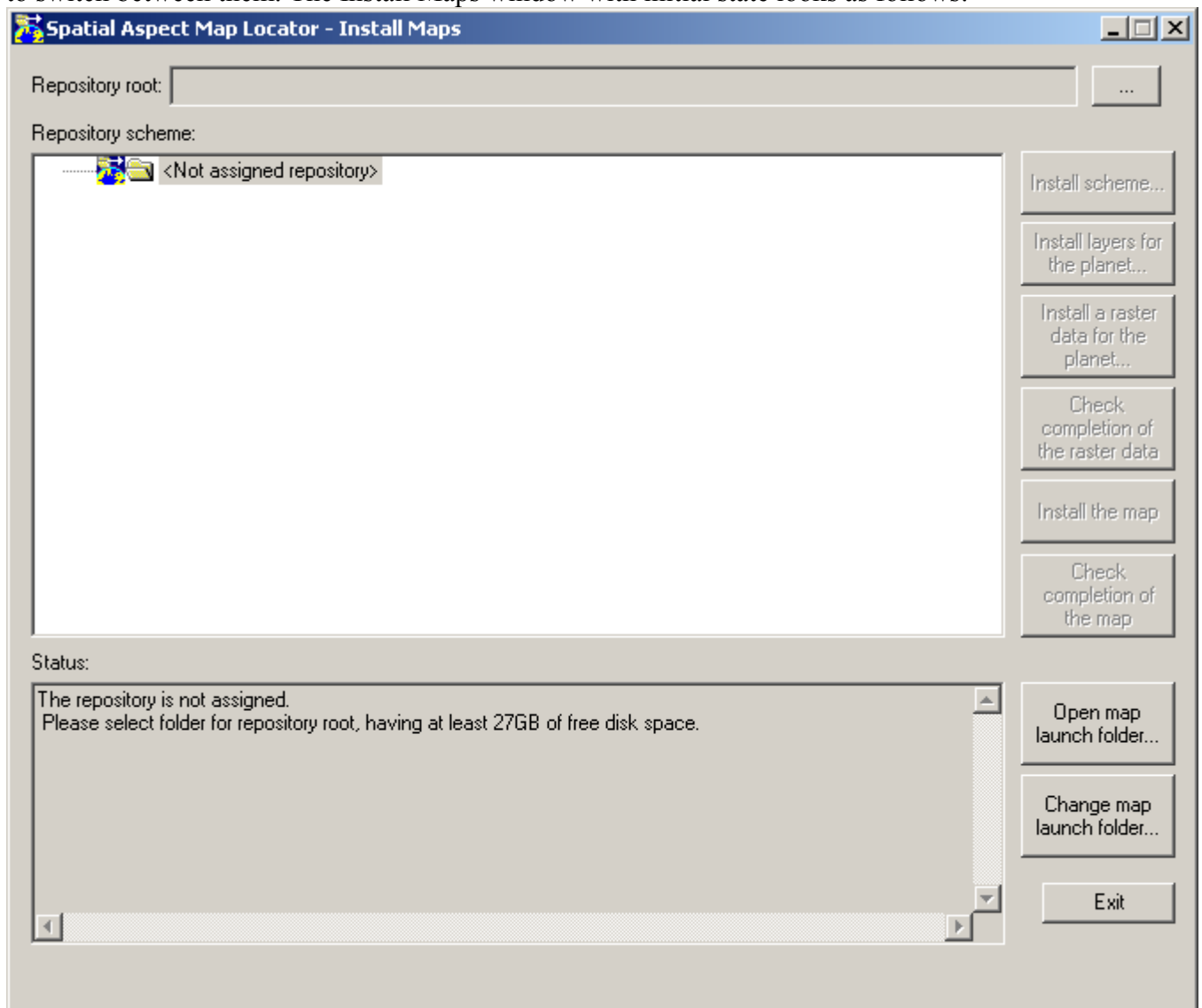
The window can be resized by user's demand with resizing the list view. Placement of the window on desktop remembered upon its closing and restored to this remembered position in next time of opening.

6. Installation guide over default scheme

The guide provides narrations for all installation tasks, beginning from initial state.

6.1. Assigning root path for repository.

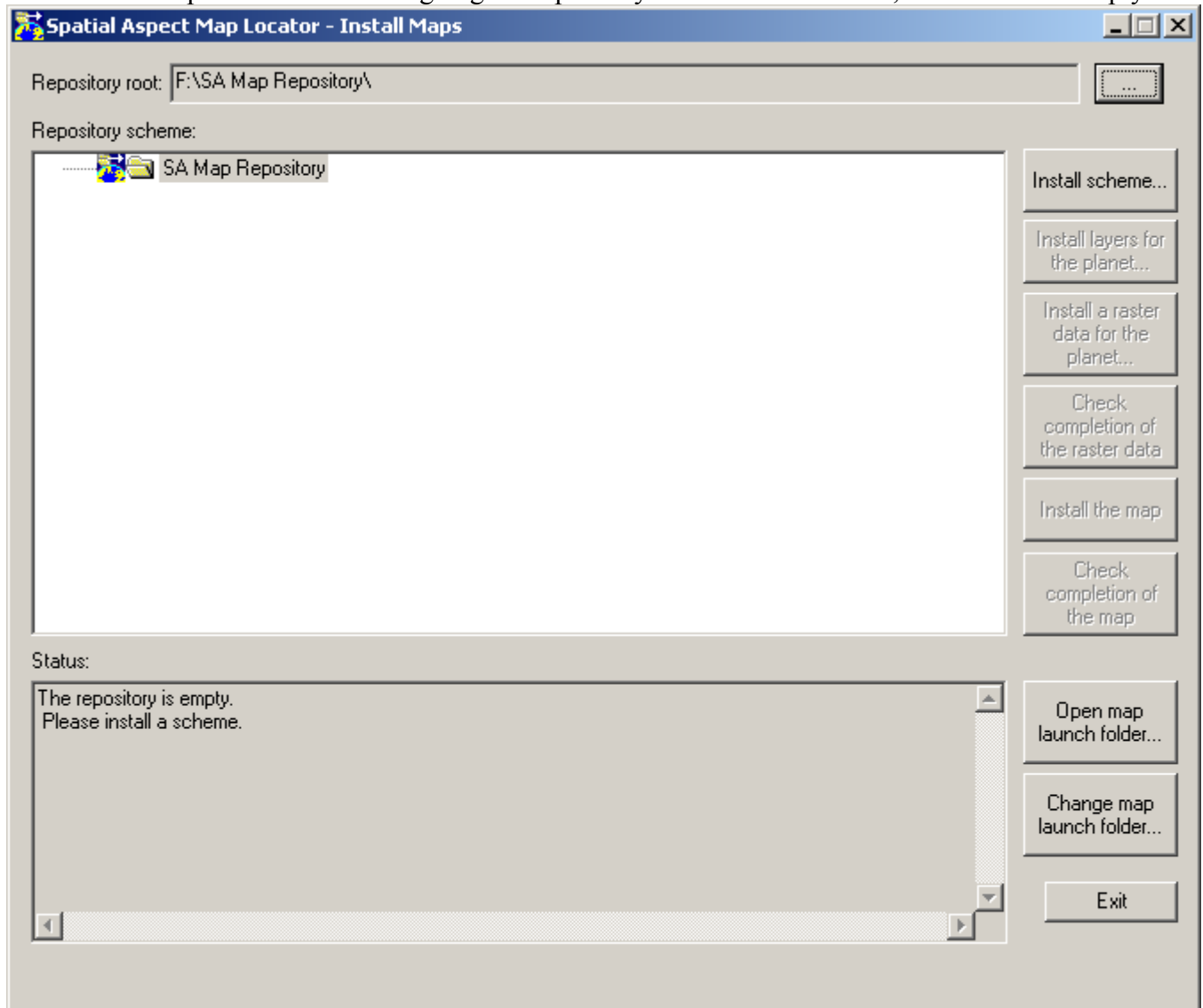
The initial state after installation the program doesn't know where a repository for maps is placed. So user should create a folder for it in advance and assign path to it. The path will be referenced as root path of repository. The folder should be created on a disk, which has enough space for place for map datums, which user will install. Currently author prepared datums for four terrestrial planets and Moon, which required space on disk about 27GB. And so it is recommended size for free space on the disk. Also user should get in account a disk space needed for storing installations archive of such datums thyself. The size typically is only on 10 percents below than installed datum, because end use datums already compressed. Also user can use a number of such repositories, and use such assigning to switch between them. The Install Maps window with initial state looks as follows:



Status window displays the initial narration for selecting the folder for repository root. So user should click on button on right of the empty edit box of repository root and select the folder.

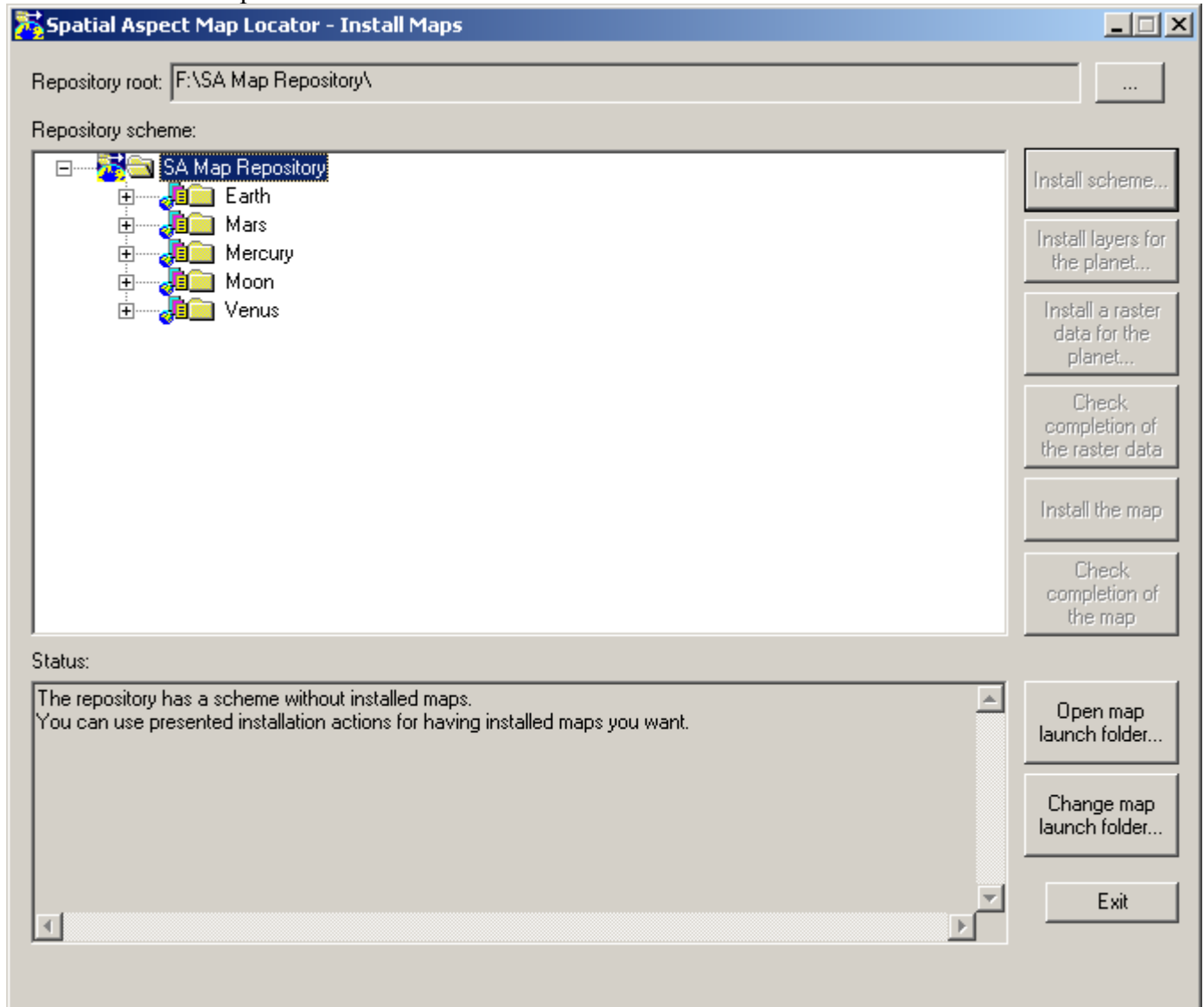
6.2. Installation of scheme.

The Install Maps window after assigning the repository root looks as follows, if the folder is empty:

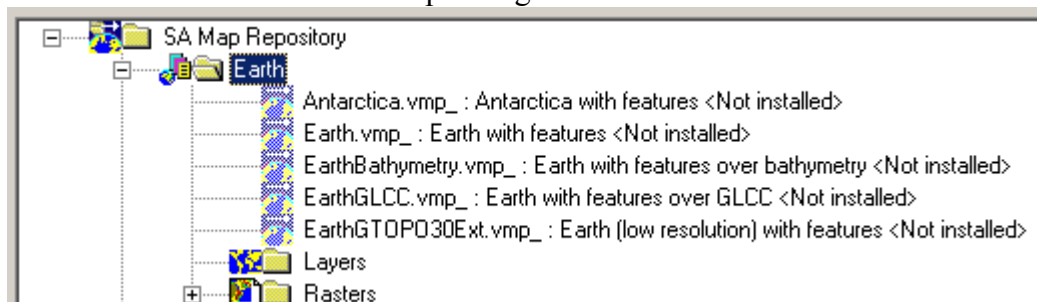


The next narration in the status window directs user to press on **Install scheme...** button, which only enabled now for select a zip-file for a scheme. The program has a zip-file for default scheme MapsRepositoryScheme.zip, which placed in folder where the program was installed. So user can select the file, and the scheme will be installed.

Now the Install Maps window looks as follows:



User can explore particular items of the scheme by using tree view for understanding its structure and future tasks. The scheme organized by folders of respective planets on upper level. Lets look on content of folder for Earth for explaining the structure.



The folder has 5 VMP maps, which all aren't installed. Each of those maps used respective vector data, which should be placed folder **Layers**, and also it used respective raster data, which should be placed in folder **Rasters**. Such used data can contain multiple files with complex relation, but for installation it is simple reduced to one archiving file. Archives for vector data are simple one zip-file per each planet, although its content can be shared or split between different VMP maps. Typically they are small files, except of Earth, which is middle size file. Archives for raster data typically much

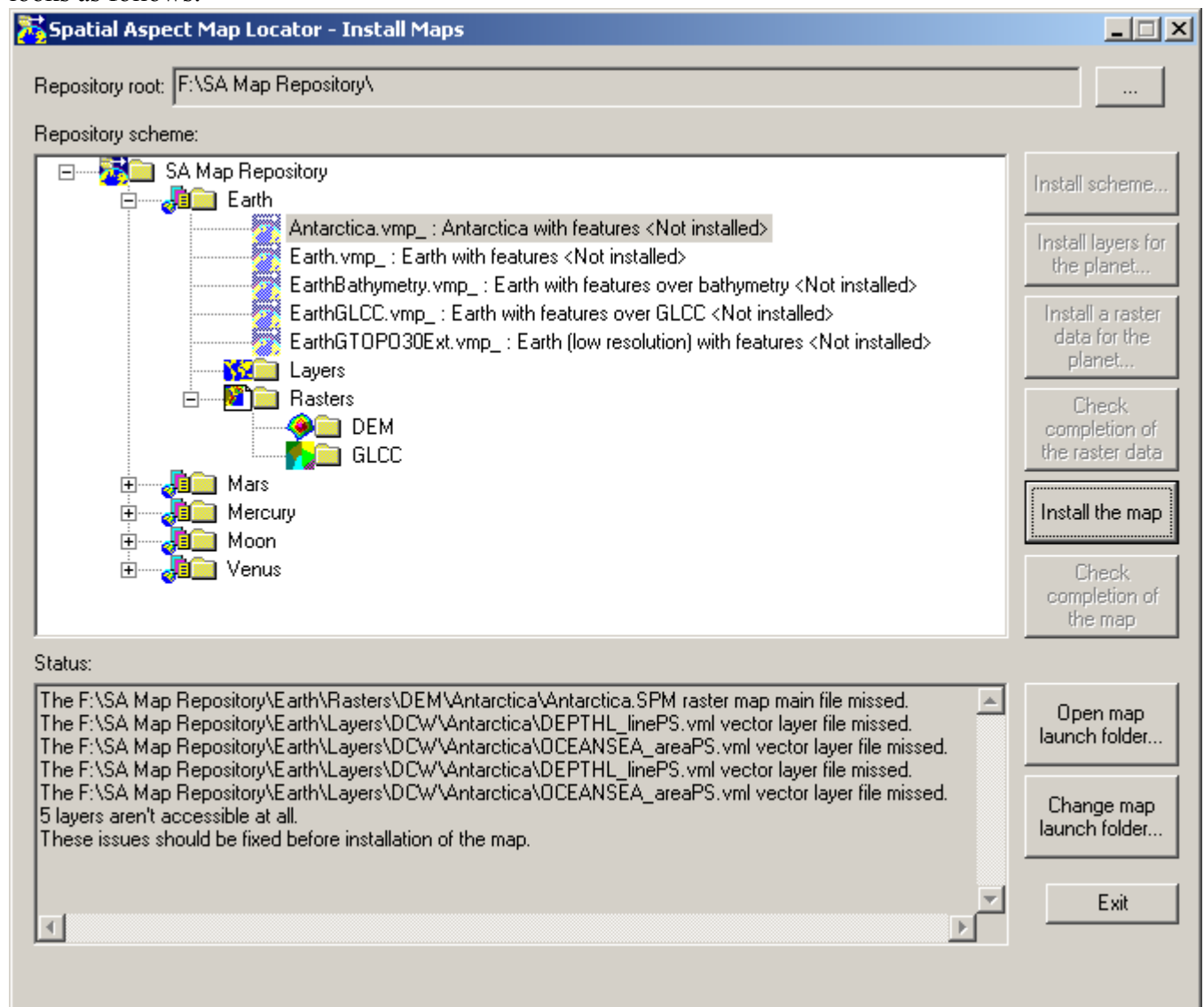
bigger, and some can be spanned between multiple parts. Those raster data also have additional hierarchy on basis of different modalities, which for example for Earth look as follows:



The first is Digital Elevation Model (DEM) modality, which presented for all planets. The second is Global Land Cover Characteristics (GLCC) modality, which presented only for Earth. Also Albedo modality exists for Moon and can be presented for other celestial bodies.

6.3. Recognizing data usability for a map.

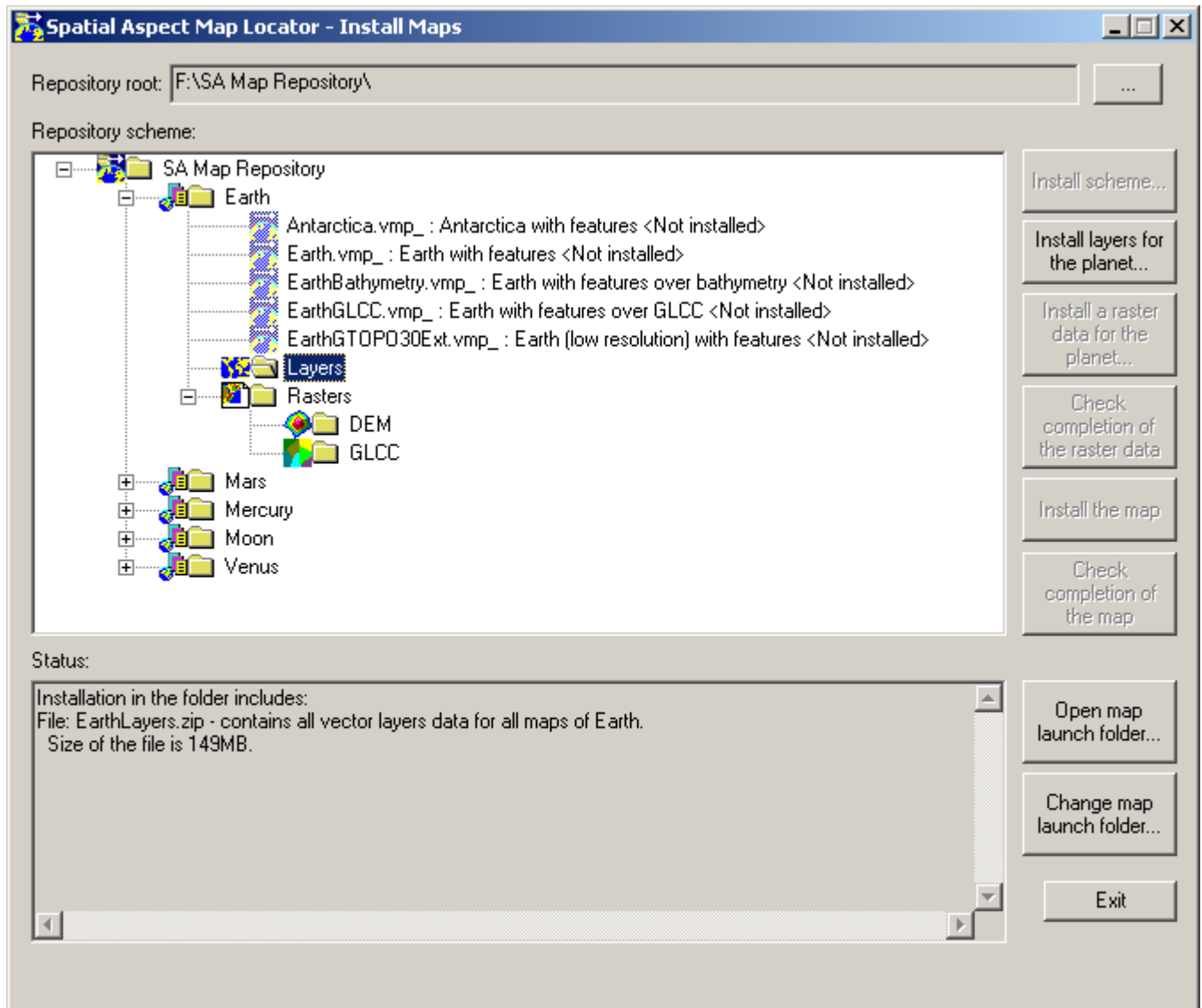
The step can be omitted, if user knows, whether data a particular map use. For know this information user can select a particular non-installed map file, **Install the map** button will be enabled, so user can press it, trying for install. The program checks existence of all used data, detects missed items and report the result in status window. For example for map of Antarctica, the result looks as follows:



The result means: one raster map with entry file Antarctica.SPM should be installed in \DEM folder, and four vector layers should be installed in respective place of \Layers folder.

6.4. Installation of layers.

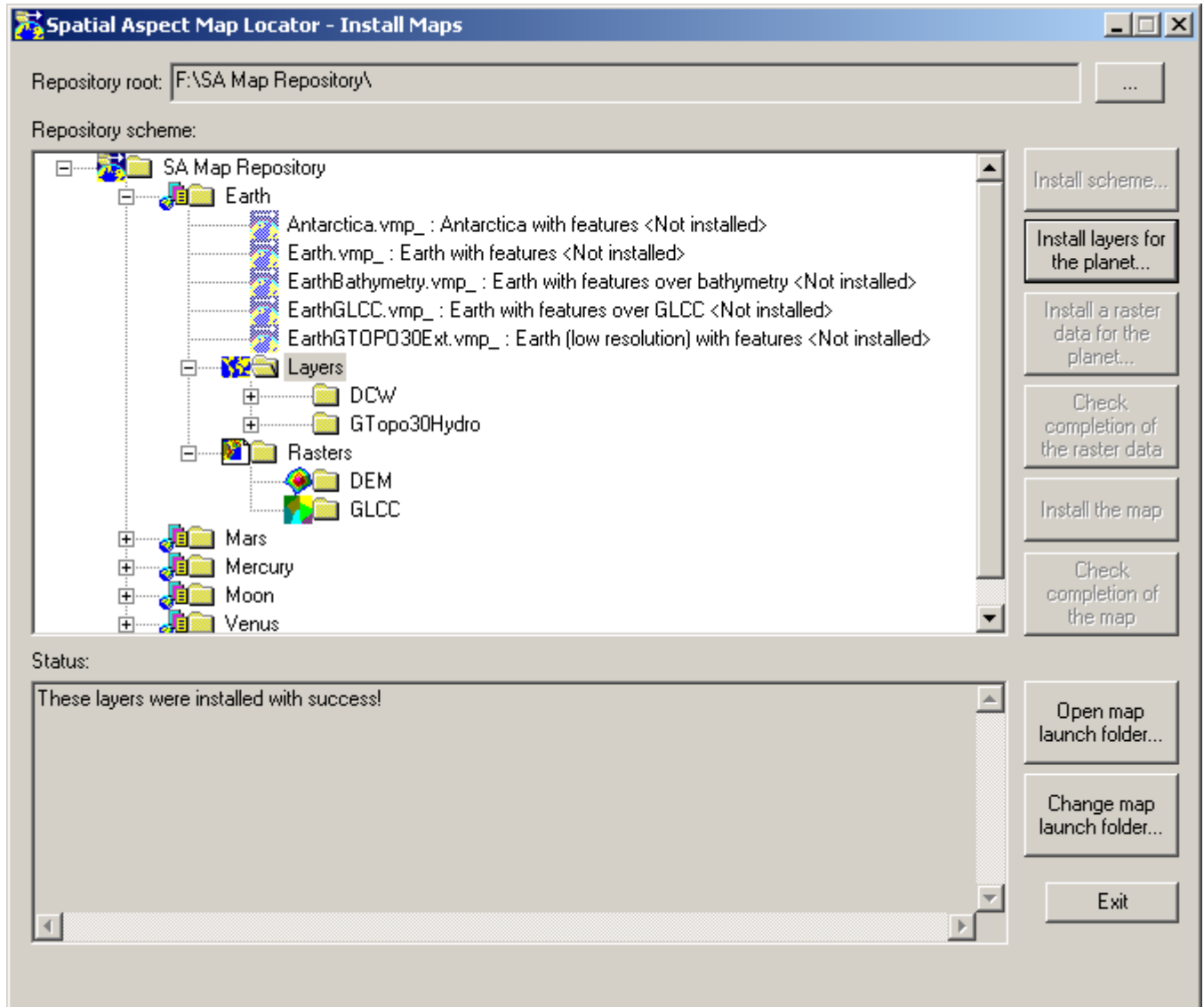
For this task user should at first select the Layers folder for particular planet in tree view. The button **Install layers for the planet...** will be enabled and respective information will be displayed in status window:



The information means: one EarthLayers.zip file with size about 149MB should be installed there for all vector layers of Earth. A “descriptor” file, which already exists in the Layers folder, and which is simple textual file, provided the information. Such files were placed by author in any folders of scheme, where respective datums can be installed. So user can press the enabled button and select the EarthLayers.zip file, which was been downloaded from site of author.

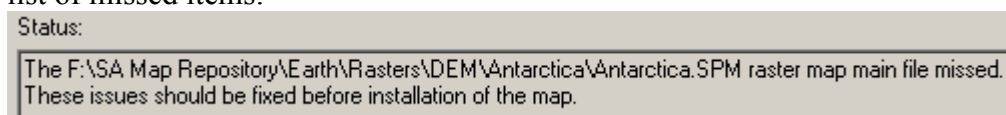
The installation task will start and continues about one minute for the Earth in particular. For other planets it will be almost instant. The installation will be accompanied by progress bar on bottom of window and by button **Abort** on right side of it for possibility of interrupt.

New items will be added in the tree view and successive information in status window:



These new items have two folders on they upper level, which represent two main original sources for installed data. They are Digital Chart of the World (DCW) and GTOPO30 Hydro. Each of two folders has a ReadMe.txt file for simple explanation of respective datum. And so other datums have such file.

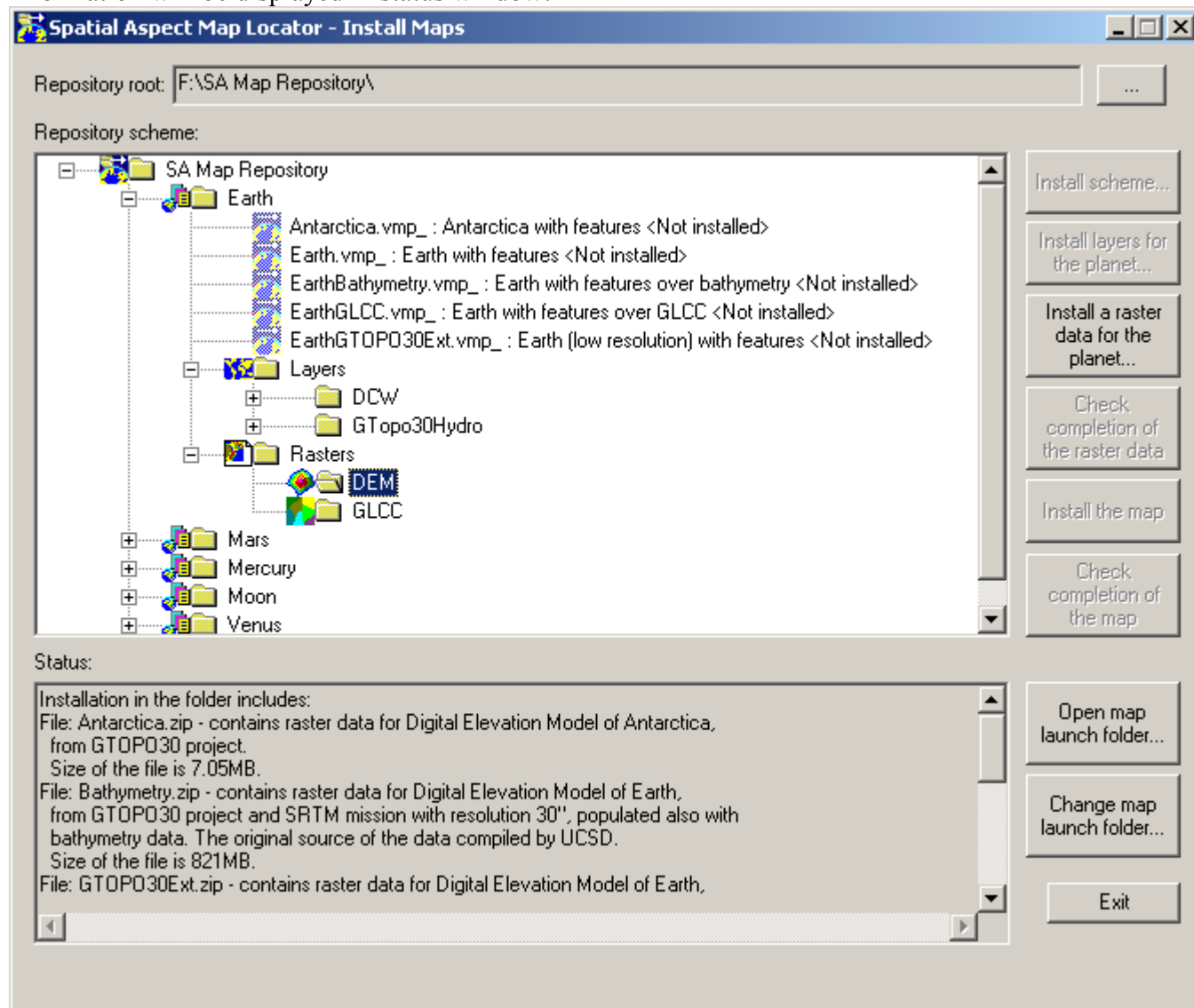
Now if user will try to install the map for Antarctica, the status window provides report with shorter list of missed items:



Only one raster map should be installed. And so it will be next step.

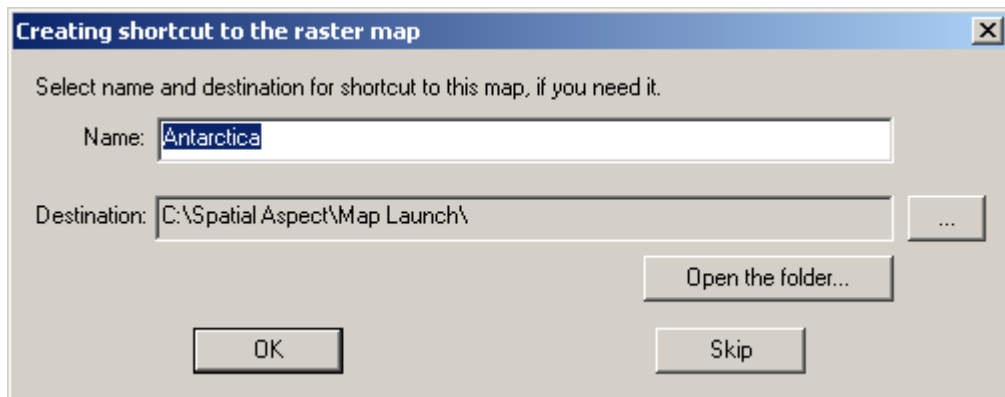
6.5. Installation of raster data.

For this task user should at first select the DEM or GLCC folder in Raster folder for particular planet in tree view. The button **Install a raster data for the planet...** will be enabled and respective information will be displayed in status window:



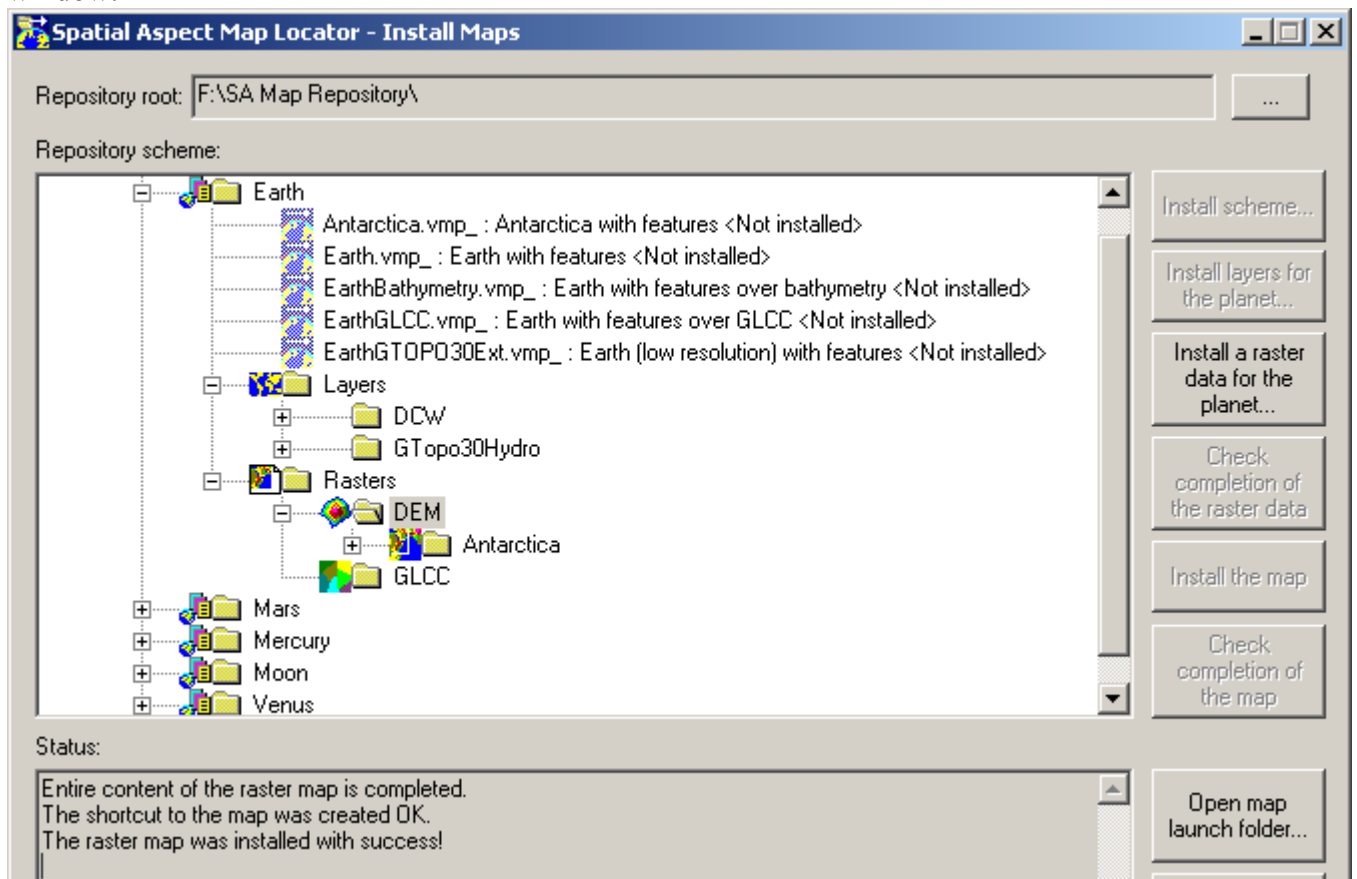
The information means: multiple installations exist for the place, each having detailed information about it, including its size. And user can install now one from all. So user can press the enabled button and select the Antarctica.zip file, which was been downloaded from site of author, and installation of the raster map for Antarctica will proceed.

The installation will be accompanied by progress bar on bottom of window and by button **Abort** on right side of it for possibility of interrupt. On finish of the task, the program will check completion of installed datum. For case of succeeding the check, the program will raise a dialog for creating shortcut for the map:



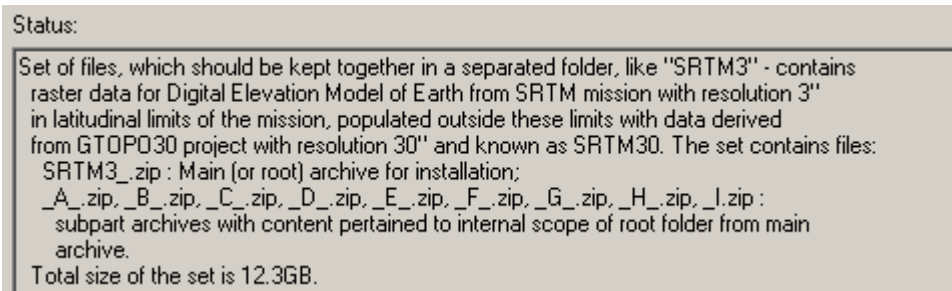
User can edit proposed name of the shortcut, can skip its creation or can change the Map Launch folder. Additionally user can open the folder from the dialog for inspection. The new created shortcut will be appeared in Launch Maps window, and the map can be opened by simple double click on it, if Spatial Aspect Viewer was installed. Author recommends keep name of such shortcuts as they proposed, because they are free from name collisions and reflect comprehensive names of entry files of respective maps.

The task will be finalized by adding new map folder in tree view and by successive report in status window:



In case of some non-completion of the map, the report will contain a list of missed or altered files of the datum, which can be result from corrupted zip-file.

For some raster maps installation uses archives, which spanned between multiple parts, such as follows:



This information means: user should download all files of the SRTM3 archive and place all them in a separated folder \SRTM3 for example. After it, user can perform installation of the entire datum by selecting the root file SRTM3_.zip. The program will proceed all 10 files in the one installation task. For the case program will perform additional check for completion the set of all 10 files. If any subpart is missed, the program will raise warning dialog, which provides way do not execute the task or continue. For the last, creating of shortcut will be skipped, and the installed raster map will be recognized as not completed. This recognizing based on completion check of datum on finish of installation.

User can finalize completion of the multipart datum in future. But it can be accomplished only in multiple installation tasks: one per each file. This task is more complicated and consists from following steps:

- Select the respective map folder in tree view. Only button **Check completion of the raster data** will be enabled.
- Press the button, and completion check will be performed with report of missed files. The button **Install a raster data for the planet...** will be enabled in case of non-completion.
- Press the button and select a particular subpart zip-file for installation inside of root folder of the map. The installation task will be finished by completion check.
- Repeat the last step, as many times as need, selecting different subpart file, until completion check will succeed with prompt for creating shortcut.

Meaning for the non-completed installation can be follows: Spatial Aspect Viewer can work with non-completed raster map by opening separated files from entire collection. Also it can work on entire map, but error message boxes will be occurred upon missing of particular file with possibility for continue work. But author doesn't recommend user to deal with such cases of non-completion.

Installation of any map data always begins from checking required space on disk. And so there exists high probability of exceed from existed limit of the space for big raster datums, such as this multipart archive. In the case following message box will be raised:

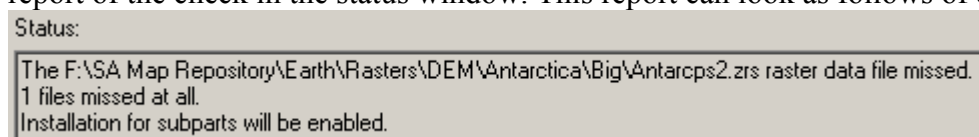


6.6. Raster map completion checking.

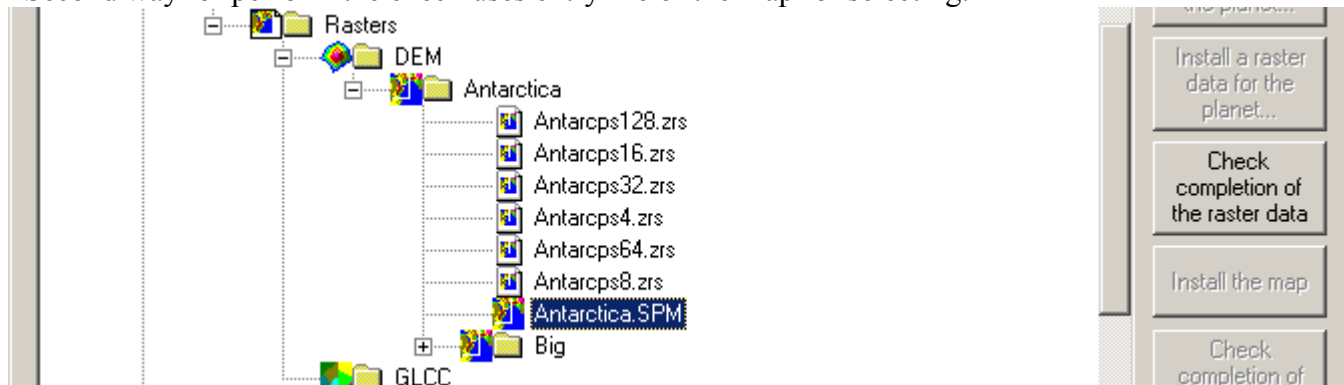
This task already was been referenced in previous topic for partial installation. But it can be performed for any raster map by two ways. The first is upon selecting the respective map folder in tree view:



The button **Check completion of the raster data** will be enabled. User can press on it, having report of the check in the status window. This report can look as follows of case of non-completion:



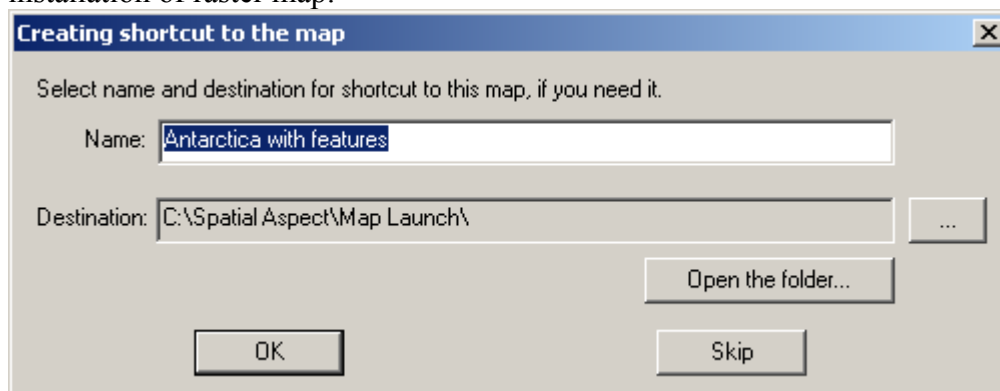
Second way for perform the check uses entry file of the map for selecting:



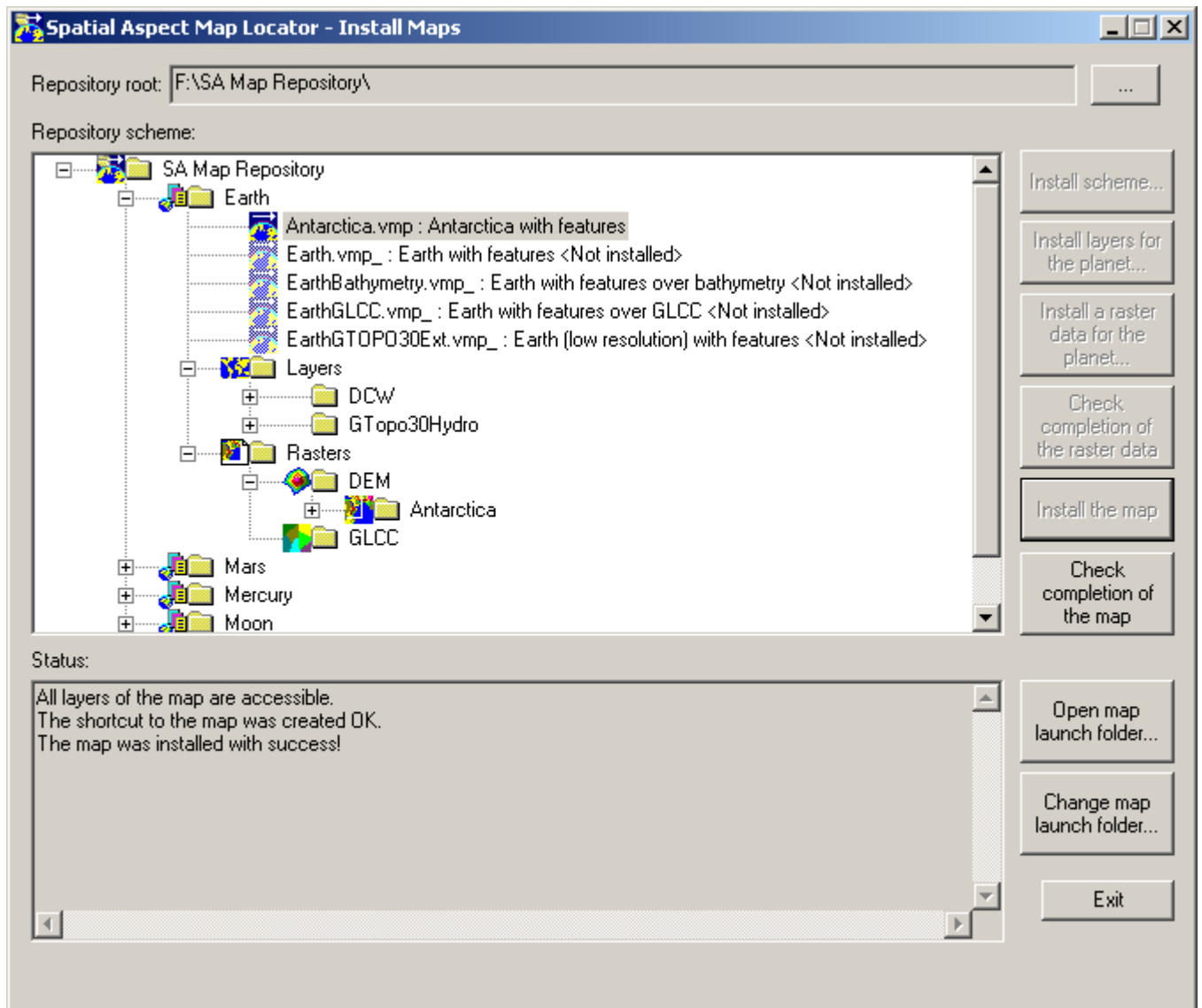
Result will be same.

6.7. Finalizing of map installation.

For this task all data for respective map should be installed. It is like task 6.3. for recognizing data usability: user selects a particular non-installed map file, **Install the map** button will be enabled, so user can press it. The installation begins for checking presence all layers of map and raster map data for its background and continues for checking completion of the raster map. If all checks will be succeeded, the program raises the dialog for creating shortcut for the map, as it was described for installation of raster map.



The step will be followed by updating map entry in tree and reporting in status window:



After the install, only button **Check completion of the map** will be enabled and new entry will be added to Map Launch window for the map.

6.8. Checking completion of installed map.

This task is useable for case of having a map manually installed. User can select a particular installed map and press the **Check completion of the map** button. Status window will report result of the check, which can be succeeded, as for case referenced in topic 6.7., or it can have missed items, like appeared in topic 6.3. The program supports also checking a map, which uses a raster map or vector layers placed outside of scheme. Result will be succeeded, if the outer raster map is completed. But author doesn't recommend creating map project of such kind, due possible problems upon migration such map to other location.