

1.1 SMS Interface

An interface for TUFLOW FV that allows the user to build and run a model within SMS is being developed. At present this allows for only limited boundary condition types, but this is planned to be expanded in the future. In this section of the manual, the installation of the interface is described.

1.1.1 Installation

When the TUFLOW FV interface for SMS is downloaded the following files are included:

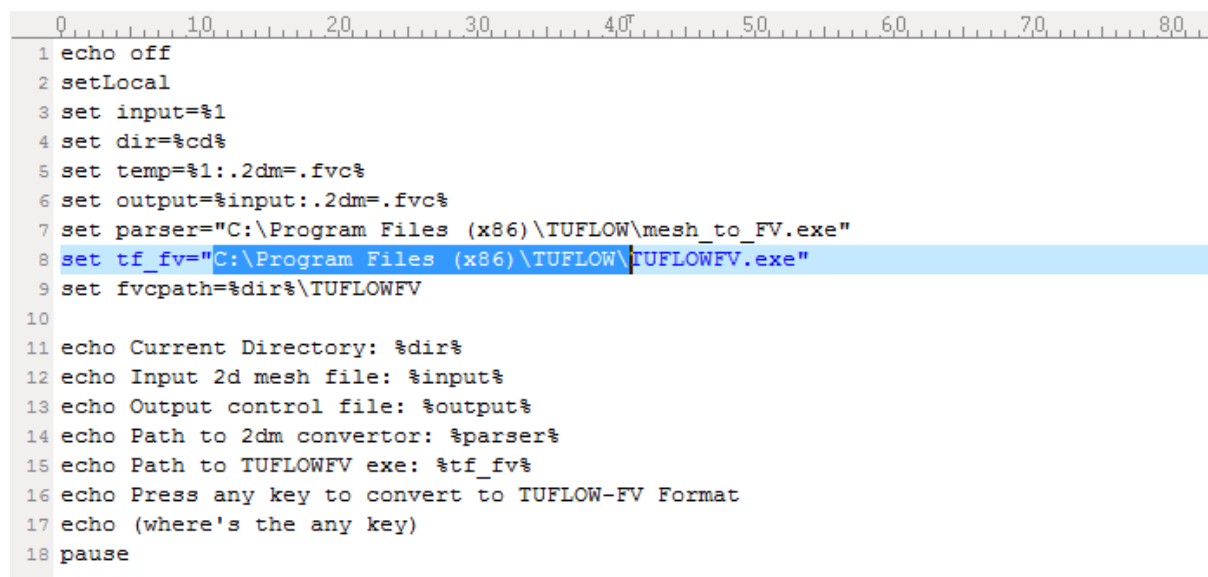
- 1 Convert_and_run.bat
- 2 Mesh_to_fv.exe
- 3 TUFLOW_FV.2dm

The interface does not need to be installed, however it does need to be configured.

The convert_and_run.bat file is a batch file that will be initialised by SMS. This needs to be configured to your machine, to do this, edit the .bat file in a text editor. An example of commands in the .bat file are shown in Figure 1-1 below, the 8th line defines the location of the TUFLOW FV executable, the highlighted text needs to be replaced with the location of the TUFLOW FV executable on your machine.

Tip: In Windows 7 if you explore to the path of the executable, hold shift down and then right click on the executable “Copy As Path” should be an option. This copies the pathname to the clipboard and can be pasted into the text editor.

Similarly line 7 needs to be edited to define the location of ‘mesh_to_FV.exe’ file.



```
0 10 20 30 40 50 60 70 80
1 echo off
2 setLocal
3 set input=%1
4 set dir=%cd%
5 set temp=%1:.2dm=.fvc%
6 set output=%input:.2dm=.fvc%
7 set parser="C:\Program Files (x86)\TUFLOW\mesh_to_FV.exe"
8 set tf_fv="C:\Program Files (x86)\TUFLOW\TUFLOWFV.exe"
9 set fvcpath=%dir%\TUFLOWFV
10
11 echo Current Directory: %dir%
12 echo Input 2d mesh file: %input%
13 echo Output control file: %output%
14 echo Path to 2dm convertor: %parser%
15 echo Path to TUFLOWFV exe: %tf_fv%
16 echo Press any key to convert to TUFLOW-FV Format
17 echo (where's the any key)
18 pause
```

Figure 1-1 SMS Interface: Configuring Batch File

In SMS the interface needs to be configured to utilise the batch file that we just modified, to do this, in SMS select:

Edit → Preferences...

Navigate to the file locations tab and then in the Model Executables under the Generic entry, select “Browse”, navigate to the correct directory, select “All Files” from the files of type dropbox and then select the convert_and_run.bat. Screen images are provided in Figure 1-2.

The SMS interface is now ready to use.

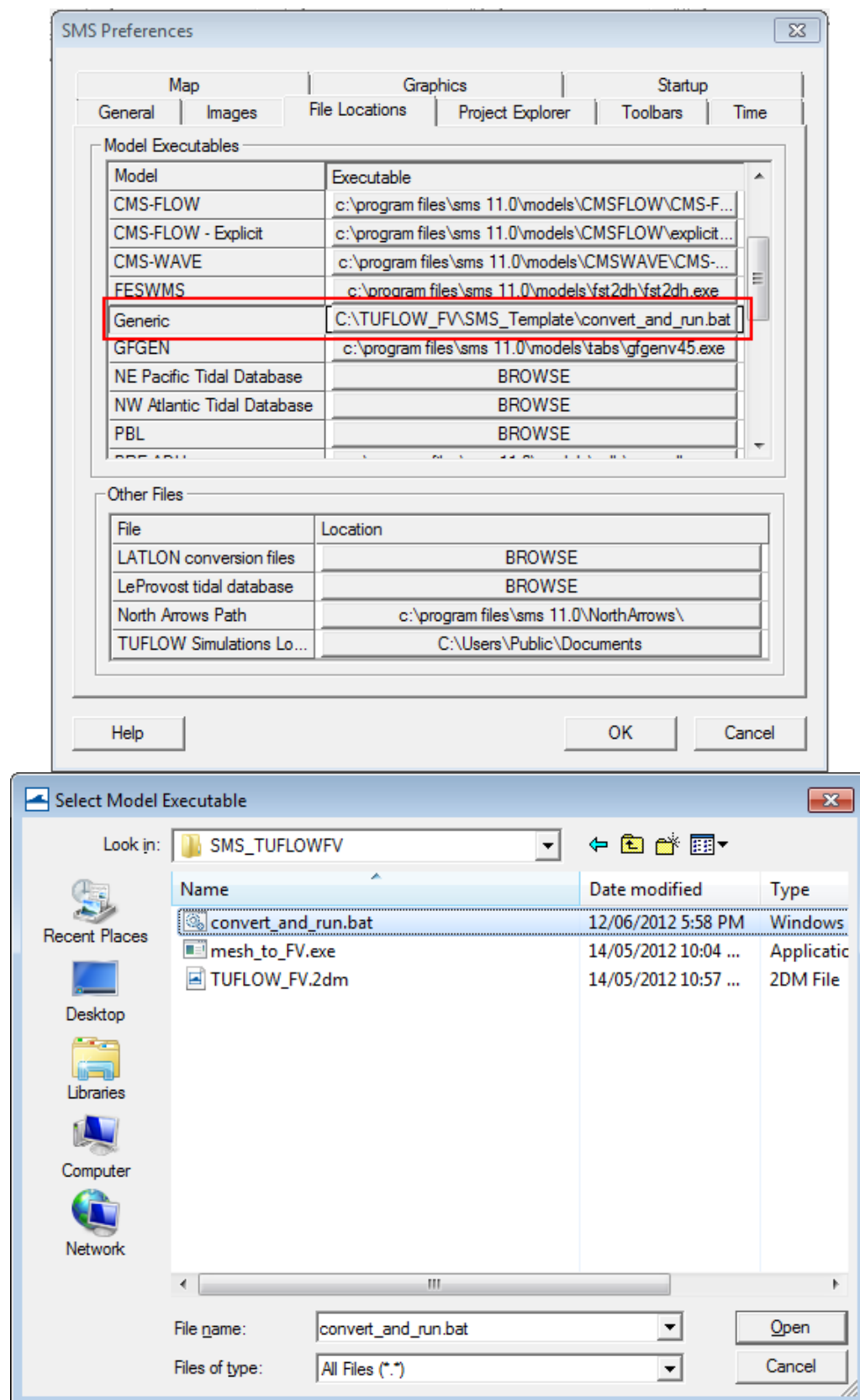


Figure 1-2 SMS Interface: Setting Generic Interface Location

1.1.2 Loading the Interface

When using the SMS interface for TUFLOW FV the steps involved in creating the model are:

- Open TUFLOW_FV.2dm (This initialises the TUFLOW FV SMS Interface)
- Create the model mesh (see Section 4.4 of the TUFLOW FV Manual and the SMS tutorials)
- Set the model boundaries and parameters
- Select Run TUFLOW FV (in the menu choose TUFLOW FV → Run TUFLOW FV). This:
 - (a) Creates the TUFLOW FV directory structure and converts the SMS .2dm file to TUFLOW FV format inputs.
 - (b) Runs TUFLOW FV on the newly created inputs.

When RUN-TUFLOW FV is selected this starts the batch file, which firstly converts the model and then runs the model.

An example model using the interface is provided in Section 6.2 of the TUFLOW FV Manual. Before starting the creation of the model mesh, the TUFLOW FV definition needs to be loaded into SMS, this is done by opening the TUFLOW_FV.2dm provided with the download (see Figure 1-3). Once loaded a TUFLOW FV menu item is visible, as shown in Figure 1-4. At this stage with no model mesh created most of the options are un-selectable (grey).

NOTE: The Define Model is used to create / modify the interface, this should not be modified by the user and is password protected. If this is modified, the conversion process is highly likely to fail.

With the TUFLOW FV model definition loaded we are now ready to create the TUFLOW FV mesh and model. This is described in the tutorial model in Section 6.2 of the TUFLOW FV Manual.

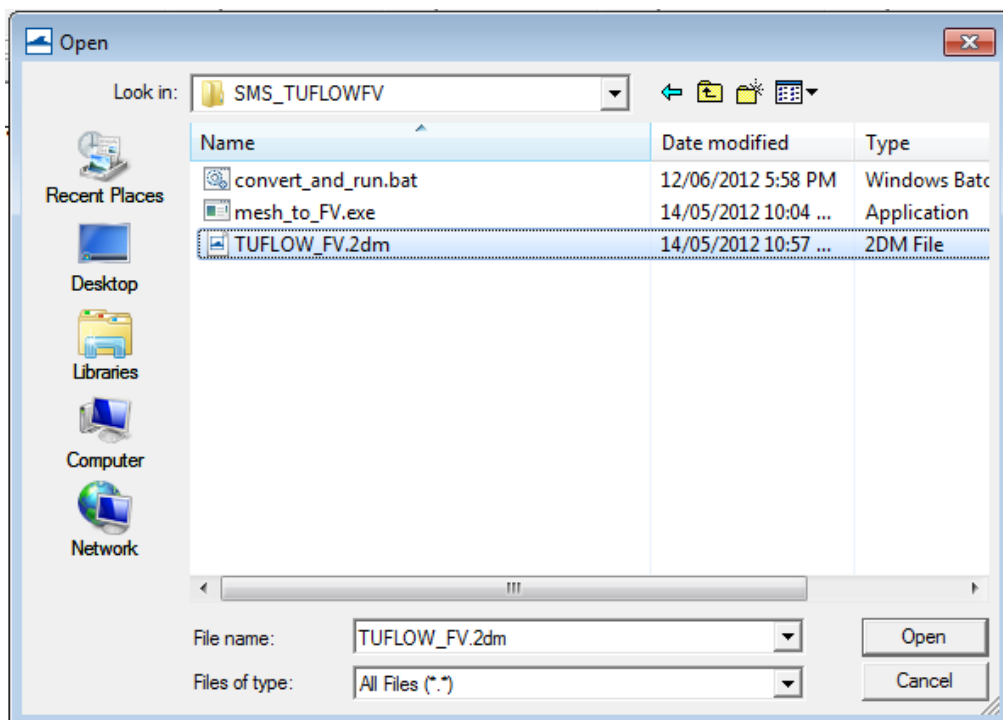


Figure 1-3 SMS Interface: Loading Model Definition

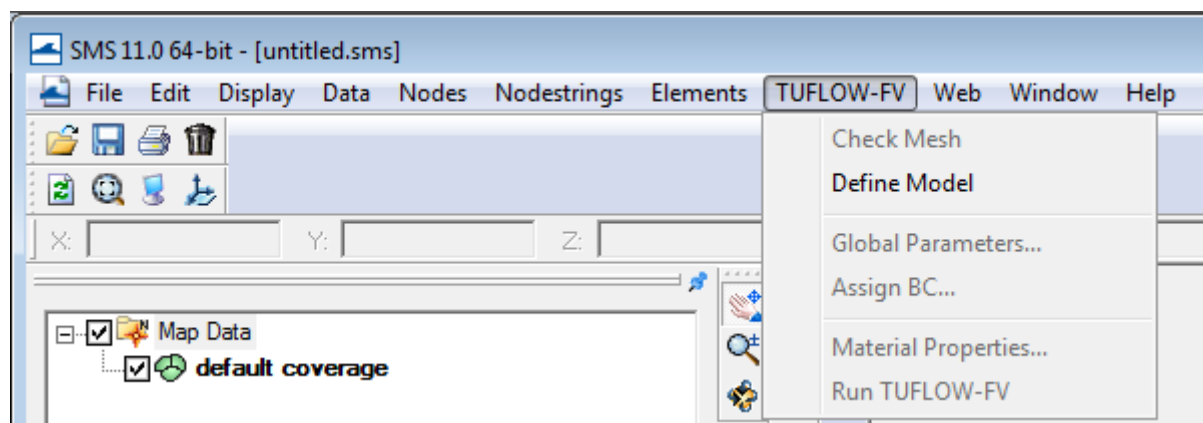


Figure 1-4 SMS Interface: TUFLOW FV Menu Item