
1.0 Support and maintenance of software

Maintenance can be defined as "*all the operations carried out in order to maintain a system or part of a system in a normal operating condition*". The **upkeep** is defined as "*the action to maintain in good condition*". In the case of software, it consists of making all the corrections or modifications necessary in order for the product to perform well in the environment and conditions for which it was designed.

1.1 Minor corrective patches

The maintenance of our computer products includes the following operations:

1. Cosmetic modifications to the graphic interface
 - a. Modification or displacement of the buttons or editing fields of a data entry form or dialog box
 - b. Correction of the spelling
 - c. Color changes
 - d. Addition of explanatory messages
2. Correction of calculation or operation errors
3. Support of a new version of Windows comprising some new characteristics
4. Support of a new material (new type of mouse, new family of printers)
5. Addition to the data dictionary of tables or fields having a minor impact on the processes or functions for the treatment of information
6. Addition of functions of general interest that can be implemented without any negative impact on the majority of users

Generally, this type of maintenance requires minor modifications to the source code and a minimum of validation. It is the same for the user. None of these modifications should require him to carry out new tests or to change anything in his work procedure. For these reasons, these minor modifications form patches having an intermediate version

number, say 7.71, which can be installed in the current version, 7.70 in this example, by replacing the previous files with the new ones obtained via the Internet.

During the span of a year, many of these corrective patches are made to the software and sent by email to users that made the request.

1.2 New versions

The following operations can also be regarded as maintenance:

1. Addition of a function (calculation, editing, page setup, etc.) to an existing module
2. Addition of new tables or fields that have a major impact on the operations, treatments or calculations done by the application
3. Improvement of an algorithm in order to increase the accuracy of a calculation or to reduce the execution time
4. Modification of the user interface to increase user friendliness
5. Modification of an application in order to make it more flexible for the user and easier to customize

This type of maintenance often requires major modifications to the source code and many validations. The user might need to make changes to his data, style files or work procedure. To minimize the negative impact of these changes on our users, we gather all the important modifications in a new version of the software, which can be reinstalled independently of the previous version. In some cases, both versions can be used in parallel for a period of time.

Since these modifications can have major impacts on some users, we must ensure that these changes will be in the best interest of our clients. Therefore, we cannot produce these versions according to a predetermined schedule. Until now, we have produced major versions every year or two. These new versions are uploaded on our website and can be used by clients holding a valid support and maintenance contract.

We make every effort to maintain the compatibility with older file formats as well as previous style files. Similarly, when we modify the data structure, we include all functions

necessary to update the structure of previous tables and to copy the data into a new database.

1.3 What is not regarded as maintenance

Generally, the following operations are not regarded as maintenance:

1. Addition of a new module
2. Addition of a function that is not necessarily useful for most of the users, or that may cause compatibility problems
3. Any addition or corrective patch that is subject to a deliverable and a schedule
4. Support of a new database management system (for example, from Access to Oracle or SQL Server)
5. Support of a new platform (for example, from Windows to Solaris)

This work is regarded as software customization and can be done as a specific mandate on an hourly or flat rate basis, to be established according to the scope of work required.

2.0 Technical support

Technical support refers to the assistance given to users within the normal framework of our products. This support is given primarily by phone, Internet and fax.

2.1 What is regarded as technical support

The following interventions are generally regarded as technical support:

1. Answer to a precise question regarding the software operations
2. Assistance during the software installation
3. Assistance for the data input and validation
4. Minor modifications to a style file

5. Minor correction or modification to an Access query (view)
6. Corrections to erroneous data due to faulty software operations

2.2 What is not regarded as technical support

The following interventions are generally not regarded as technical support:

1. On site technical support
2. Complete installation of the software
3. Detailed explanations about the software due to a lack of training
4. Input of geotechnical or other data
5. Development of style files
6. Development of data entry forms
7. Development of Access queries (views)
8. Development of Access reports
9. Development of Excel files
10. Correction of erroneous data due to the following:
 - a. The software was used without adequate training
 - b. The data were entered without following the requirements handbook produced by our main clients provided of contracts
 - c. The data are from tables added or customized by the user
 - d. The data are from customized queries that are erroneous

This work is regarded as training, software customization, consultation, technical assistance or *ad hoc* development, and can be done as a specific mandate on an hourly or flat rate basis, to be established according to the scope of work required.

3.0 Training

We now offer courses on the use of the various modules developed by Sobek. These one-day courses cover the following topics:

1. Data entry forms for exploration
2. Data entry forms for quality control (construction)
3. X3D user interface
4. SM2 mapping and modeling library
5. Log module (boring logs)
6. Lab module (laboratory tests)
7. Pro module (profile view of geotechnical properties)
8. Site module (management of data with spatial reference)
9. Stat module (reports on material filling)
10. Dam module (design of retaining structures)

These courses are offered at our office (1010 Sherbrooke West, suite 1412, Montreal) and include practical examples. The training cost varies depending on the number of people from a given company registered for a course:

1. 500 \$ for the first person
2. 400 \$ for the second person
3. 300 \$ for each additional person

The number of people is limited to six, with a minimum of two.

Sobek is accredited by the Ministry of Employment-Quebec (0046306).

4.0 Technical assistance

Sobek also offers the following services:

1. On site technical assistance (installation, computer equipment, networks, database, etc.)
2. On site specific training (coaching)
3. Input or correction of geotechnical or other data
4. Customized development of:
 - Style files
 - Data entry forms
 - Access queries
 - Access reports
 - Excel files
5. Development of a new specialized module

This work can be done at an hourly rate of 100\$ (including travel time). Living and travel expenses are the responsibility of the client. If the scope of the work is precisely known, it can be done as on a flat rate basis.