

# Maintenance and upkeep of the software

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**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.

## Minor corrective patches

The maintenance of our computer products includes the following operations:

- Cosmetic modifications to the graphic interface
  - Modification or displacement of the buttons or editing fields of a data entry form or dialog box
  - Correction of the spelling
  - Color changes
  - Addition of explanatory messages
- Correction of calculation or operation errors
- Support of a new version of Windows comprising new characteristics
- Support of a new material (new type of mouse, new family of printers)
- Addition to the data dictionary of tables or fields having a minor impact on the processes or functions for the treatment of information
- 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 8.064, which can be installed in the current version, 8.0 in this example, by replacing the previous files in the Bin directory with the new ones obtained on our website.

During the span of a year, many of these corrective patches are made to the software and published on our website.

## New versions

The following operations can also be regarded as maintenance:

- Addition of a function (calculation, editing, page setup, etc.) to an existing module
- Addition of new tables or fields that have a major impact on the operations, treatments or calculations done by the application

- Improvement of an algorithm in order to increase the accuracy of a calculation or to reduce the execution time
- Modification of the user interface to increase user friendliness
- 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 published on our website.

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.

## What is not regarded as maintenance

The following operations are not regarded as maintenance:

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