

# HEC-FDA

## Version 1.4.2, July 2017

### Release Notes

HEC-FDA Version 1.4.2 is a minor update to HEC-FDA Version 1.4.1, which was released in May 2016. This document describes these updates.

#### Description of Updates

The following is a list of updates to HEC-FDA Version 1.4.1 software that are implemented in HEC-FDA Version 1.4.2:

- Code was added to read HEC-FDA Version 1.4.1 Release Candidate 2 databases and convert them to a Version 1.4.2 database (which is also compatible with the Version 1.4.1 database). When installing Version 1.4.1 from the ACE-IT website, instead of installing the final release, the Release Candidate 2 Version was installed. The databases of Release Candidate 2 and the final release are incompatible. This change converts Release Candidate 2 databases into a database that is compatible with both Version 1.4.1 (final release) and Version 1.4.2.
- In studies where the SID reach name is used, Version 1.4.2 resolves conflicts differently than Version 1.4.1 but similar to Version 1.2.5a. In cases where the SID reach for a structure is on the opposite bank of the specified reach, Version 1.4.2 will aggregate damage to the specified SID reach. Version 1.4.1 would reject the structure. For example, if the structure is on the right bank but the SID reach is on the left bank, Version 1.4.2 will aggregate it to the specified SID reach on the left bank. Version 1.4.1 would reject the structure with a message telling the user that the correct reach could not be found.
- If there are no reaches in the study, Version 1.4.2 will not abort when the user lists reaches.
- When the user creates a new study or converts an old study, Version 1.4.2 calls external programs that actually create/convert the study so that it can be compatible with Windows 10. The user will see command prompt windows ("DOS" windows) appear that will show the creation/conversion process. Version 1.4.1 does not call these external programs so the screen output is quite different.
- Version 1.4.2 correctly transfers the global economic parameters from a Version 1.4.1 study to a Version 1.4.2 study when converting the study. Version 1.4.1 does not transfer those parameters when converting an older study. For example, the trace level parameter and the "write structure detail" flag were not transferred by Version 1.4.1.

- Version 1.4.2 correctly fills in the *study.dbf* field **STY\_DBVER** with the correct version of HEC-FDA when converting a Version 1.4.1 study. This field is not used for anything and can only be seen by the user if opening the database file with a dbf file viewer such as dBASE.
- Version 1.4.2 now strips padded blanks from the character date and eliminates the line feed character if present. This noticeably affected exporting structures in ASCII tab-delimited format. Version 1.4.1 created dates with a line feed character, which resulted in two lines of output for each structure in the output ASCII tab-delimited file. This file could not be used to edit structure data in Excel® and import it back into HEC-FDA.
- Version 1.4.2 will properly use no error about probability curves when user defined standard errors about the curve are entered. Version 1.4.1 failed to properly compute with no error.
- The Version 1.4.2 GUI (graphical user interface) was changed so that the levee overtopping button and associated check mark box are grayed out. All previous versions had these components active.
- The Version 1.4.2 stage-aggregated damage library was changed to correctly report the number of objects imported using the ASCII tab-delimited import option and to provide a summary of the number of objects imported. Previously, the stage-aggregated damage library did not always report the correct numbers and it was not apparent which output was summary output and which output was the interim output.

## Using a Study Created in a Previous Version of HEC-FDA

HEC-FDA Version 1.4.2 can directly import studies created in Versions 1.2.4, 1.2.5, 1.2.5a, 1.4.0, and 1.4.1. However, once these studies are imported in to Version 1.4.2, the study database will be converted to a new format and will no longer be compatible with earlier Versions of the program. The only exception to this is that Version 1.4.1 (final release) and Version 1.4.2 databases are identical so either Version 1.4.1 or Version 1.4.2 can be used with these databases. For other Versions, it is advisable that users save a copy of their Version 1.2.4, 1.2.5, 1.2.5a, or 1.4.0 studies before importing them into Version 1.4.2. To import a study into Version 1.4.2 open the study in Version 1.4.2. A notice will appear stating that “This study has a database for an older Version of HEC-FDA and must be converted for use with this Version of the program. You should make a backup of your database before proceeding. Do you want to update your database to the new Version?” If the user clicks **Yes** the study will be converted into the Version 1.4.2 format. Studies created in earlier (than Version 1.2.4) versions of the program will have to be converted to Version 1.2.5a before they can be imported into Version 1.4.2 (or Version 1.4.1).

## Notes about HEC-FDA Versions 1.4.0, 1.4.1 and 1.4.2

When running HEC-FDA Version 1.4.0, Version 1.4.1 or Version 1.4.2 in the Windows 7 operating system, a command prompt (DOS) window containing the Galaxy® debug message opens. Galaxy® is the commercial library that was used to create the HEC-FDA GUI. This window can be minimized but not closed while running HEC-FDA. This is described further in the Version 1.4.0 release notes.

HEC-FDA is distributed with two executables: 1) *fda.exe*, and 2) *fdaPerformance.exe*. The difference between the two executables are that *fda.exe* is the default program and is considered the more stable of the two executables; but it is what is called a "debug" version and produces the additional DOS window as described above. *fdaPerformance.exe* is the alternative executable and is considered a "release" version of the program; the executable is optimized for speed, therefore, calculations are faster than the *fda.exe* executable, but is considered less stable.

The primary update implemented in Version 1.4.0 (change to Version 1.2.5a) is the computation methods used to define uncertainty distributions about graphical flow or stage frequency curves. These methods continue to be implemented in Version 1.4.2. This update is described in detail in the Version 1.4.0 release notes.