

# TECHNICAL BULLETIN - 0003

## FLOW-X APPLICATION VERSION CONTROL

The Flow-X flow computer comes with a CD containing the latest application files. Furthermore, the applicable application (Gas / Liquid application in metric / US customary units) is pre-installed before shipment. Alternative applications or application versions can be installed using the Flow-Xpress configuration software. This software can also be used to create customized applications.

Spirit IT is constantly improving the standard gas and liquid applications. On a regular basis Spirit IT releases new application versions, containing new features, improvements and fixes.

Spirit IT applications are distributed as 'Master files' (extension .fxm). Before these can be used or edited, they have to be converted into application files (extension .fxa).

Principally there are 2 different routes to install flow computer applications:

1. A direct route, in which each flow computer application is created directly from the Spirit master. This route is especially useable if you've just one or a limited number of Flow-X flow computers, or if you are using only standard functionality without extensive customizations.
2. An indirect route, in which you maintain a company master, which is deducted from the Spirit master, and which is used as a basis for all your flow computer applications. This route is especially feasible if you are using a large number of Flow-X flow computers with customized functionality which you want to harmonize between your flow computers.

## 1. SINGLE FLOW COMPUTER INSTALLATIONS

This section describes:

- ✓ How to install a flow computer application
- ✓ How to install subsequent flow computer applications
- ✓ How to upgrade a flow computer application to a new Spirit master

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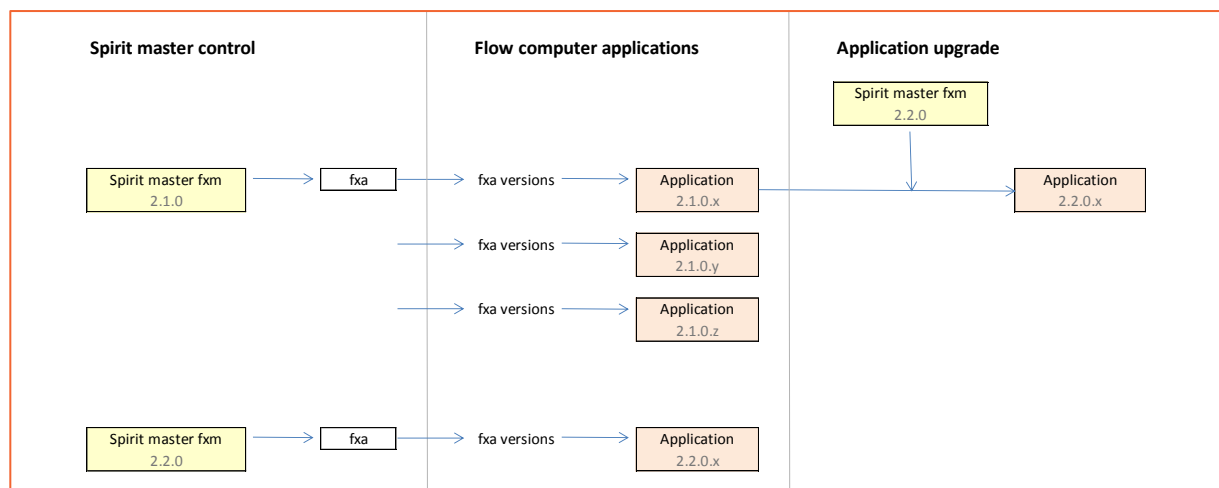
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### APPLIES TO

*Flow-X applications*

### KEYWORDS

- ✓ *Applications*
- ✓ *Master files*
- ✓ *Versions*
- ✓ *Flow computer installations*



## Install a flow computer application

Follow this procedure to create, configure, customize and install a flow computer application.

1. Create an application (.fxa) from the latest Spirit master (.fxm)
  - ✓ See Operation and Configuration manual, paragraph 'Creating applications' for a detailed instruction
  - ✓ It's good practice to choose a file name that includes the project name, flow computer tag, etc.
2. Use the Flow-Xpress configuration software to configure and customize the application.
  - ✓ With **Flow-Xpress Basic edition** it's possible to configure:
    - Device setup
    - Ports and Devices
    - Displays
    - Units
    - Reports
    - Parameters
    - User calculations for added functionality
    - Translations
    - Etc.
  - ✓ With **Flow-Xpress Professional edition** additional modifications can be made to:
    - Modbus communication lists
    - Custom calculation sheets for added functionality

Please follow the following rules when applying modifications to Modbus lists and calculation sheets:

- Don't modify the standard calculation sheets. These are maintained by Spirit IT. If you need to add functionality, please add it on a dedicated custom sheet.
- Don't just modify an existing standard Modbus list. You may either create a new list, or copy or rename a standard Modbus list prior to modifying it.

If you don't follow these rules your modifications will be lost when upgrading the application to a new master.

3. Use the '**Version**' option in Flow-Xpress to document and track the modifications you've made.

- ✓ You may create multiple versions in order to document the subsequent modifications you've made.

- ✓ Each time when a new version is created the fourth digit of the application version number is augmented and the following data is saved:
  - version number
  - date
  - author
  - status
  - description

4. Write the application to the flow computer for further configuration and testing.

You may need to repeat steps 2 – 4 until the application meets the project requirements.

5. When the installation is finalized, it's good practice to **read back the application** and additional files from the flow computer and store it.

- ✓ You'll find the files in the 'Flow-Xpress\Received' folder in the 'My Documents' section of your computer.

### Install subsequent flow computer applications

When installing additional flow computers you have the choice either to start from scratch from the latest Spirit IT master file, or to adapt a previous installed application.

- ✓ Starting from scratch from the latest application version has a number of advantages:
  - Don't miss new features, improvements and bug fixes
  - 'Straight line' version history
  - Avoid chaotic, untraceable modifications
  - Avoid repeated errors

### Upgrade to a new Spirit master

An existing application can be upgraded to a new Spirit master application.

- ✓ See Operation and Configuration manual, section 'Updating applications' for a detailed instruction
- ✓ For a successful upgrade the following prerequisites must be met:
  - The device setup (X/S, X/P2 etc.) of the master and application must be the same.

## 2. COMPANY MASTER CONTROL

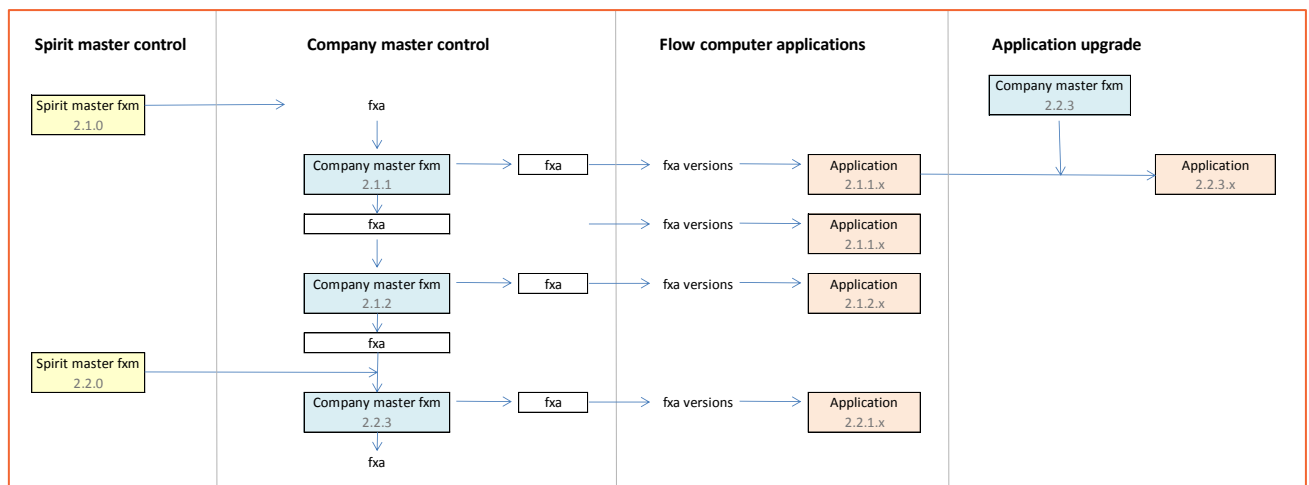
If as a company you are using a large number of Flow-X flow computers, it may be beneficial to maintain a company master that contains all configurations, customizations and additions that are common to all your installations.

Maintaining a company master file has a number of advantages:

- All flow computers are configured in a similar way
- No need to make the same modifications over and over again
- Less configuration errors
- Improved traceability of application versions

This section describes

- ✓ How to create a company master
- ✓ How to create flow computer applications from the company master
- ✓ How to control the company master
- ✓ How to upgrade a flow computer application to a new company master
- ✓ How to upgrade a company master to a new Spirit master



### Create a company master

Follow this procedure to create a company master from a Spirit master.

1. Create an application (.fxa) from the latest Spirit master (.fxm)
  - ✓ See Operation and Configuration manual, paragraph 'Creating applications' for a detailed instructions.
2. Use the Flow-Xpress configuration software to configure and customize the application.
  - ✓ With **Flow-Xpress Basic edition** it's possible to configure:
    - Device setup
    - Ports and Devices
    - Displays
    - Units
    - Reports
    - Parameters

- User calculations for added functionality
  - Translations
  - Etc.
- ✓ With **Flow-Xpress Professional edition** additional modifications can be made to:
- Modbus communication lists
  - Custom calculation sheets for added functionality

Please follow the following rules when applying modifications to Modbus lists and calculation sheets:

- Don't modify the standard calculation sheets. These are maintained by Spirit IT. If you need to add some functionality, please add it on a dedicated custom sheet.
- Don't just modify an existing standard Modbus list. You may either create a new list, or copy or rename a standard Modbus list prior to modifying it.

If you don't follow these rules your modifications will be lost when upgrading the application to a new master.

3. Save the application as a Master file (.fxm). This company master will be the parent of all future flow computer implementations.

- ✓ You have to specify a master version number. It's good practice to augment the last (3th) digit by one. F.e. if you're using Spirit master version 2.1.0, your company master will get version number 2.1.1.

## Flow computer installations

Each time when a flow computer is to be installed, an application (.fxa) has to be created from the company master (.fxm). The application inherits all functionality from the master, including the functionality you've added or modified in the company master file.

- ✓ See Operation and Configuration manual, paragraph 'Creating applications' for a detailed instruction.
- ✓ It's good practice to choose a file name that includes the project name, flow computer tag and application version number.
- ✓ The application can be adapted to the specific project requirements, using the Flow-Xpress (basic or professional) configuration software.
- ✓ Use the **'Version'** option in Flow-Xpress to document and track the flow computer specific modifications you've made. Each time when a new version is created the following data is saved:
  - version number
  - date
  - author
  - status
  - description

Each time when a new version is created, the 4th digit of the application version number is augmented.

- ✓ You may create multiple versions in order to document the subsequent modifications you've made
- ✓ When the installation is finalized, it's good practice to **read back the application** and additional files from the flow computer and store it.
  - You'll find the files in the 'Flow-Xpress\Received' folder in the 'My Documents' section of your computer.

## Company master control

After some time you may want to **modify the company master**, f.e. because you foresee that multiple future installations need some new specific functionality, or because you've learnt by experience that your company master is not yet optimal.

Follow this procedure to create an updated company master:

1. Create an application file (.fxa) from the current company master.
2. Modify it
3. Save the application as Master (.fxm).
  - ✓ You have to specify a master version number. It's good practice to augment the last (3th) digit by one. F.e. if you're using company master version 2.1.1, your new company master will get version number 2.1.2.
  - ✓ From now on every new installation will start from the new company master.

## Upgrade application to new company master

After creating a new company master, you might decide to **upgrade existing installations to the new company master**. This means that the new master functionality has to be merged with the existing functionality of the flow computer application, including any project specific modifications you've made to the flow computer application.

1. Open the existing application file in Flow-Xpress, either by looking up the application you've saved previously, or by reading the application from the flow computer.
2. Upgrade this application to the new company master file.
  - ✓ See Operation and Configuration manual, paragraph 'Updating applications' for a detailed instruction
  - ✓ For a successful upgrade the following prerequisites must be met:
    - The device setup (X/S, X/P2 etc.) of the master and application must be the same.
  - ✓ The updated application file inherits the version number of the company master, with the added 4<sup>th</sup> digit from the old application. F.e. when upgrading application version 2.1.1.3 to company master 2.1.2, the new application version will be 2.1.2.3
3. Write the updated application file to the flow computer

## Upgrade company master to new Spirit master

When a new Spirit master is released, you might want to **upgrade the company master to the new Spirit master**. This means that the new Spirit master functionality has to be merged with the existing functionality of the company master, including any customization you've made to the company master.

1. Create an application file (.fxa) from the latest company master.\
2. Upgrade this application to the new Spirit master file.
  - ✓ See Operation and Configuration manual, paragraph 'Updating applications' for a detailed instruction

- ✓ For a successful upgrade the following prerequisites must be met:
  - The device setup (X/S, X/P2 etc.) of the master and application must be the same.

3. Save the updated application as master

- ✓ The updated application file inherits the version number of the new Spirit master, to which you can add a 3th digit. You can choose to proceed from the previous number or restart this 3th digit at 1. F.e. when upgrading company master version 2.1.3 to Spirit master 2.2.0, you can apply to the new company master the version number 2.2.1 or 2.2.4.

The new company master can be used to upgrade any existing installations. See paragraph 'Upgrade application to new company master'.

- ✓ It should be avoided to upgrade existing installations directly to a new Spirit master (without first upgrading the company master), because:
  - You'd miss any recent modifications you may have made to the company master.
  - Version control would be crippled, because you can't see any more from which company master the application has been created.

## CHANGE LOG

Date	Version	By	Description
10 sept 2015	1.0	Louis Joosten	Initial release