Automation Builder V1.2
SD card - Store and Load the Project to / from the SD Card

1. SD Card Command file SDCARD. INI file structure:

- Function of Card in this SDCARD.INI can be changed as shown below for Firmware update, load user program or update firmware and load user program as same time.

  > 0: no function
  > 1: load user program
  > 2: firmware update as defined (see below)
  > 3: update firmware and load user program
  > 4: reserved
  > 8: as 0.. 4 + save debug data in case of possible failures
  > 16: reserved

- Firmware Update can be changed by setting the value such as below:
  > 0: no update
  > 1: update
  > 2: update with specific version
  > 3: update with specific version if the SD file is newer

- User Program update by these values:
  > 0: no update or
  > 1: update

SD Memory Card
The Command File SDCARD.INI

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2. Store /Load the project to / from the SD Card:
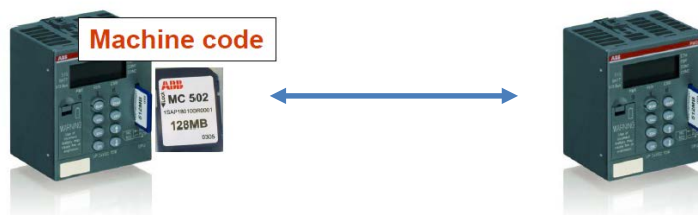
2.1 Copy the project from PLC to PLC.
- Copy a project as a machine code not readable by PC and the configuration of communi-cation modules to a SD card plugged in one PLC.
- Load this project into another PLC from the SD card plugged into AC500 CPU's SD card slot

2.2 Store a project to the SD card.
To store the user program to the SD card, proceed as follows:
- Build complete project using the menu items **"Project" \ "Clean all"** and **"Project" \ "Rebuild all"**.
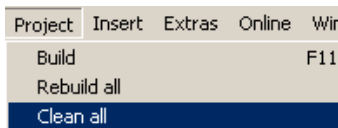
- Download the project into the AC500 CPU

⚠ **Caution**: After download the program execution is stopped!

2.3 Create the boot project on the controller using "**Online** >**Create boot project**".
The boot project files (DEFAULT.PRG and DEFAUL.CHK) are loaded into the AC500 and flashed. The "RUN" and "ERR" LEDs on the AC500 flash alternately while data flashing is in progress.

2.4 Open "**Resources" / "PLC Browser**". Enter the command **"sdappl"<ENTER>**.

2.5 The "RUN" LED on the AC500 flashes during writing to the SD card.

2.6 The files DEFAULT.PRG and DEFAULT.CHK and configuration files of the plugged communi-cation modules are loaded from the flash memory and stored to the directory USERDATA\PM5xx\USERPROG on the SD card in the compressed file **BOOT.ZIP**.

In the file SDCARD.INI the parameters are set:
- FunctionOfCard = **1**
- UserProgram = **1**

e.g., the function "Load the user program" is activated.

2.7 Load a project from the SD card:

To duplicate the project to another blank CPU, the SD card has to be inserted into an AC500 CPU when:
- o The PLC is in STOP mode or
- o Before switching the power ON

The file structure on the SD card is verified by the CPU
 Only if:
    FunctionOfCard=1
    UserProgram=1
    The project is loaded into the CPU's memory flash area.

3. Source Code Download and Upload

The Automation Builder project include comments, visualizations etc. stored in the PC can be stored as a compressed file on the SD card which plugged into SD card slot. This backup can be uploaded from PLC or directly from SD card to any PC with installed Automation Builder software tool.
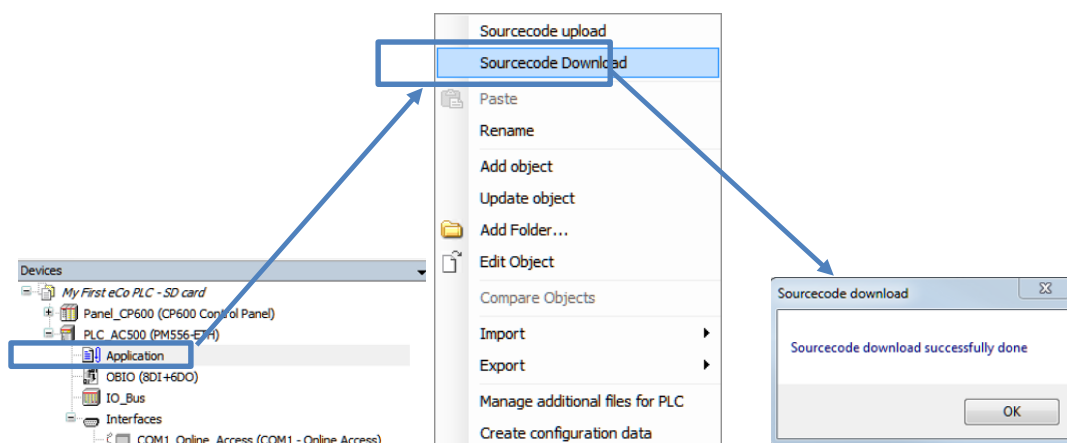
3.1 Source Code Download to SD Card:
- • Verify if the parameter "FunctionOfCard" on the SD card is set to "0" (no function when insterted in the AC500 CPU).
- • Verify if the SD card is plugged in the PLC.
- • In CoDeSys Project: verify if the proper communication parameters are set for this project. Save and exit the CoDeSys project.
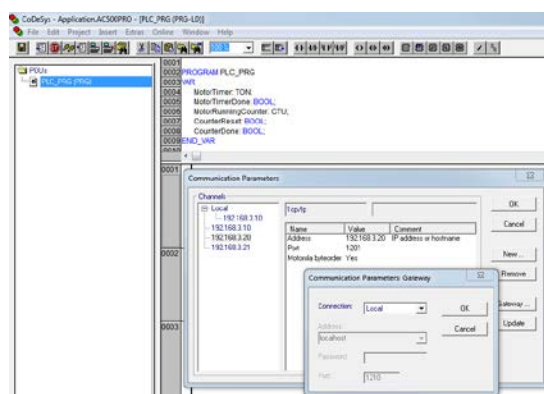

In Automation Builder:
- • Start the procedure by right-click on **Application** and selecting the item "**Sourcecode Download**". The CPU's RUN led is blinking.

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- The information about an successful download is given. On the SD-card the file SOURCE.ZIP has been created.

3.2 New PLC project with source code upload from CPU to PC:

- Plug in the SD card into the slot on the CPU.
- Create a new project containing a same CPU type .
- In **CoDeSys Project**: verify if the right communication parameters are set or set them properly for this project. Save and exit the CoDeSys project.
- In Automation Builder tool: right-click **Application** and select the item "**Sourcecode up-load**". The CPU's RUN led is flashing.
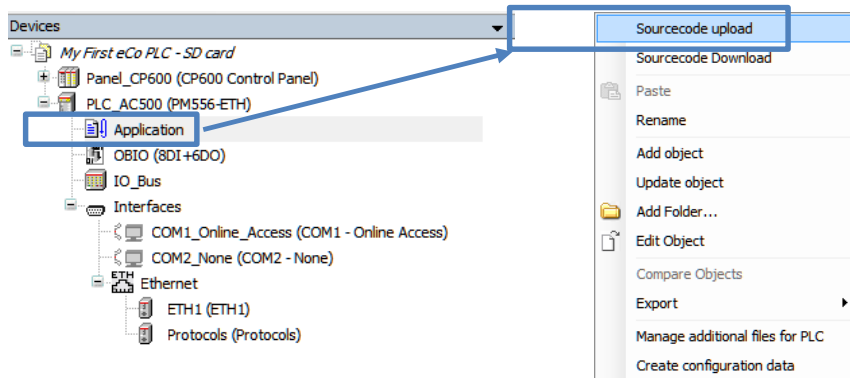
- Select the destination folder for the project and the files to be unzipped. It is recommended to unzip all listed files. Click **Extract** to accept the changes.
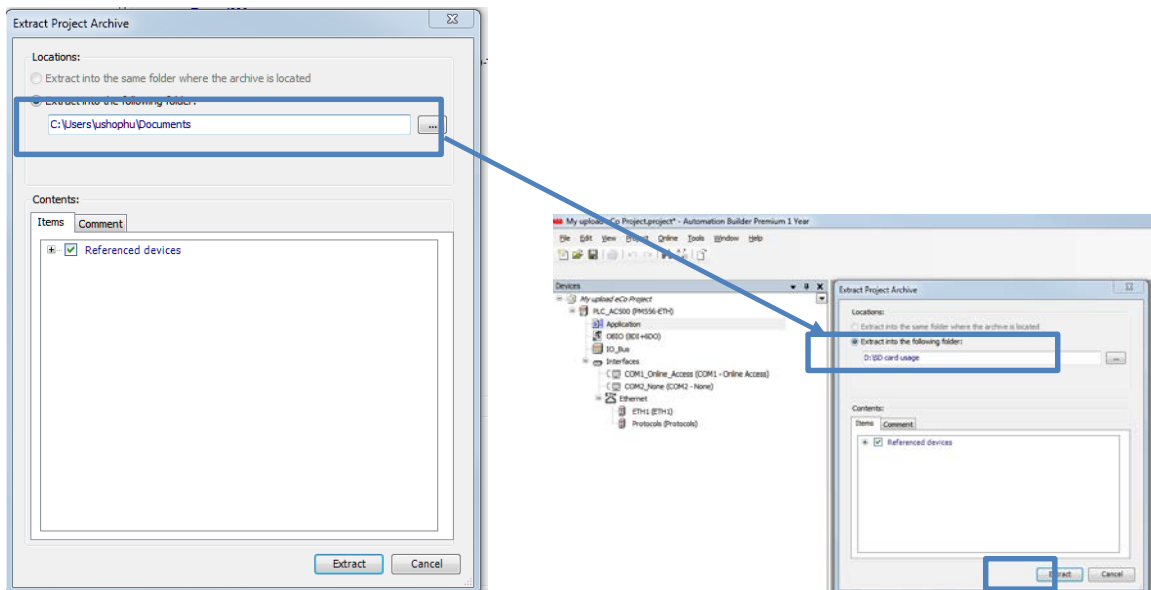
- The new identical PLC project is created and ready to use.