

TOSHIBA

AS3 Application Note 3.6.0

Ethernet IP EDS File and Add On Instruction (AOI)

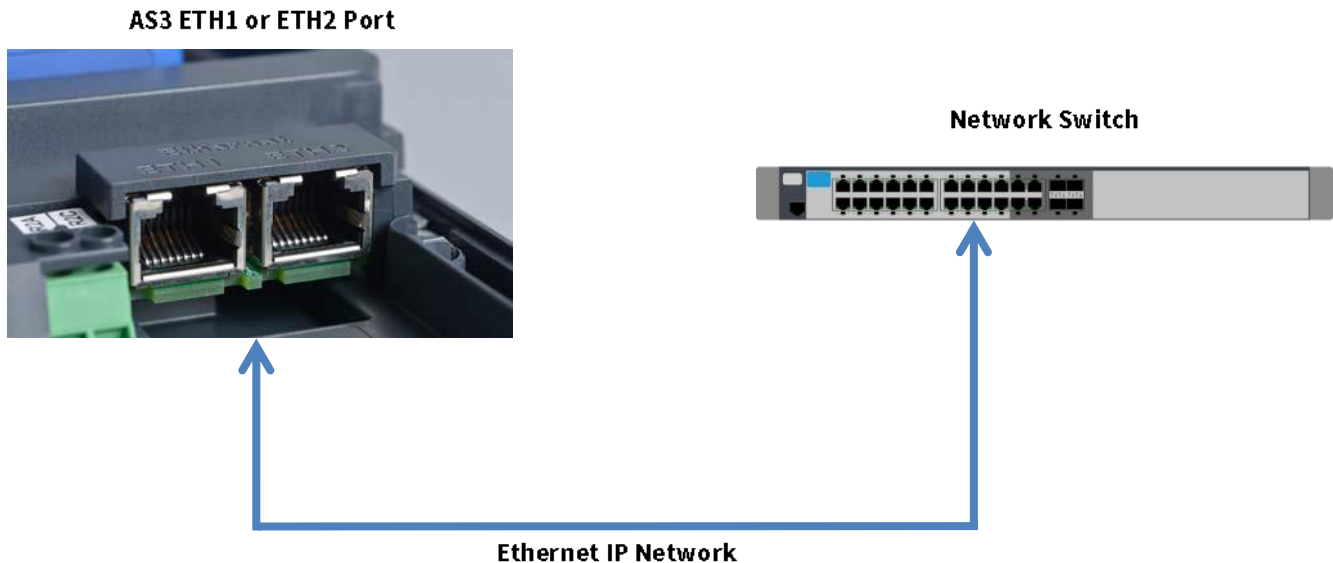
Estimated Time: 15 minutes

Level: 3 out of 3

Prerequisite:

- AS3 Application Note 1.1.0
Navigating Menus & Parameters

STEP 1 Connections



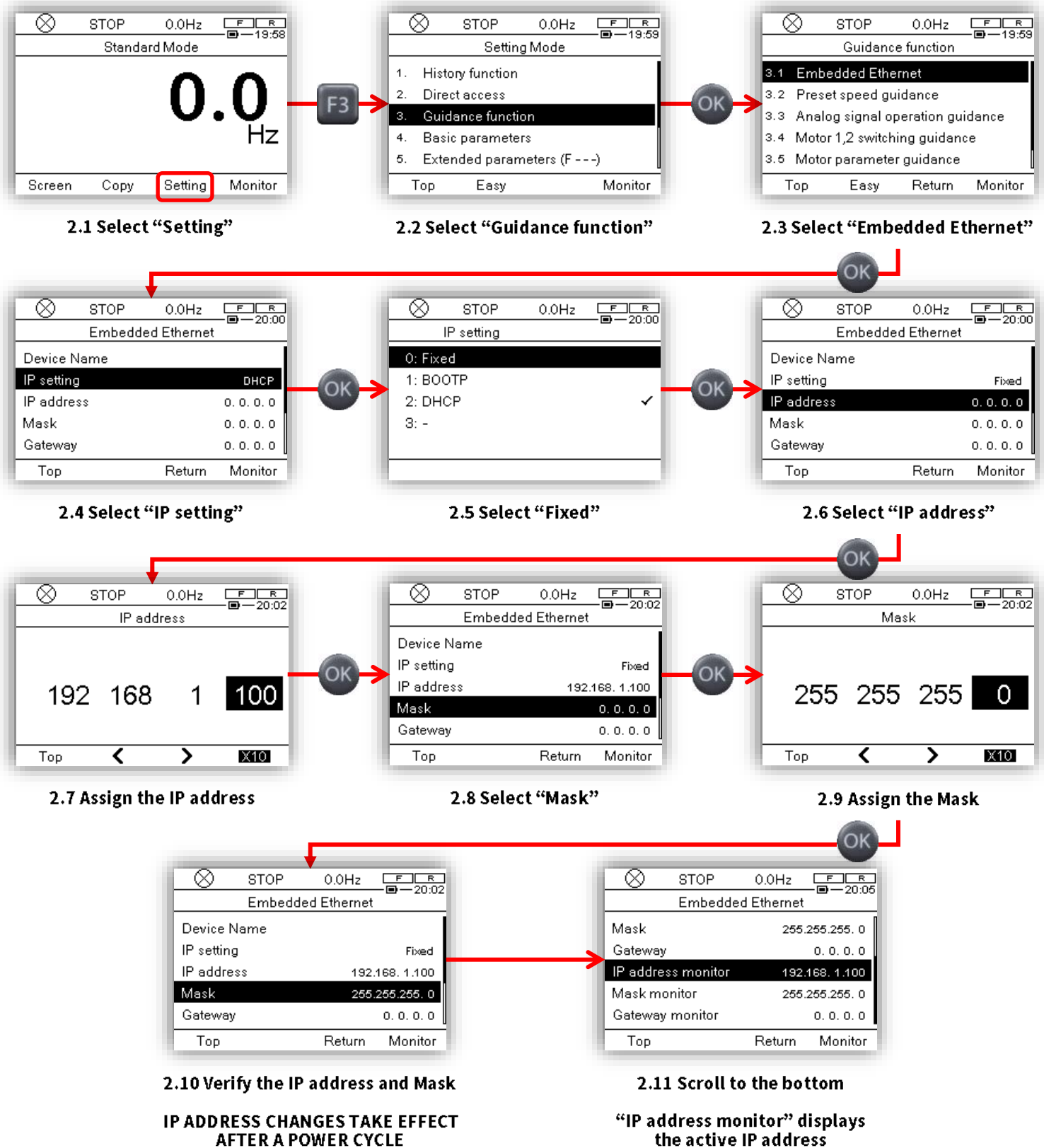
Check Your Work

- ✓ **Verify the AS3 LNK1 or LNK2 status LED is solid green.**

Notes:

Spanning Tree Protocol (STP) may need to be disabled if a Stratix 5700 managed switch is used
STP inside the AS3 is disabled with CPU1 version 128 and higher

STEP 2 Program the AS3

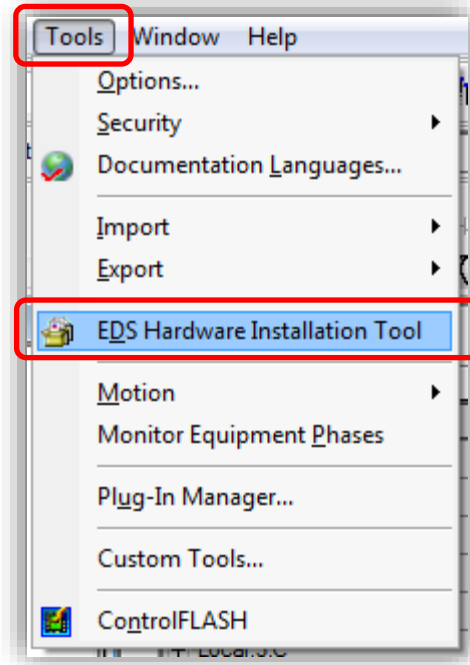


STEP 3

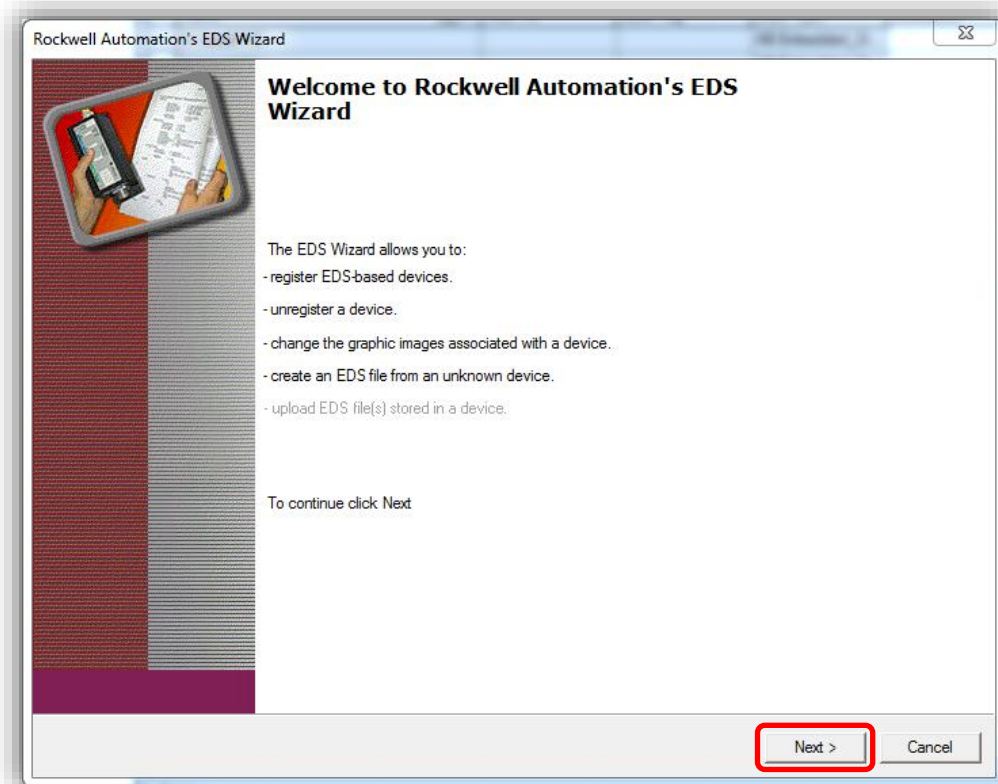
Import the EDS file in Studio 5000

3.1 Select "Tools"

3.2 Select "EDS Hardware Installation Tool"



3.3 Select "Next"

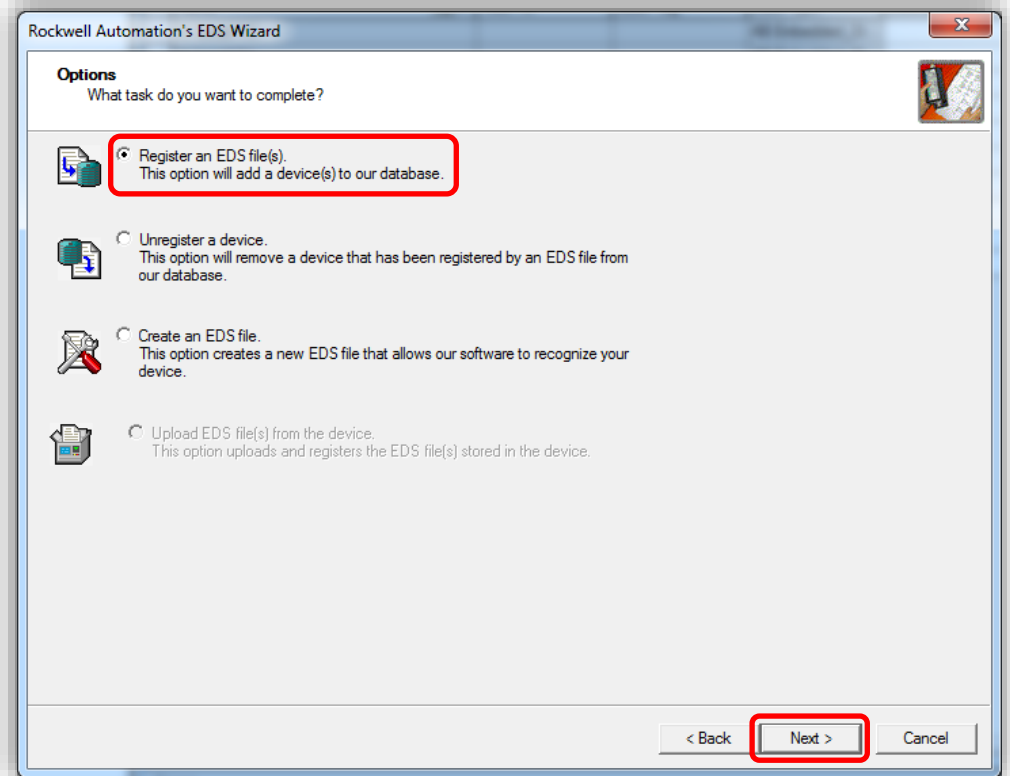


STEP 3

Import the EDS file in Studio 5000

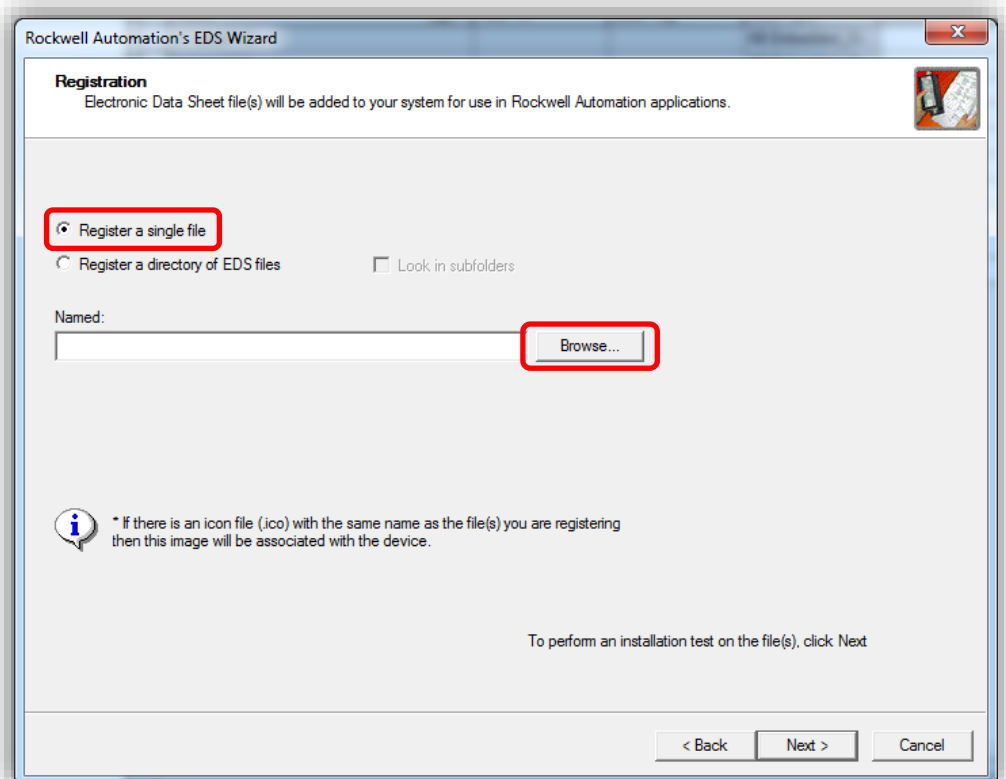
3.4 Select “Register an EDS file(s)”

3.5 Select “Next”



3.6 Select “Register a single file”

3.7 Select “Browse...”



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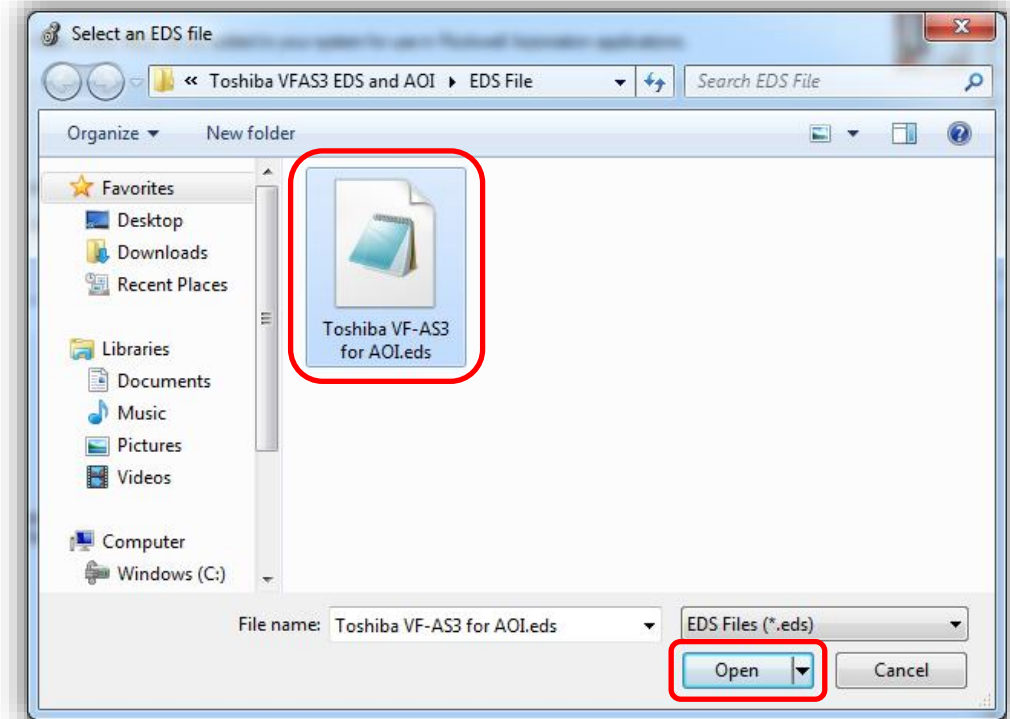
STEP 3



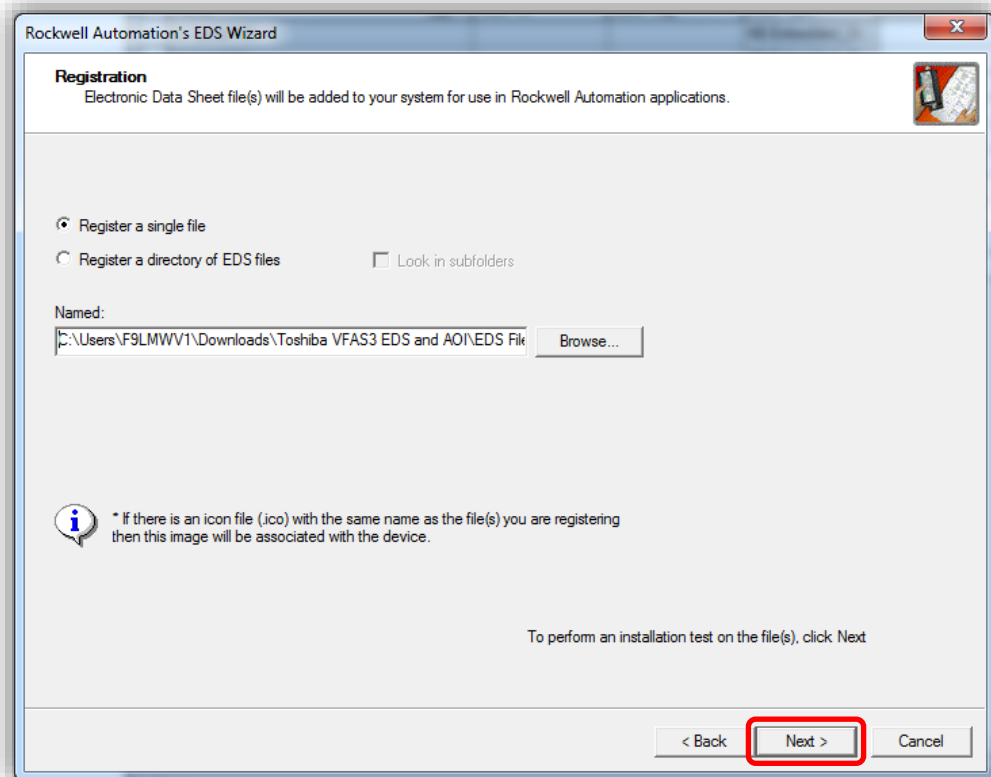
Import the EDS file in Studio 5000

3.8 Navigate to the
“Toshiba VF-AS3 for
AOI.eds” file

3.9 Select “Open”



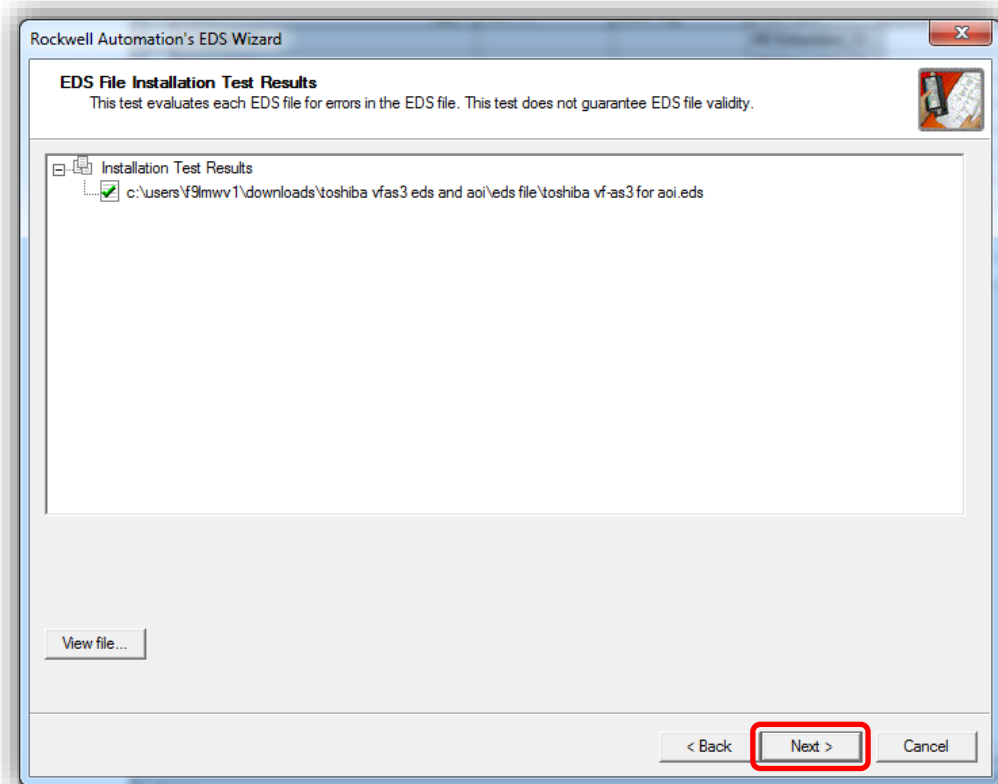
3.10 Select “Next”



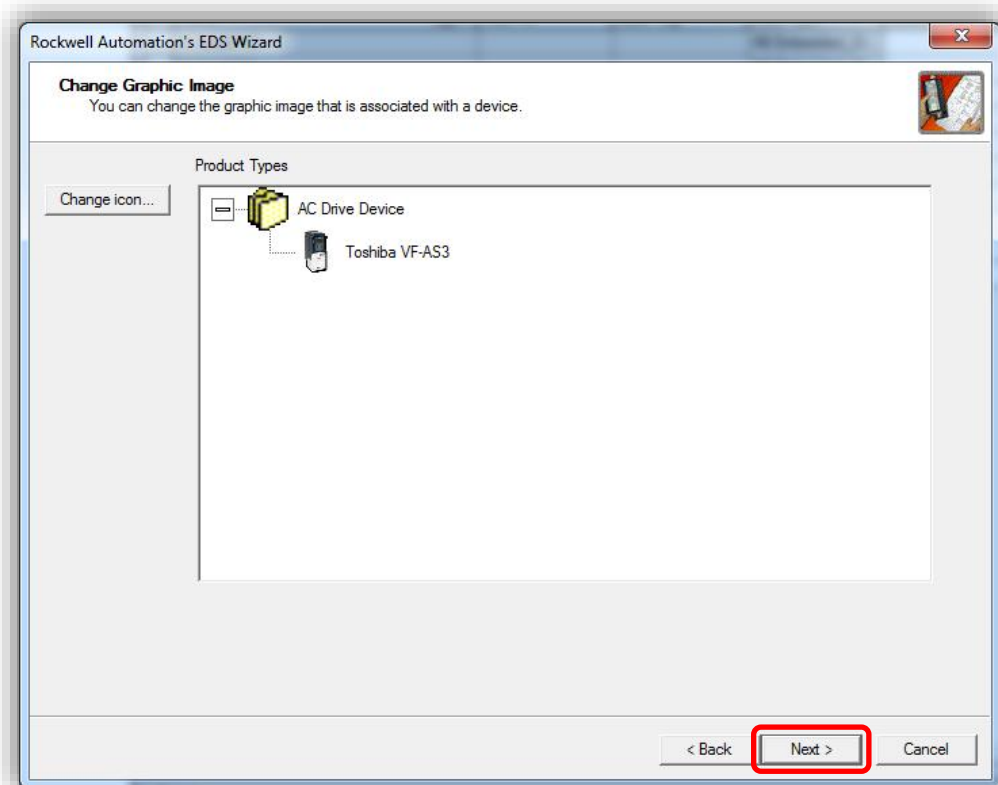
STEP 3

Import the EDS file in Studio 5000

3.11 Select "Next"



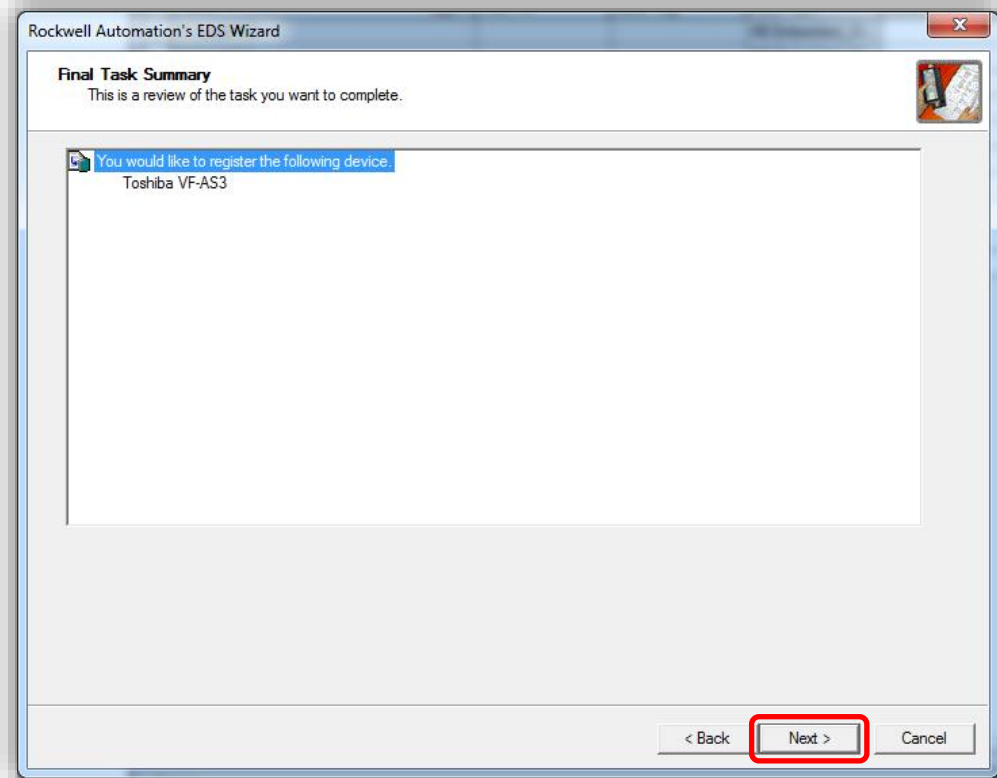
3.12 Select "Next"



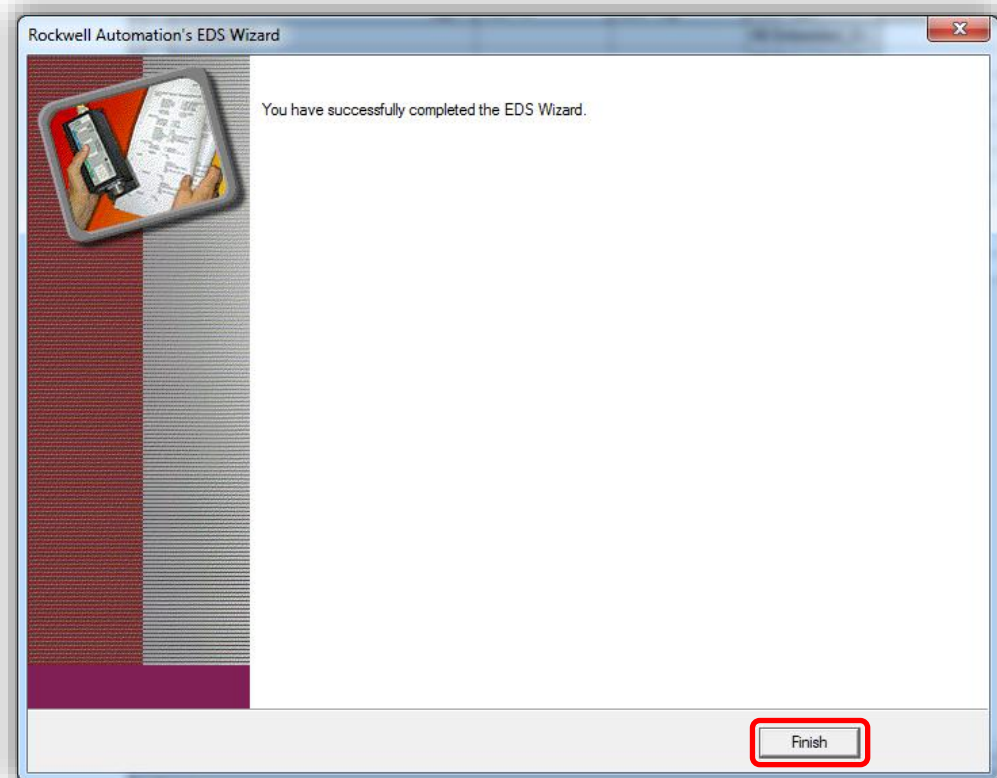
STEP 3

Import the EDS file in Studio 5000

3.13 Select "Next"



3.14 Select "Finish"



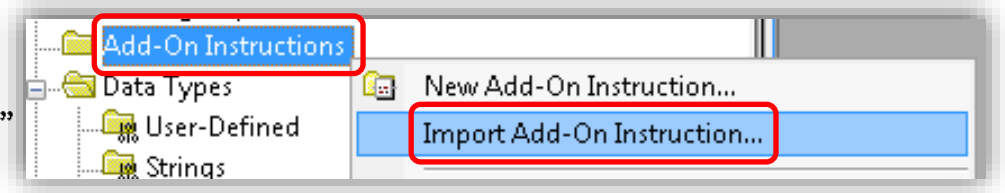
TOSHIBA

STEP 4

Import the AOI in Studio 5000

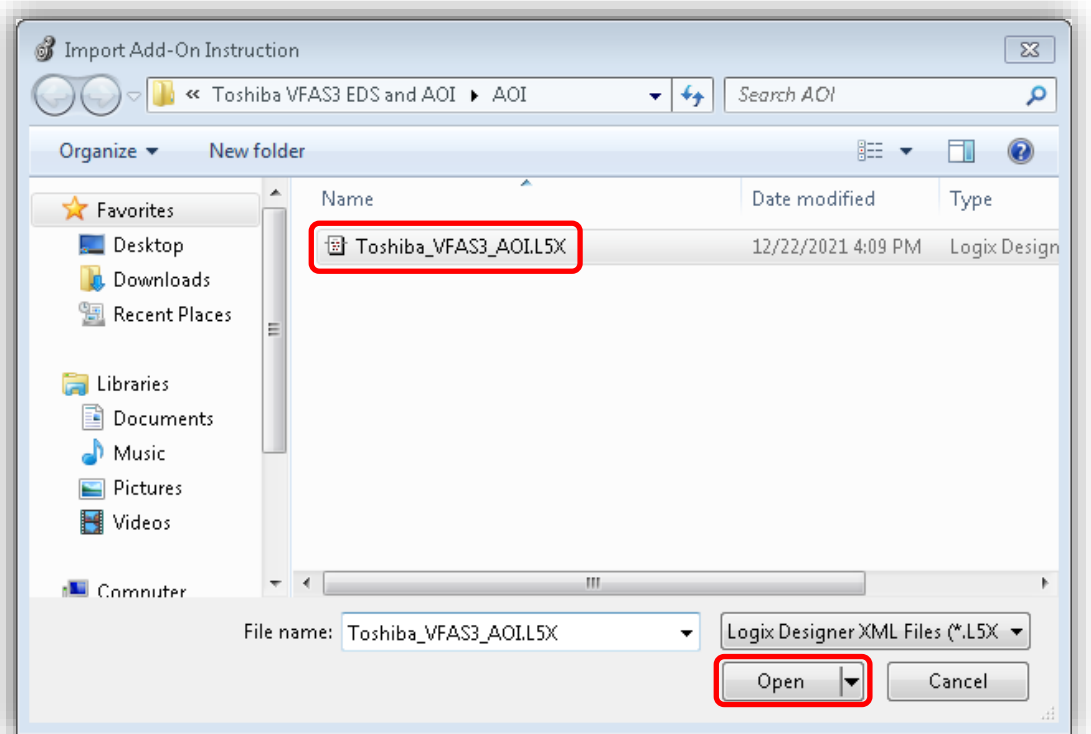
4.1 Right click “Add-On Instructions”

4.2 Select “Import Add-On Instruction”



4.3 Navigate to the “Toshiba_VFAS3_AOI.L5X” file

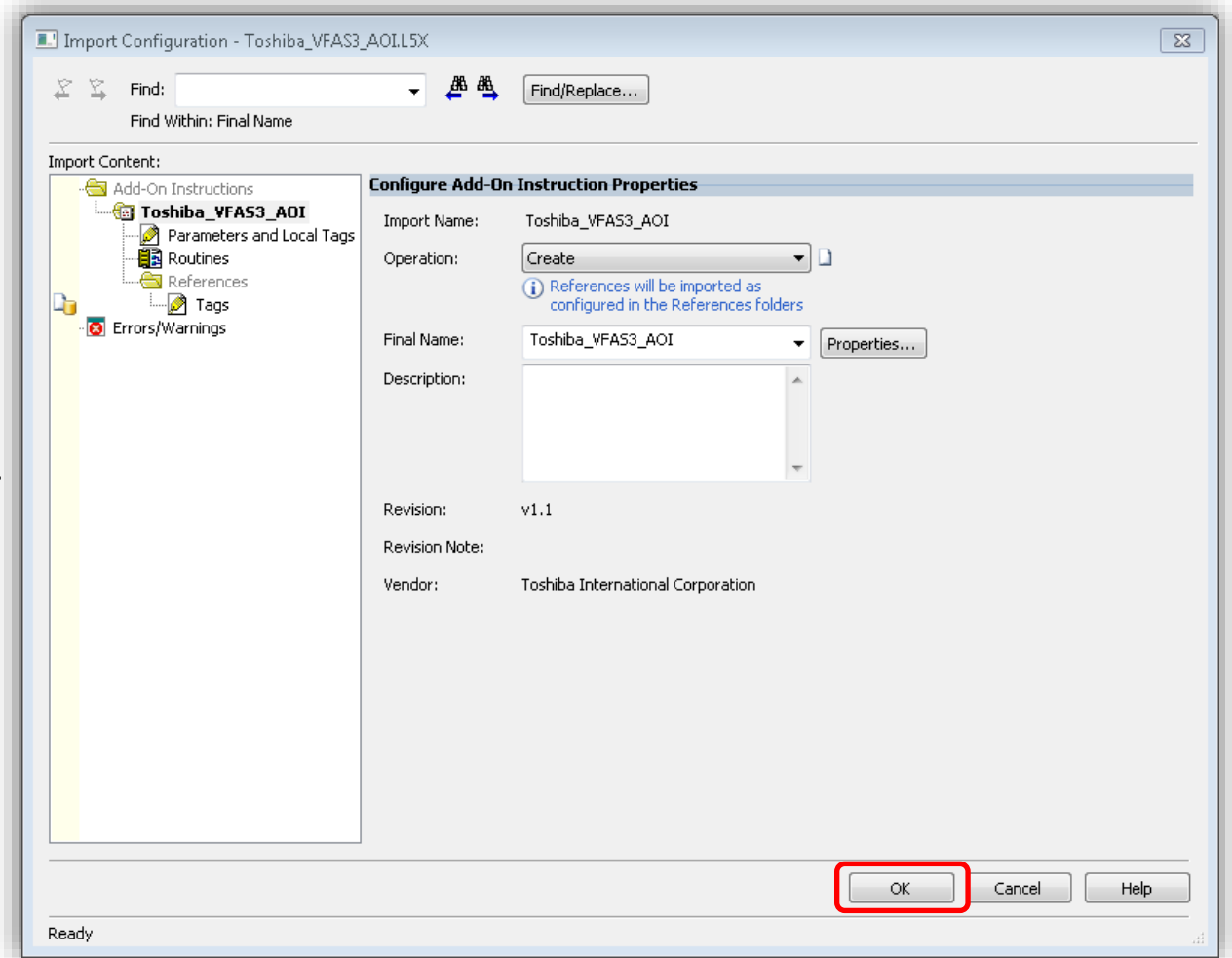
4.4 Select “Open”



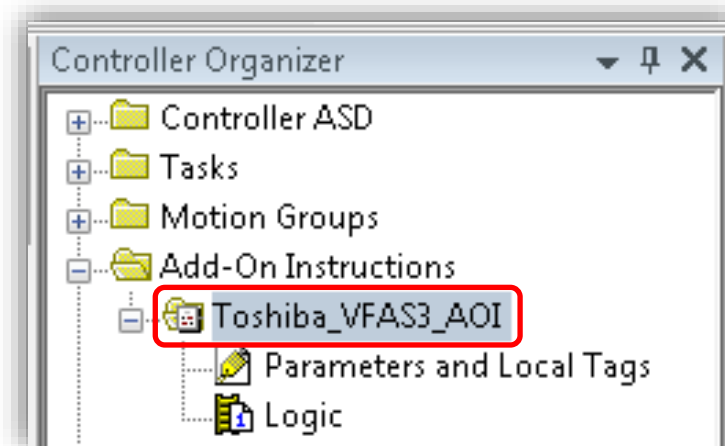
STEP 4

Import the AOI in Studio 5000

4.5 Select "OK"



4.6 Verify the AOI is in the Controller Organizer list

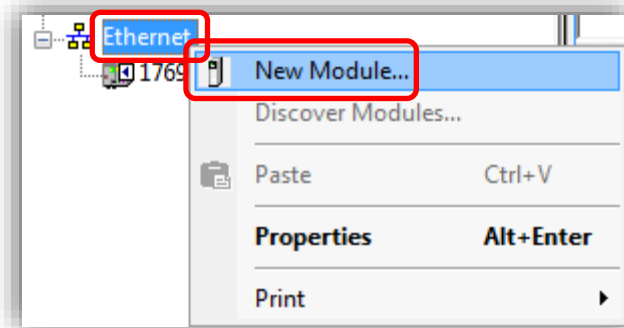


STEP 5

➔ Add an AS3 Module in Studio 5000

5.1 Right click on “Ethernet”

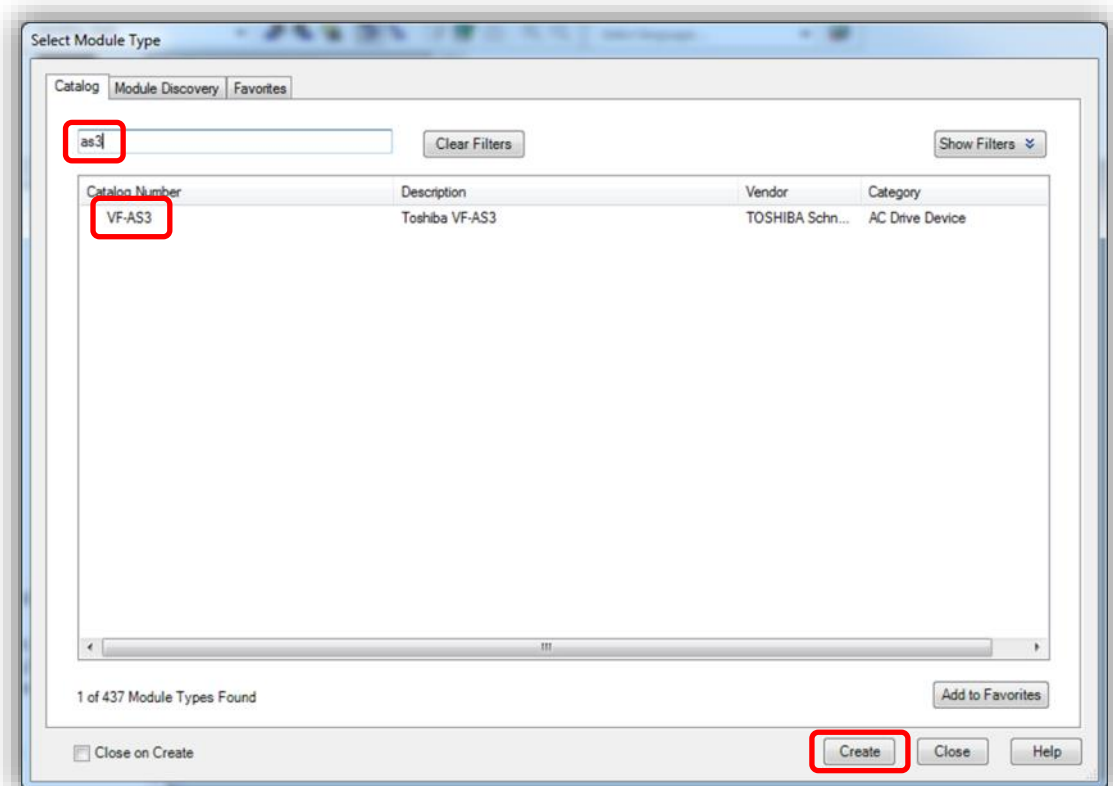
5.2 Select “New Module...”



5.3 Search for “as3”

5.4 Select “VF-AS3”

5.5 Select “Create”

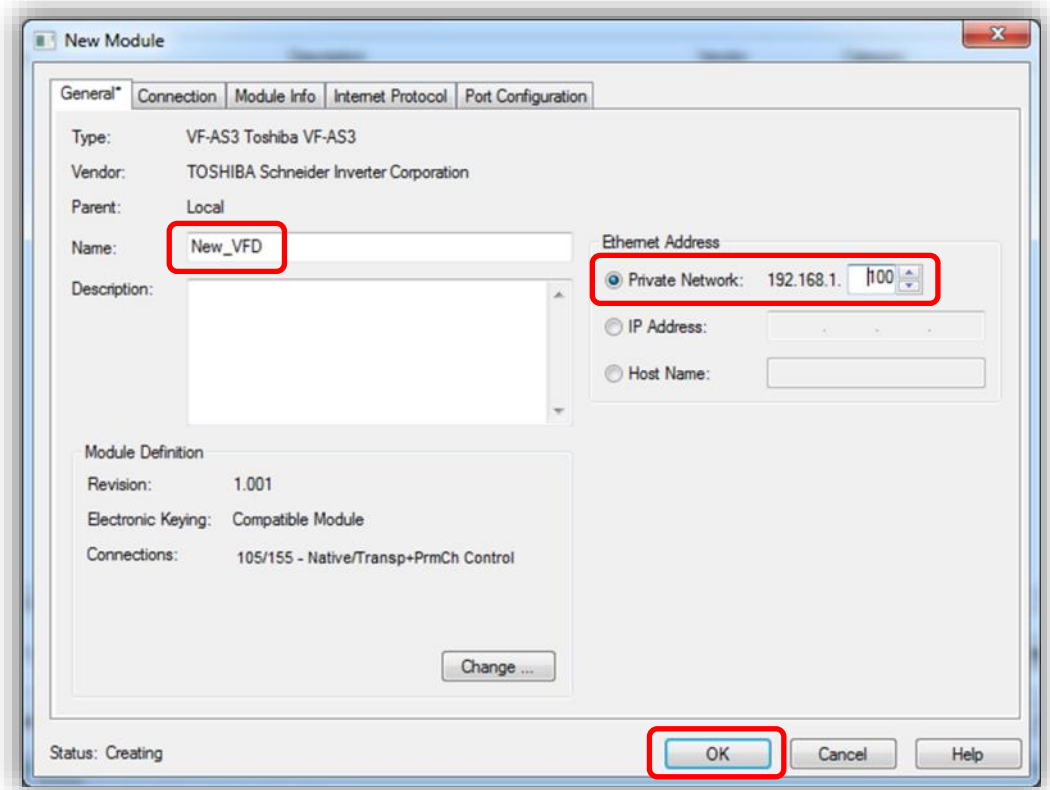


STEP 5

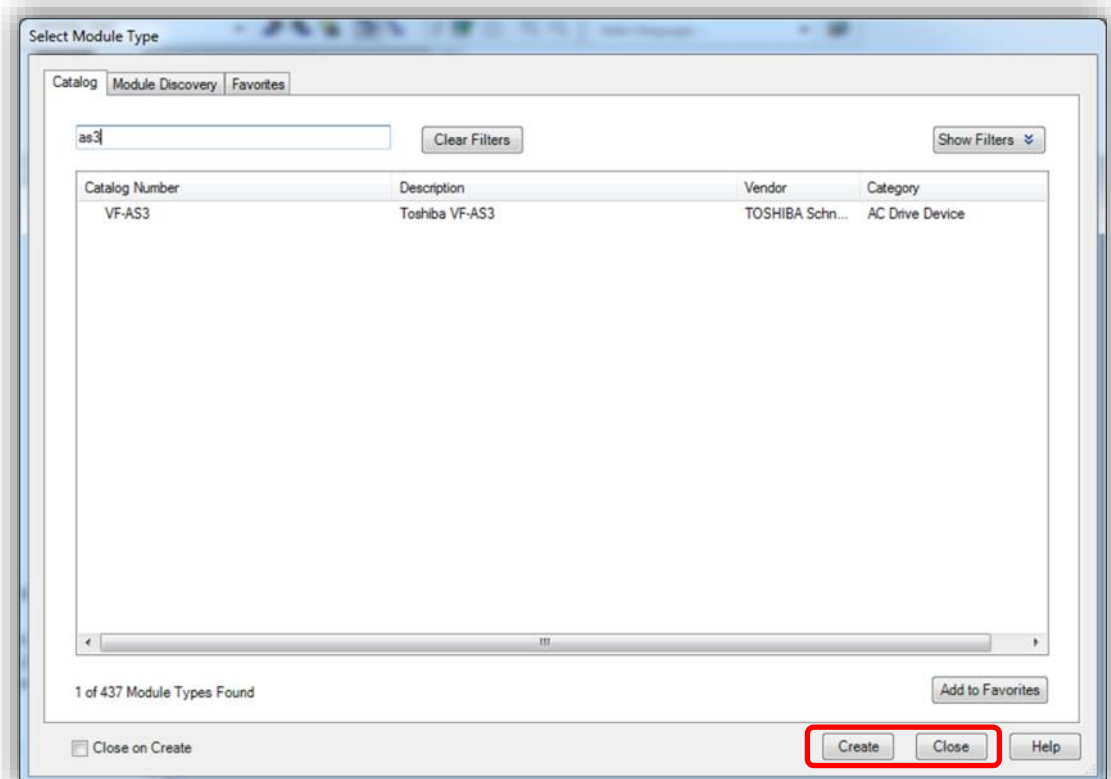
➔ Add an AS3 Module in Studio 5000

5.6 Assign the Name and Ethernet Address

5.7 Select “OK”



5.8 Select “Close” or to add another module select “Create”

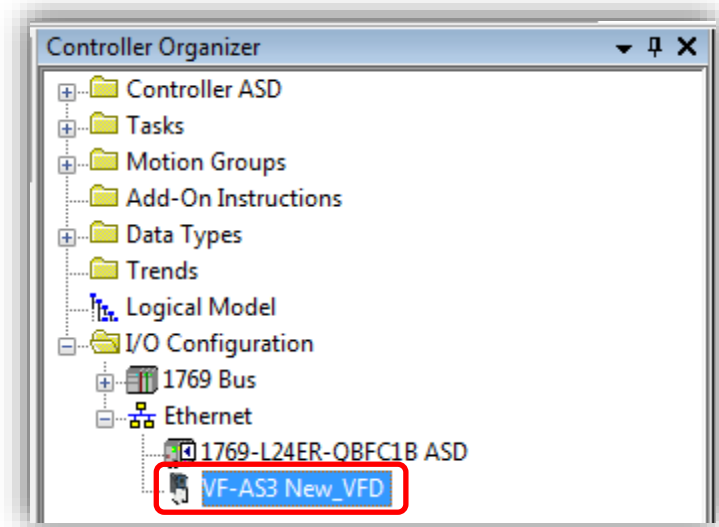


STEP 5



Add an AS3 Module in Studio 5000

5.9 Verify the new module is in the Controller Organizer Ethernet list



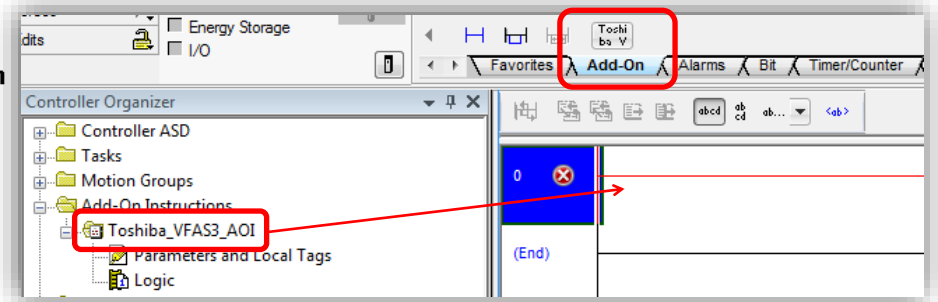
STEP 6

➔ Add the AOI to a Logic Block

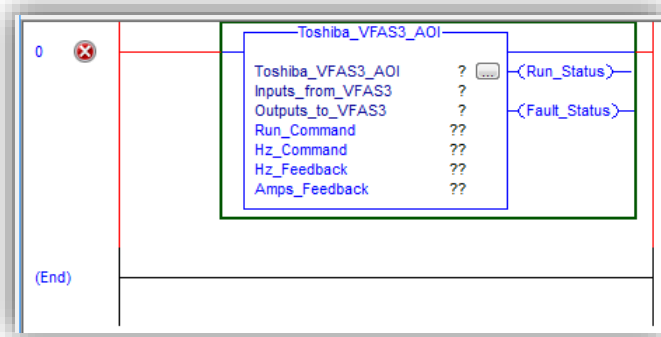
6.1 Select the “Toshiba_VFAS3_AOI” button from the Add-On tab

OR

Drag and drop the AOI from the Controller Organizer list

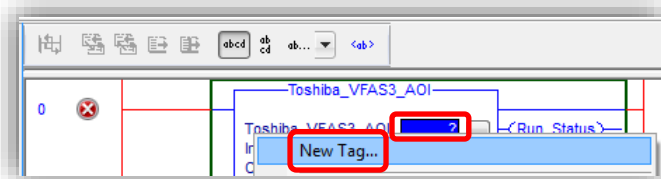


6.2 Verify the AOI is in the ladder logic rung



6.3 Right click the top “?”

6.4 Select “New Tag...”

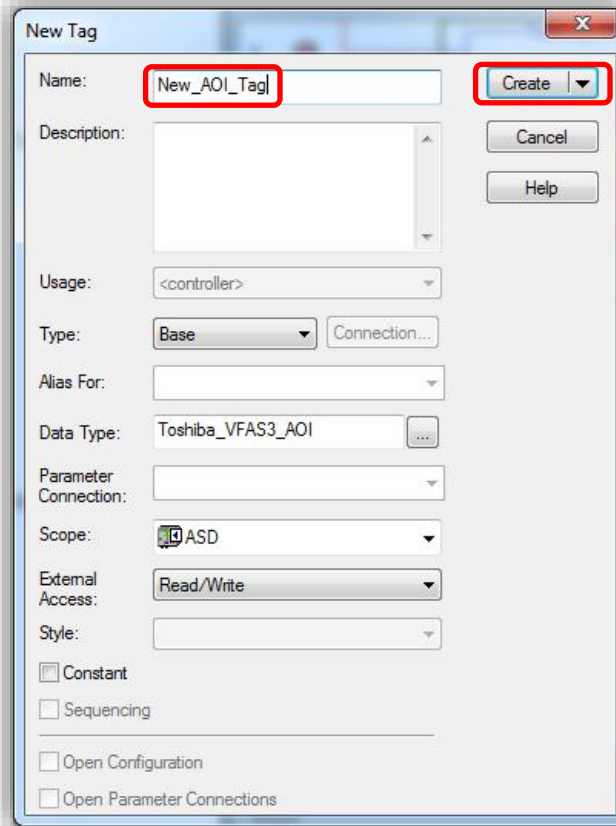


STEP 6

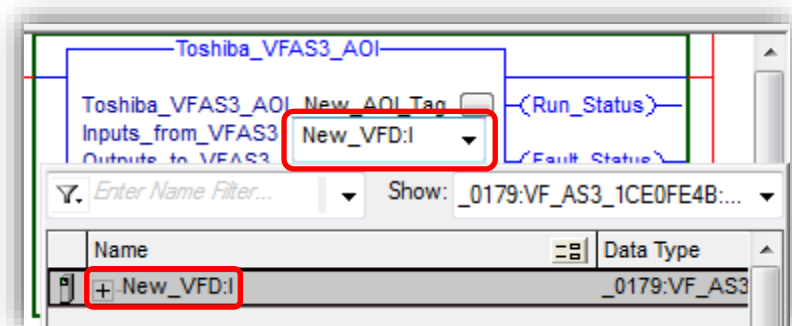
➔ Add the AOI to a Logic Block

6.5 Assign the tag a Name

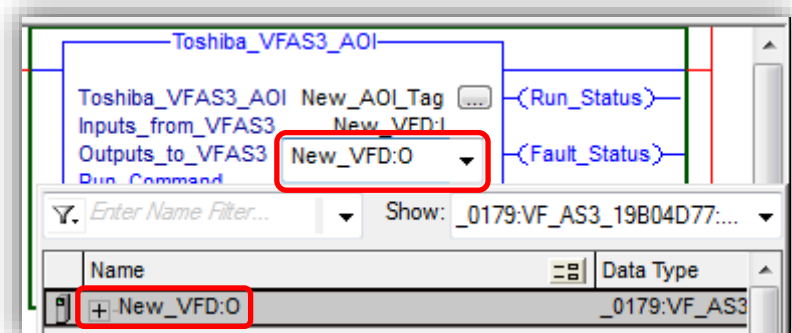
6.6 Select “Create”



6.7 Using the “Inputs_from_VFAS3” drop down list select the AS3 Module inputs



6.8 Using the “Outputs_to_VFAS3” drop down list select the AS3 Module outputs





STEP 6

Add the AOI to a Logic Block

6.9 Verify the AOI tags are in the Controller Tags list

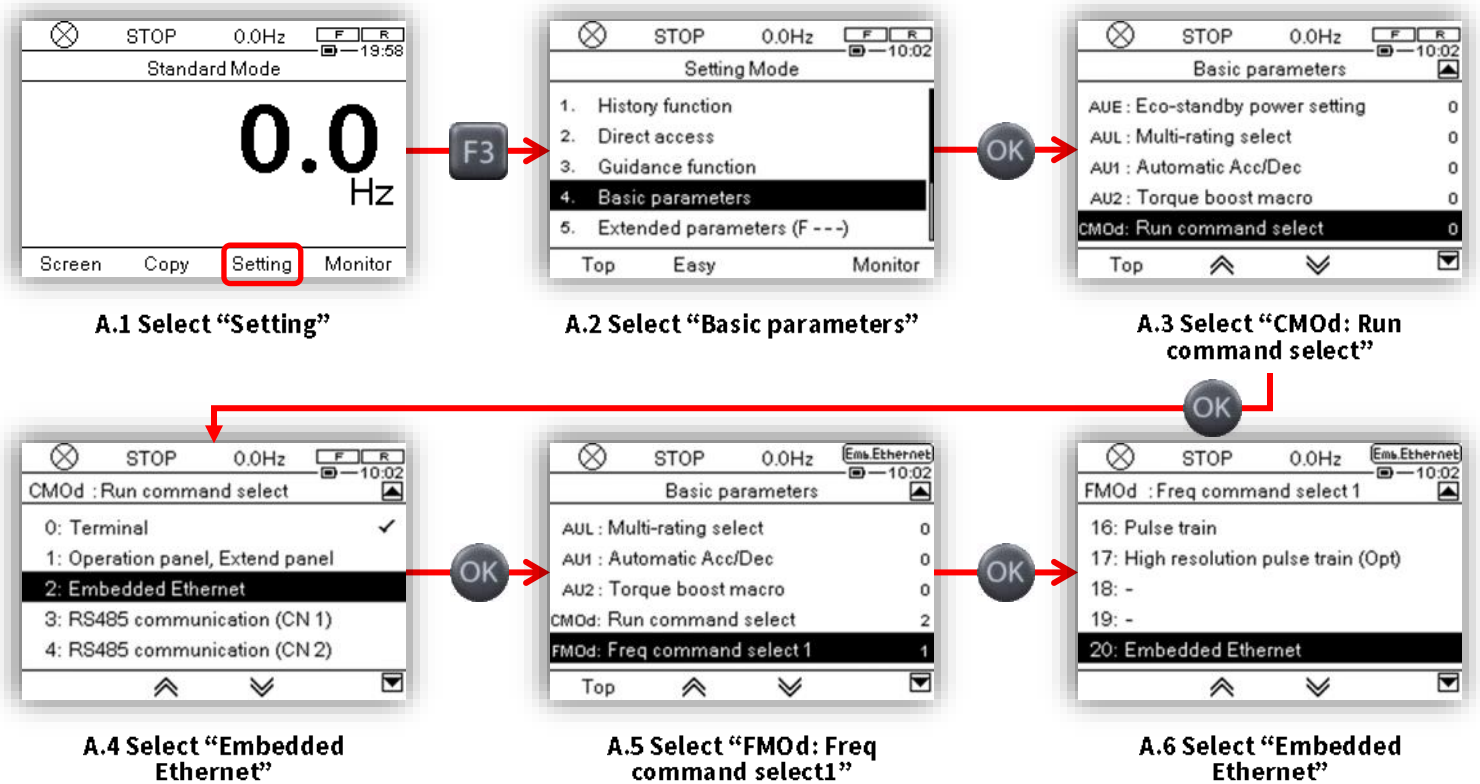
Scope: ASD		Show: All Tags	
Name	Value	Force Mask	Data Type
+ New_VFD:O	{...}	{...}	_0179:VF_AS3_FFDEBCC1:...
+ New_VFD:I	{...}	{...}	_0179:VF_AS3_DE452258:I:0
- New_AOI_Tag	{...}	{...}	Toshiba_VFAS3_AOI
- New_AOI_Tag.EnableIn	1		Decimal BOOL
- New_AOI_Tag.EnableOut	0		Decimal BOOL
- New_AOI_Tag.Run_Command	0		Decimal BOOL
- New_AOI_Tag.Hz_Command	0.0		Float REAL
- New_AOI_Tag.Run_Status	0		Decimal BOOL
- New_AOI_Tag.Fault_Status	0		Decimal BOOL
- New_AOI_Tag.Hz_Feedback	0.0		Float REAL
- New_AOI_Tag.Amps_Feedback	0.0		Float REAL
- New_AOI_Tag.Jog_Run_Command	0		Decimal BOOL
- New_AOI_Tag.Direction_Command	0		Decimal BOOL
- New_AOI_Tag.Coast_Stop_Command	0		Decimal BOOL
- New_AOI_Tag.Emergency_Off_Command	0		Decimal BOOL
- New_AOI_Tag.Fault_Reset_Command	0		Decimal BOOL
- New_AOI_Tag.Frequency_Priority_Command	0		Decimal BOOL
- New_AOI_Tag.Command_Priority_Command	0		Decimal BOOL
- New_AOI_Tag.Alarm_Status	0		Decimal BOOL
- New_AOI_Tag.Under_Voltage_Status	0		Decimal BOOL
- New_AOI_Tag.Jog_Run_Status	0		Decimal BOOL
- New_AOI_Tag.Direction_Status	0		Decimal BOOL
- New_AOI_Tag.Coast_Stop_Status	0		Decimal BOOL
- New_AOI_Tag.Emergency_Stop_Status	0		Decimal BOOL
- New_AOI_Tag.Run_Command_Status	0		Decimal BOOL
- New_AOI_Tag.Ready_Status	0		Decimal BOOL
- New_AOI_Tag.Hand_Auto_Status	0		Decimal BOOL
+ New_AOI_Tag.C643_Command	0		Decimal INT
+ New_AOI_Tag.C644_Command	0		Decimal INT
+ New_AOI_Tag.C645_Command	0		Decimal INT
+ New_AOI_Tag.C646_Command	0		Decimal INT
+ New_AOI_Tag.C653_Feedback	0		Decimal INT
+ New_AOI_Tag.C654_Feedback	0		Decimal INT
+ New_AOI_Tag.C655_Feedback	0		Decimal INT
+ New_AOI_Tag.C656_Feedback	0		Decimal INT

APPENDIX A

Optional AS3 Programming

If the AS3 is going to be controlled using the Embedded Ethernet the following parameters should be changed.

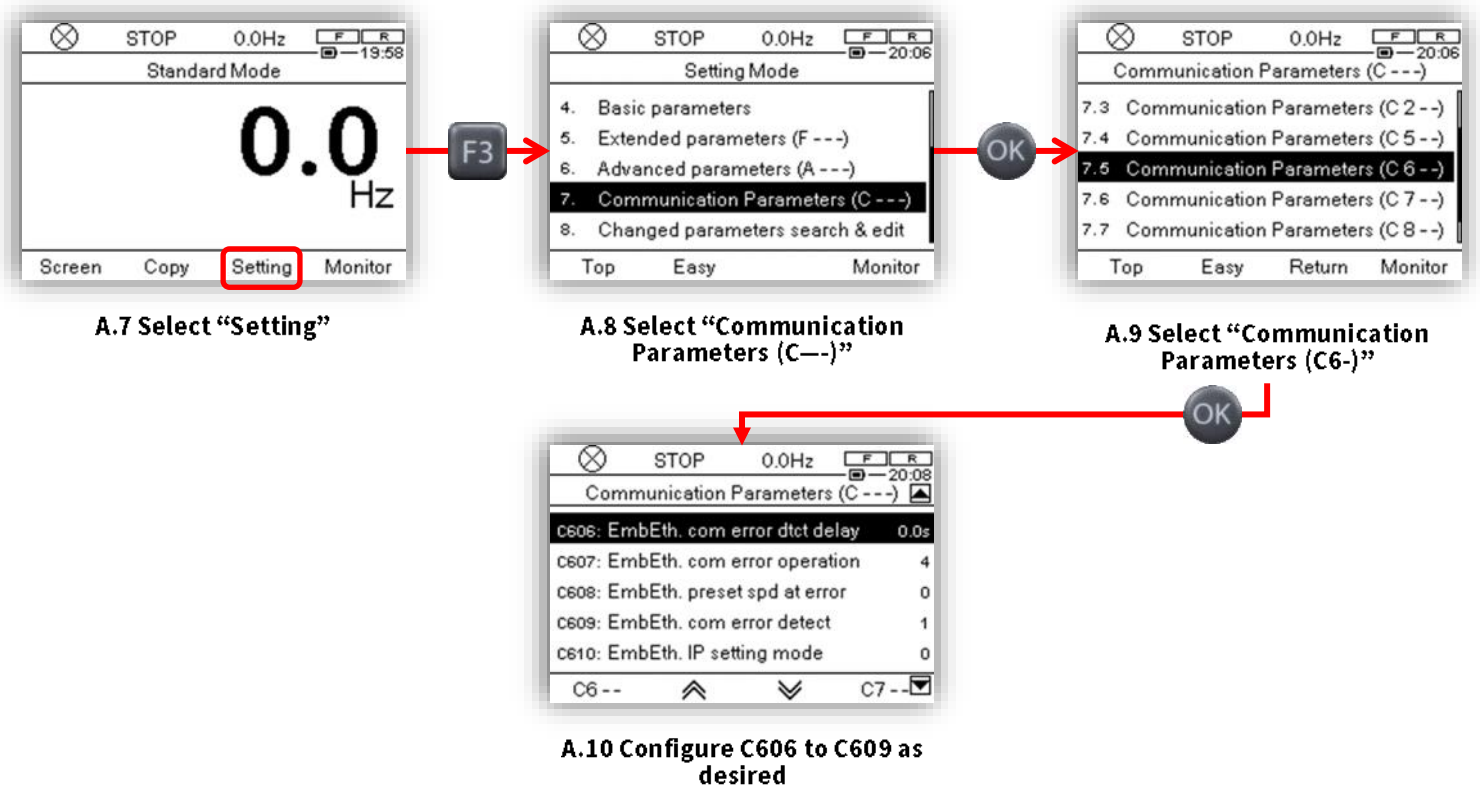
- CM0d: Run command select = Embedded Ethernet
- FM0d: Freq command select 1 = Embedded Ethernet



APPENDIX A

Optional AS3 Programming

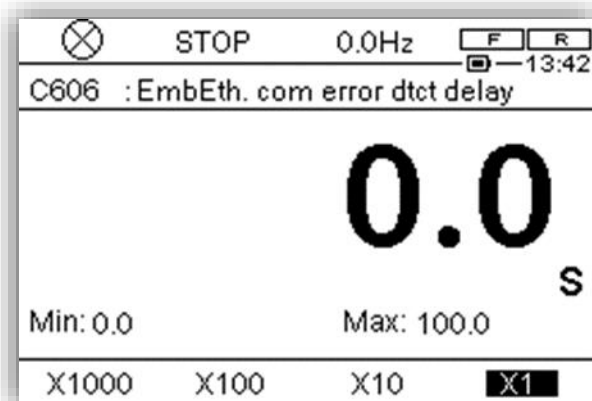
Network disconnection parameters can be adjusted to change the delay time and the action taken when the AS3 detects a loss of communication from the PLC.



C606: Emb. Eth. Communication error detection delay

The delay between a communication error and the start of the operation configured in C607

- Range: 0.0 to 100.0 seconds



APPENDIX A

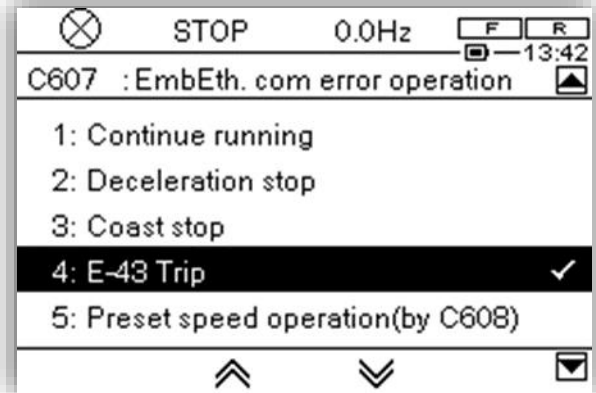


Optional AS3 Programming

C607: Emb. Eth. Communication error operation

Operation of the drive after a communication error

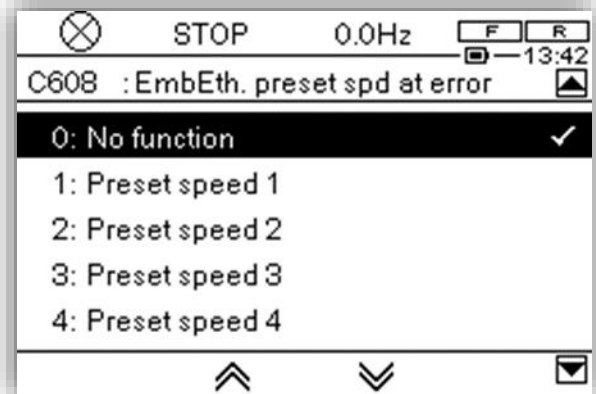
- 0: Turn off bit 10, 14 and 15 of FA36
- 1: Continue running
- 2: Deceleration stop
- 3: Coast stop
- 4: Network error stop (E-43 trip) (default)
- 5: Preset speed operation (configured by C608)



C608: Emb. Eth. Preset speed at communication error

Preset speed after a communication error and C607 = 5

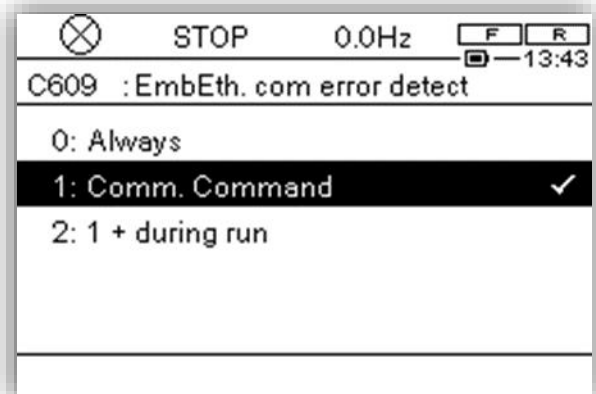
- 0: None (default)
- 1 to 15: Preset speed 1 to 15



C609: Emb. Eth. Communication error detection

Conditions when a communication error can be detected

- 0: Always
 - ⇒ Communication error detection is always enabled
- 1: Communication command (default)
 - ⇒ Communication error detection is enabled when CM0d and FMOD are configured to "Embedded Ethernet"
- 2: 1+ during run
 - ⇒ Communication error detection is enabled when CM0d and FMOD are configured to "Embedded Ethernet" and the drive is running

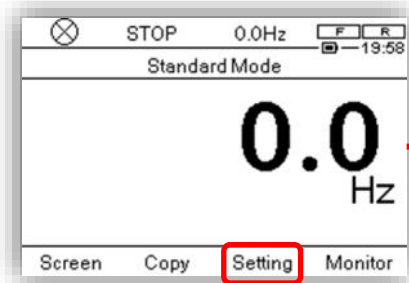


APPENDIX A

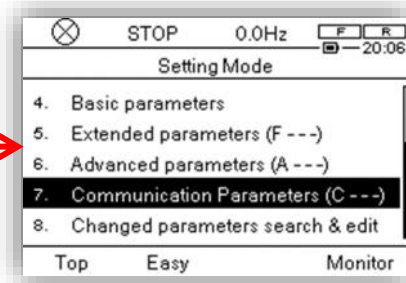
Optional AS3 Programming

Four additional feedback words can be configured using parameters C653 to C656. These additional words are used to populate more data from the AS3 into the AOI tag.

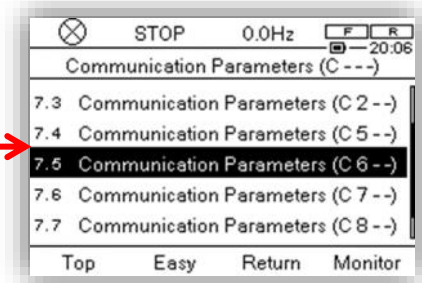
+ New_AOI_Tag.C653_Feedback
+ New_AOI_Tag.C654_Feedback
+ New_AOI_Tag.C655_Feedback
+ New_AOI_Tag.C656_Feedback



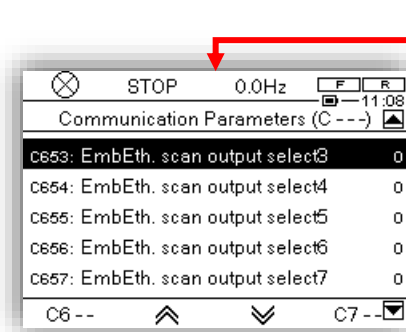
A.11 Select "Setting"



A.12 Select "Communication Parameters (C--)"



A.13 Select "Communication Parameters (C6-)"



A.14 Configure C653 to C656 as desired

DO NOT CHANGE C651 OR C652

APPENDIX A

Optional AS3 Programming

Title	Comm. No.	Parameter name	Description	Default setting
C651 to C660	C651 to C660	Emb Eth. Scanner output select 1 to 10	0: No action 1: FD01 (Inverter status 1) 2: FD00 (Output frequency) 3: FD03 (Output current) 4: FD05 (Output voltage) 5: FC91 (Alarm code) 6: FD22 (PID feedback value) 7: FD06 (Input terminal status) 8: FD07 (Output terminal status) 9: FE35 (Terminal RR input value) 10: FE36 (Terminal RX input value) 11: FE37 (Terminal II input value) 12: FD04 (Input voltage (DC detection)) 13: FD16 (Speed feedback frequency (real time)) 14: FD18 (Torque) 15: FE60 (My function monitor output 1) 16: FE61 (My function monitor output 2) 17: FE62 (My function monitor output 3) 18: FE63 (My function monitor output 4) 19: F880 (Free memorandum) 20: FD29 (Input power) 21: FD30 (Output power) 22: FE14 (Cumulative operation time) 23: FE40 (Terminal FM output value) 24: FE41 (Terminal AM output value) 25: FD20 (Torque current) 26: FD23 (Motor overload factor) 27: FD24 (Inverter overload factor) 28: FD25 (Braking resistor overload factor) 29: FD26 (Motor load factor) 30: FD27 (Inverter load factor) 31: FE56 (Terminal S4/S5 pulse train input value) 32: FE70 (Inverter rated current) 33: FE76 (Input cumulative power) 34: FE77 (Output cumulative power) 35: FD83 (Internal temperature 1)	C651: 1 C652: 2 C653 to C654: 0

APPENDIX B

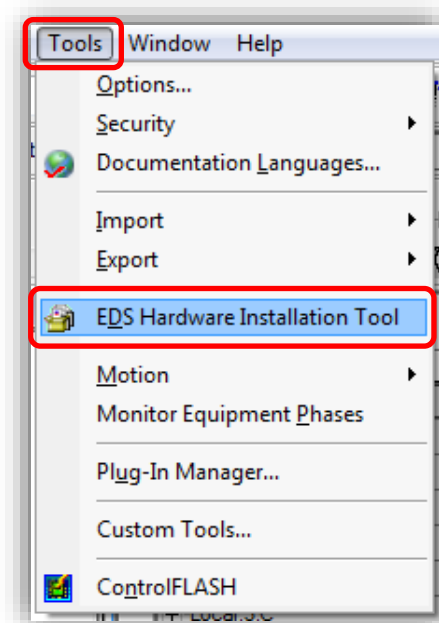


Unregister an existing EDS file

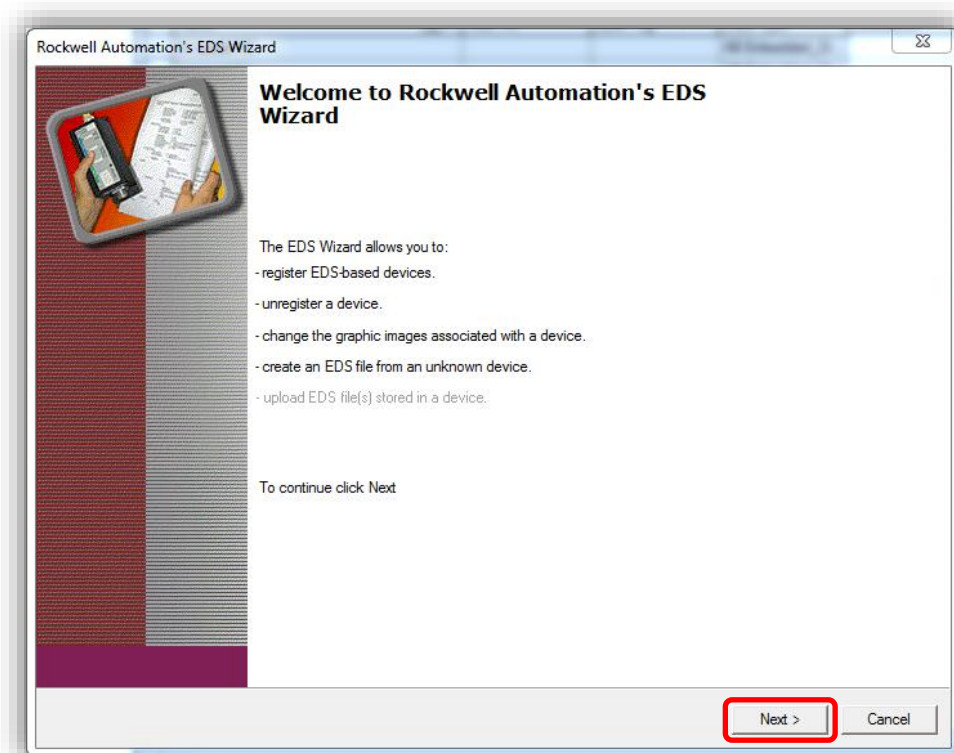
A common issue when importing the EDS file is if there is an existing AS3 EDS file the new EDS file will not overwrite the existing one. To solve this issue the existing file needs to be unregistered using the EDS installation tool then the new EDS file can be imported. Follow these steps to unregister any existing AS3 EDS files.

B.1 Select “Tools”

B.2 Select “EDS Hardware Installation Tool”



B.3 Select “Next”

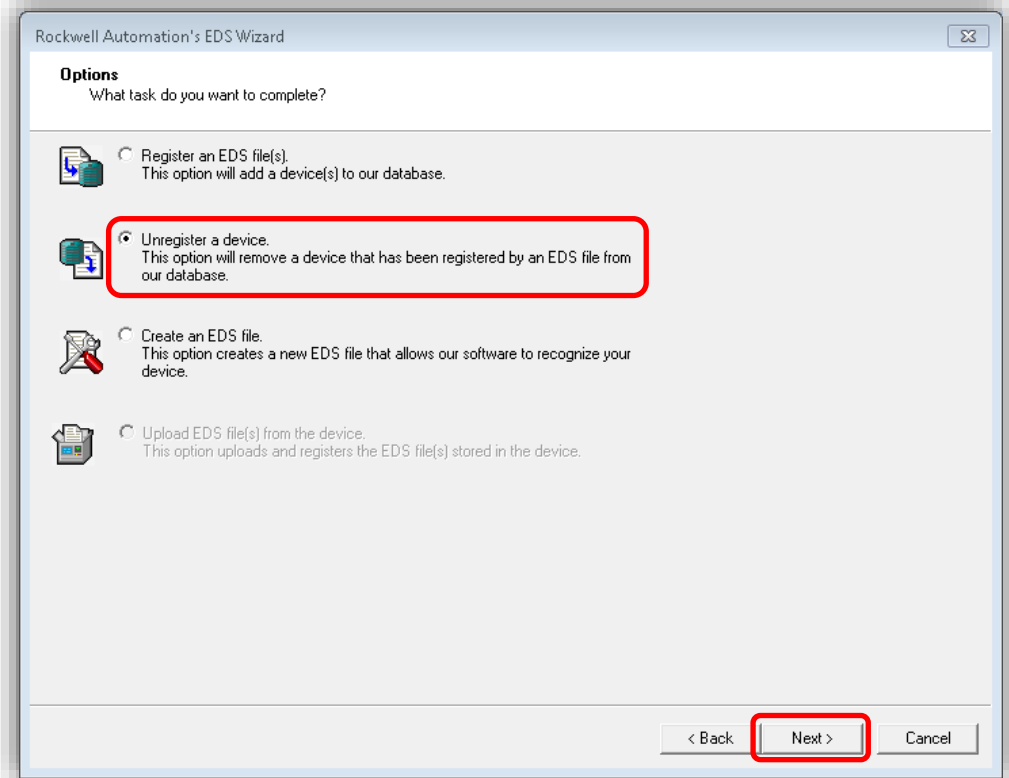


APPENDIX B

Unregister an existing EDS file

B.4 Select “Unregister a device”

B.5 Select “Next”

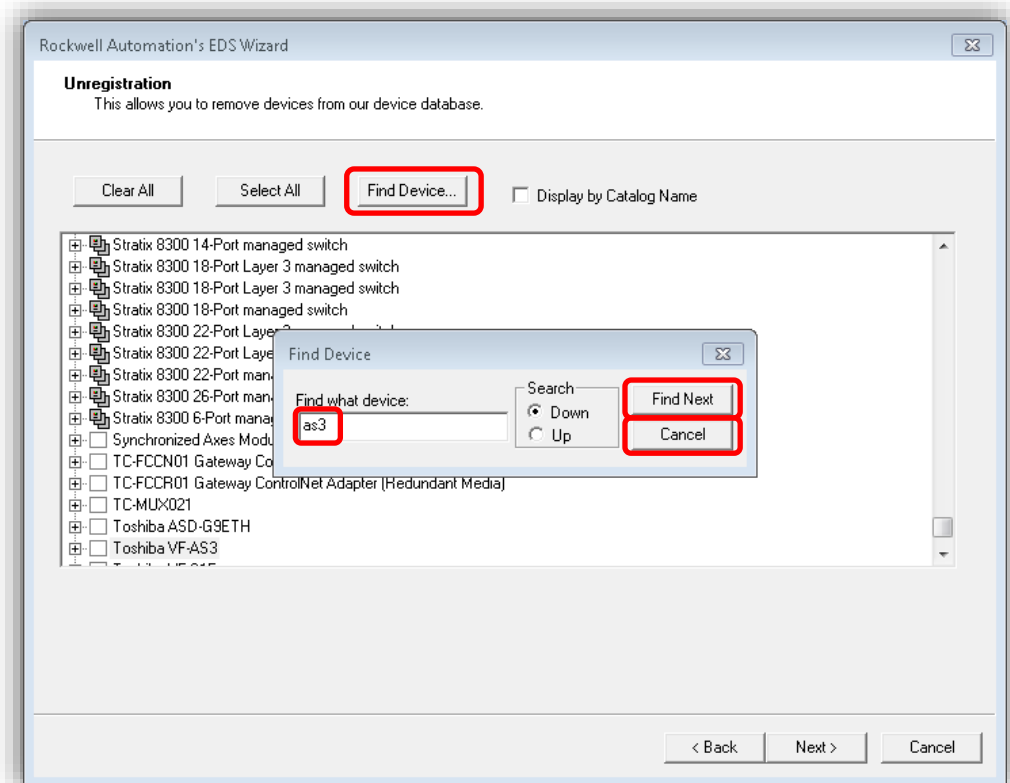


B.6 Select “Find Device...”

B.7 Search for “as3”

B.8 Select “Find Next”

B.9 Select “Cancel”



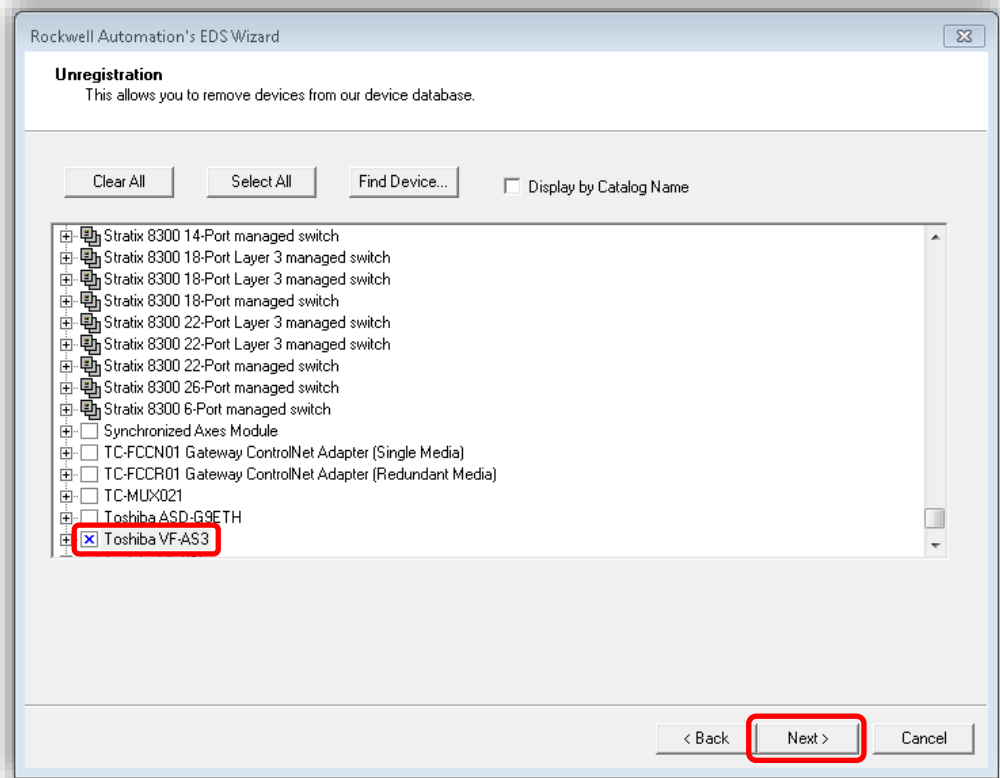
APPENDIX B



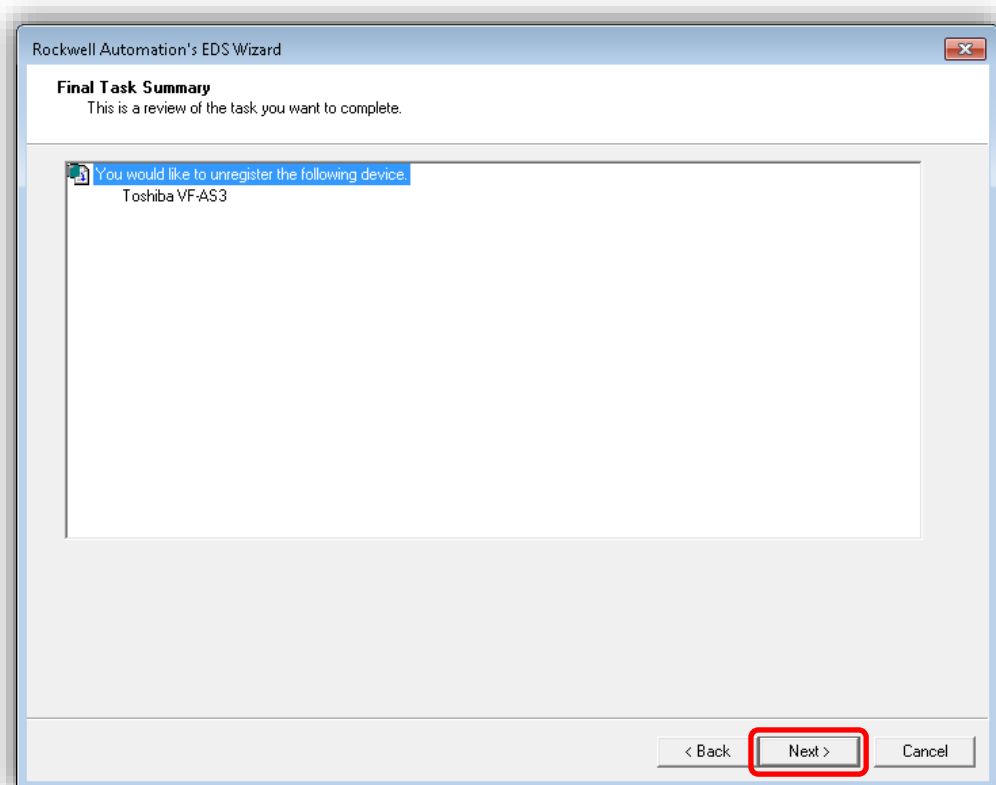
Unregister an existing EDS file

B.10 Select “Toshiba VF-AS3”

B.11 Select “Next”



B.12 Select “Next”



APPENDIX B

➔ Unregister an existing EDS file

B.13 Select “Finish”

