



**AKADEMIA GÓRNICZO-HUTNICZA
IM. STANISŁAWA STASZICA W KRAKOWIE**

**AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY**

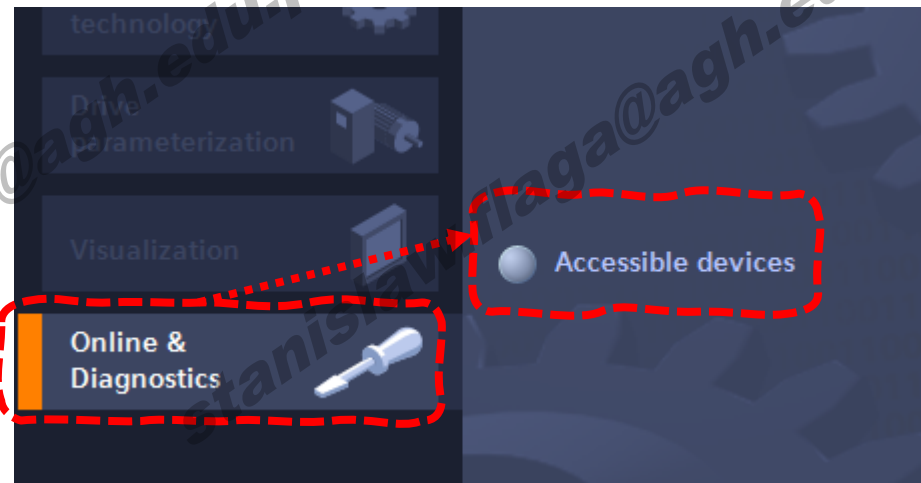
TIA portal

- konfiguracja komunikacji PC<->PLC <-> HMI,
 - prosty program, logika pozytywna,
 - wizualizacja na HMI
 - wiele ekranów

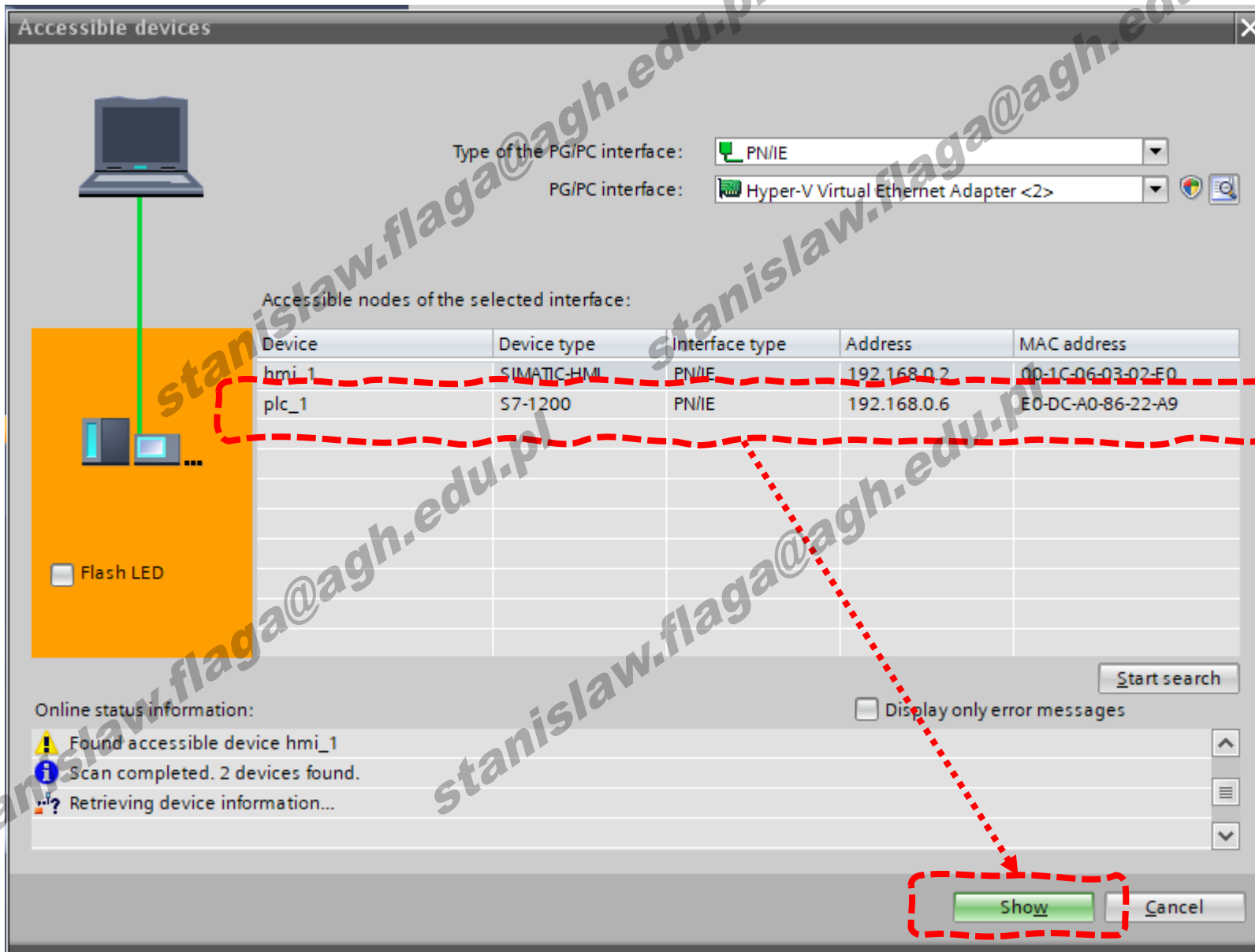
Część: 1

Krok 1: **identyfikacja nieznanego sterownika** przed wykreowaniem projektu

Jeżeli nie mamy ani kodu źródłowego projektu, ani dokumentacji, a tabliczka znamionowa jest trudno dostępna



Krok 2_2: odczyt wersji firmware



Type of the PG/PC interface:

PG/PC interface:

Accessible nodes of the selected interface:

Device	Device type	Interface type	Address	MAC address
hmi_1	SIMATIC-HMI	PN/IE	192.168.0.2	00-1C-06-03-02-E0
plc_1	S7-1200	PN/IE	192.168.0.6	E0-DC-A0-86-22-A9

Flash LED

Start search

Display only error messages

Online status information:

- Found accessible device hmi_1
- Scan completed. 2 devices found.
- Retrieving device information...

Show Cancel

Krok 2_3: odczyt wersji firmware - tylko przy pierwszej próbie połączenia się ze sterownikiem



Accessible devices

Type of the PG/PC interface:

PG/PC interface:

Accessible nodes of the selected interface:

Flash LED

Start search

Display only error messages

Online status information:

- Found accessible device hmi_1
- Scan completed. 2 devices found.
- Retrieving device information...
- Scan and information retrieval completed.

Accessible devices (0131:000011)

Assign IP address

To execute this function the PG/PC requires an additional IP address in the same subnet as the device.

Do you want to add the IP address?

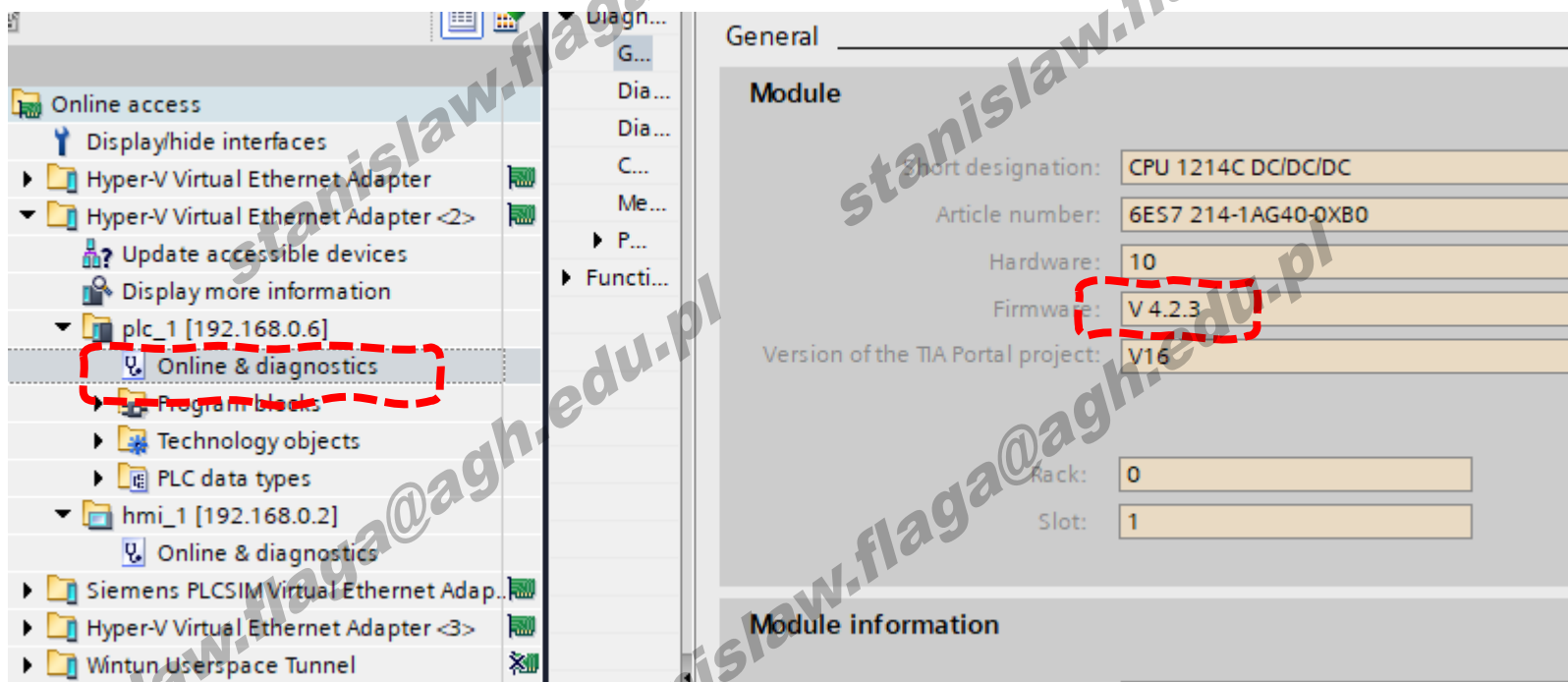
Accessible devices (0131:000008)

An additional IP address was added.

The IP address 192.168.0.241 was added to the interface Hyper-V Virtual Ethernet Adapter <2>.

Krok 2_4: odczyt wersji firmware

Ważna jest pierwsza liczba – tutaj **V 4**



The screenshot displays the Siemens TIA Portal interface. On the left, the 'Online & diagnostics' option under the 'plc_1 [192.168.0.6]' device is highlighted with a red dashed box. On the right, the 'General' tab of the 'Module' properties window is shown. The 'Firmware' field is also highlighted with a red dashed box, displaying the value 'V 4.2.3'. Other fields include 'Short designation: CPU 1214C DC/DC/DC', 'Article number: 6ES7 214-1AG40-0XB0', 'Hardware: 10', and 'Version of the TIA Portal project: V16'. The 'Rack' is set to 0 and the 'Slot' is set to 1.

Field	Value
Short designation	CPU 1214C DC/DC/DC
Article number	6ES7 214-1AG40-0XB0
Hardware	10
Firmware	V 4.2.3
Version of the TIA Portal project	V16
Rack	0
Slot	1

Krok 3_1: Nowy projekt w „Project View”

Siemens Totally Integrated Automation PORTAL

Start

- Devices & networks
- PLC programming
- Motion & technology
- Drive parameterization
- Visualization
- Online & Diagnostics

- Open existing project
- Create new project**
- Migrate project
- Close project
- Welcome Tour
- First steps

Create new project

Project name: [Pod]_PLC_HMI

Path: D:\S7_Proj

Version: V16

Author: st

Comment:

Create

Krok 3 2: Dodawanie sprzętu – PLC autodetekcja

Start

- Devices & networks
- PLC programming
- Motion & technology
- Drive parameterization
- Visualization
- Online & Diagnostics

Navigation:

- Show all devices
- Add new device
- Configure networks
- Help

Add new device

name:

Controllers

- SIMATIC S7-1200
 - CPU
 - CPU 1211C AC/DC/Rly
 - CPU 1211C DC/DC/DC
 - CPU 1211C DC/DC/Rly
 - CPU 1212C AC/DC/Rly
 - CPU 1212C DC/DC/DC
 - CPU 1212C DC/DC/Rly
 - CPU 1214C AC/DC/Rly
 - CPU 1214C DC/DC/DC
 - CPU 1214C DC/DC/Rly
 - CPU 1215C AC/DC/Rly
 - CPU 1215C DC/DC/DC
 - CPU 1215C DC/DC/Rly
 - CPU 1217C DC/DC/DC
 - CPU 1212FC DC/DC/DC
 - CPU 1212FC DC/DC/Rly
 - CPU 1214FC DC/DC/DC
 - CPU 1214FC DC/DC/Rly
 - CPU 1215FC DC/DC/DC
 - CPU 1215FC DC/DC/Rly
 - CPU SIPUS
 - Unspecified CPU 1200
 - 6ES7 2XX-XXXXX-XXXX
 - Unspecified CPU 1200

General

Module

Site designation: CPU 1214

Article number: 6ES7 214

Hardware: 10

Firmware: V4.3

Version of the TIA Portal project: v16

Device:

Unspecified CPU 1200

Article no.: 6ES7 2XX-XXXXX-XXXX

Version: V4.0

Description: Unspecified CPU 1200

device view

Add

Krok 3_3: Autodetekcja konfiguracji



Hardware detection for PLC_1

Type of the PG/PC interface:

PG/PC interface:

Compatible accessible nodes of the selected interface:

Device	Device type	Interface type	Address	MAC address
plc_1	CPU 1214C DC/D...	PN/IE	192.168.0.6	E0-DC-A0-86-22-A9

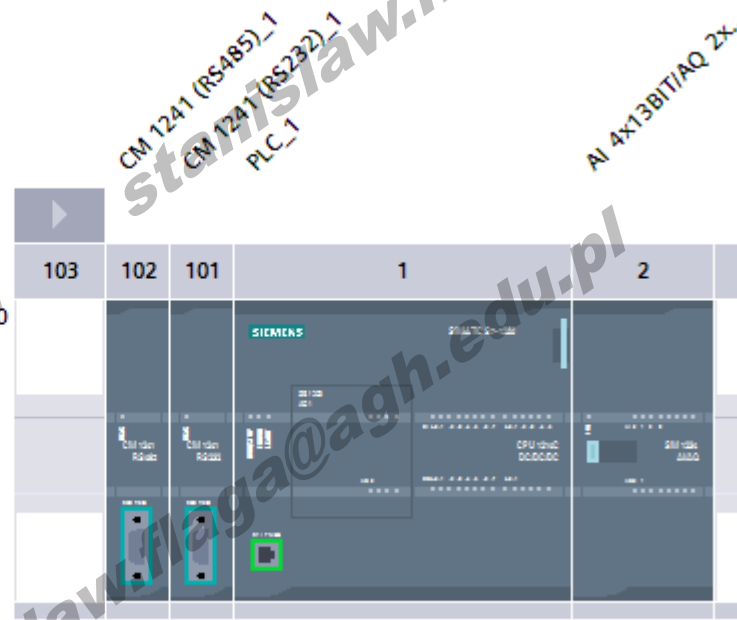
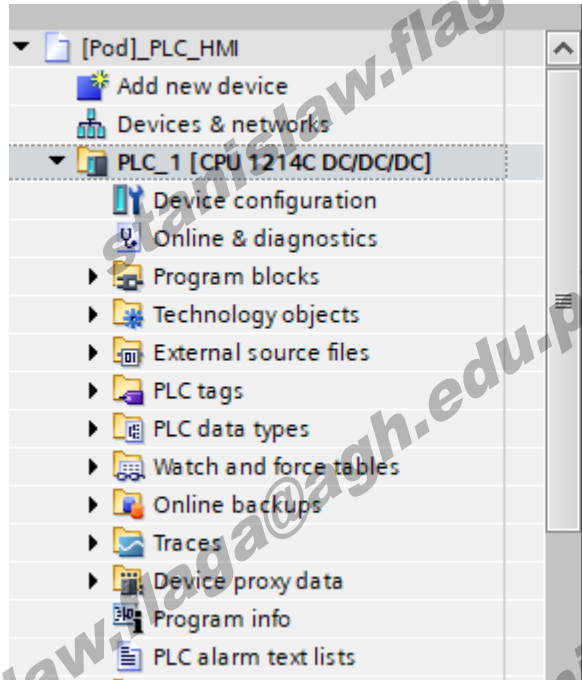
Flash LED

Online status information:

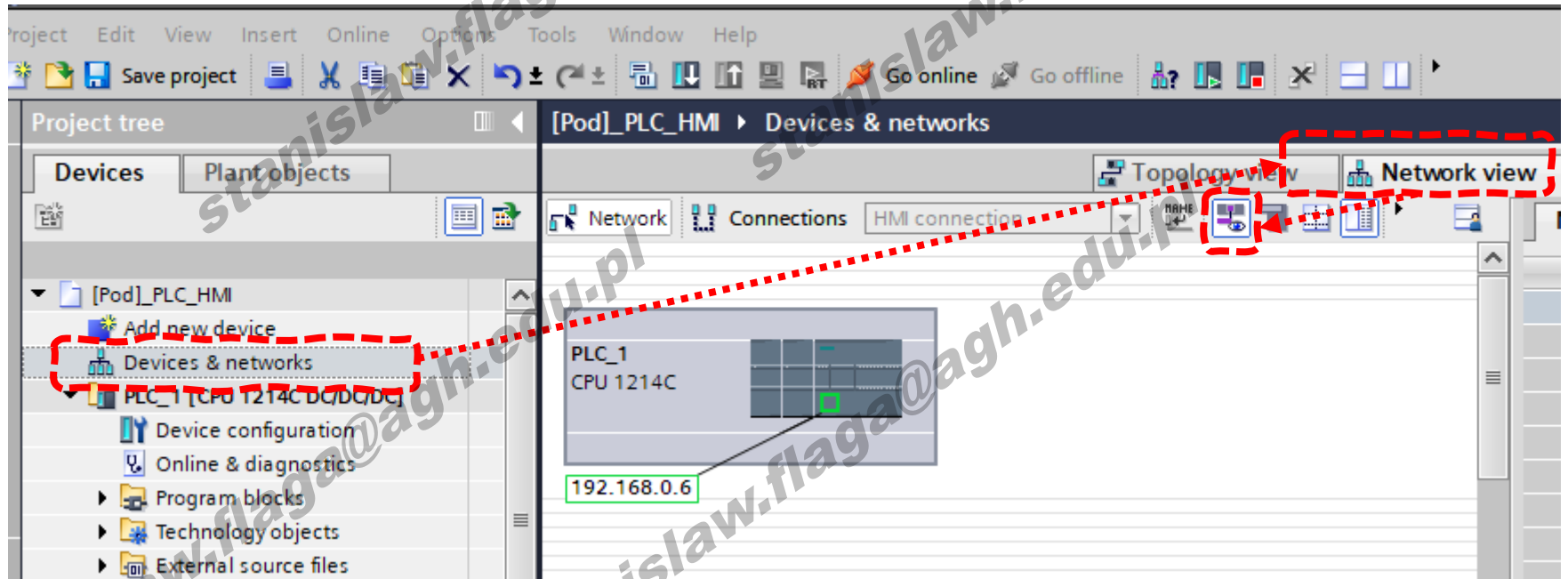
- Found accessible device hmi_1
- Scan completed. 1 compatible devices of 2 accessible devices found.
- Scan and information retrieval completed.
- Retrieving device information...

Display only error messages

Krok 3_4: Odkryta konfiguracja



Krok 3_5: „Devices & Networks”



Krok 4: Dodawanie HMI z widoku „Portal”

Uwaga – w zależności od stanowiska może być inny panel HMI

KTP 600 Basic

Add new device

Device name: HMI_1

Controllers

HMI

PC systems

Drives

- HMI
 - SIMATIC Basic Panel
 - 3" Display
 - 4" Display
 - 6" Display
 - KTP600 Basic
 - 6AV6 647-0AB11-3AX0
 - 6AV6 647-0AC11-3AX0
 - 6AV6 647-0AD11-3AX0
 - 7" Display
 - 9" Display
 - 10" Display
 - 12" Display
 - 15" Display
 - SIMATIC Comfort Panel
 - SIMATIC Unified Comfort Panel
 - SIMATIC Mobile Panel
 - HMI SIPLUS

Start device wizard

Add

KTP 400 Basic

Add new device

Device name: HMI_1

Controllers

HMI

PC systems

- HMI
 - SIMATIC Basic Panel
 - 3" Display
 - 4" Display
 - KTP400 Basic
 - 6AV2 123-2DB03-0AX0
 - 6AV6 647-0AA11-3AX0
 - 6AV6 647-0AK11-3AX0
 - KTP400 Basic Portrait
 - KP400 Basic
 - 6" Display
 - KTP600 Basic
 - 6AV6 647-0AB11-3AX0
 - 6AV6 647-0AC11-3AX0
 - 6AV6 647-0AD11-3AX0
 - KTP600 Basic Portrait
 - 7" Display
 - 9" Display

Add

Krok 4: Jeżeli stanowisko nie jest wyposażone w panel HMI

KTP 700 Basic – stanowiska bez HMI

Add new device


Device name: HMI_1

Controllers

HMI

PC systems

- HMI
 - SIMATIC Basic Panel
 - 3" Display
 - 4" Display
 - 6" Display
 - 7" Display
 - KTP700 Basic
 - 6AV2 123-2GA03-0AX0
 - 6AV2 123-2GB03-0AX0
 - 9" Display
 - 10" Display
 - 12" Display
 - 15" Display
 - SIMATIC Comfort Panel
 - SIMATIC Unified Comfort Panel
 - SIMATIC Mobile Panel
 - HMI SIPLUS

Device:  KTP700 Basic PN

Article no.: 6AV2 123-2GB03-0AX0

Version: 16.0.0.0

Description: 7" TFT display, 800 x 480 pixel, 64K colors; Key and Touch operation, 8 function keys; 1 x PROFINET, 1 x USB

Start device wizard

Add

Krok 4_1: Konfigurowanie „connection”

PLC connections
Configure the PLC connection(s).

PLC connections

Screen layout

Alarms

Screens

System screens

Buttons

Communication driver: <PLC>

Interface: [dropdown]

HMI_1
KTP600 Basic color PN

Select PLC

Browse...

Name	CPU type
None	
PLC_1	CPU 1214C...

<< Back Next >>

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Communication driver: SIMATIC 57 1200

Interface: PROFINET (X1)

HMI_1
KTP600 Basic color PN

PLC_1
CPU 1214C DC/DC/DC

Browse...

<< Back Next >> **Finish** Cancel

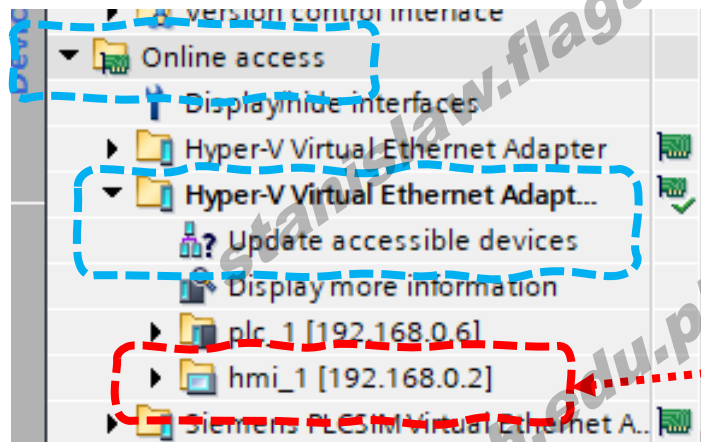
www.agh.edu.pl

stanislaw.flaga@agh.edu.pl

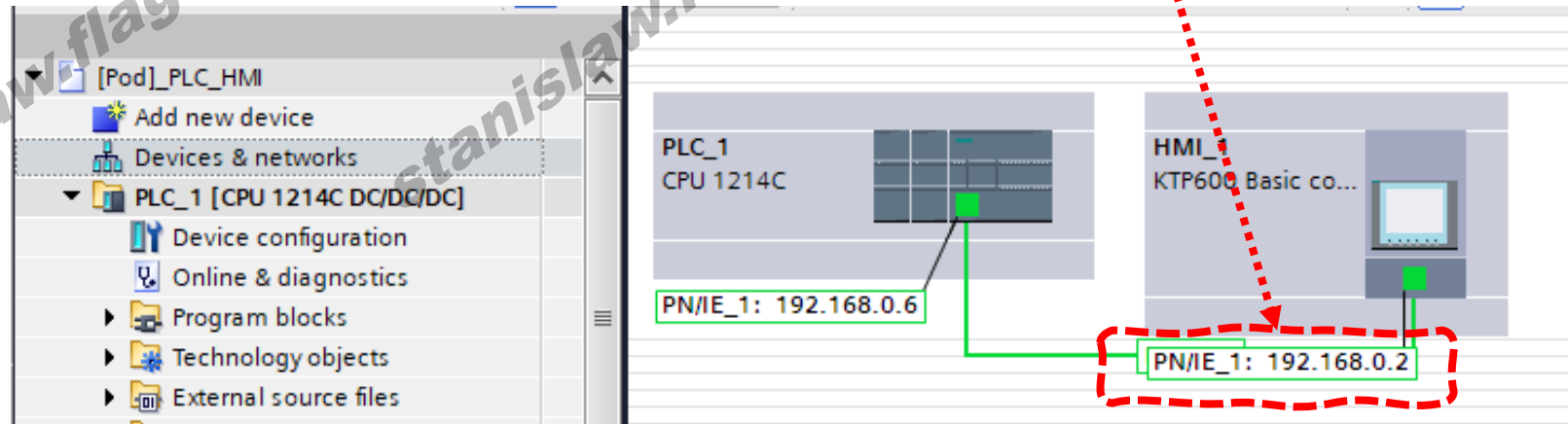
Krok 4_2: „Devices & Networks”

Uwaga – jeżeli komunikujemy się via Ethernet **trzeba sprawdzić** czy rzeczywisty adres IP panelu HMI zgadza się z adresem w projekcie.

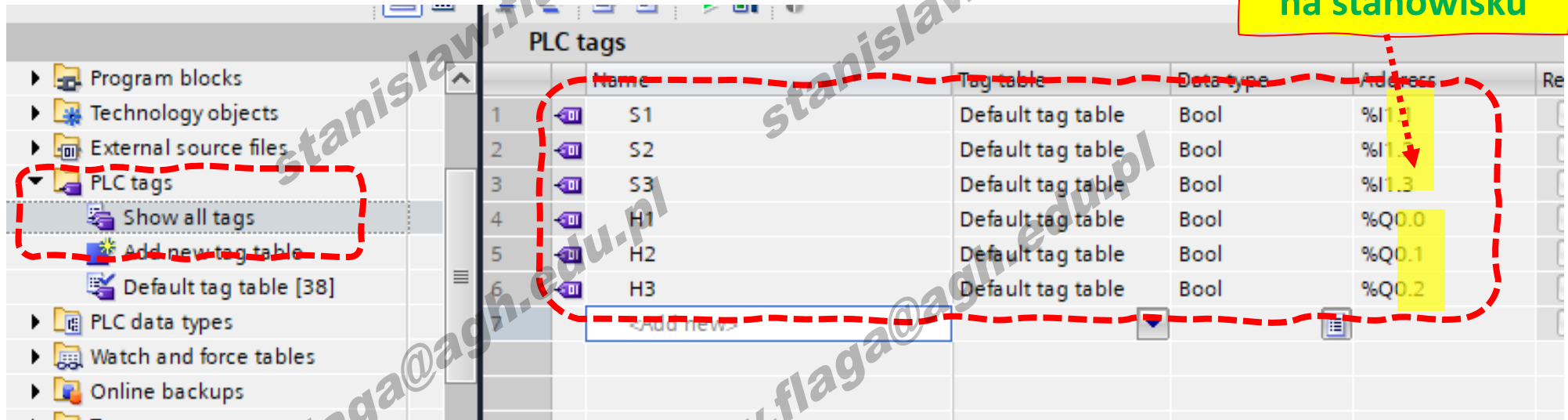
Jeżeli NIE to trzeba zmienić adres w projekcie



Zgadza się



Krok 5: Wpisujemy trywialny program do PLC – definicja tagów

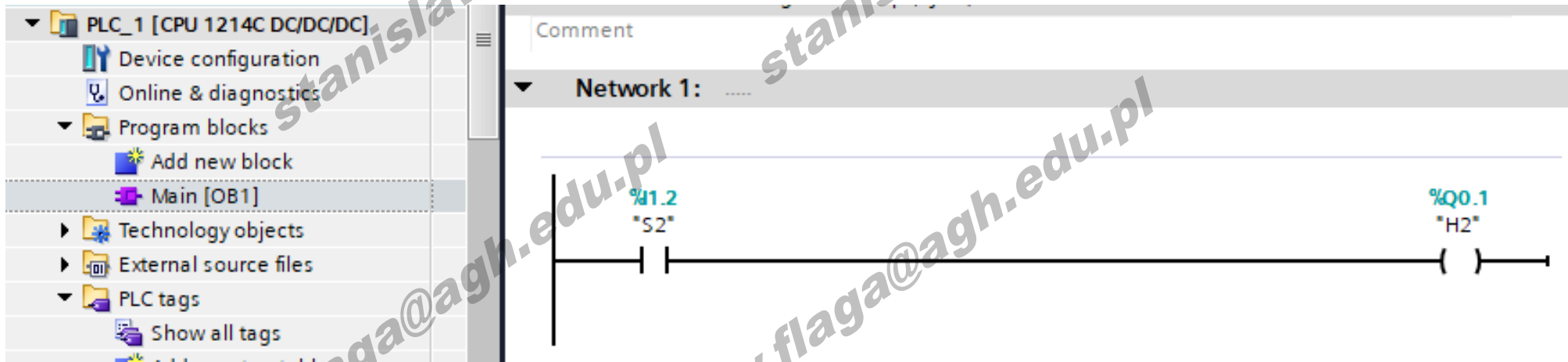


The screenshot shows the 'PLC tags' configuration window. On the left, a tree view shows 'PLC tags' expanded, with 'Show all tags' selected. The main area contains a table with the following data:

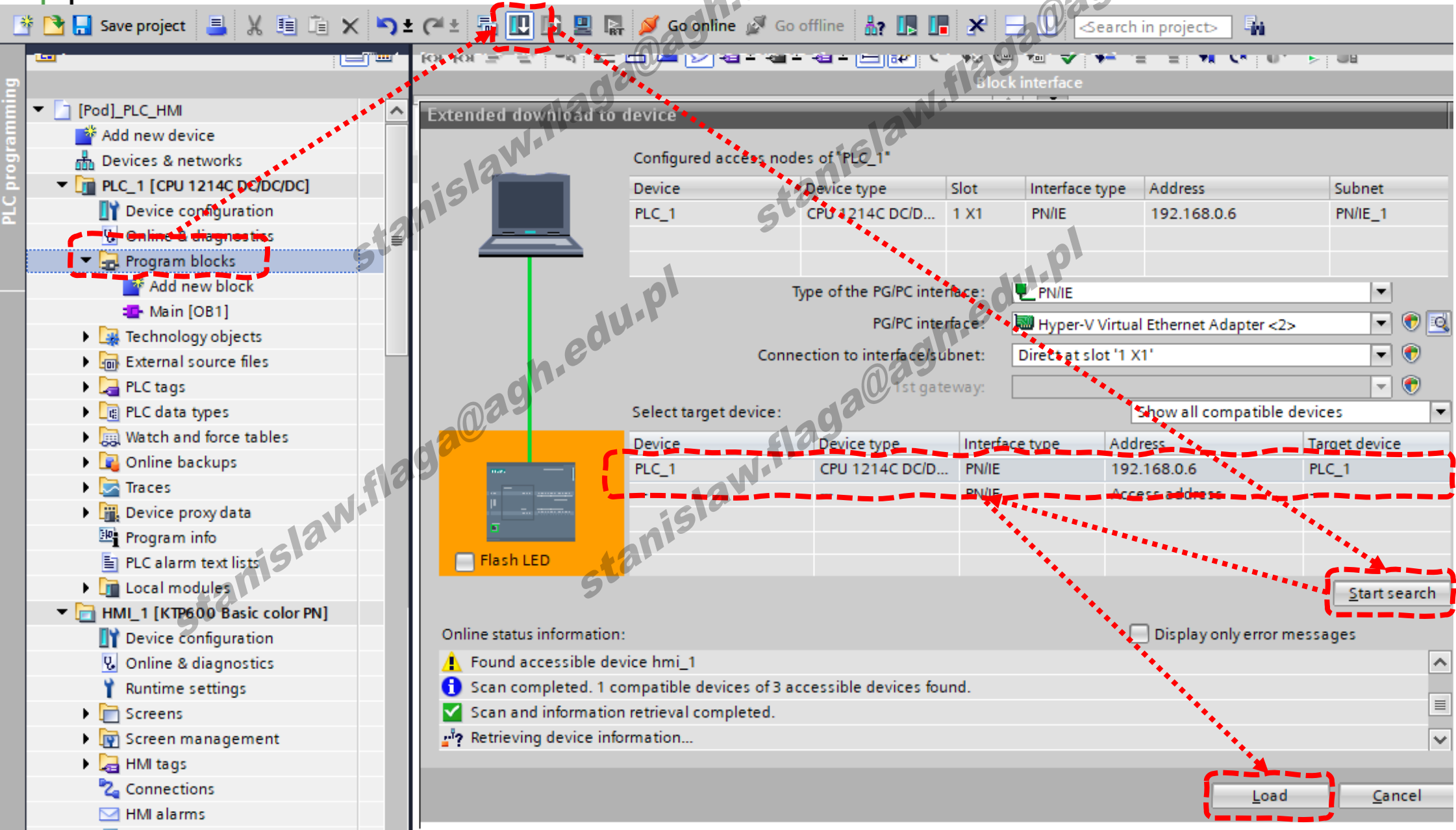
	Name	Tag table	Data type	Address
1	S1	Default tag table	Bool	%I1.1
2	S2	Default tag table	Bool	%I1.2
3	S3	Default tag table	Bool	%I1.3
4	H1	Default tag table	Bool	%Q0.0
5	H2	Default tag table	Bool	%Q0.1
6	H3	Default tag table	Bool	%Q0.2

A red dashed box highlights the 'Show all tags' option and the table. A yellow box with the text 'Sprawdź adresy na stanowisku' (Check addresses on the station) has an arrow pointing to the 'Address' column. A blue box highlights the 'Add new' button at the bottom of the table.

Krok 5_1: Wpisujemy trywialny program do PLC – program w LAD



Krok 5_2: Sprawdzamy połączenie – ładujemy prosty program do PLC



Block interface

Extended download to device

Configured access nodes of "PLC_1"

Device	Device type	Slot	Interface type	Address	Subnet
PLC_1	CPU 1214C DC/D...	1 X1	PN/IE	192.168.0.6	PN/IE_1

Type of the PG/PC interface:

PG/PC interface:

Connection to interface/subnet:

1st gateway:

Select target device:

Device	Device type	Interface type	Address	Target device
PLC_1	CPU 1214C DC/D...	PN/IE	192.168.0.6	PLC_1
		PN/IE	Access address	

Flash LED

Online status information:

- Display only error messages
- ⚠ Found accessible device hmi_1
- ℹ Scan completed. 1 compatible devices of 3 accessible devices found.
- ✅ Scan and information retrieval completed.
- ❓ Retrieving device information...

Krok 5_2: Sprawdzamy połączenie – ładujemy prosty program do PLC

Load preview

Check before loading

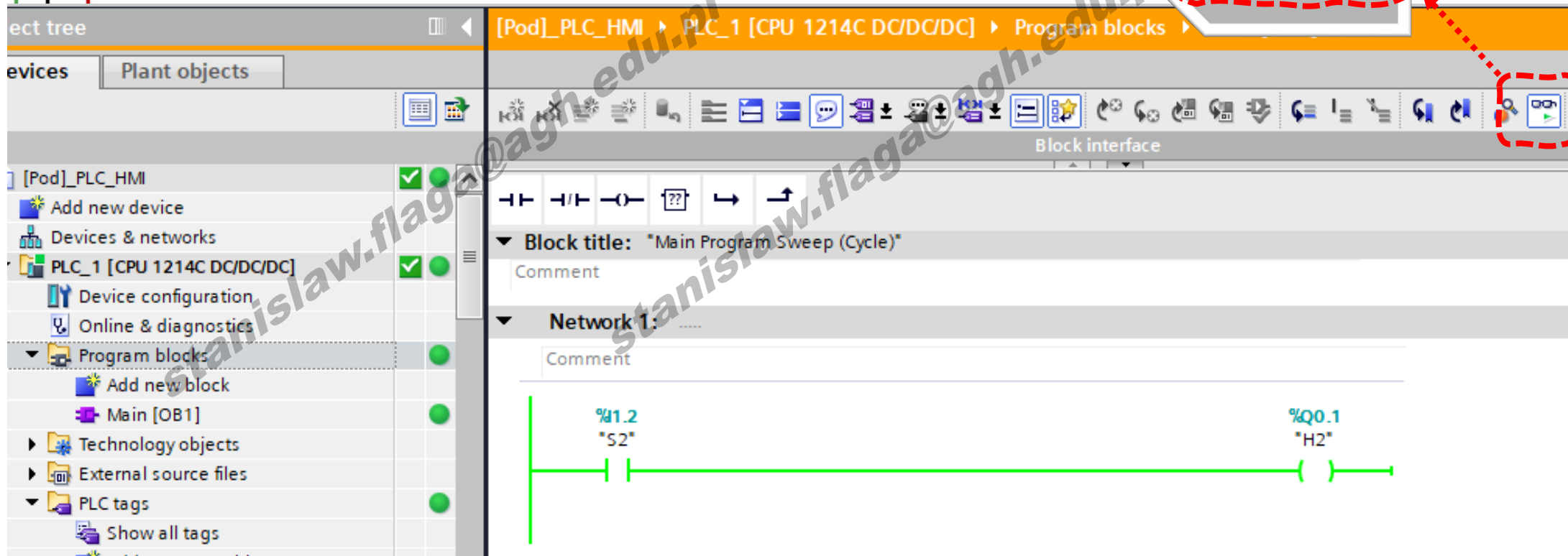
Status	!	Target	Message	Action
↓↑	✓	▼ PLC_1	Ready for loading.	Load 'PLC_1'
	✓	▶ Software	Download software to device	Consistent download

Refresh

Finish Load Cancel

Krok 5_3: Włączamy monitoring

Dlaczego linia „Network 1:” jest cały czas aktywna??



The screenshot displays the SIMATIC Manager interface. On the left, the project tree shows the hierarchy: [Pod]_PLC_HMI > PLC_1 [CPU 1214C DC/DC/DC] > Program blocks. The main workspace shows the 'Block interface' for the 'Main Program Sweep (Cycle)' block. The 'Network 1:' section contains a single ladder logic network with the following components:

- Input: %I1.2, labeled "S2"
- Output: %Q0.1, labeled "H2"

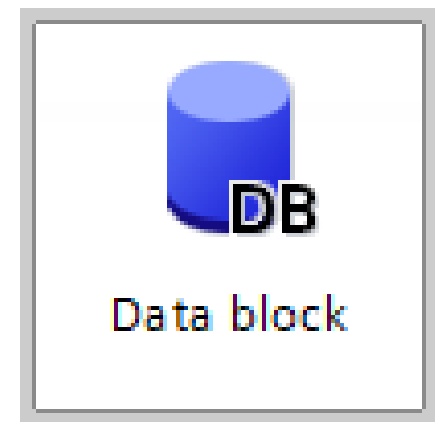
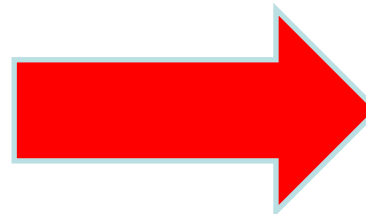
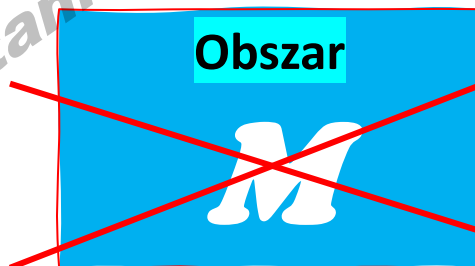
The network is represented by a green horizontal line with a normally open contact on the left and a coil on the right. A red dashed box highlights the 'Run' button (a play icon) in the top right corner of the software interface.

1 przykazanie programisty

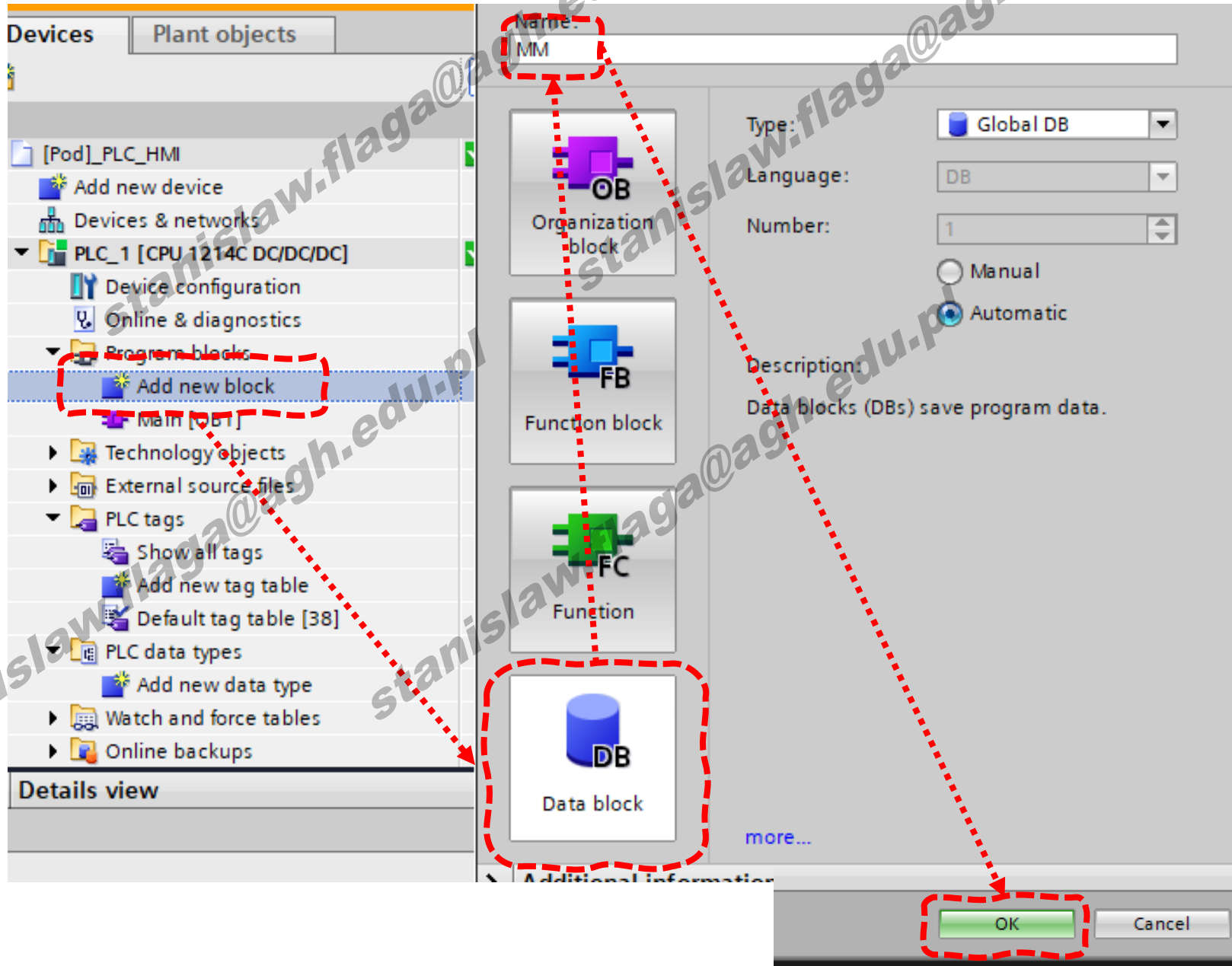
Algorytmy i programy budujemy w logice pozytywnej

Napiszemy funkcję mapującą wejścia (I) na zmienne w pamięci z jednoczesnym przejściem do logiki pozytywnej (pozbędziemy się funkcji łączeniowej styków fizycznych)

W jakim obszarze pamięci ulokować zmienne ?



Krok 6: Dodamy blok danych **DB**



The screenshot shows the 'Add new block' dialog box in SIMATIC Manager. The 'Name' field is set to 'MM'. The 'Type' is 'Global DB'. The 'Language' is 'DB'. The 'Number' is '1'. The 'Automatic' radio button is selected. The 'Data blocks (DBs) save program data.' description is visible. The 'OK' button is highlighted.

Details view

Additional information

OK Cancel

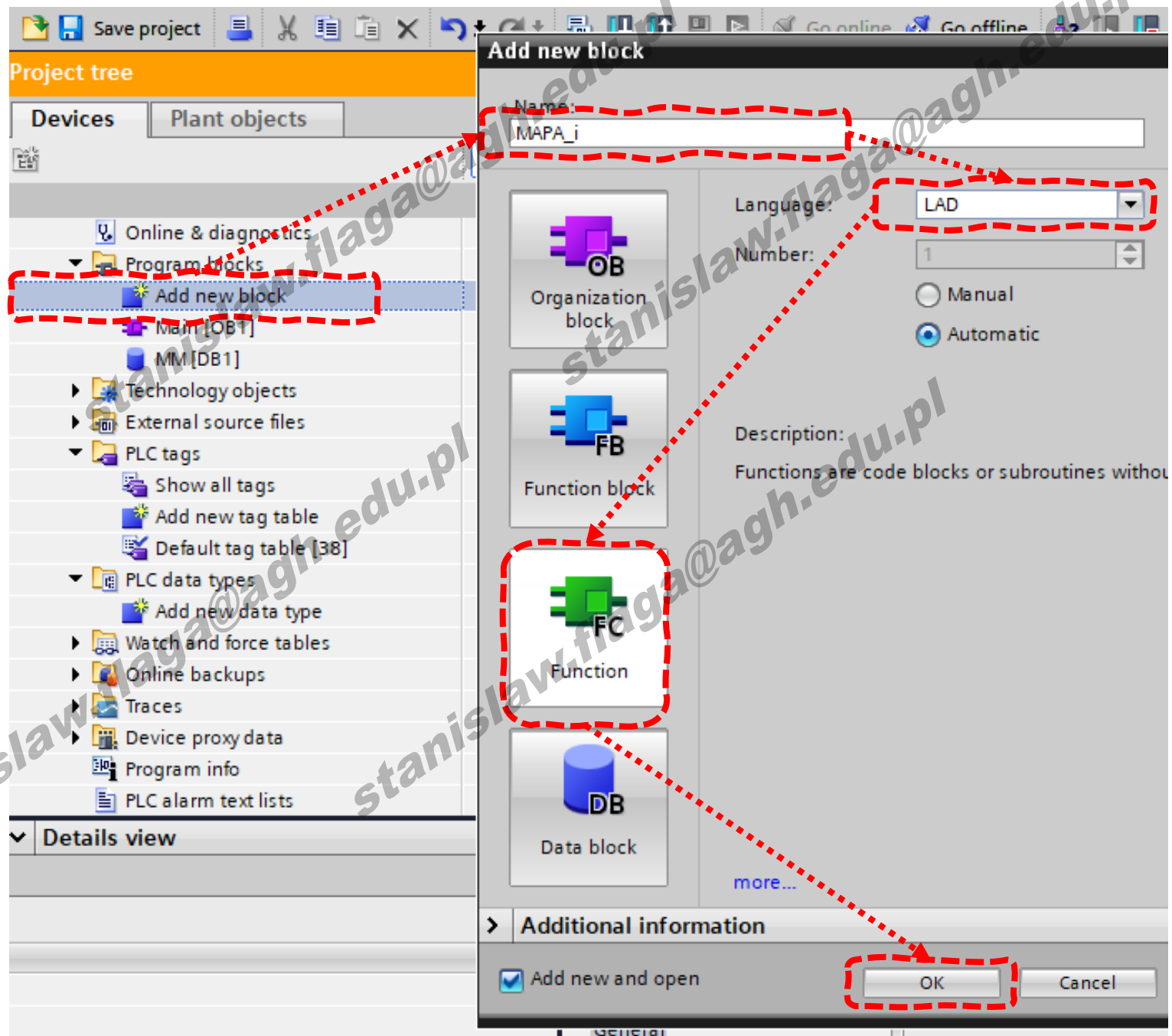
Krok 6_1: Tworzymy odpowiedniki zmiennych



z obszarów **I**, **Q** w **DB MM**

	Name	Data type	Start value	Retain
1	Static			<input type="checkbox"/>
2	S1	Bool	false	<input type="checkbox"/>
3	S2	Bool	false	<input type="checkbox"/>
4	S3	Bool	false	<input type="checkbox"/>
5	H1	Bool	false	<input type="checkbox"/>
6	H2	Bool	false	<input type="checkbox"/>
7	H3	Bool	false	<input type="checkbox"/>
8	<Add new>			<input type="checkbox"/>

Krok 6_2: Tworzymy funkcję mapującą wejścia **MAPA_i**

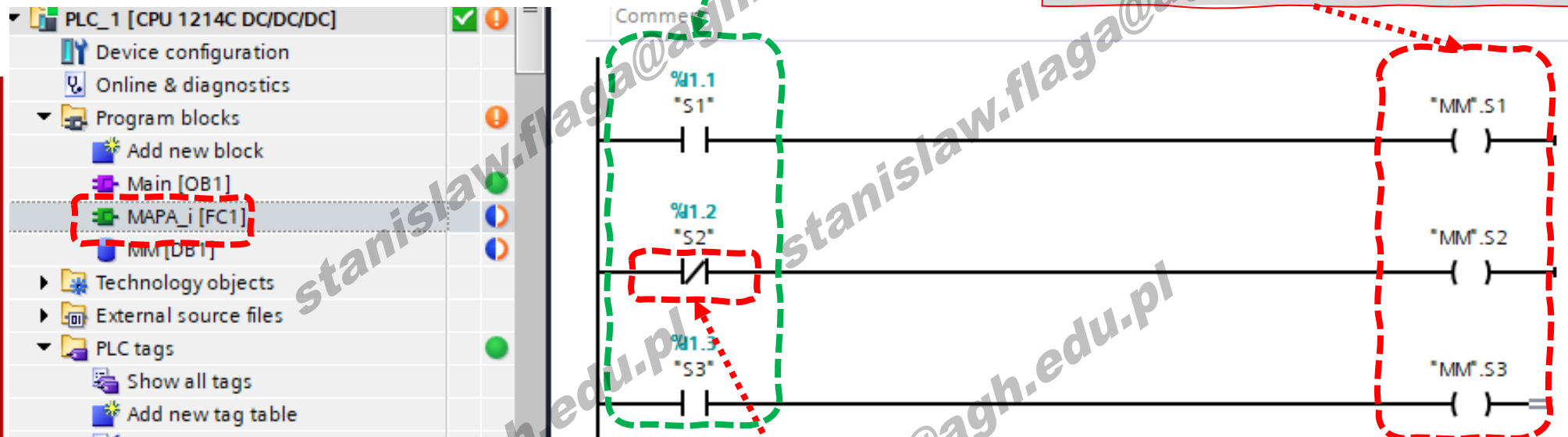


The screenshot shows the Siemens SIMATIC Manager interface. On the left, the 'Project tree' is visible, with 'Add new block' selected under the 'Program blocks' folder. The main window displays the 'Add new block' dialog box. The 'Name' field contains 'MAPA_i'. The 'Language' dropdown is set to 'LAD'. The 'Number' field is '1'. The 'Automatic' radio button is selected. The 'Function' block type is highlighted. The 'OK' button is highlighted with a red dashed box. The 'Additional information' section at the bottom has the 'Add new and open' checkbox checked.

Krok 6_3: Implementujemy funkcję mapującą wejścia *MAPA_i*

Wejścia fizyczne

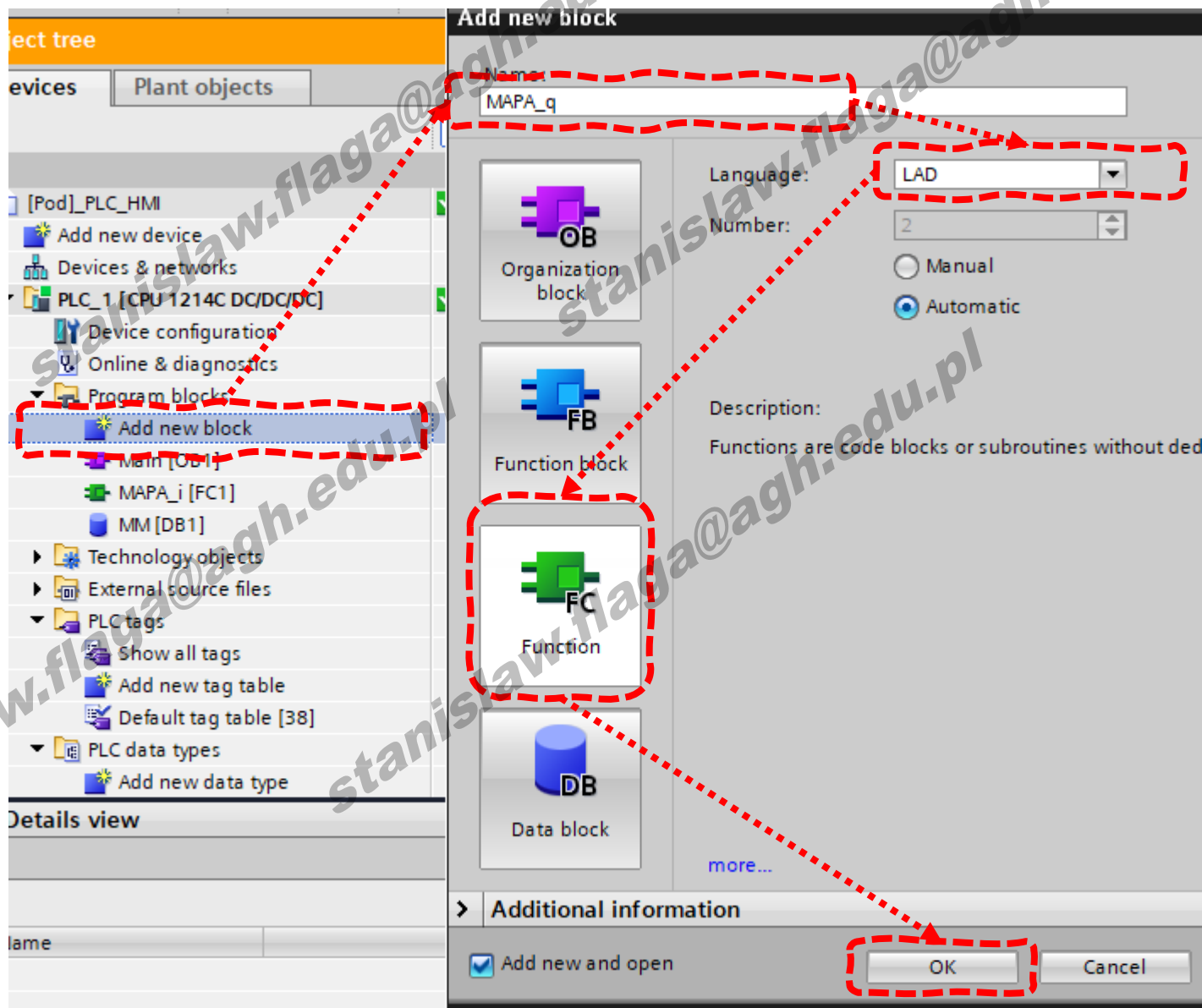
Na tych zmiennych będziemy pracować w programie



Pozbycie się funkcji łączeniowej styku S2 (fizycznie jest typu NC)

Od tej chwili odpowiadająca mu zmienna "MM".S2 będzie się zachowywała jak fizyczny styk typu NO

Krok 6_4: Tworzymy funkcję mapującą wyjścia **MAPA_q**



The screenshot shows the 'Add new block' dialog box in Siemens SIMATIC Manager. The 'Project tree' on the left shows the 'Program blocks' folder selected, with 'Add new block' highlighted. The dialog box has the following fields and options:

- Name:** MAPA_q
- Language:** LAD
- Number:** 2
- Mode:** Automatic (selected)
- Description:** Functions are code blocks or subroutines without dedicated...
- Block Type:** Function (FC) selected
- Additional information:** Add new and open (checked)
- Buttons:** OK and Cancel

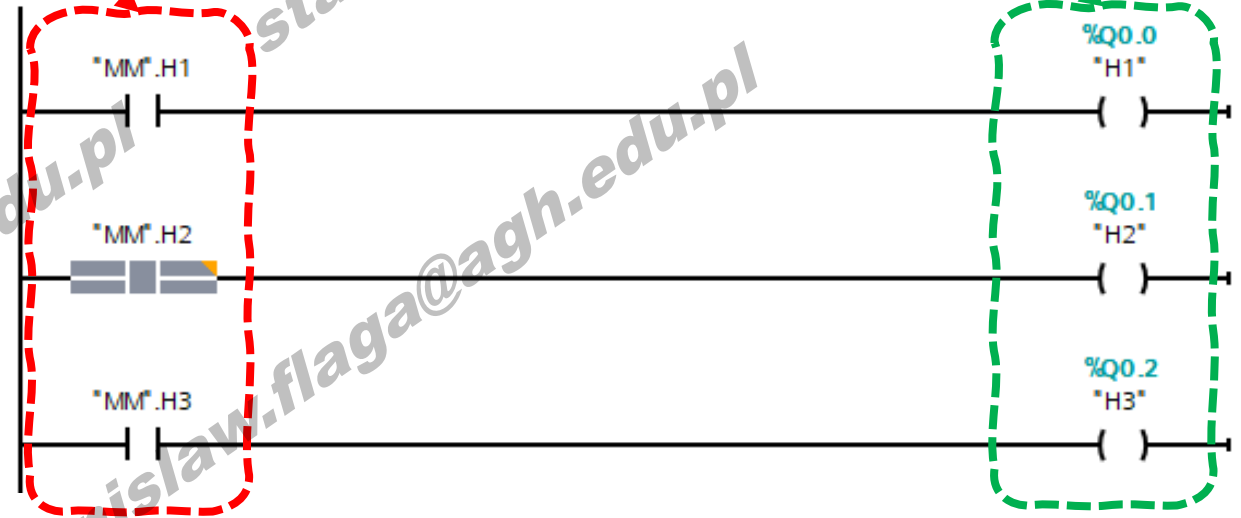
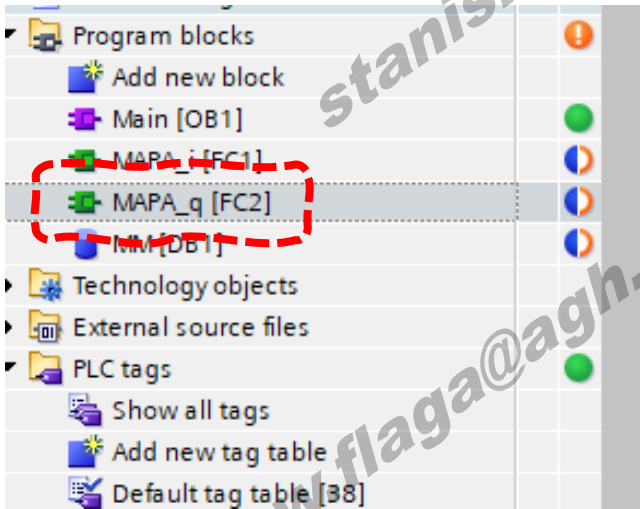
Red dashed boxes and arrows highlight the 'Name' field, the 'Language' dropdown, the 'Function' block type, and the 'OK' button.

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Krok 6_5: Implementujemy funkcję mapującą wejścia **MAPA_q**

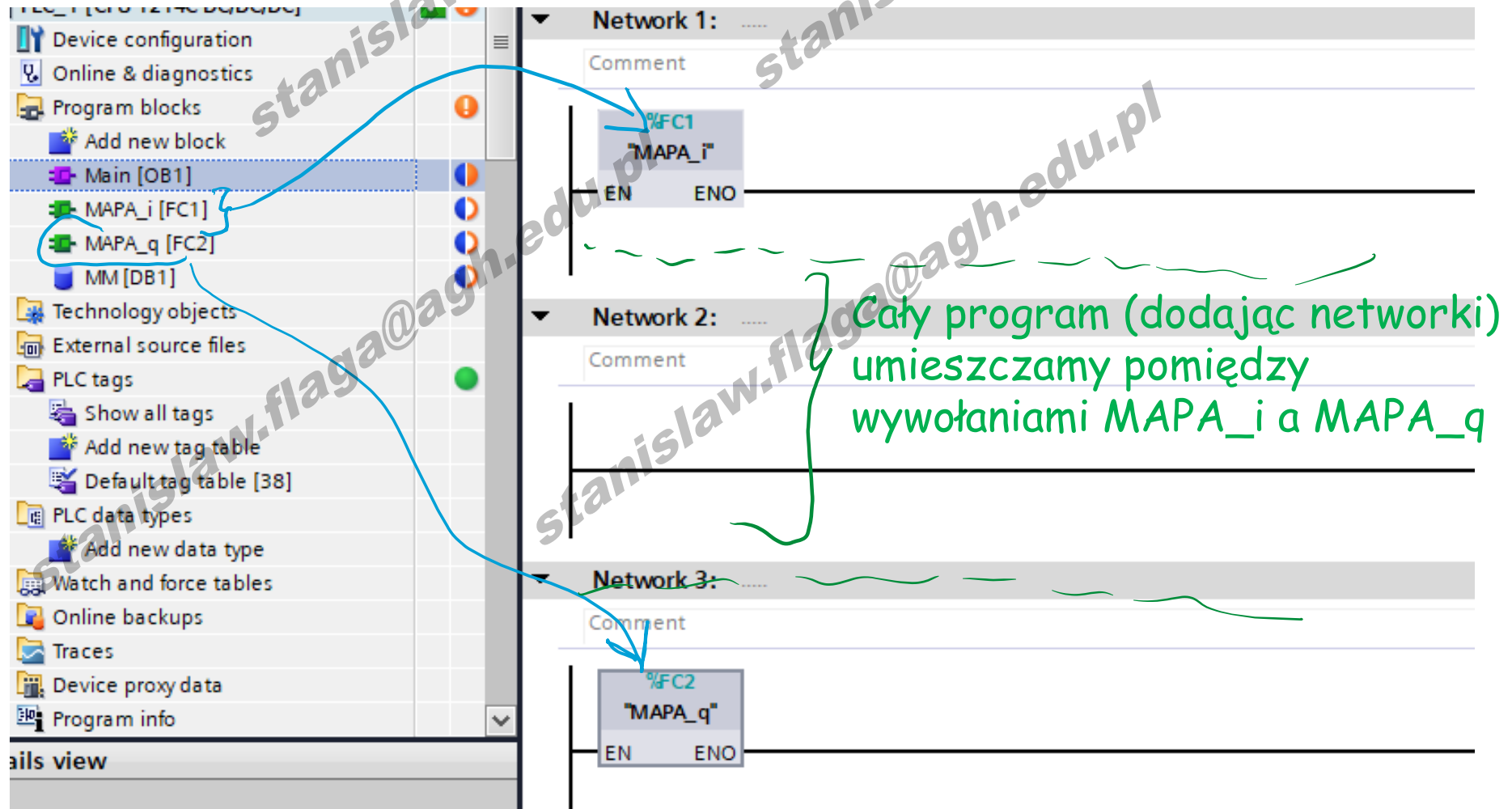
Te wartości wyliczamy w programie

... i przepisujemy na wyjścia fizyczne



Krok 6_6: wywołujemy bezwarunkowo MAPA_i w pierwszym networku bloku OB1 i MAPA_q w ostatnim networku bloku OB1

UWAGA !! - funkcje MAPA_i oraz MAPA_q są nietypowe. PRACUJĄ NA ZMIENNYCH GLOBALNYCH nie można ich wielokrotnie wykorzystać w tym samym programie. Tutaj ich zadaniem jest uporządkowanie kodu



Cały program (dodając networki) umieszczamy pomiędzy wywołaniami MAPA_i a MAPA_q

Krok 6_7: Piszemy program używając zamapowanych zmiennych i ładujemy go do sterownika



The screenshot displays the SIMATIC Manager interface. On the left, the Project tree shows the hierarchy: [Pod]_PLC_HMI > PLC_1 [CPU 1214C DC/DC/DC] > Program blocks > Main [OB1]. The 'Program blocks' folder is expanded, showing sub-items like 'Add new block', 'Main [OB1]', 'MAPA_i [FC1]', 'MAPA_q [FC2]', and 'MM [DB1]'. A red box highlights the 'Load' icon in the top toolbar. The main workspace shows a ladder logic network with three networks. Network 1 contains a function block call for '%FC1' 'MAPA_i' with EN and ENO terminals. Network 2 shows a normally open contact labeled '*MM'.S2 connected to a coil labeled '*MM'.H2. Network 3 contains a function block call for '%FC2' 'MAPA_q' with EN and ENO terminals. The interface includes various toolbars for editing and simulation, and a search bar at the top right.



AGH

Krok 6_8: Włączamy monitoring

Program działa tak jak poprzednio i **jest napisany w logice pozytywnej**

Należy zwrócić uwagę na to, że przy zmiennych "MM"?? nie zobaczymy adresu.

DB MM jest blokiem zoptymalizowanym i mamy tylko dostęp symboliczny do zmiennych

The screenshot displays the SIMATIC Manager interface. On the left, the project tree shows the following structure:

- PLC_1 [CPU 1214C DC/DC/DC]
- Device configuration
- Online & diagnostics
- Program blocks
 - Add new block
 - Main [OB1]
 - MAPA_i [FC1]
 - MAPA_q [FC2]
 - MM [DB1]
- Technology objects
- External source files
- PLC tags
 - Show all tags
 - Add new tag table
 - Default tag table [38]
- PLC data types
 - Add new data type
- Watch and force tables
- Online backups
- Traces
- Device proxy data
- Program info

The main window shows the ladder logic for three networks:

- Network 1:** A normally open contact labeled '%FC1' is connected to a coil labeled 'MAPA_i'.
- Network 2:** A normally open contact labeled '*MM'.S2' is connected to a coil labeled '*MM'.H2'.
- Network 3:** A normally open contact labeled '%FC2' is connected to a coil labeled 'MAPA_q'.



Zadanie

Algorytm powyższego programu:

Naciśnięcie przycisku S2 na panelu operatora powinno zaświecić sygnalizator H2.

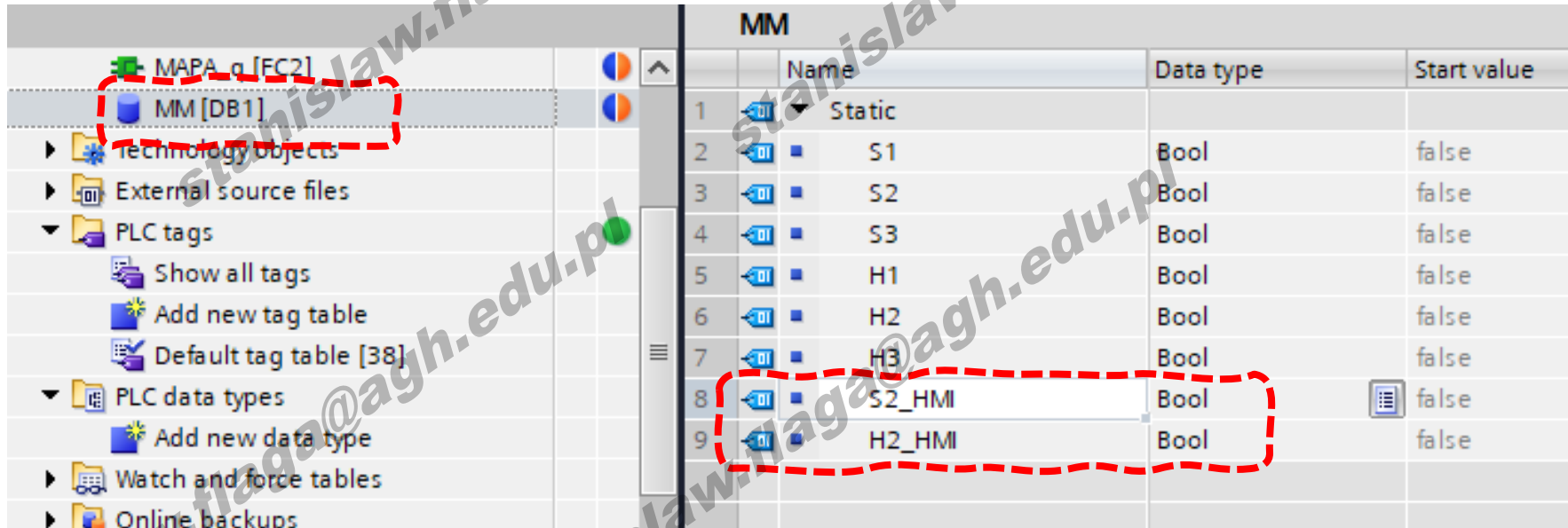
Zadanie

Utworzyć na panelu HMI:

- przycisk S2_HMI,
- wirtualny sygnalizator H2_HMI.

Naciśnięcie S2 lub S2_HMI powinno zaświecić H2 i H2_HMI

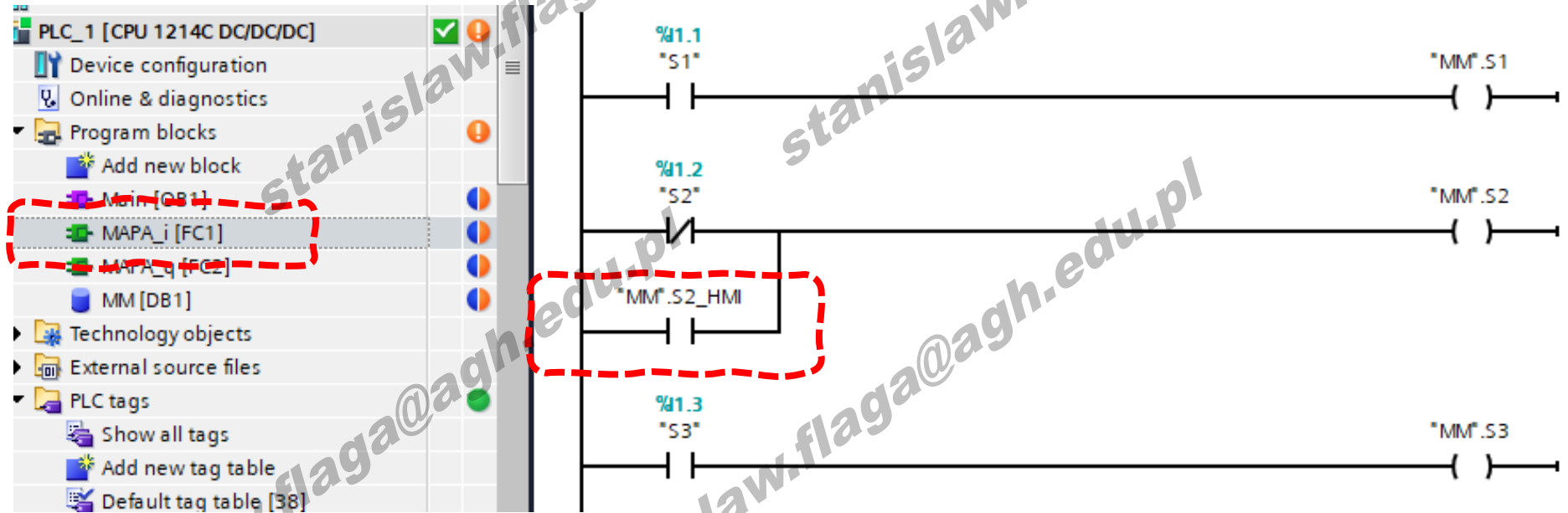
HMI - Krok 1: dodanie zmiennych w DB "MM" do obsługi HMI



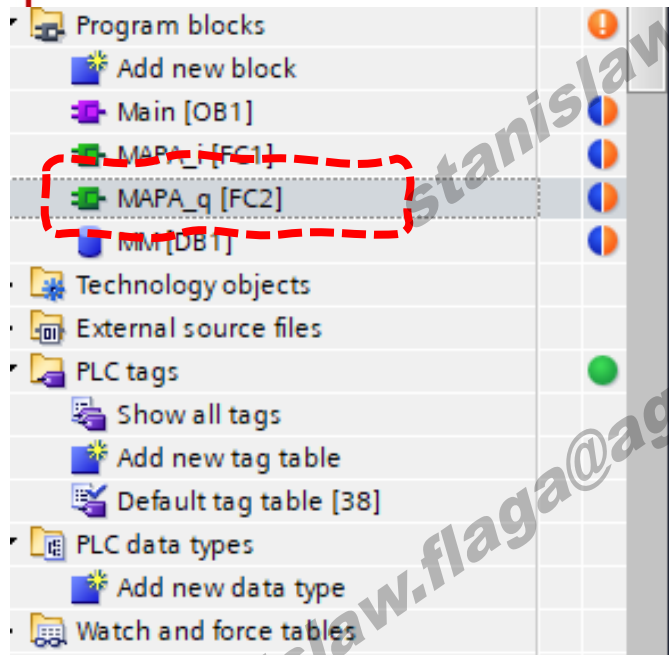
The screenshot displays the SIMATIC Manager interface. On the left, the project tree shows the 'MM [DB1]' data block selected. On the right, the 'MM' data block configuration table is shown, listing variables and their properties.

MM			
	Name	Data type	Start value
1	Static		
2	S1	Bool	false
3	S2	Bool	false
4	S3	Bool	false
5	H1	Bool	false
6	H2	Bool	false
7	H3	Bool	false
8	S2_HMI	Bool	false
9	H2_HMI	Bool	false

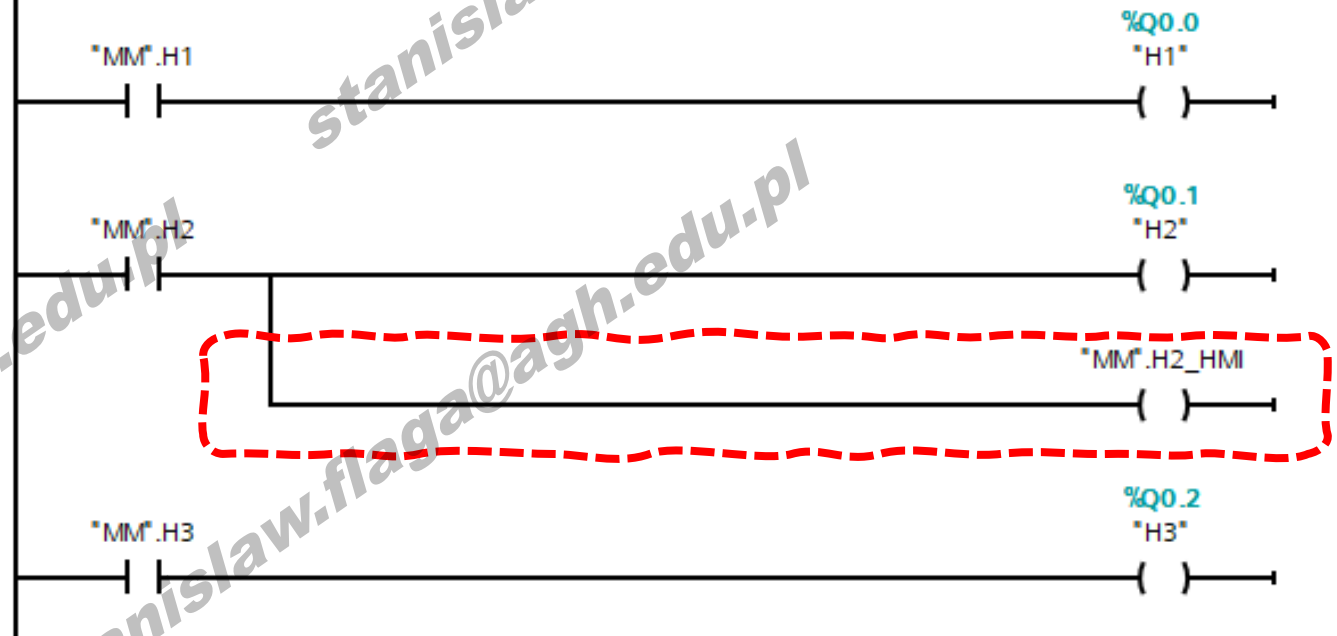
HMI - Krok 2: Modyfikacja FC MAPA_i



HMI - Krok 3: Modyfikacja FC "MAPA_q"



The screenshot shows the project tree in SIMATIC Manager. The 'Program blocks' folder is expanded, showing 'MAPA_q [FC2]' selected and highlighted with a red dashed box. Other visible items include 'Main [OB1]', 'MMI [DB 1]', 'Technology objects', 'External source files', 'PLC tags', and 'PLC data types'.



HMI - Krok 4: Ładujemy program do PLC



The screenshot shows the SIMATIC Manager interface with a dialog box titled "Software synchronization before loading to a device". The dialog box contains a warning icon and the text: "The CPU contains changes that cannot be automatically synchronized." Below this is a table with the following data:

!	Software synchronization	Status	Action
	PLC_1		
	'Program blocks'		
!	Main [OB1]	!	Manual synchronization required
!	MM [DB1]	!	Manual synchronization required
!	MAPA_i [FC1]	!	Manual synchronization required
!	MAPA_q [FC2]	!	Manual synchronization required

At the bottom of the dialog box, there are four buttons: "Offline/online comparison", "Synchronize", "Continue without synchronization", and "Cancel". The "Continue without synchronization" button is highlighted with a red dashed box. A red dashed line also points from the "Continue without synchronization" button back to the "Program blocks" folder in the project tree on the left.

HMI - Krok 4_1: Ładujemy program do PLC

Load preview

Check before loading

Status	!	Target	Message	Action
↓	⚠	PLC_1	Loading will not be performed because preconditions are not met	Load 'PLC_1'
	⚠	▶ Data block re-initi...	The data blocks will be re-initialized with their start values.	No action
	✓	▶ Software	Download software to device	

Load preview

Check before loading

Status	!	Target	Message	Action
↓	✓	PLC_1	Ready for loading.	Load 'PLC_1'
	✓	▶ Data block re-initi...	The data blocks will be re-initialized with their start values.	Re-initialize
	✓	▶ Software	Download software to device	Consistent download

Refresh

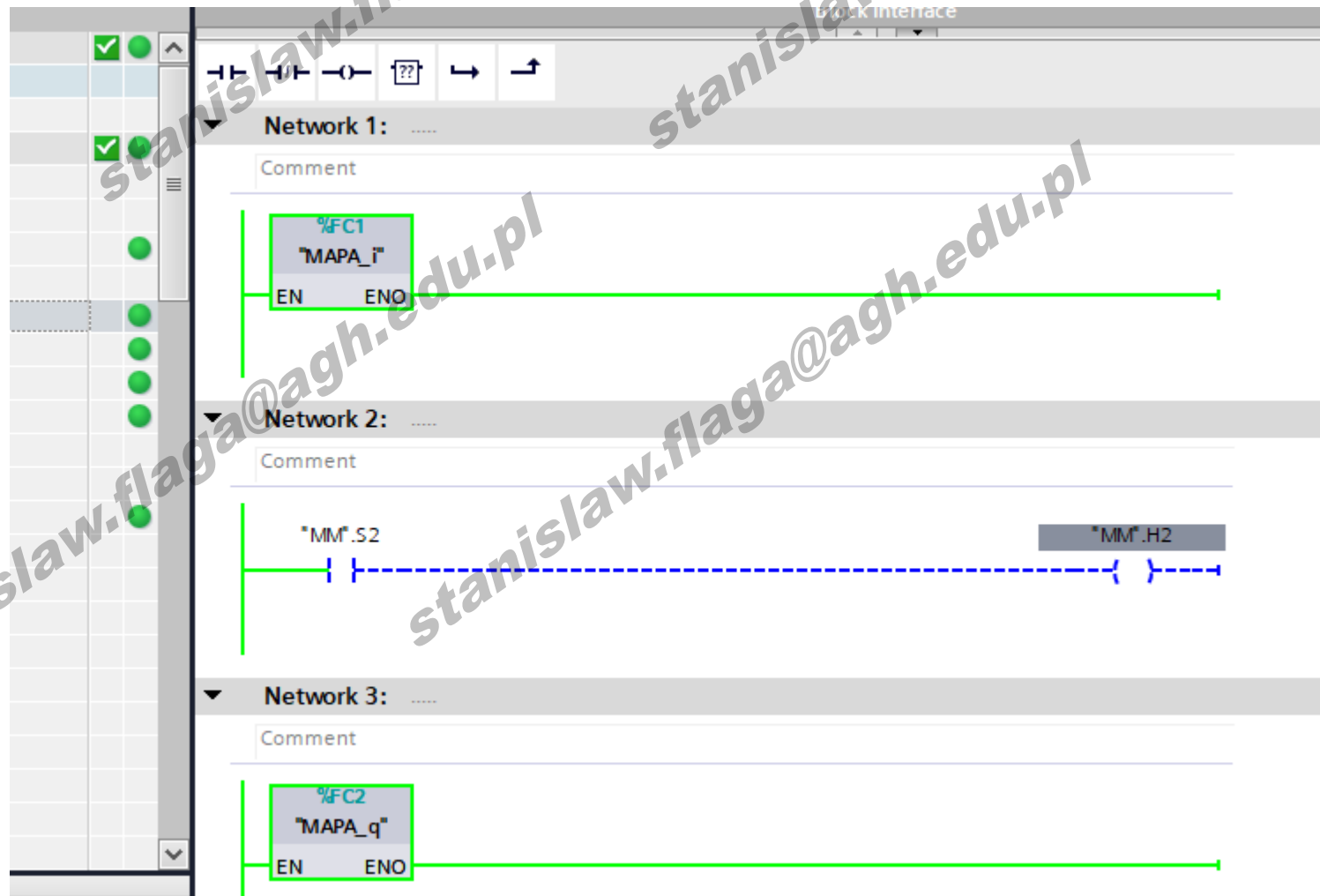
Finish Load Cancel

HMI - Krok 4_2: Ładujemy program do PLC

Jeżeli wszystko działa przystępujemy do obsługi zmiennych:

- "MM".S2_HMI
- "MM".H2_HMI

na panelu HMI



HMI – Usuwamy niepotrzebny napis z HMI: *fizyczne panele KTP600/400, symulowany KTP700*

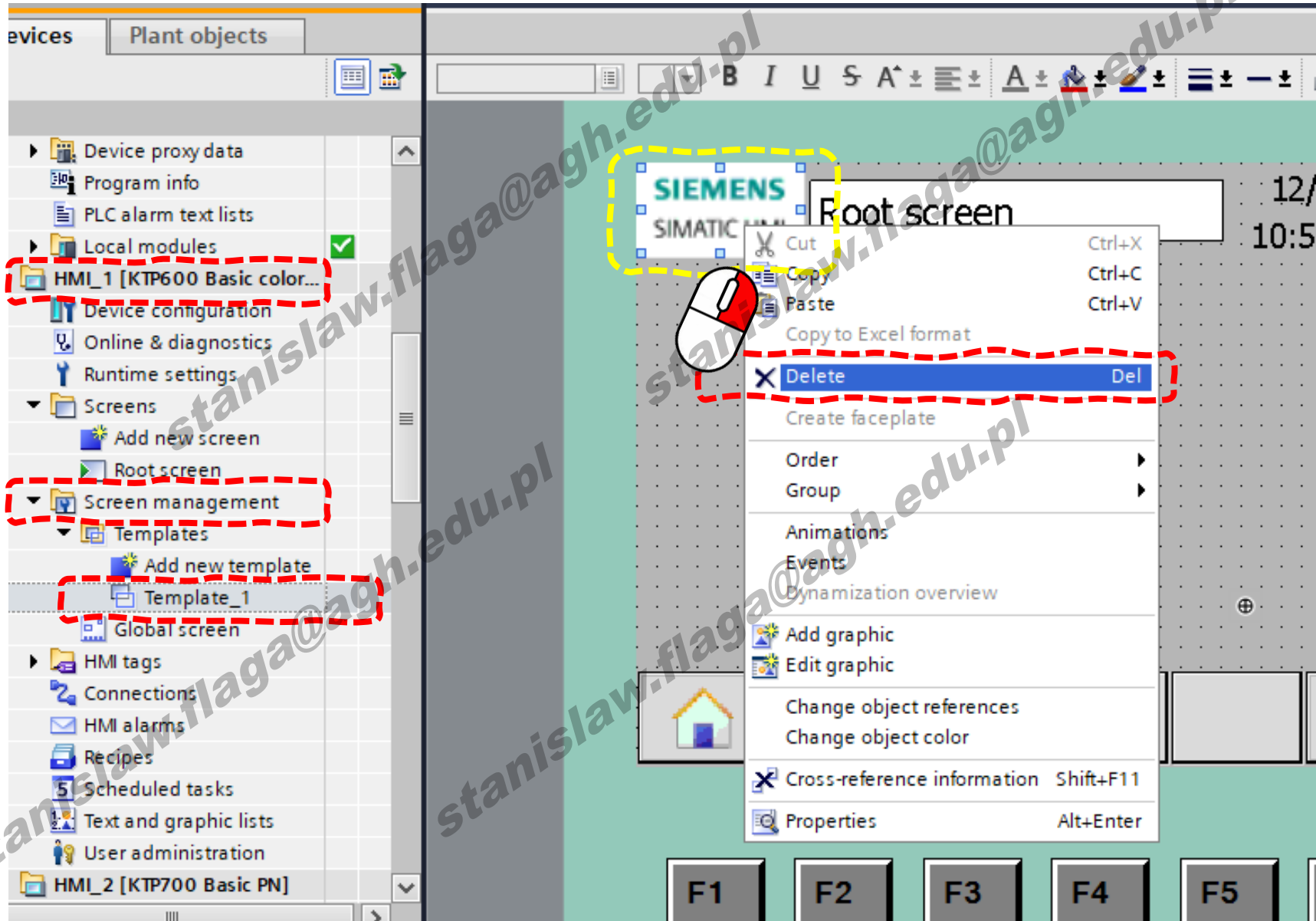


The screenshot displays the SIMATIC Manager interface for configuring an HMI. On the left, the project tree shows the following structure:

- Program line
 - PLC alarm text lists
 - Local modules
 - HMI_1 [KTP600 Basic color...]** (highlighted with a red dashed box)
 - Device configuration
 - Online & diagnostics
 - Runtime settings
 - Screens
 - Add new screen**
 - Root screen** (highlighted with a red dashed box)
 - Screen management
 - HMI tags
 - Connections
 - HMI alarms
 - Recipes
 - Scheduled tasks
 - Text and graphic lists
 - User administration
- HMI_2 [KTP700 Basic PN]
- Ungrouped devices
- Security settings

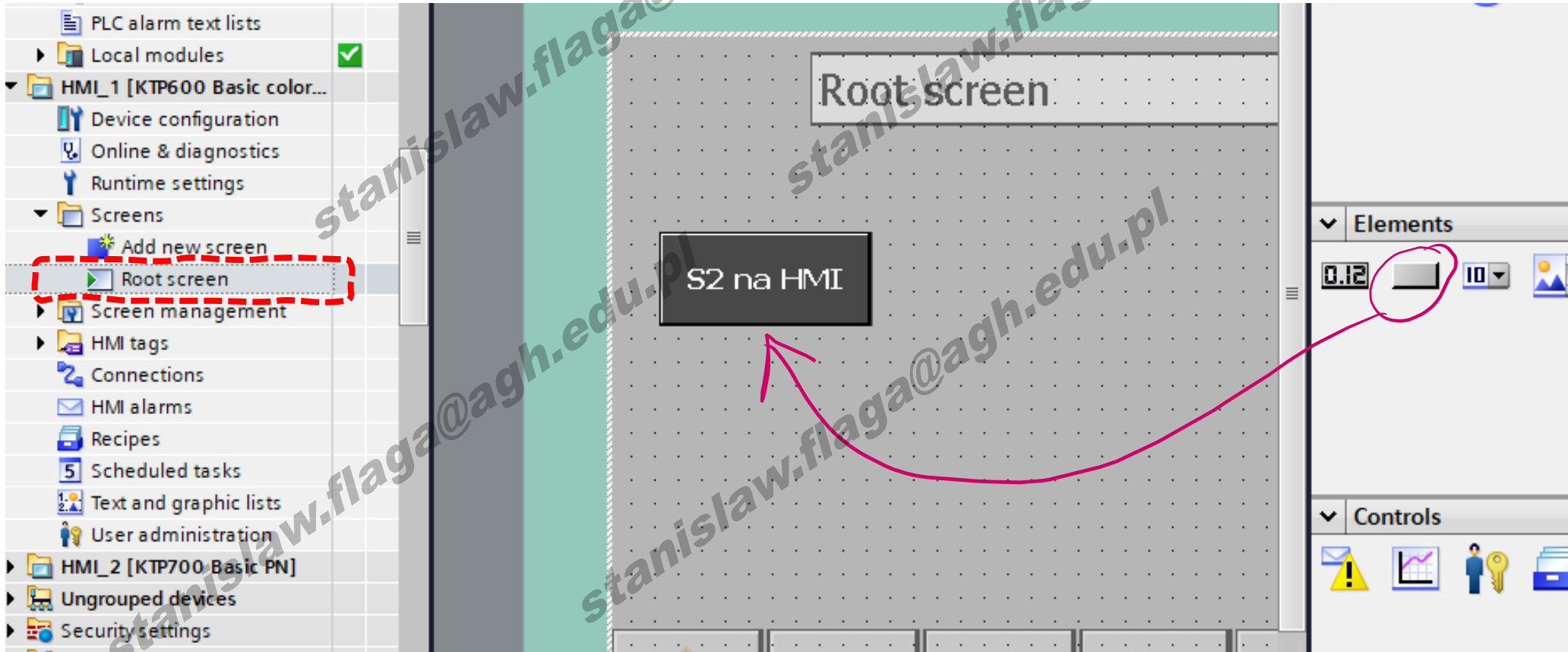
The main workspace shows the 'Root screen' with a grid background. A text box containing 'Welcome to HMI_1 (KTP600 Basic color PN)!' is highlighted with a yellow dashed box. A context menu is open over this text box, with the 'Delete' option highlighted by a red dashed box. A mouse cursor is positioned over the text box. The top right corner of the workspace shows the date '12/31/2000' and time '10:59:39 AM'. The text 'SIEMENS SIMATIC HMI' is visible in the top left of the workspace.

HMI – Usuwamy logo Siemens z *Template*



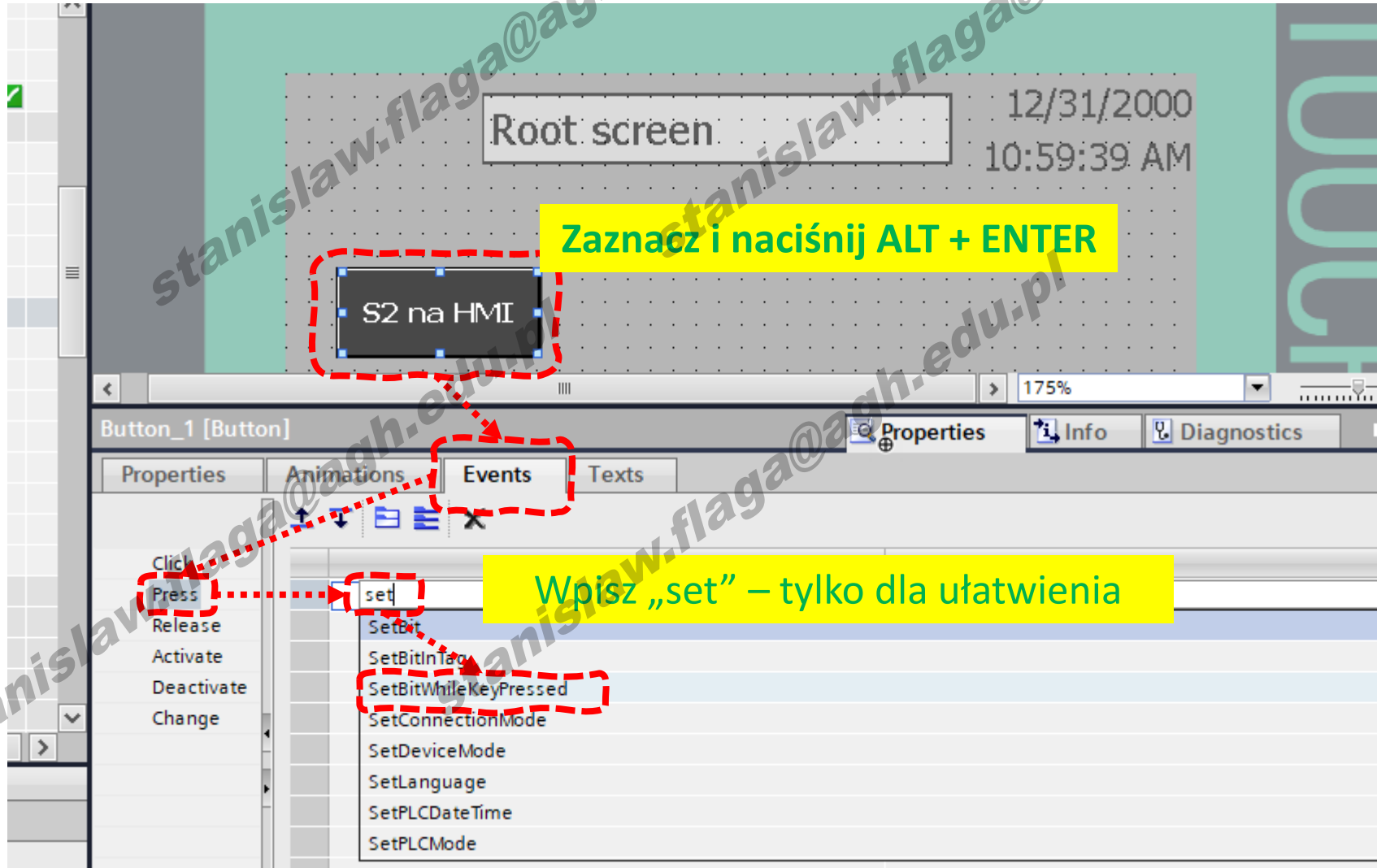
The screenshot displays the SIMATIC Manager interface. On the left, the 'Plant objects' tree shows a project structure with 'HMI_1 [KTP600 Basic color...]' selected. A red dashed box highlights the 'Screen management' folder, which contains 'Templates'. Another red dashed box highlights 'Template_1'. The main workspace shows a 'Root screen' with a 'SIEMENS SIMATIC' logo. A context menu is open over the logo, with the 'Delete' option highlighted in blue. A mouse cursor is positioned over the 'Delete' option. The menu also includes options like 'Cut', 'Copy', 'Paste', 'Copy to Excel format', 'Create faceplate', 'Order', 'Group', 'Animations', 'Events', 'Dynamization overview', 'Add graphic', 'Edit graphic', 'Change object references', 'Change object color', 'Cross-reference information', and 'Properties'. The bottom of the screen shows function keys F1 through F5.

Zamknij okno z *Template* aby przez pomyłkę nie zrobić z niego ekranu roboczego



The screenshot displays the SIMATIC Manager software interface for HMI configuration. On the left, a tree view shows the project structure, with the 'Screens' folder expanded and 'Root screen' selected. A red dashed box highlights the 'Add new screen' and 'Root screen' options. The main workspace shows a grid with a 'Root screen' label and a button labeled 'S2 na HMI'. The right sidebar shows 'Elements' and 'Controls' panels. A pink arrow points from the 'S2 na HMI' button to the 'Controls' panel, specifically to a button icon.

HMI – przypisujemy do przycisku funkcję obsługi zdarzenia modelującego go jako przycisk monostabilny



Root screen 12/31/2000
10:59:39 AM

Zaznacz i naciśnij ALT + ENTER

S2 na HMI

175%

Button_1 [Button]

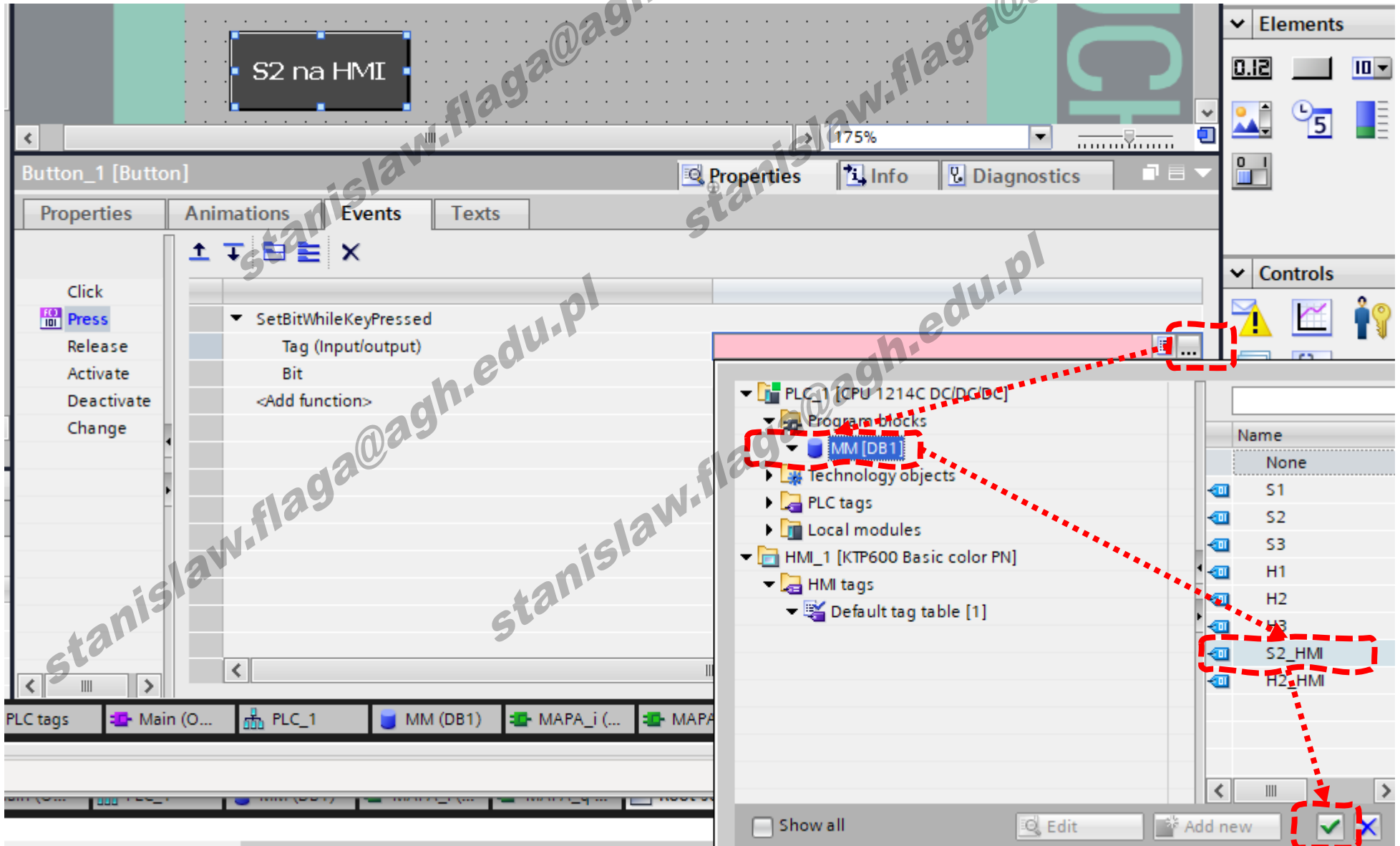
Properties Animations **Events** Texts

Click
Press
Release
Activate
Deactivate
Change

set
SetBit
SetBitInTag
SetBitWhileKeyPressed
SetConnectionMode
SetDeviceMode
SetLanguage
SetPLCDateTime
SetPLCMode

Wpisz „set” – tylko dla ułatwienia

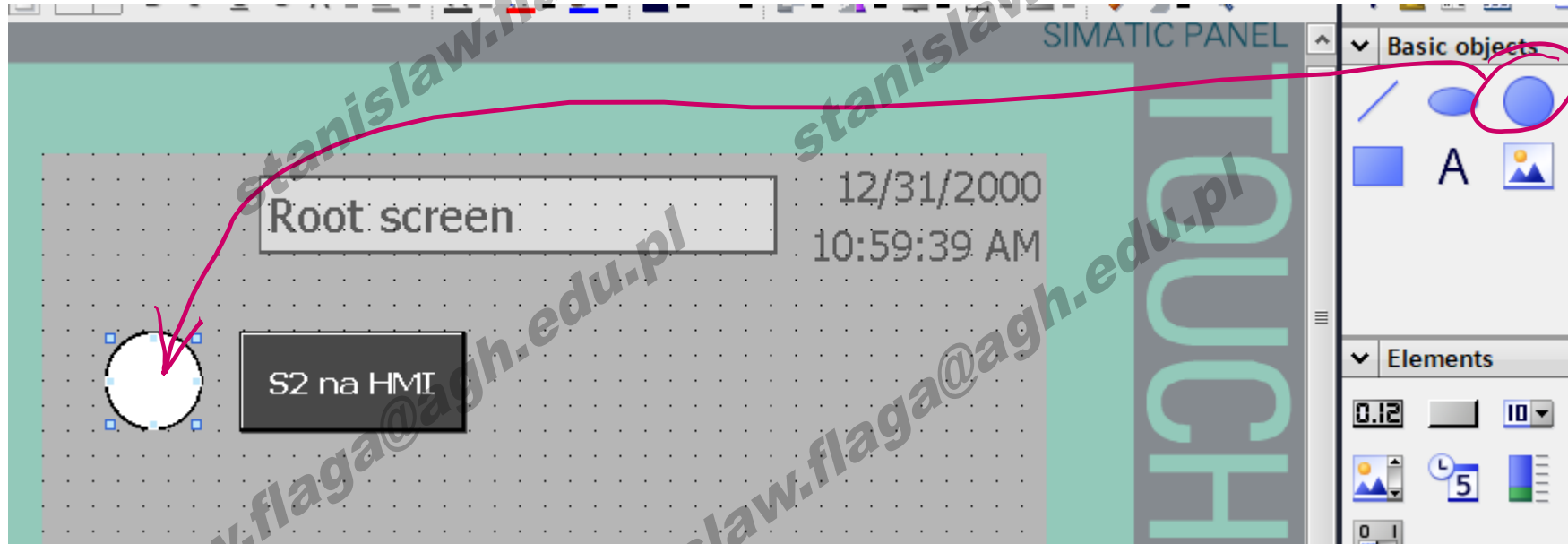
HMI – wybierz zmienną przypisaną do funkcji obsługi zdarzenia



The screenshot displays the SIMATIC Manager interface for configuring an HMI button. The main window shows a button labeled "S2 na HMI" on a grid. Below it, the "Button_1 [Button]" configuration window is open, with the "Events" tab selected. The "Click" event is expanded to show the "Press" function, which is set to "SetBitWhileKeyPressed". The "Tag (Input/output)" field is set to "Bit". The "MM (DB1)" data block is highlighted in the project tree, and the "S2_HMI" tag is selected in the tag table. A red dashed box highlights the "S2_HMI" tag in the tag table and the "OK" button at the bottom right.

Name
None
S1
S2
S3
H1
H2
H3
S2_HMI
H2_HMI

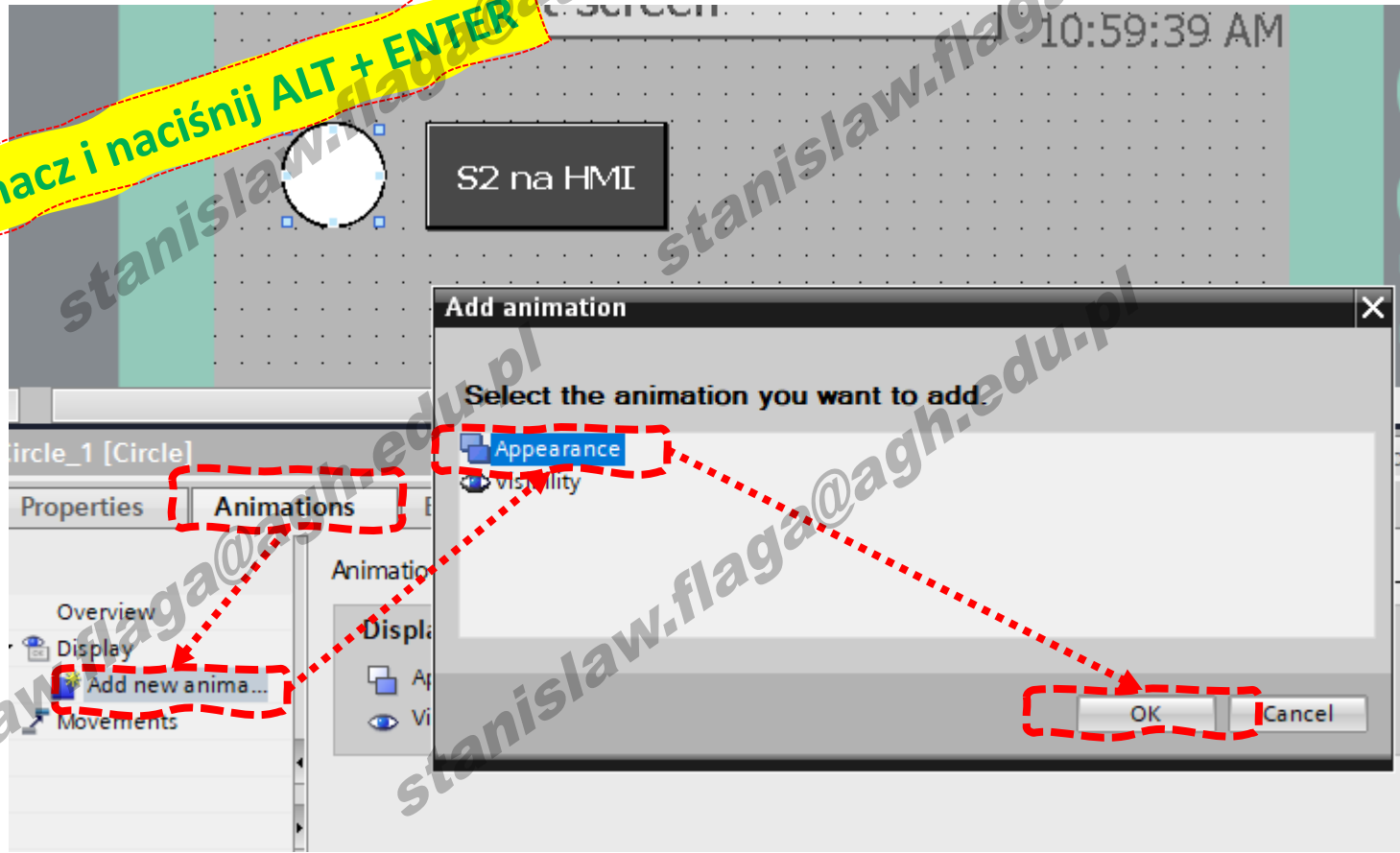
HMI – wirtualny sygnalizator – wstaw wybrany kształt



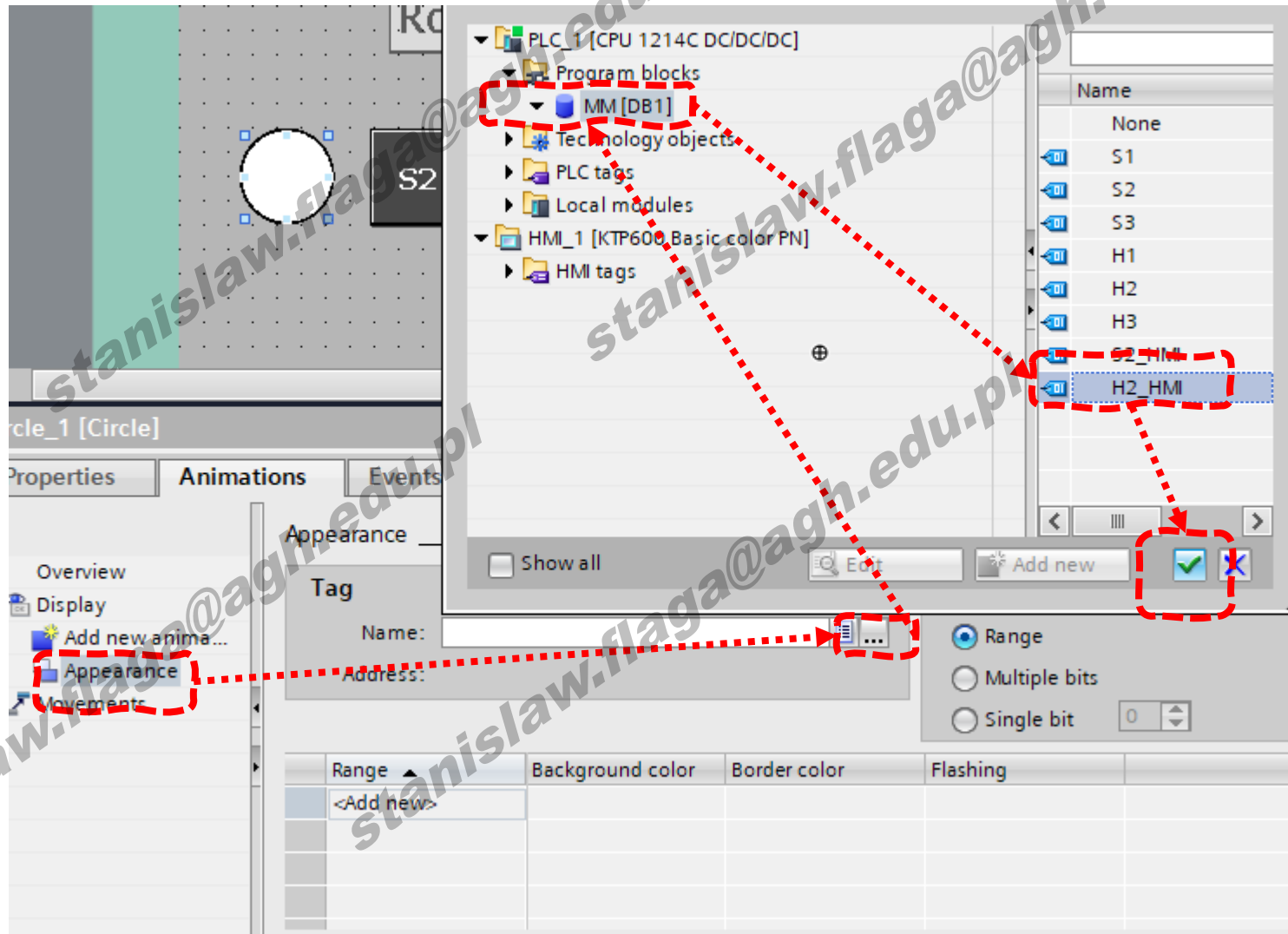
HMI – wirtualny sygnalizator –

zmiana koloru, wymiarów, widoczności, położenia to **ANIMACJA**

Zaznacz i naciśnij ALT + ENTER



HMI – wirtualny sygnalizator – konfiguracji zmiennej i zachowania



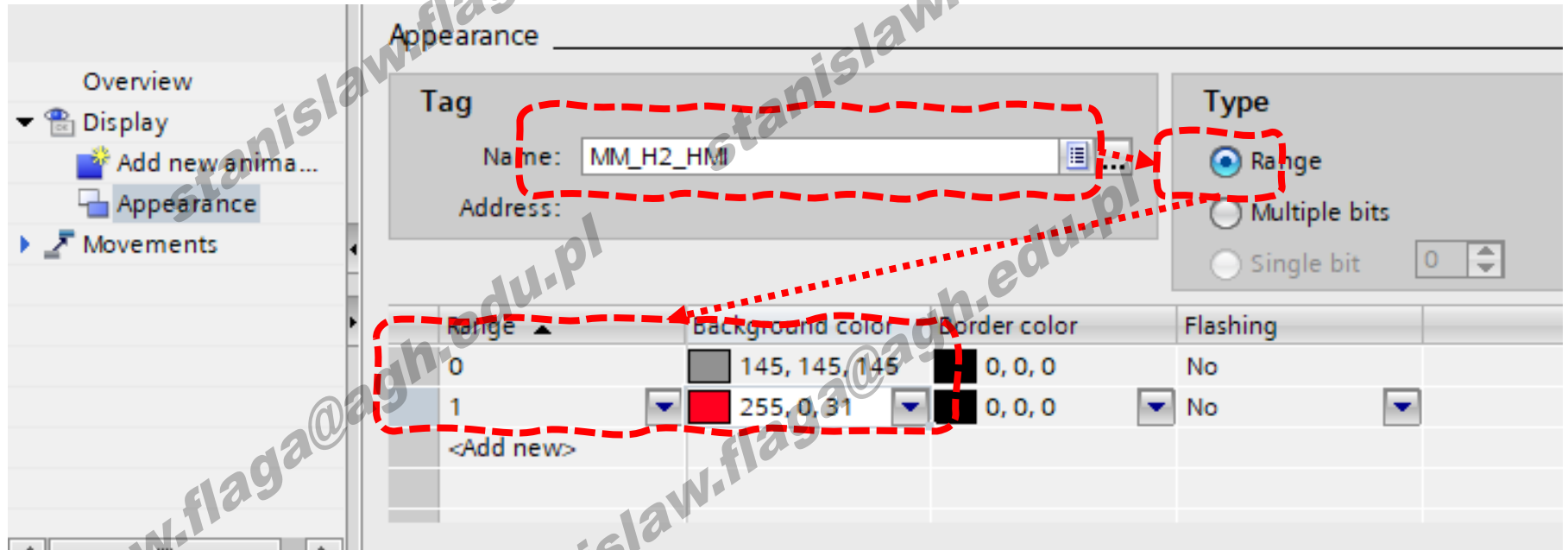
The screenshot displays the SIMATIC Manager configuration environment. The project tree on the right shows the hierarchy: PLC_1 [CPU 1214C DC/DC/DC] > Program blocks > MM [DB1] > HMI_1 [KTP600 Basic color PN] > HMI tags. The variable declaration table below the tree lists the following variables:

Name	Value
None	
S1	
S2	
S3	
H1	
H2	
H3	
S2_HMI	
H2_HMI	

The configuration table at the bottom defines the appearance of the signalizer elements:

Range	Background color	Border color	Flashing
<Add new>			

Red dashed boxes highlight the configuration steps: the 'Appearance' tab in the left sidebar, the 'H2_HMI' variable in the table, the 'Add new' button in the configuration table, and the 'OK' button in the bottom right corner.



Appearance

Tag

Name: MM_H2_HMI

Address:

Type

Range

Multiple bits

Single bit 0

Range	Background color	Border color	Flashing
0	145, 145, 145	0, 0, 0	No
1	255, 0, 31	0, 0, 0	No
<Add new>			

**Ponizej akcje
tylko
dla posiadaczy fizycznych
paneli**



HMI – ładowanie programu do HMI

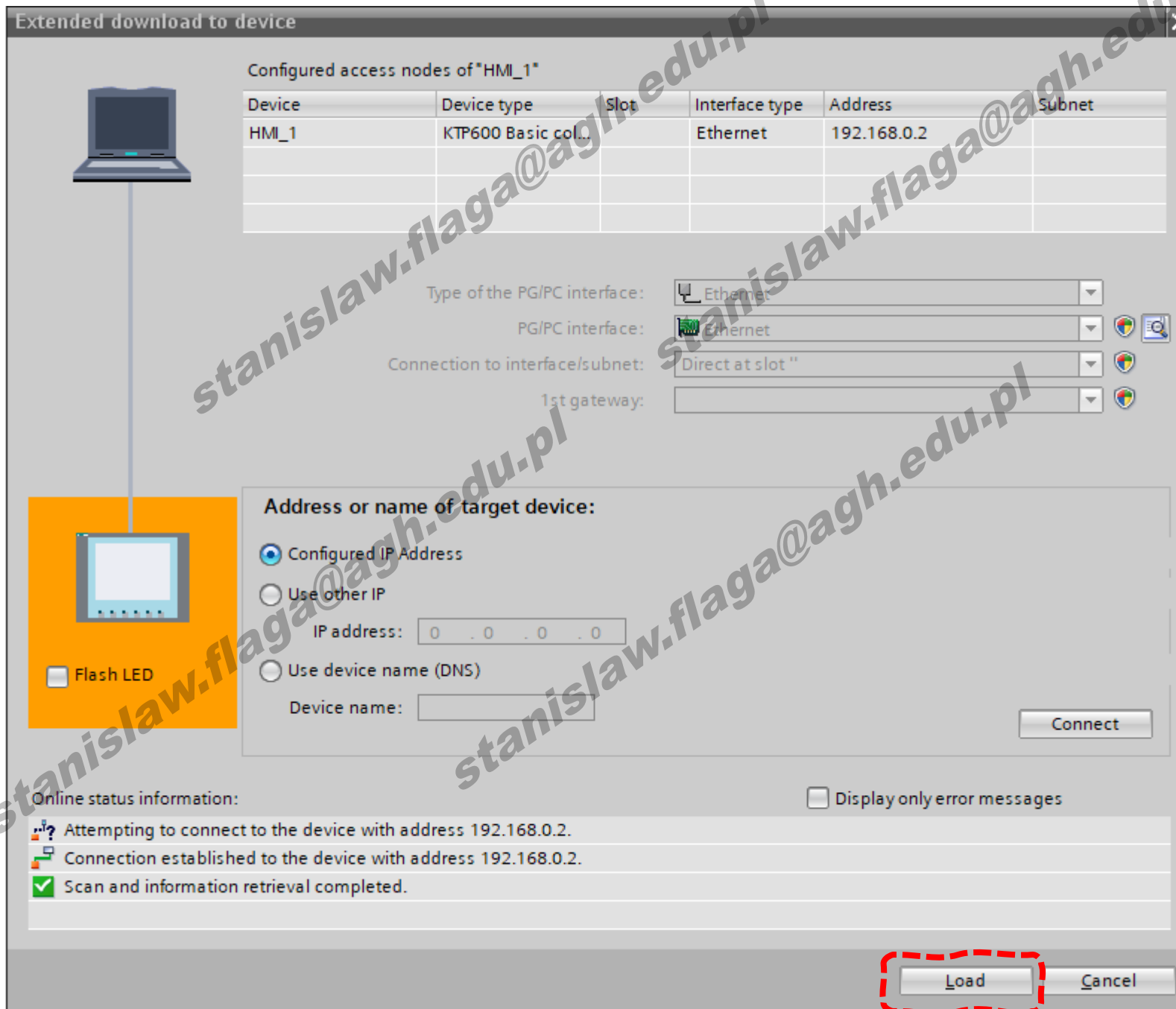
The screenshot displays the SIMATIC Manager interface. On the left, the project tree shows the HMI_1 device selected. The main window shows the 'Extended download to device' dialog. A table lists the configured access nodes for HMI_1:

Device	Device type	Slot	Interface type	Address	Subnet
HMI_1	KTP600 Basic col...		Ethernet	192.168.0.2	

Below the table, the 'Type of the PC/PC interface' is set to Ethernet. The 'Connection to interface/subnet' is set to 'Direct at slot'. The 'Address or name of target device' section has 'Configured IP Address' selected, with the IP address field set to 0.0.0.0. A 'Connect' button is visible at the bottom right.

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HMI – jeżeli połączenie się powiodło kliknij „Load”



Extended download to device

Configured access nodes of "HMI_1"

Device	Device type	Slot	Interface type	Address	Subnet
HMI_1	KTP600 Basic col...		Ethernet	192.168.0.2	

Type of the PG/PC interface: Ethernet

PG/PC interface: Ethernet

Connection to interface/subnet: Direct at slot "

1st gateway:

Address or name of target device:

Configured IP Address

Use other IP

IP address: 0 . 0 . 0 . 0

Use device name (DNS)

Device name:

Flash LED

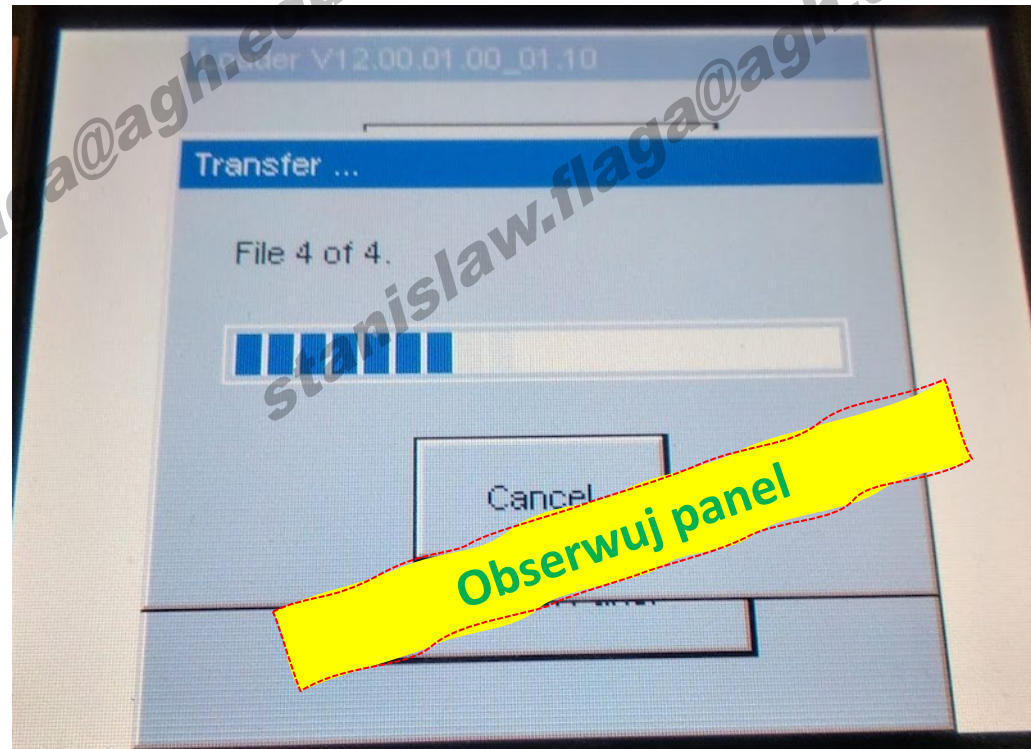
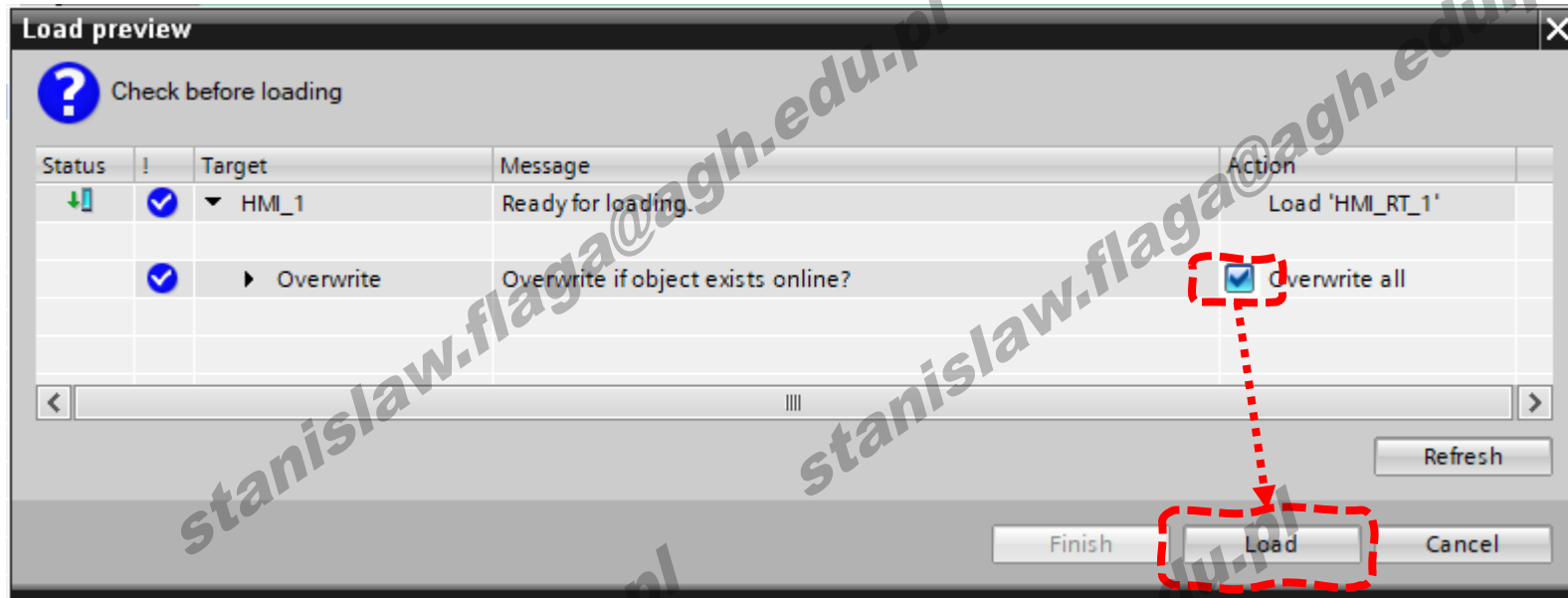
Connect

Online status information: Display only error messages

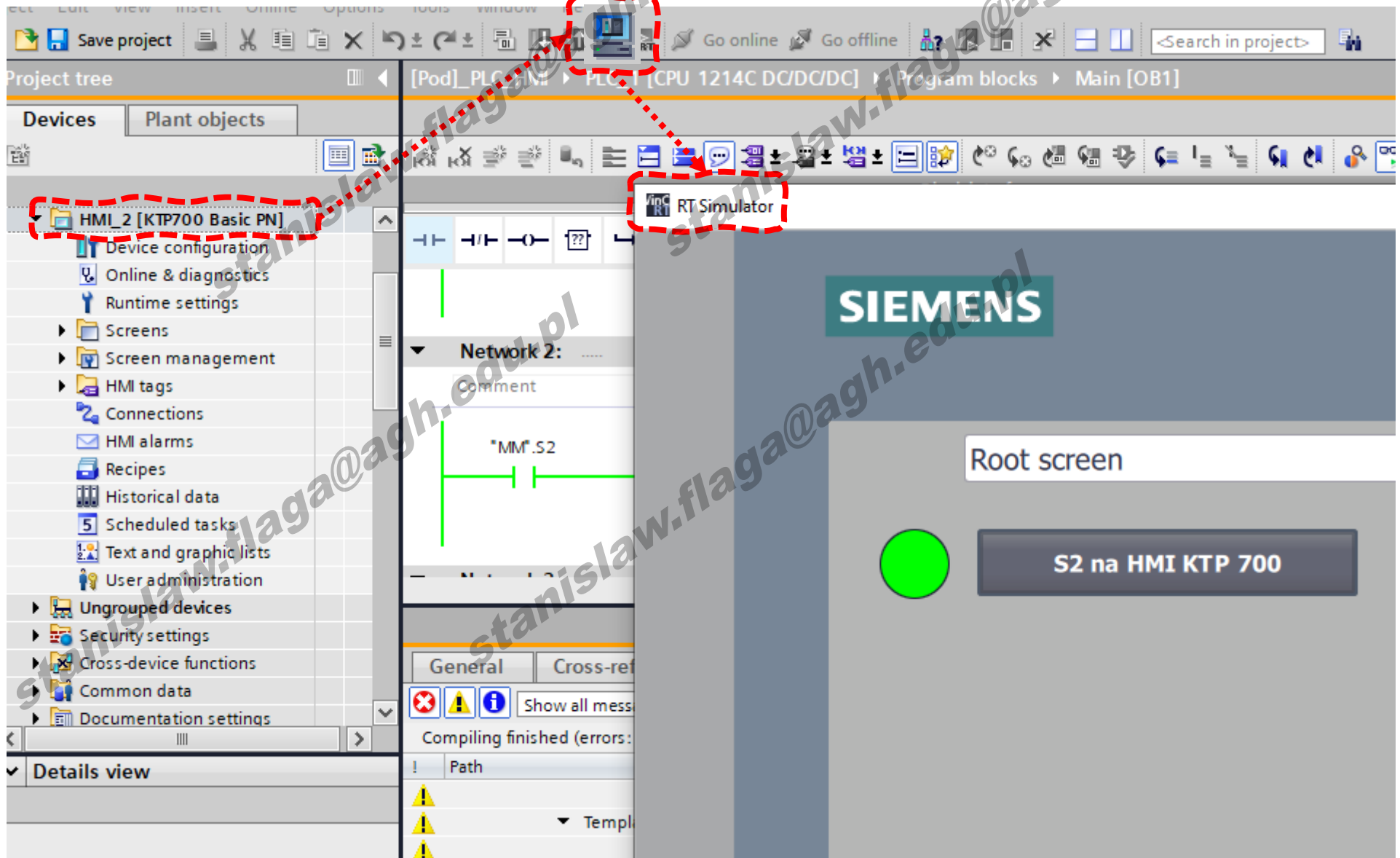
- Attempting to connect to the device with address 192.168.0.2.
- Connection established to the device with address 192.168.0.2.
- Scan and information retrieval completed.

Load Cancel

HMI – po skompilowaniu programu należy rozpocząć transfer do HMI



**Jeżeli używasz
wirtualnego panelu KTP 700
to poniższy slajd jest dla
Ciebie**



The screenshot displays the Siemens SIMATIC Manager interface. The top menu bar includes options like 'Save project', 'Go online', and 'Go offline'. The 'Project tree' on the left shows a hierarchy: [Pod]_PLC [SIMATIC] > PLC [CPU 1214C DC/DC/DC] > Program blocks > Main [OB1]. Under 'Plant objects', 'HMI_2 [KTP700 Basic PN]' is selected and highlighted with a red dashed box. Below it, a list of configuration options is visible, including 'Device configuration', 'Online & diagnostics', 'Runtime settings', 'Screens', 'Screen management', 'HMI tags', 'Connections', 'HMI alarms', 'Recipes', 'Historical data', 'Scheduled tasks', 'Text and graphic lists', and 'User administration'. The main workspace shows a network diagram with a component labeled '*MM*.S2'. A red dashed box highlights the 'RT Simulator' icon in the toolbar. On the right, a preview window shows the 'Root screen' of the HMI, featuring a green circle and a button labeled 'S2 na HMI KTP 700'. The bottom status bar indicates 'Compiling finished (errors: ...)'.