Opracowanie: W. Kubicki

Exercise 6-4

Custom application – building application core

Task: Create and apply FGV queue holders

Use Bookmark manager to navigate through tasks in the application

6-4.1 Correct gaps in MHL Queue Ref Holder.vi code:

a) Remove the ref holder wire that connects input and output terminals
b) Insert **Case structure** and connect it to the **Action** control (Fig. 1)
c) Update selection names and make sure that **GET** is the default option
d) Wire queue ref wires and apply shift register to store the reference
e) Set single-execution of the FGV by connecting **True** to Stop terminal
f) Describe the cases using **Subdiagram labels**

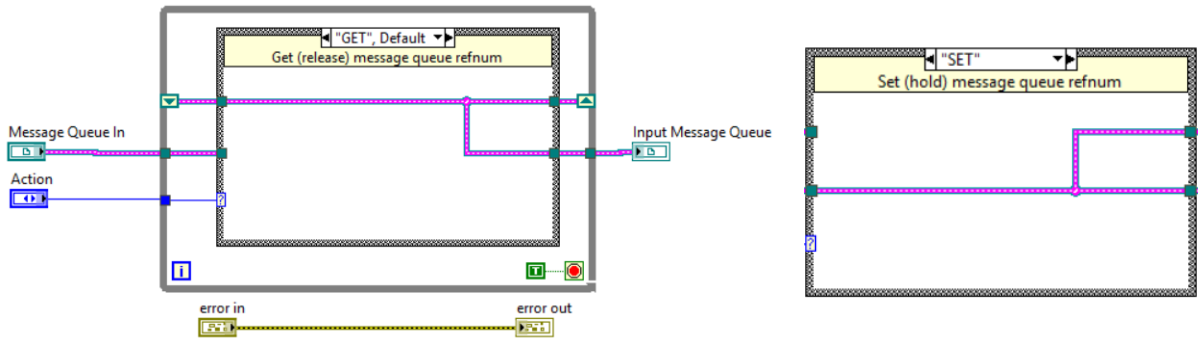
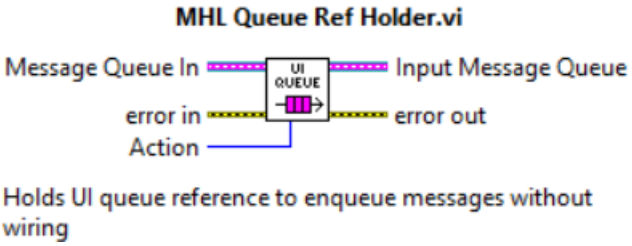


Fig. 1. MHL Queue Ref Holder block diagram

g) Update Connector Pane and add Description for Context Help (VI Properties >> Documentation) according to Fig. 2a
h) Use Icon editor to create custom icon according to Fig. 2b

a)



b)

Fig. 2. MHL Queue Ref Holder: a) context help, b) custom icon

6-4.2 Set UI queue reference:

a) Place **MHL Queue Ref Holder** before UI MHL Loop in Main.vi (Fig. 3)

b) Connect **SET** value to the Action terminal

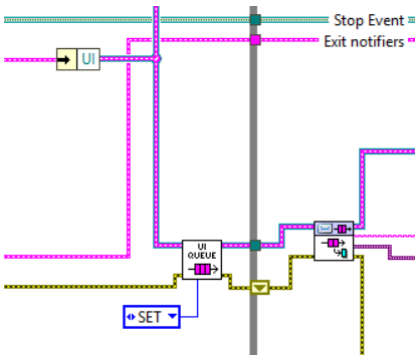


Fig. 3. Setting UI queue reference in MHL Queue Ref Holder

6-4.3 Provide UI queue ref for Update Display API:

a) Find and open Update Display API (Fig. 4a)

b) Place **MHL Queue Ref Holder** and connect it with **Enqueue Message.vi** according to Fig. 4b

c) Add **To variant** conversion to enqueuer Message string

d) Add *Update display* message to **Enqueue Message.vi**

e) Is GET action for MHL Queue Ref Holder required here?

a)

b)

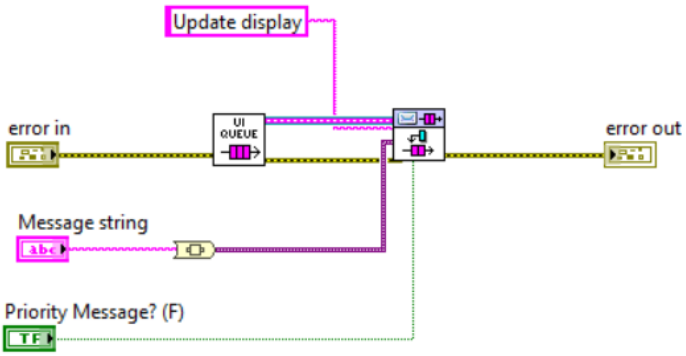


Fig. 4. Getting UI queue reference for Update Display API

6-4.4 Update PLC Start API:

a) Navigate to Main.vi >> UI MHL >> Start process and open block diagram of PLC.lvlib:**Start.vi** (Fig. 5a)

b) Drag **PLC Queue Ref Holder.vi** from project Explorer and update the code according to Fig. 5b

c) Add *Start* message to **Enqueue Message.vi**

a)

b)

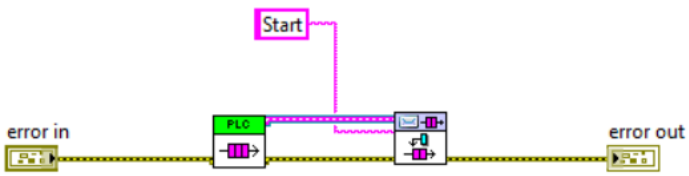


Fig. 5. Getting PLC queue reference for Start API