

ISOLAR-EVE: Synchronization of Multiple VECUs



Question

- How to run multiple VECUs from ISOLAR-EVE synchronized?
- How to start a VECU from another VECU?



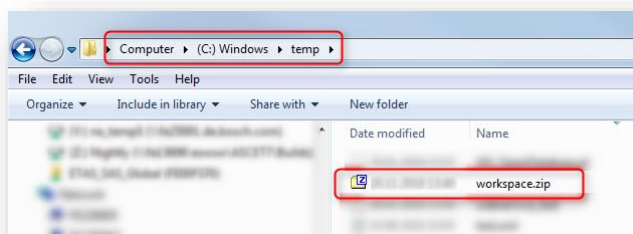
Answer

Short answer

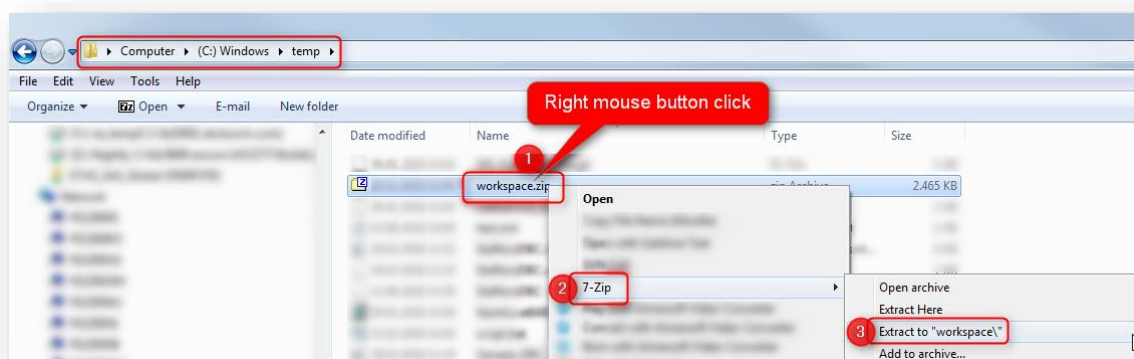
- Place a link to the other VECU into the source code of your VECU
- Find attached an example workspace
 - The example workspace contains two projects:
 - **TestSender** and **TestReceiver**
- In the source code of the one VECU (TestSender) there is a direct link to the executable of the other VECU (TestReceiver)
 - The remote VECU will be handled as an additional device

Instructions

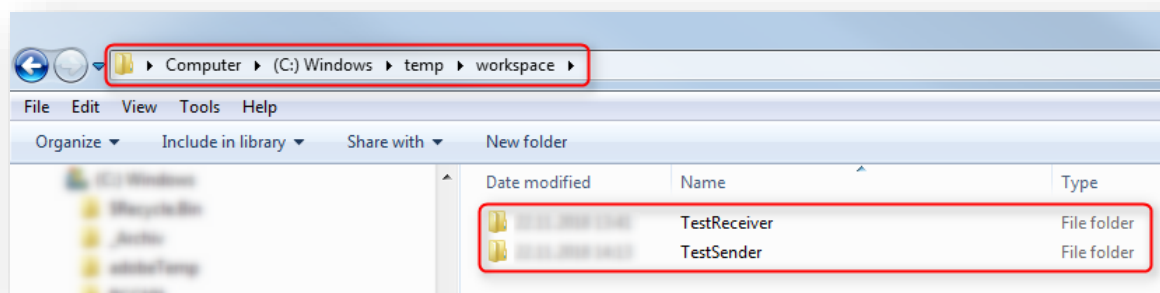
1. Save the attached **workspace.zip** file to a local drive, for example to **C:\temp**



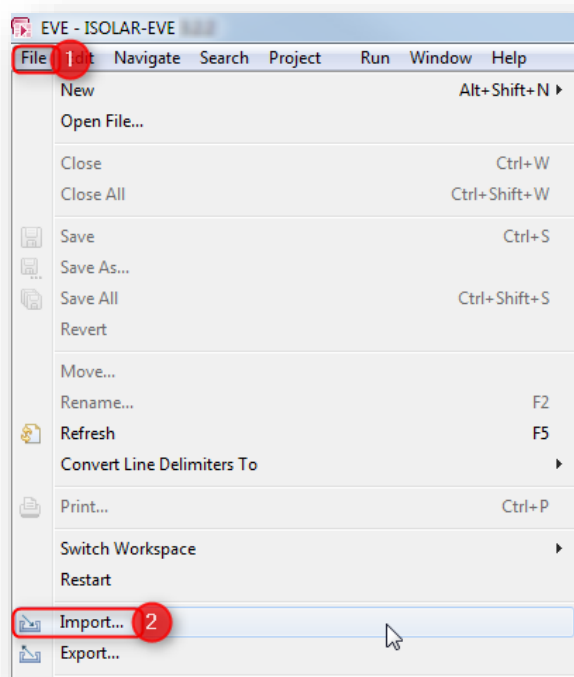
2. Unzip the **workspace.zip** file



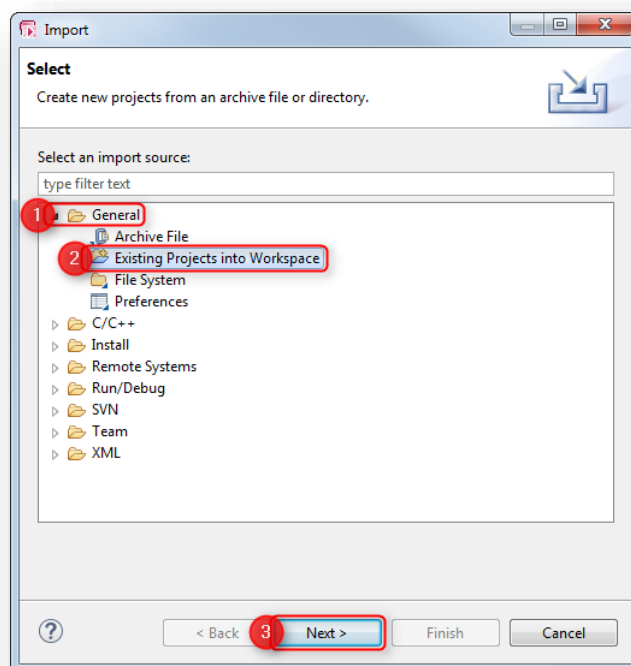
3. Result:



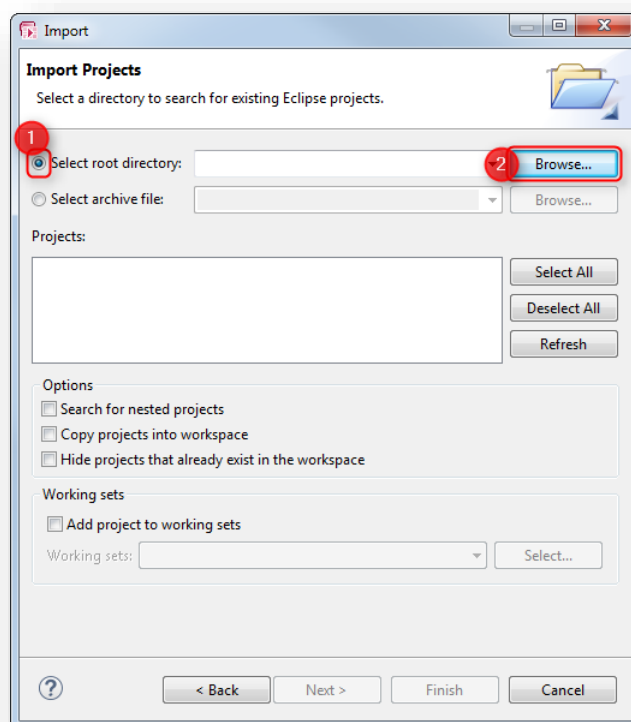
4. In ISOLAR-EVE → Menu Bar → File → Import...



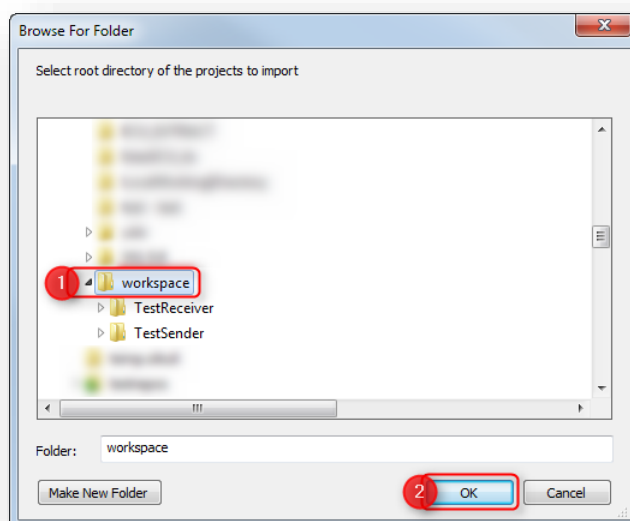
5. In dialog **Import** → **General** → **Existing Projects into Workspace** → Click **Next >** button



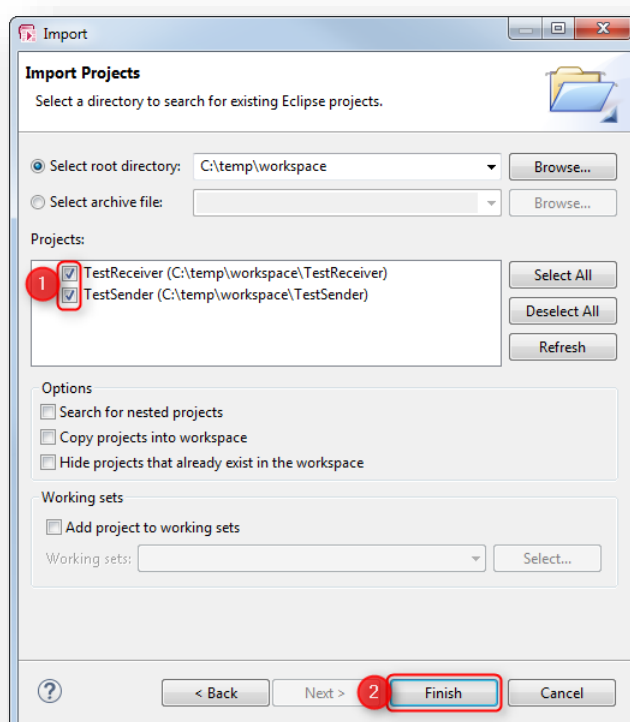
6. On next side of dialog **Import** → **Select root directory** → Click **Browse...** button



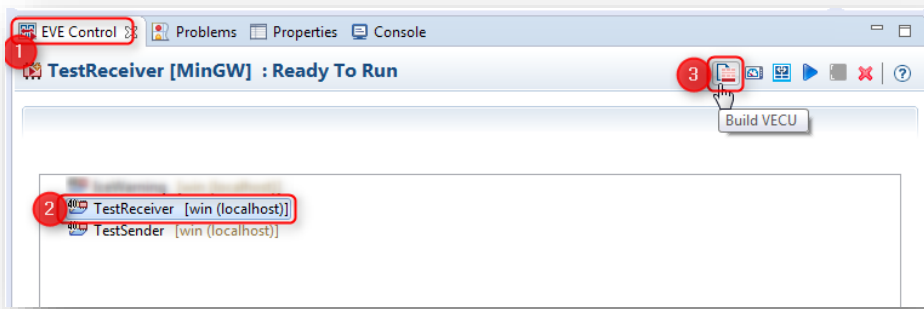
- In dialog **Browse For Folder**: Navigate to the folder where you placed the example workspace folder to (for example "C:\temp") → Click **OK** button



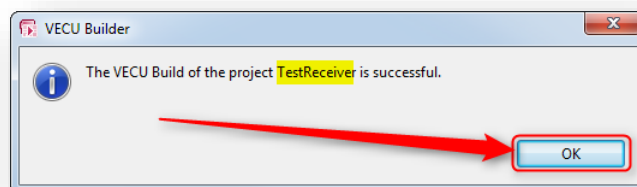
- Back in dialog **Import**: Make sure that **TestReceiver** and **TestSender** are selected → Click **Finish** button



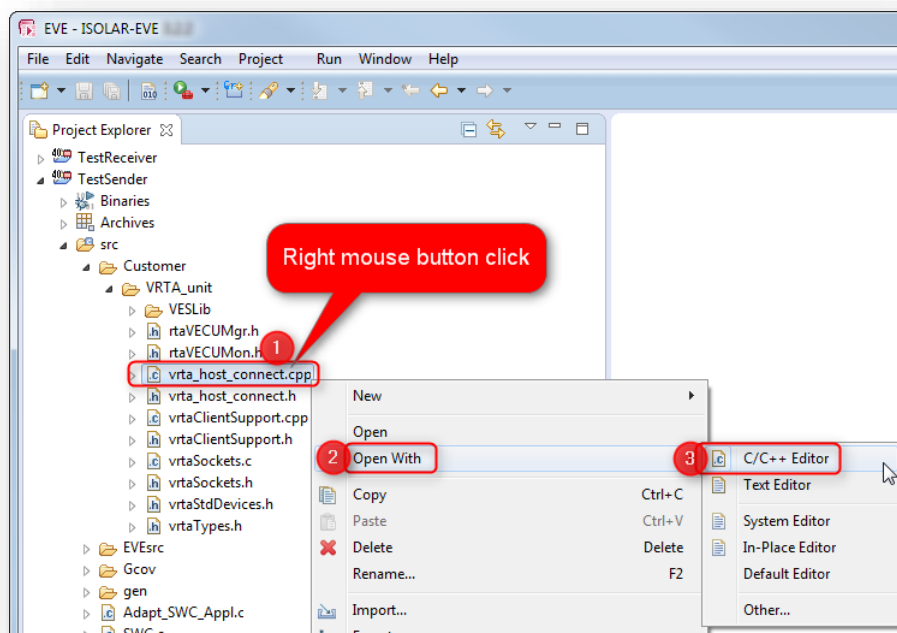
9. On tab **EVE Control**: Click on **TestReceiver** to select it → Click **Build VECU** icon



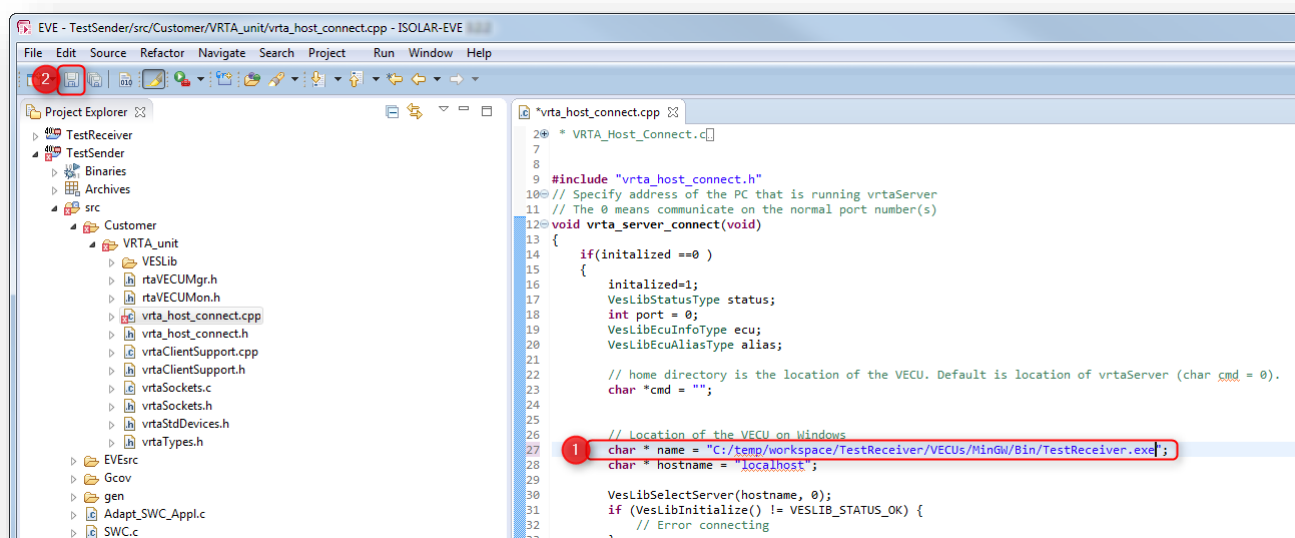
10. Wait for dialog **VECU Builder** → Click **OK** button



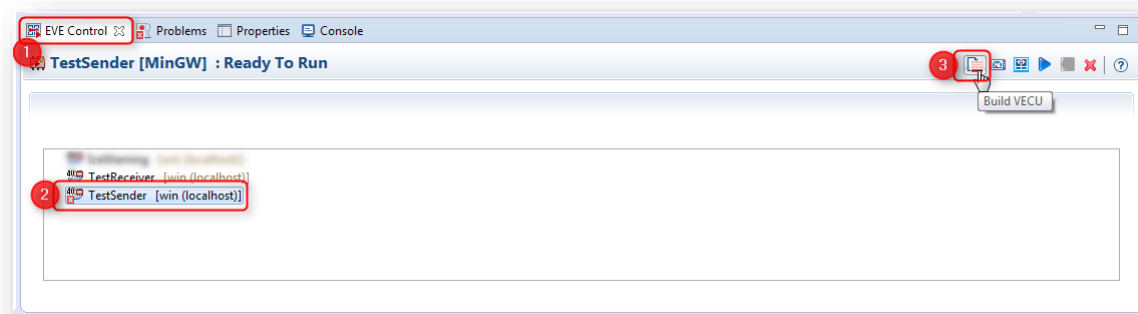
11. In **Project Explorer** → **TestSender** → **src** → **Customer** → **VRTA_unit** → **vrta_host_connect.cpp**: Right mouse button click → **Open With** → **C/C++ Editor**



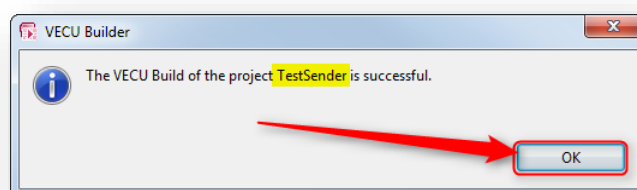
12. In **line 27**: Adjust the **path to TestReceiver.exe** according to your environment → Then click **Save** button



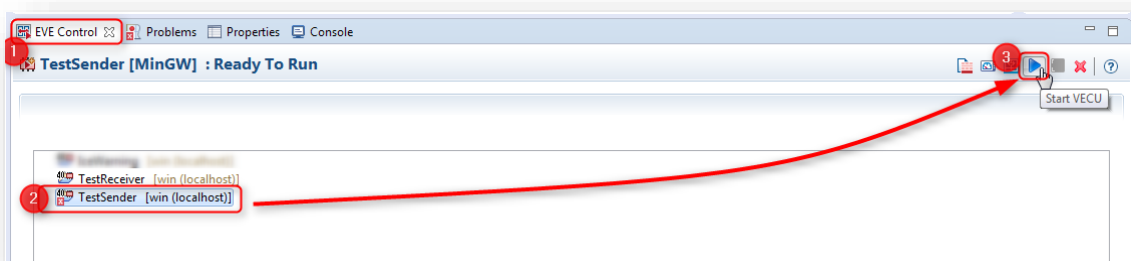
13. On tab **EVE Control**: Click on **TestSender** to select it → Click **Build VECU** icon



14. Wait for dialog **VECU Builder** → Click **OK** button

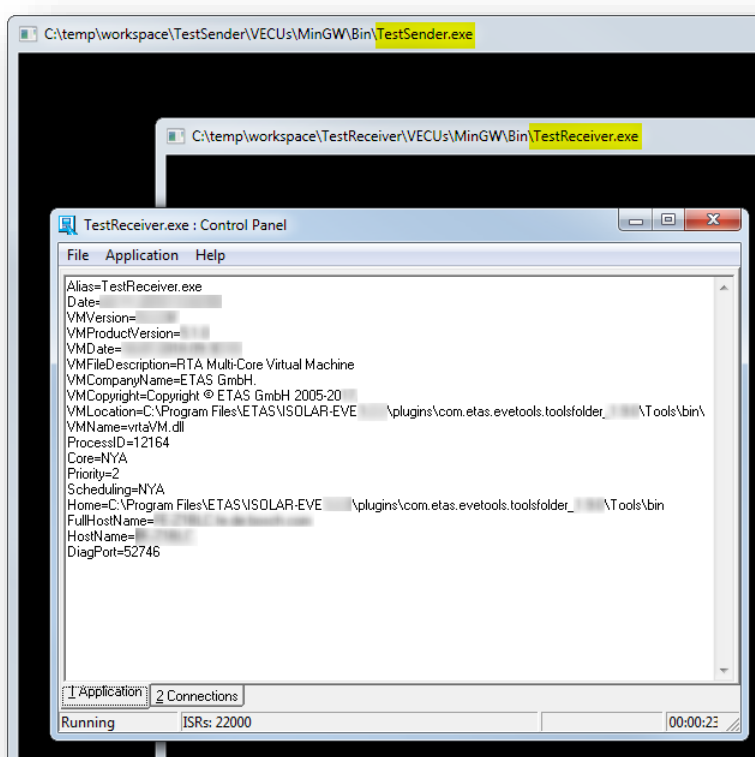


15. On tab **EVE Control**: Make sure that **TestSender** is selected → Click **Start VECU** icon

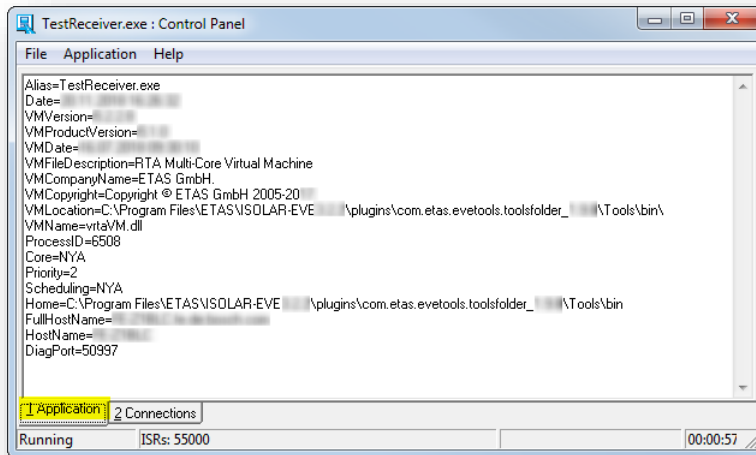


16. Result:

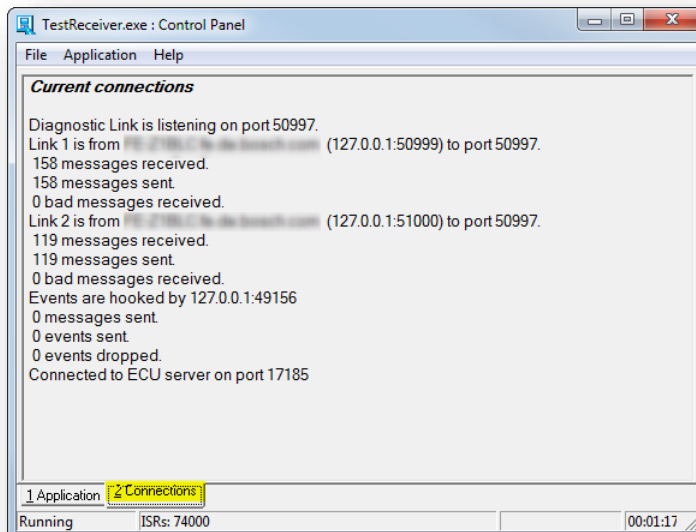
- A command line interface is opened for **TestSender.exe**
- Another one for **TestReceiver.exe**
- And, in addition, a dialog **TestReceiver.exe : Control Panel** is opened



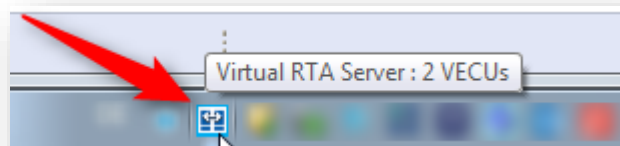
17. Tab Application of dialog TestReceiver.exe : Control Panel



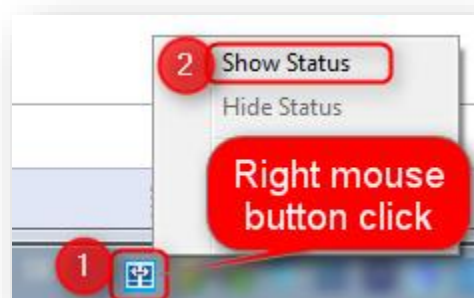
18. Tab Connections of dialog TestReceiver.exe : Control Panel



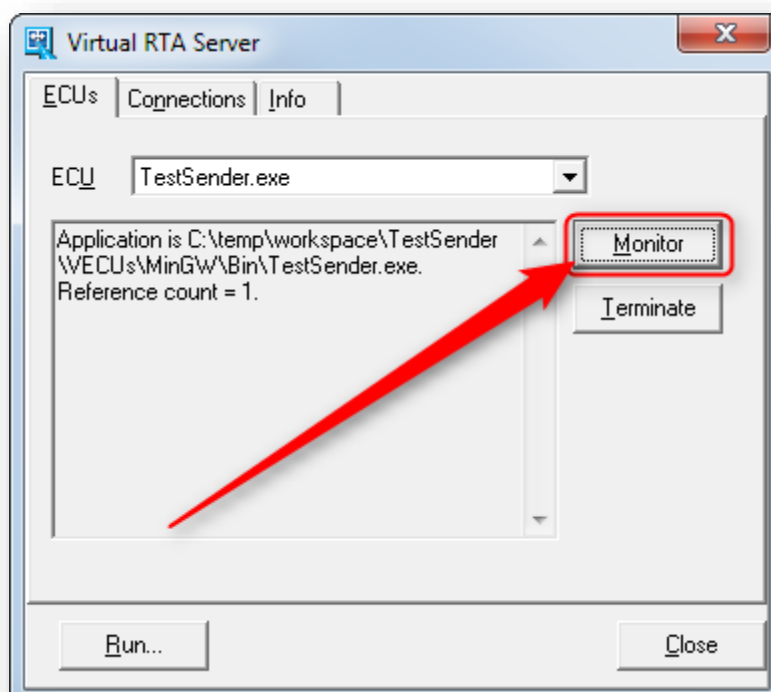
19. In **MS Windows Task Bar**: Look for **Virtual RTA Server** icon



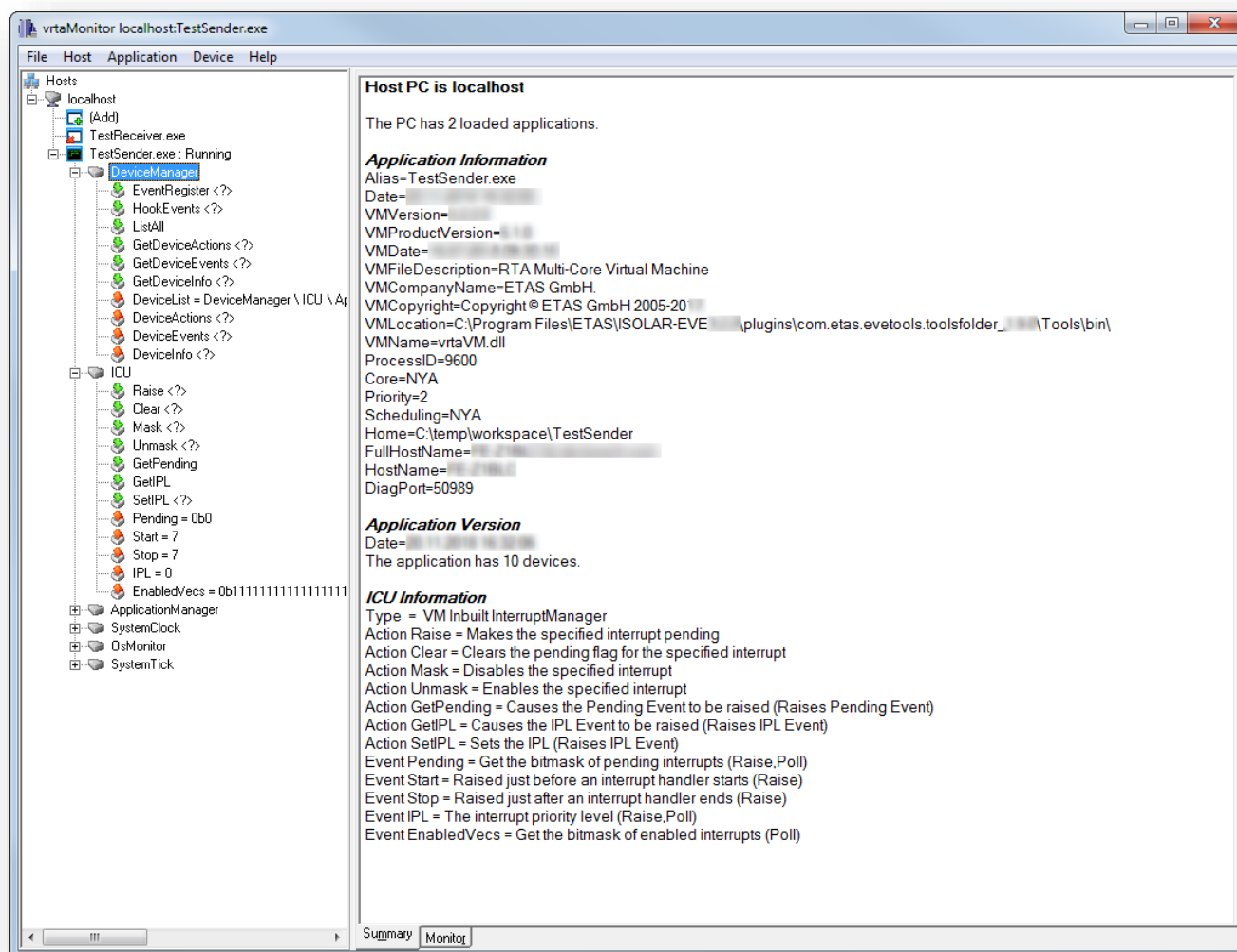
20. On **Virtual RTA Server** icon: Right mouse button click → **Show Status**



21. In dialog **Virtual RTA Server**: Click **Monitor** button



22. Use the vrtaMonitor to investigate the running application



- Find further information regarding the vrtaMonitor tool in the "RTA-OS VRTA Virtual ECU User Guide.pdf" (Chapter 6)



Additional information

Accessing the virtual device of TestSender

- The definition and the access to the virtual device of **TestSender** can be found in the same source file **vrta_host_connection.cpp**:

```
51 // set default devices
52 char * Device_1 = "SystemClock";
53 char * Device_2 = "ApplicationManager";
54
55 vrtaECUDevice *ECUdeviceSystemClock = vecuLink->operator [] (Device_1);
56 vrtaECUDevice * applicationManagerDevice = vecuLink->operator [] (Device_2);
57
58 // set default actions
59 vrtaECUDeviceAction *DirectTickAction = ECUdeviceSystemClock->Actions()["DirectTick"];
60
61 DirectTickAction->SendAction("1000",4);
62
63 // set default events
64 vrtaECUDeviceEvent *GetTickState = ECUdeviceSystemClock->Events()["Ticks"];
65 vrtaECUDeviceEvent *GetRemainingTickState = ECUdeviceSystemClock->Events()["Remaining"];
66
67 // Starts the OS thread after vECU has been loaded.
68 applicationManagerDevice->Actions()["Start"]->SendAction();
```



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