

常问问题 • 03/2015

通过 PLC 代理实现精致屏的时间同步到 SIMOTION

Simotion, Comfort Panel, Time Synchronization

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1 概述

工厂中的 HMI 操作员面板与 SIMOTION 控制器交换数据的同时，可以和控制器 SIMOTION 进行时钟同步。

时钟同步分为两种任务：

1. HMI 操作员面板将作为主时钟。
(HMI 操作员面板的时钟传递到 SIMOTION 控制器)
2. SIMOTION 控制器将作为主时钟。
(SIMOTION 组件的时钟传递到 HMI 操作员面板)

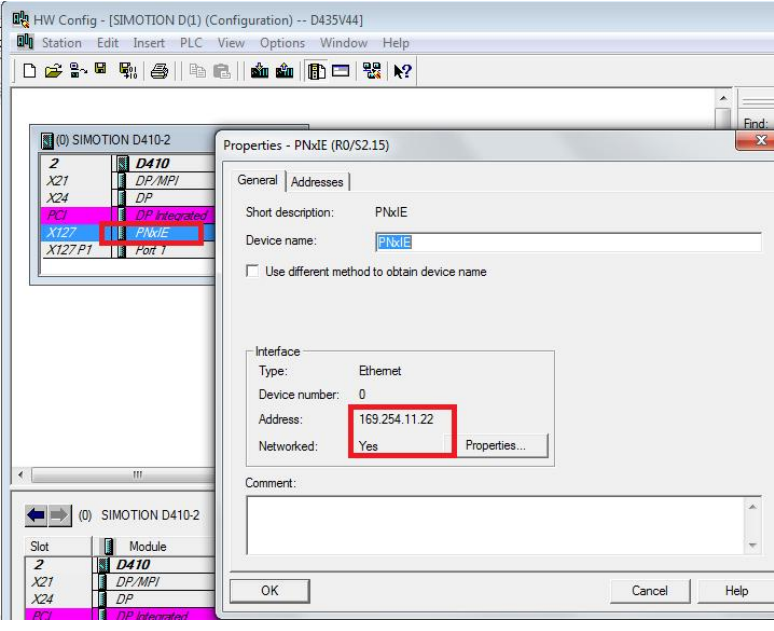
本文介绍了通过 SCOUT 及 WinCC V13 通过 PLC 代理的方式实现时钟同步任务 1 的设置及其程序中的实现步骤。

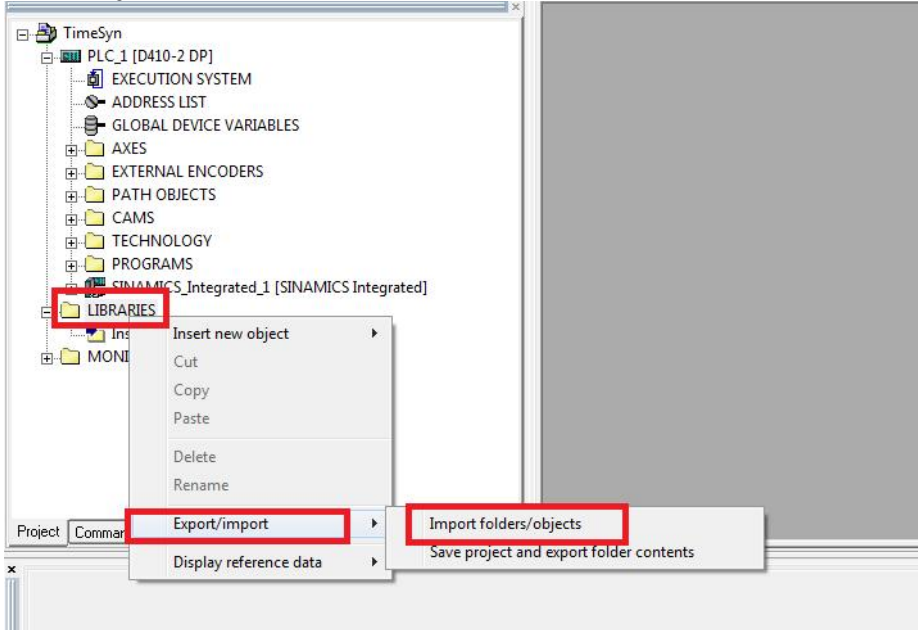
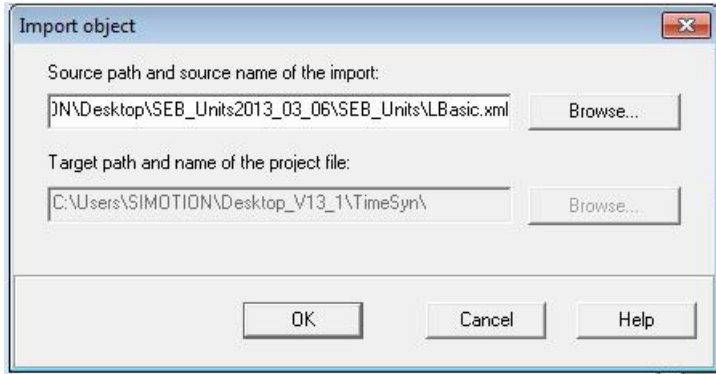
2 配置

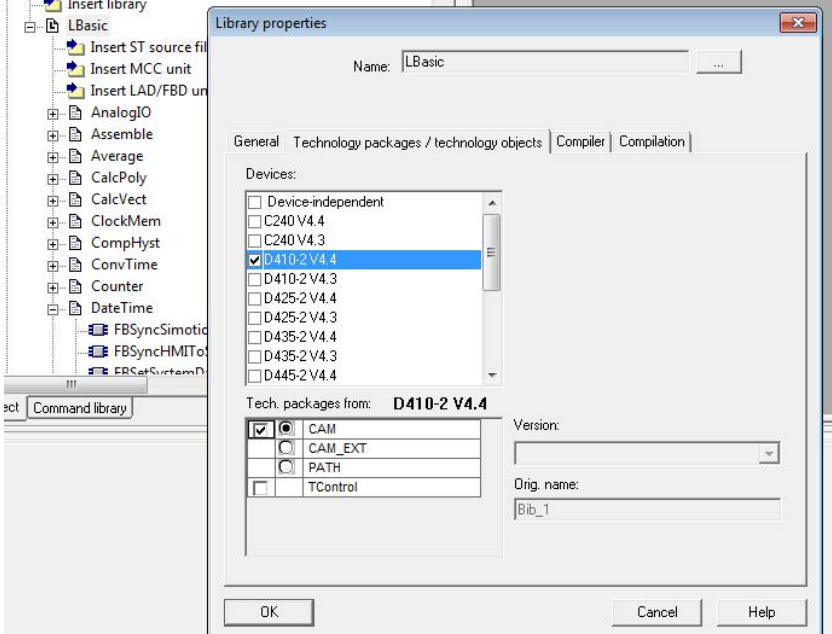
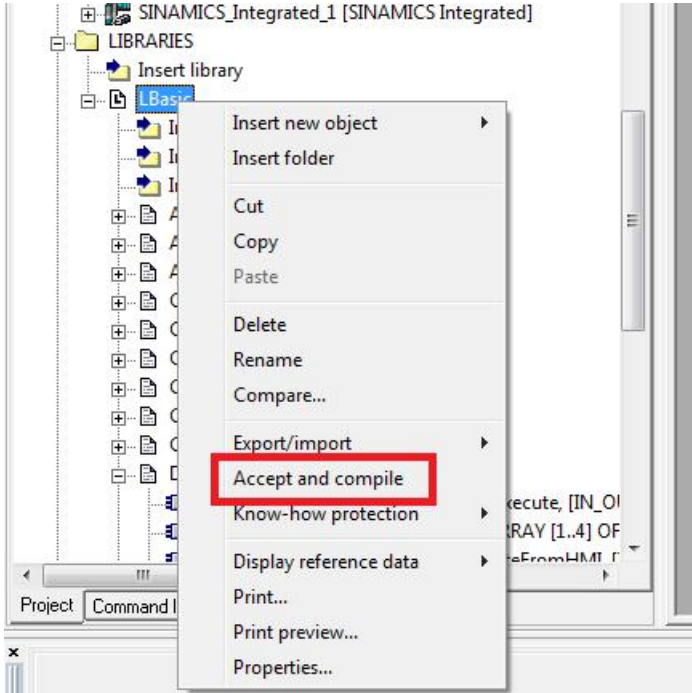
软硬件要求：

- TIA Portal V13 Update2 以上版本、SIMOTION SCOUT TIA V4.4 选件包
- SIMOTION SCOUT V4.4 以上版本
- SIMATIC STEP 7 V5.5 SP4
- 使用 SIMOTION 控制器 Fw V4.3 以上
- WinCC Comfort, WinCC Advanced 或 WinCC Professional V13 以上版本

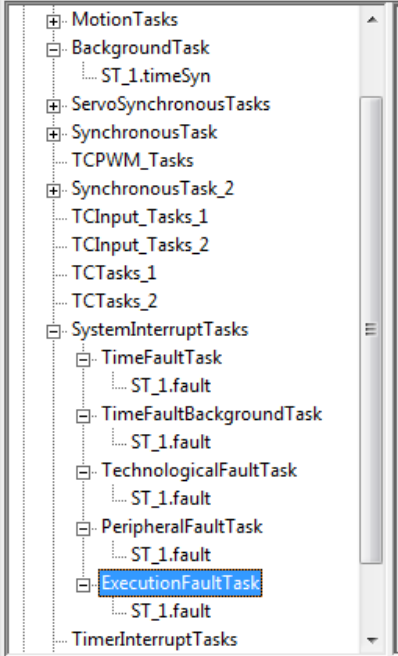
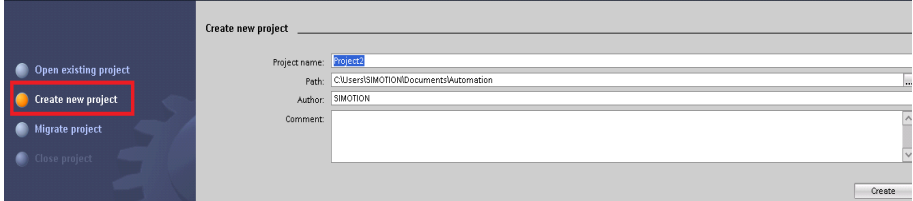
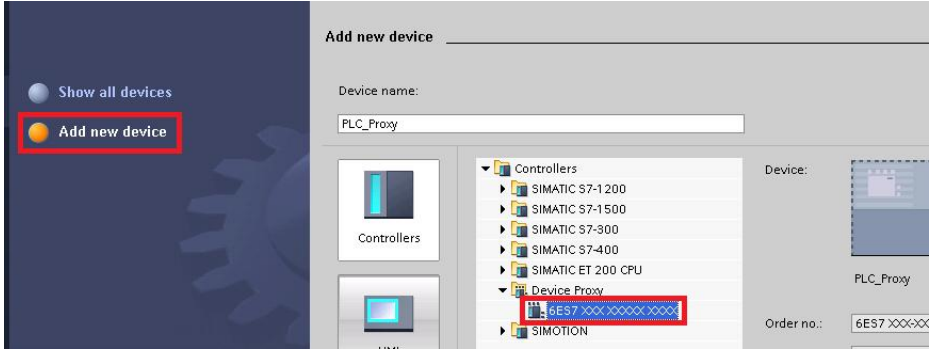
操作步骤见表 2-1。

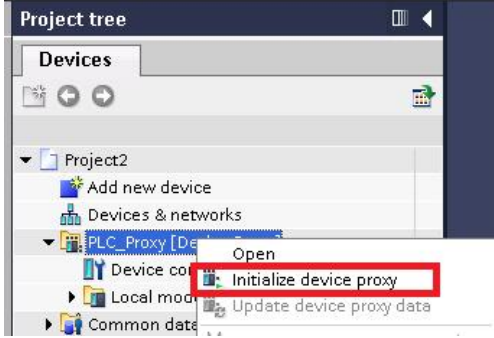
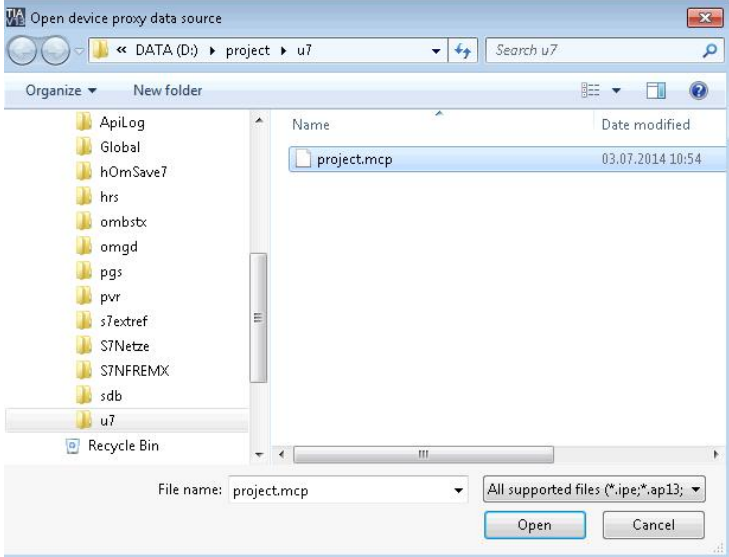
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| 1. | <p>打开 SCOUT V4.4 软件，创建一个新项目并建立一个以太网通讯网络：</p>  |

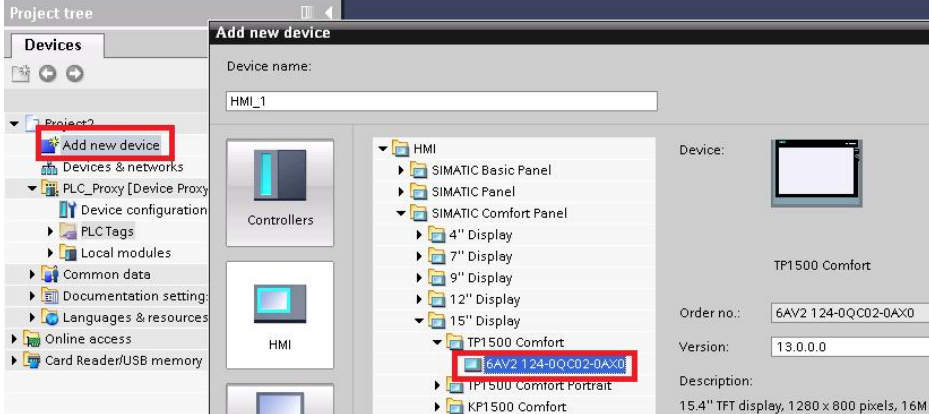
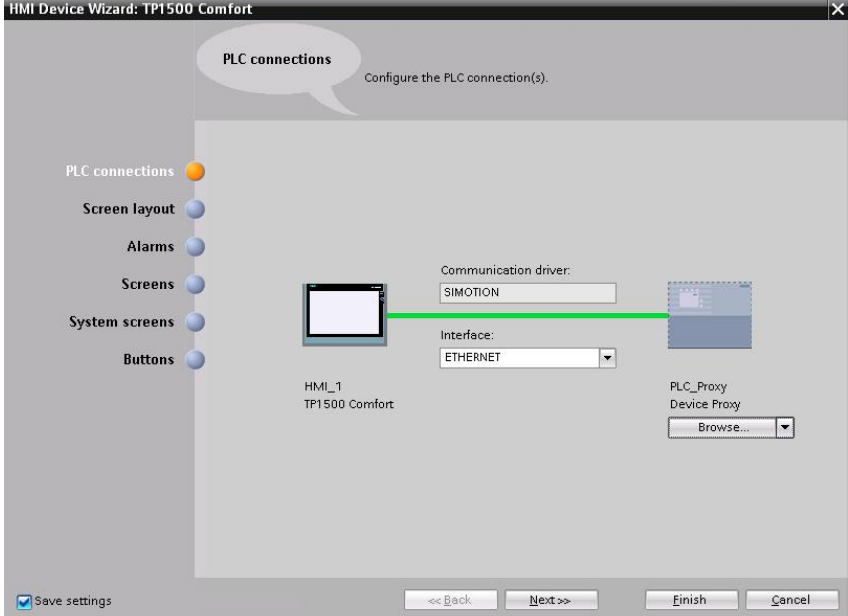
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| 2. | <p>打开 SCOUT TIA 软件，导入 SEB 库程序（库程序位于 SCOUT 光盘目录： \\Utilities_Applications\\src\\Applications\\InterbranchSolutions_Si motionEasyBasics 中的 SEB_Units 中）：</p>  <p>选择 LBasic.xml :</p>  |

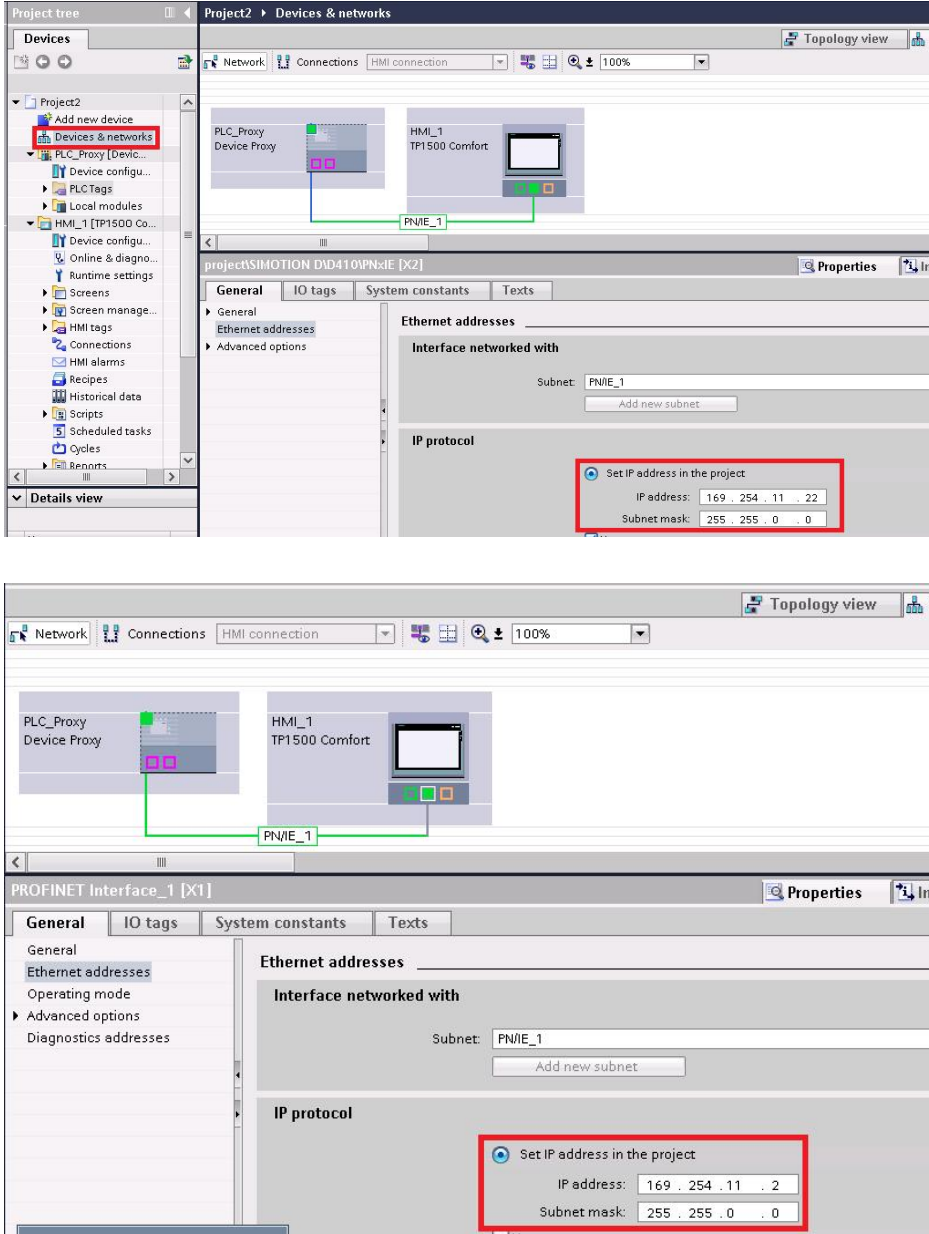
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| 3. | <p>右键选择 LBasic 的库应用的硬件设备对象，需注意使用的版本，并且进行编译：</p>  <p>编译：</p>  |

| 序号 | 图示与说明 |
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| 4. | <p>在 SIMOTION 中插入 ST 程序单元，编写程序如下：</p> <pre>INTERFACE USELIB LBasic ; PROGRAM timeSyn; PROGRAM fault; VAR_GLOBAL myFBSyncSi moti onToHMI : FBSyncSi moti onToHMI ; myHMI JobBox : ARRAY [0..3] OF WORD; myDT: ARRAY [0..5] OF WORD; outputDT: DT; startSYN: BOOL; END_VAR END_INTERFACE IMPLEMENTATION PROGRAM timeSyn myFBSyncSi moti onToHMI (execute := startSYN ,HMI JobBox := myHMI JobBox ,dateAndTime := myDT ,systemDateAndTime => outputDT); END_PROGRAM PROGRAM fault ; END_PROGRAM END_IMPLEMENTATION</pre> |

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| 5. | <p>分配执行程序：</p>  |
| 6. | <p>完成 SCOUT 项目配置之后，双击“ TIA Portal V13” 图标并创建 HMI 项目：</p>  |
| 7. | <p>选择“ Add new device ”，在设备列表中选择设备代理：</p>  |

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| 8. | <p>右键点击设备代理，在弹出的菜单中选择“ Initialize device proxy” 进行代理设备的初始化：</p>  <p>The screenshot shows a 'Project tree' window with a 'Devices' folder expanded. Under 'Project2', there is a 'PLC_Proxy [De]' folder. A right-click context menu is open over this folder, and the 'Initialize device proxy' option is highlighted with a red rectangular box. Other options in the menu include 'Open', 'Device co...', 'Local mod...', and 'Update device proxy data'.</p> |
| 9. | <p>选择已创建的 SCOUT 项目，将相关信息导入到代理设备中：</p>  <p>The screenshot shows a file selection dialog titled 'Open device proxy data source'. The current directory is 'DATA (D:) > project > u7'. The file list contains several folders and one file named 'project.mcp', which is selected. The 'File name' field at the bottom contains 'project.mcp' and the file type is set to 'All supported files (*.ipe;*.ap13;...)'. 'Open' and 'Cancel' buttons are visible at the bottom right.</p> |

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| 10. | <p data-bbox="448 347 715 383">在项目中添加精智屏：</p>  <p data-bbox="448 801 895 837">选择 SIMOTION 设备与屏的通讯驱动：</p>  |

| 序号 | 图示与说明 |
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| 11. | <p data-bbox="448 344 1321 383">在网络视图中检查代理设备(SIMOTION)与精智屏的网络连接及 IP 地址:</p>  <p>The image displays two screenshots from the Siemens SIMATIC Manager software. The top screenshot shows the 'Devices & networks' view, where a network diagram connects a 'PLC_Proxy Device Proxy' and an 'HMI_1 TP1500 Comfort' via a 'PN/E_1' interface. Below the diagram, the 'Properties' window for 'projectSIMOTION D1D410IPN:IE [X2]' is open, showing the 'Ethernet addresses' tab. A red box highlights the 'Set IP address in the project' radio button, and another red box highlights the IP address field (169 . 254 . 11 . 22) and the Subnet mask field (255 . 255 . 0 . 0). The bottom screenshot shows the 'Properties' window for 'PROFINET Interface_1 [X1]', also with the 'Ethernet addresses' tab selected. A red box highlights the 'Set IP address in the project' radio button, and another red box highlights the IP address field (169 . 254 . 11 . 2) and the Subnet mask field (255 . 255 . 0 . 0).</p> |

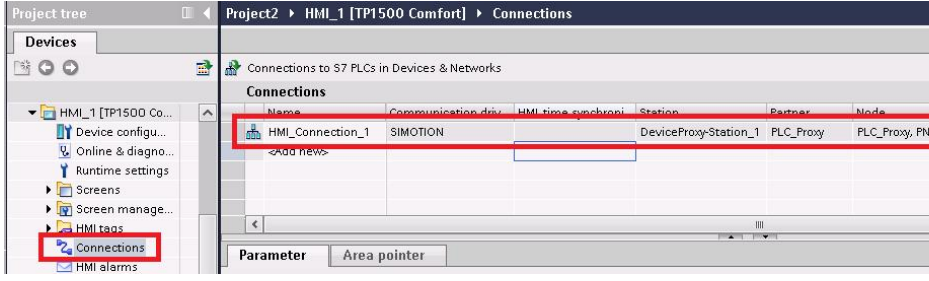
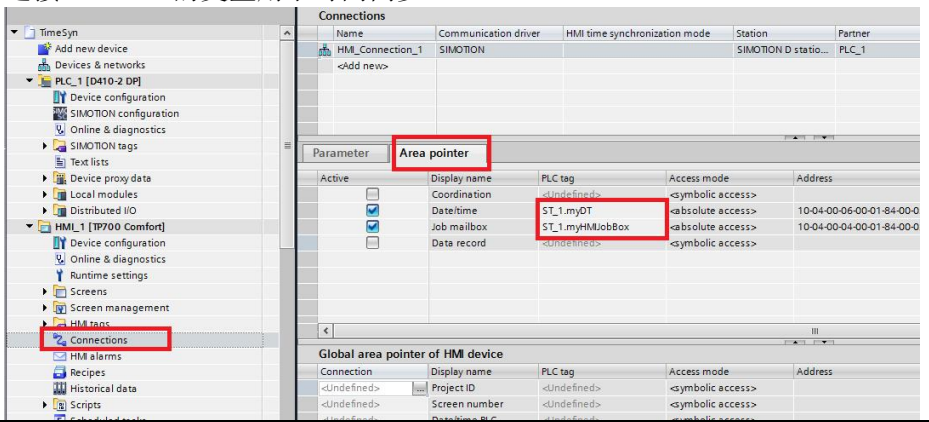
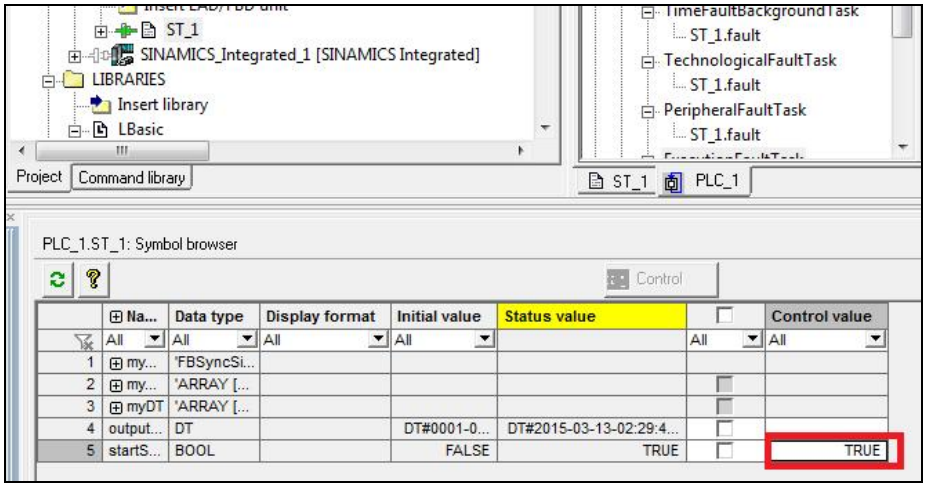
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| 12. | <p>创建代理设备与精智屏的通讯连接：</p>  |
| 13. | <p>连接 SIMOTION 的变量用于时间同步：</p>  |
| 14. | <p>让 SIMOTION 处于运行状态，设定 SIMOTION 的变量 startSYN=true 启动时钟同步，即可以将 SIMOTION 的时间与屏的时间同步：</p>  |

表 2-1 操作步骤说明