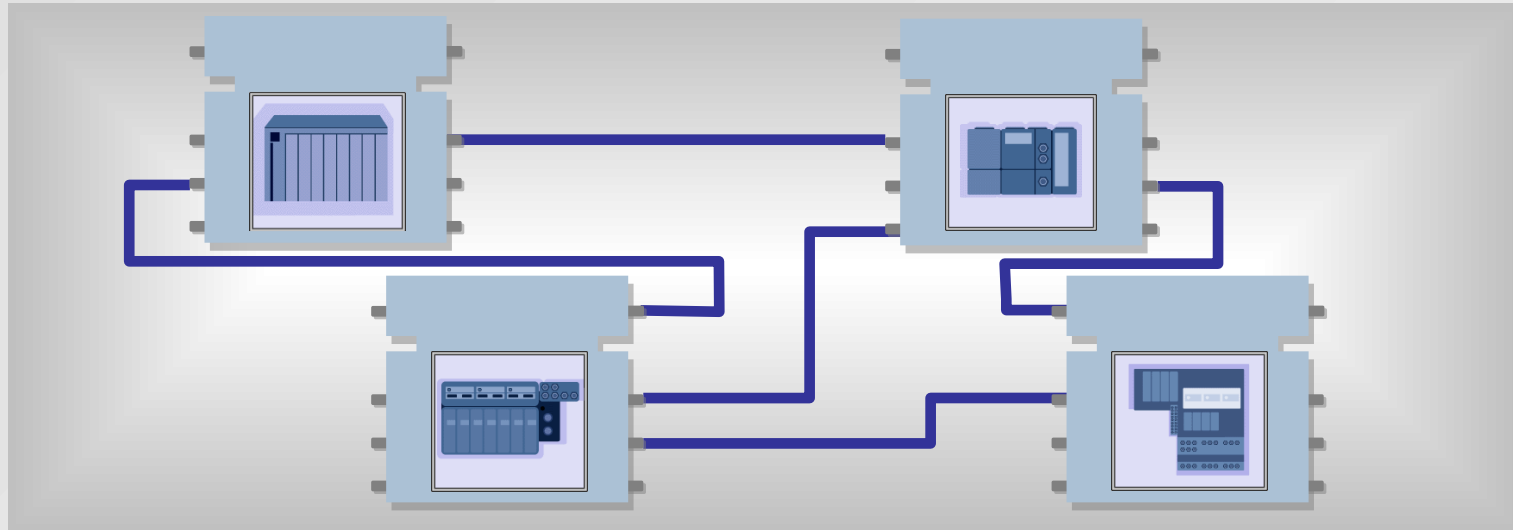


SIFB development approach to provide control and real time communications

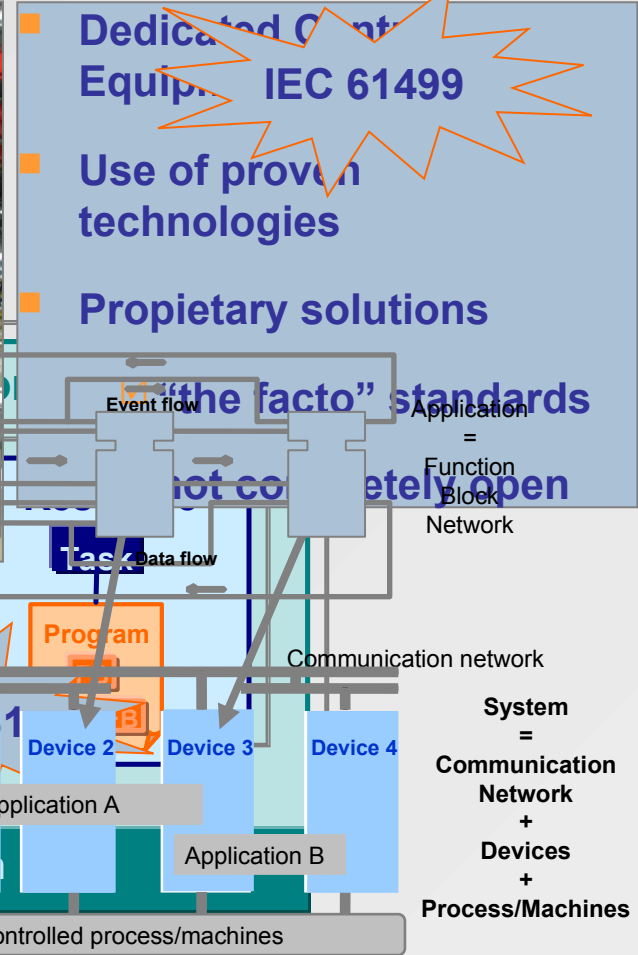
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Industrial Automation System

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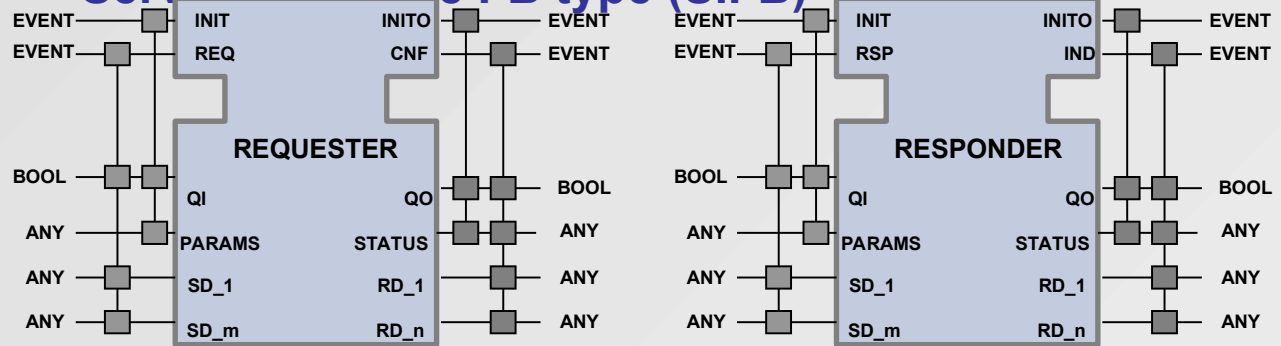


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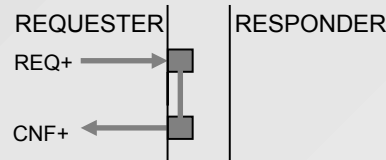
☑ Basic FB type

☑ Composite FB type

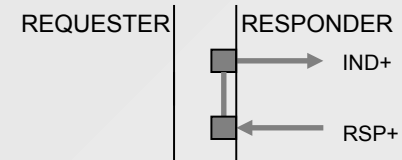
☑ Service Interface FB type (SIFB)



Normal_data_transfer



Normal_data_transfer



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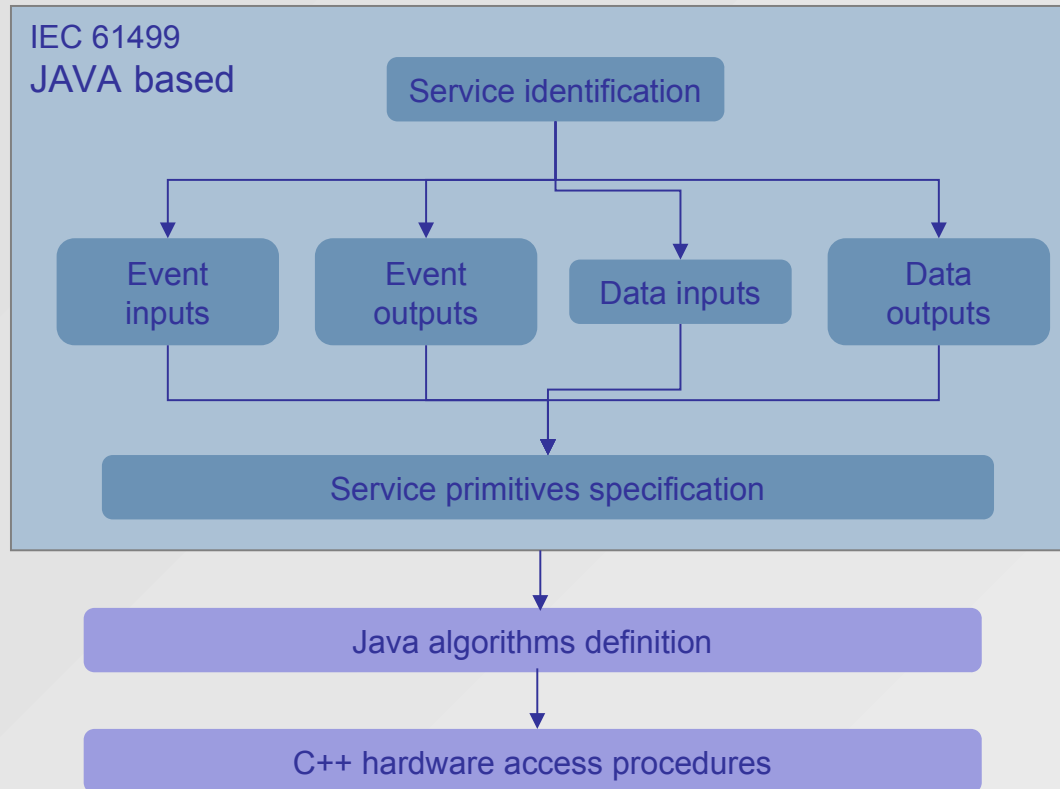
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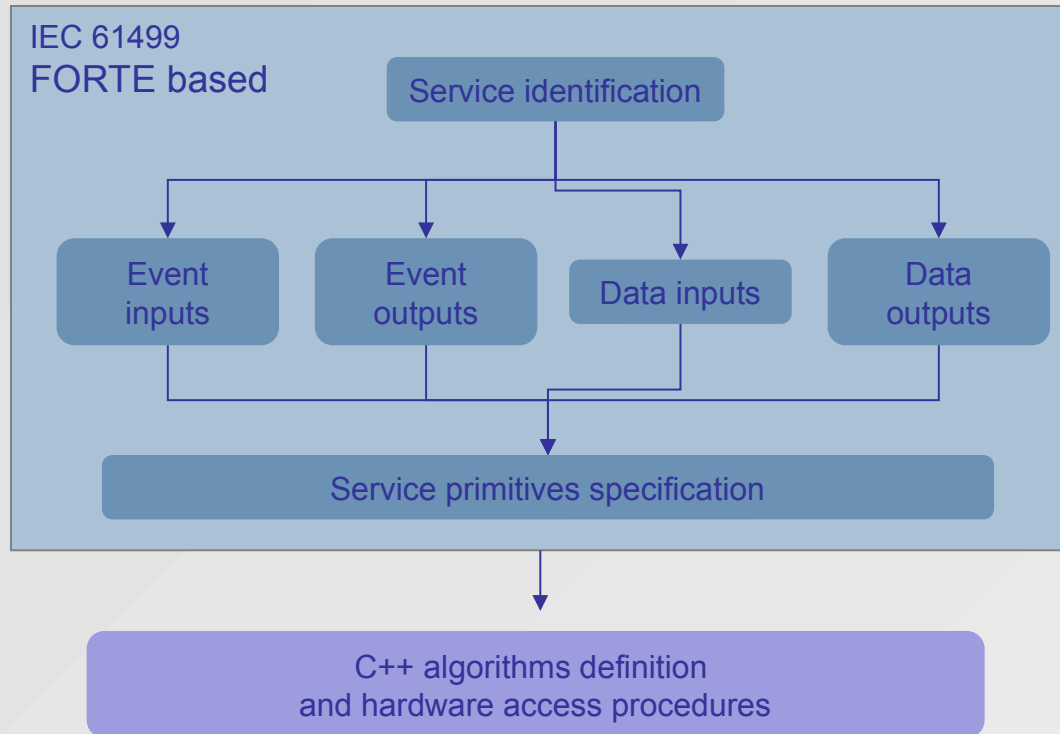
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Methodology to Develop SIFBs

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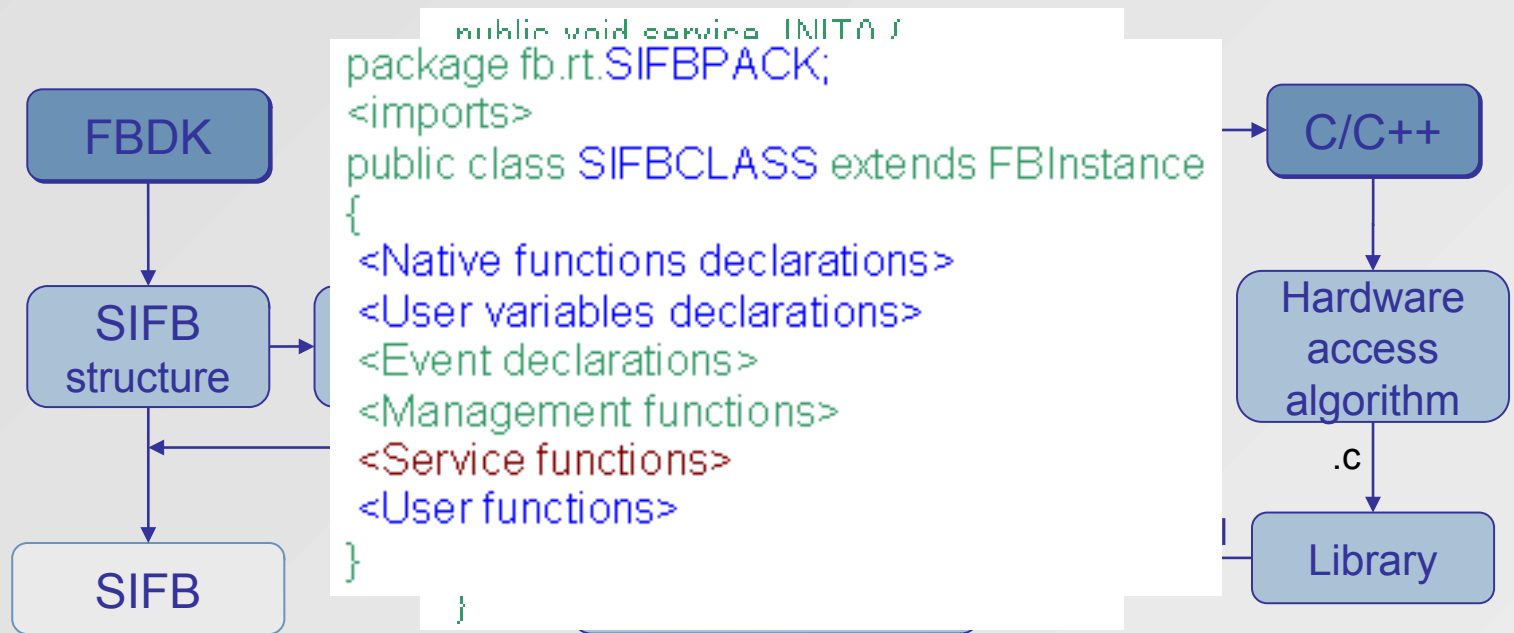
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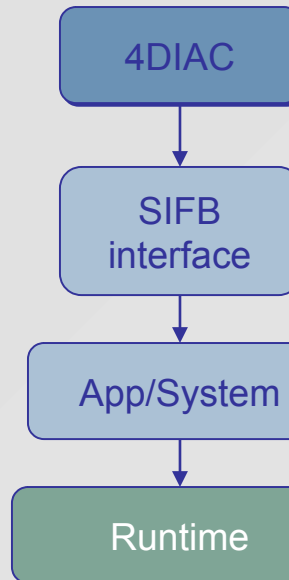
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```
bool SST5136INBOOL::service_INIT() {  
    bool out = false;  
  
    if(QI)  
    {  
        if(!m_bActive)  
        {  
            for(int i = 0; i < 50 && !m_bActive; i++)  
            {  
                int waittime = 100;  
                wait(&waittime); //sleep for 100 ms  
                if(sst5136CheckSlave((unsigned int)SLAVE))  
                {  
                    m_bActive = true;  
                }  
            }  
        }  
    }  
    else  
    {  
        m_bActive = false;  
    }  
  
    out = m_bActive;  
  
    return out;  
}
```

FORTE
source code

HW code

HW Library

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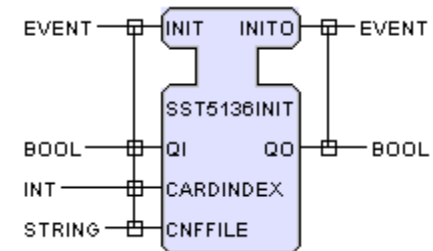
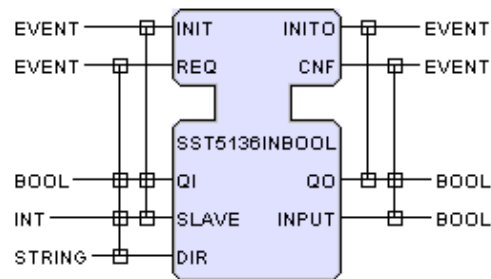
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- ☑ **Components and reusability**
- ☑ **Components in IEC-61499 as FBs**
- ☑ **Hardware-specific interaction as components in SIFBs**

SIFBs set for PROFIBUS-DP

SIFB components PF-DP set

- ☑ Initialization
- ☑ Read/Write BOOL data types
- ☑ Read/Write BYTE data types
- ☑ Read/Write WORD data types
- ☑ Read/Write DWORD data types



Tested with SST-5136 and SST-PFB3 from Molex-Woodhead

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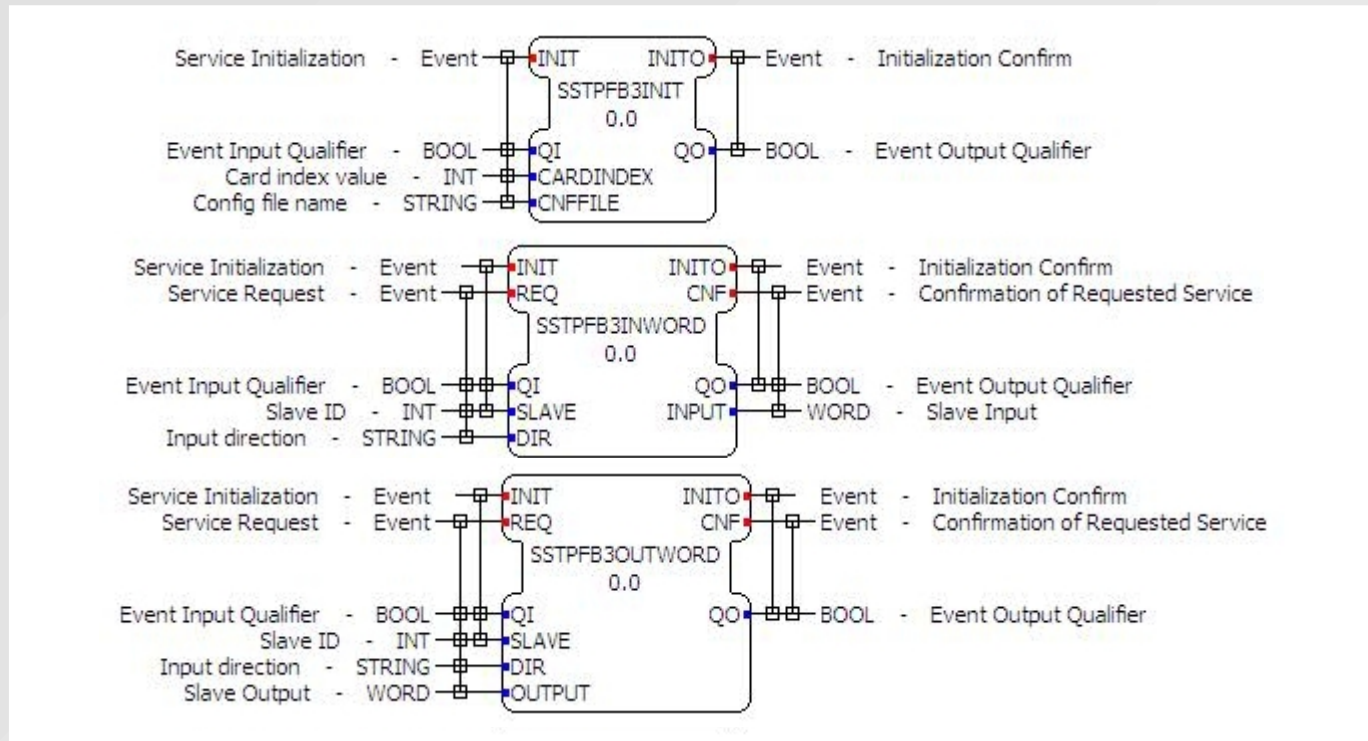
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- ☑ Initialization
- ☑ Read real time data
- ☑ Write real time data

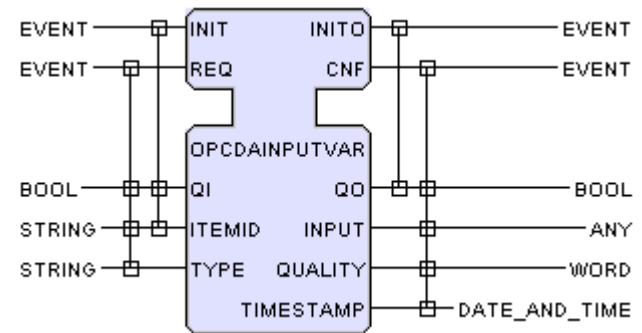
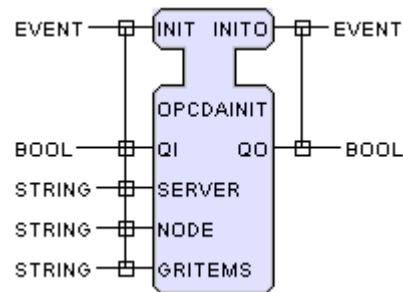


Tested with SST-5136 and SST-PFB3 from Molex-Woodhead

SIFBs set for OPC-DA

SIFB components OPC-DA set

- ☑ Initialization
- ☑ Read synchronous real time data
- ☑ Write synchronous real time data



Tested with SimaticNet and Matrikon OPC-DA servers

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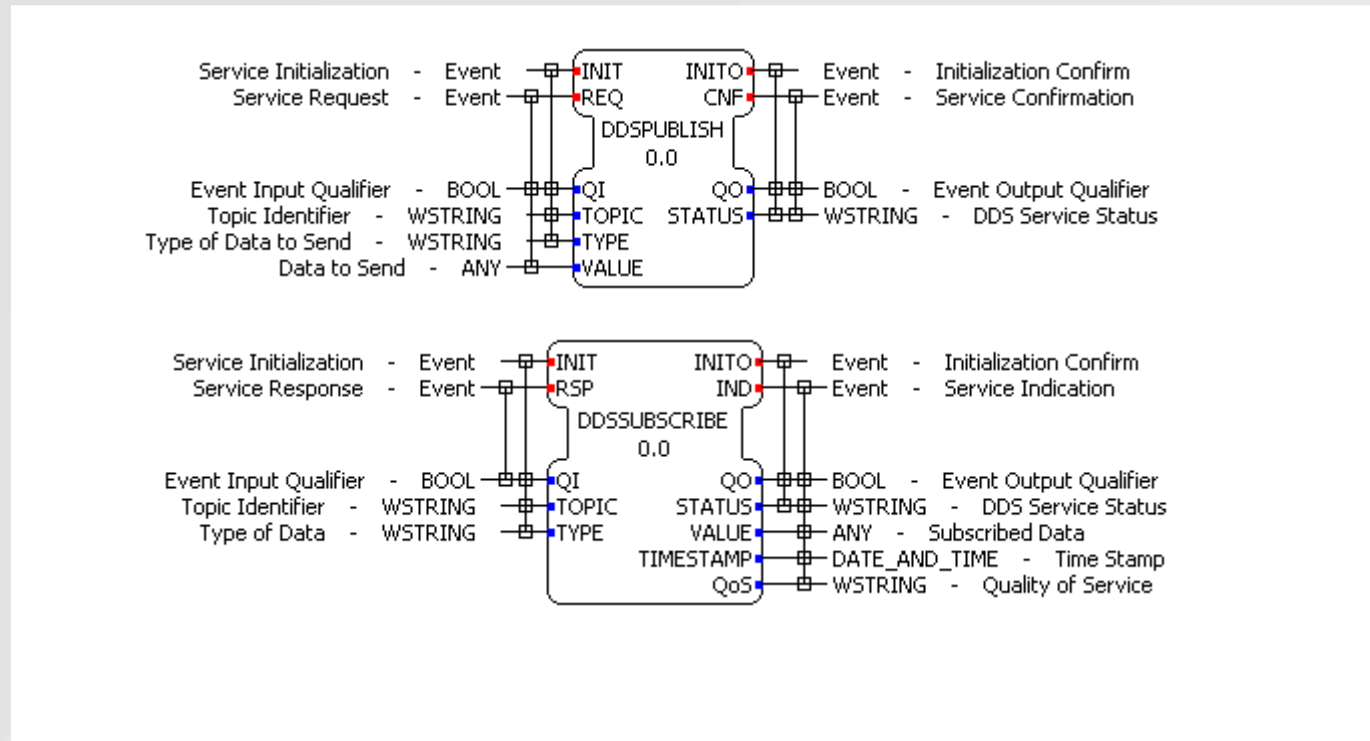
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SIFBs set for DDS

SIFB components DDS set

- ☑ Publisher
- ☑ Subscriber



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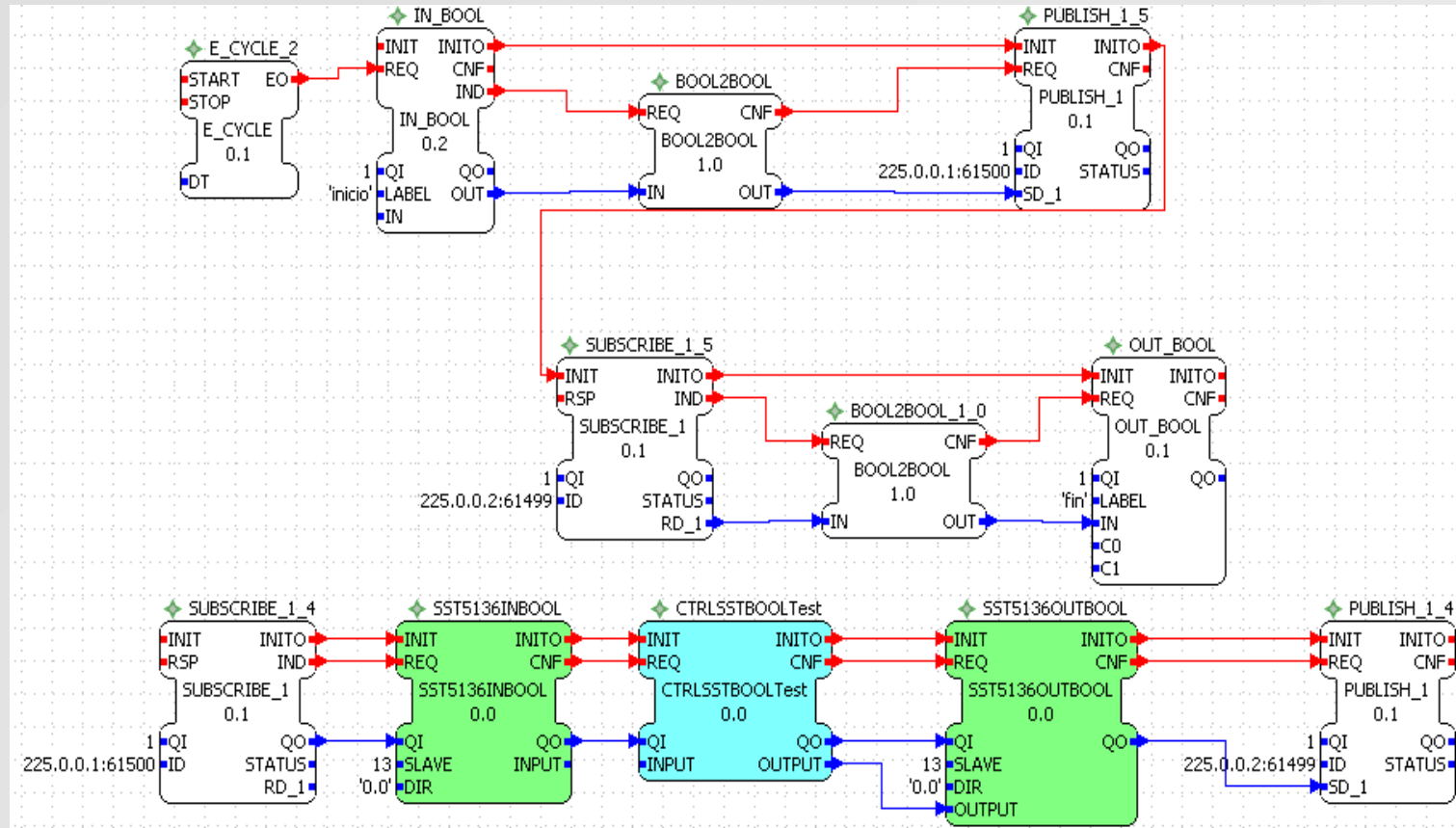
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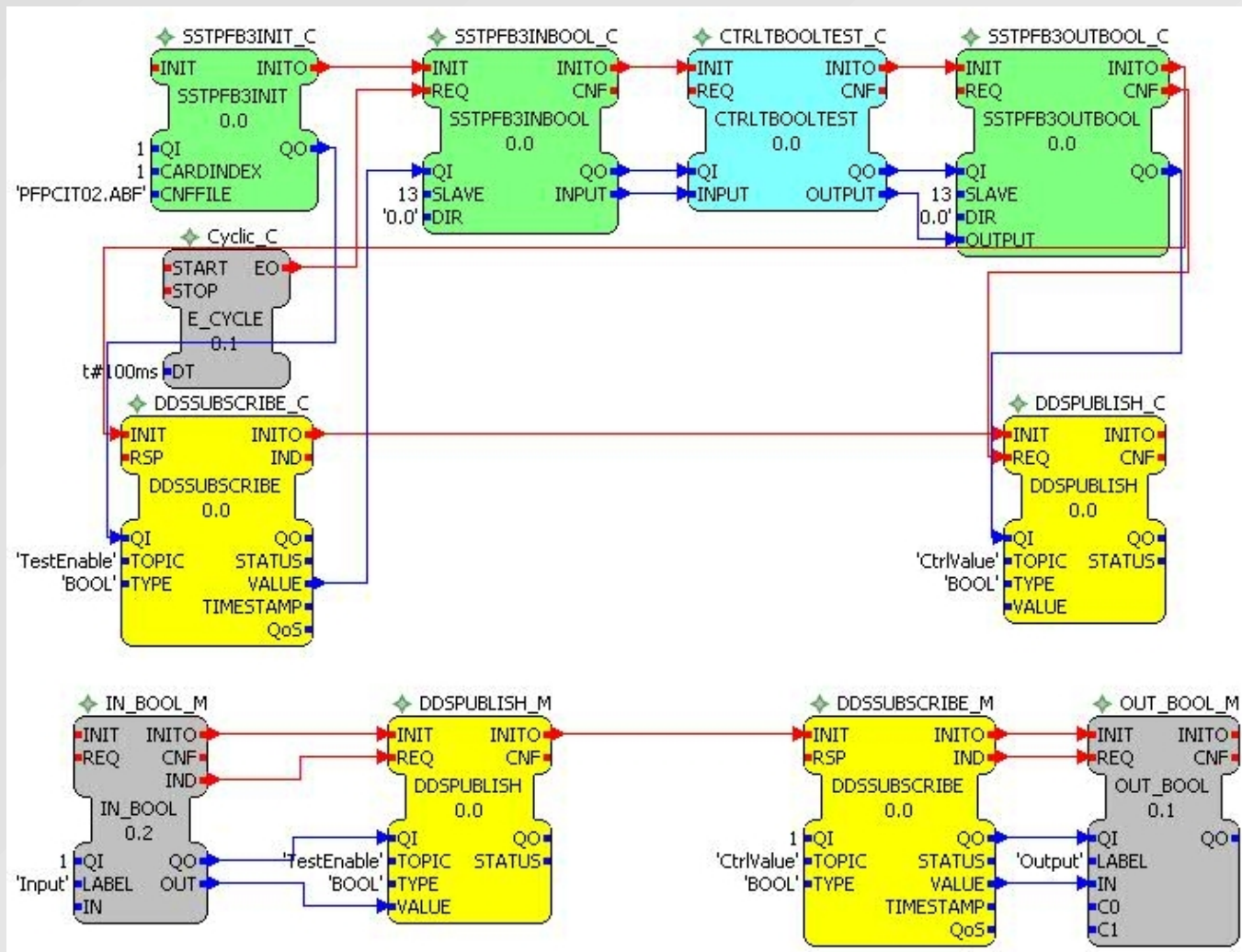
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OPC Server



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- ❑ IEC 61499 standard defines a generic architecture that provides a reference model to achieve the use of FBs in distributed control systems.
- ❑ The use of IEC 61499 enables the integration into a distributed automation system and the use of the services of a component within the whole system.
- ❑ The developed SIFBs set allows access to control and real process data using different technologies.

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