

C:\SlowControls\Drawings\Documents\TcAltium.xsd

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<?xml version="1.0" encoding="utf-8"?>
<!--This is the xml schema file for the a LIGO Altium TwinCAT workflow! -->
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
  targetNamespace="https://dcc.ligo.org/LIGO-E1800220/public" xmlns="https://
  dcc.ligo.org/LIGO-E1800220/public" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <!--Types!-->
  <!--Type: System!-->
  <xs:simpleType name="type_ams">
    <xs:restriction base="xs:string">
      <xs:pattern value="(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25[0-5]|2
        [0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|
        [1-9]?[0-9])\.(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25[0-5]|2
        [0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|
        [1-9]?[0-9])"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="type_System">
    <xs:all>
      <xs:element name="AutoPriority" minOccurs="0" maxOccurs="1"
        type="xs:boolean" default="true" />
      <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
      <xs:element name="Site" minOccurs="0" maxOccurs="1" type="xs:string" />
      <xs:element name="SaveToProject" minOccurs="0" maxOccurs="1"
        type="xs:boolean" default="false" />
      <xs:element name="BasePath" minOccurs="0" maxOccurs="1" type="xs:string" />
      <xs:element name="Directory" minOccurs="0" maxOccurs="1" type="xs:string" />
      <xs:element name="Mapping" minOccurs="0" maxOccurs="1" type="xs:string" />
      <xs:element name="Debugger" minOccurs="0" maxOccurs="1" type="xs:boolean"
        default="false" />
      <xs:element name="Target" minOccurs="0" maxOccurs="1" type="type_ams" />
    </xs:all>
  </xs:complexType>
  <!--Type: RealTime!-->
  <xs:simpleType name="type_realtimeCPU">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="1"/>
      <xs:maxInclusive value="64"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="type_isoatedCPU">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="0"/>
      <xs:maxInclusive value="63"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="type_maxCPU">
    <xs:simpleContent>
      <xs:extension base="type_realtimeCPU">
        <xs:attribute name="NonWindowsCPUs" type="type_isoatedCPU"

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        use="optional" />
    </xs:extension>
</xs:simpleContent>
</xs:complexType>
<xs:simpleType name="type_basetime">
    <xs:restriction base="xs:integer">
        <xs:enumeration value="1000"/>
        <xs:enumeration value="5000"/>
        <xs:enumeration value="3330"/>
        <xs:enumeration value="2500"/>
        <xs:enumeration value="2000"/>
        <xs:enumeration value="1250"/>
        <xs:enumeration value="1000"/>
        <xs:enumeration value="833"/>
        <xs:enumeration value="769"/>
        <xs:enumeration value="714"/>
        <xs:enumeration value="666"/>
        <xs:enumeration value="625"/>
        <xs:enumeration value="500"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_loadlimit">
    <xs:restriction base="xs:integer">
        <xs:enumeration value="10"/>
        <xs:enumeration value="20"/>
        <xs:enumeration value="30"/>
        <xs:enumeration value="40"/>
        <xs:enumeration value="50"/>
        <xs:enumeration value="60"/>
        <xs:enumeration value="70"/>
        <xs:enumeration value="80"/>
        <xs:enumeration value="90"/>
        <xs:enumeration value="100"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_latencylimit">
    <xs:restriction base="xs:integer">
        <xs:enumeration value="0"/>
        <xs:enumeration value="20"/>
        <xs:enumeration value="50"/>
        <xs:enumeration value="100"/>
        <xs:enumeration value="200"/>
        <xs:enumeration value="250"/>
        <xs:enumeration value="500"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_CPUid">
    <xs:restriction base="xs:integer">
        <xs:minInclusive value="0"/>
    </xs:restriction>
</xs:simpleType>
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<xs:maxInclusive value="63"/>
</xs:restriction>
</xs:simpleType>
<xs:complexType name="type_CPU">
  <xs:all>
    <xs:element name="BaseTime" type="type_basetime" />
    <xs:element name="LoadLimit" type="type_loadlimit" />
    <xs:element name="LatencyWarning" type="type_latencylimit" />
  </xs:all>
  <xs:attribute name="Id" type="type_CPUid" use="required" />
</xs:complexType>
<xs:complexType name="type_CPUs">
  <xs:sequence>
    <xs:element name="CPU" minOccurs="1" maxOccurs="32" type="type_CPU" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="type_affinity">
  <xs:restriction base="xs:string">
    <xs:pattern value="#x[0-9a-fA-F]{16}"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_rtimesetdef">
  <xs:all>
    <xs:element name="MaxCPUs" minOccurs="1" maxOccurs="1" type="type_maxCPU" />
    <xs:element name="CPUs" minOccurs="1" maxOccurs="1" type="type_CPUs" />
    <xs:element name="Affinity" minOccurs="0" maxOccurs="1"
      type="type_affinity" />
  </xs:all>
</xs:complexType>
<xs:complexType name="type_RealTime">
  <xs:sequence>
    <xs:element name="RTimesetDef" minOccurs="0" maxOccurs="1"
      type="type_rtimesetdef" />
  </xs:sequence>
</xs:complexType>
<!--Type: Tasks!-->
<xs:simpleType name="type_priority">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="61"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_taskdef">
  <xs:all>
    <xs:element name="CycleTime" minOccurs="1" maxOccurs="1"
      type="xs:positiveInteger" />
    <xs:element name="Priority" minOccurs="0" maxOccurs="1"
      type="type_priority" />
    <xs:element name="AutoStart" minOccurs="0" maxOccurs="1" type="xs:boolean" />
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        default="true"/>
        <xs:element name="CpuAffinity" minOccurs="0" maxOccurs="1"
            type="type_affinity" />
        <xs:element name="CreateSymbols" minOccurs="0" maxOccurs="1"
            type="xs:boolean" />
    </xs:all>
</xs:complexType>
<xs:complexType name="type_Task">
    <xs:all>
        <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Parent" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Disabled" minOccurs="0" maxOccurs="1" type="xs:boolean"
            default="false"/>
        <xs:element name="TaskDef" minOccurs="1" maxOccurs="1" type="type_taskdef" />
    </xs:all>
</xs:complexType>
<xs:complexType name="type_Tasks">
    <xs:sequence>
        <xs:element name="Task" minOccurs="1" maxOccurs="unbounded"
            type="type_Task" />
    </xs:sequence>
</xs:complexType>
<!--Type: PLCs!-->
<xs:complexType name="type_SymbolInit">
    <xs:all>
        <xs:element name="Name" type="xs:token" />
        <xs:element name="Data" type="xs:int" />
    </xs:all>
</xs:complexType>
<xs:complexType name="type_SymbolInits">
    <xs:sequence>
        <xs:element name="SymbolInit" minOccurs="0" maxOccurs="unbounded"
            type="type_SymbolInit" />
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="type_plcport">
    <xs:restriction base="xs:integer">
        <xs:minInclusive value="800"/>
        <xs:maxInclusive value="899"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_Instance">
    <xs:all>
        <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Parent" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Port" minOccurs="1" maxOccurs="1" type="type_plcport" />
        <xs:element name="Filename" minOccurs="1" maxOccurs="1" type="xs:string" />
        <xs:element name="SymbolInits" minOccurs="0" maxOccurs="1" />
    </xs:all>
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        type="type_SymbolInits" />
    </xs:all>
</xs:complexType>
<xs:complexType name="type_Instances">
    <xs:sequence>
        <xs:element name="Instance" minOccurs="1" maxOccurs="unbounded"
            type="type_Instance" />
    </xs:sequence>
</xs:complexType>
<xs:complexType name="type_PLC">
    <xs:all>
        <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Parent" minOccurs="1" maxOccurs="1" type="xs:token" />
        <xs:element name="Location" minOccurs="0" maxOccurs="1" type="xs:string" />
        <xs:element name="Directory" minOccurs="1" maxOccurs="1" type="xs:string" />
        <xs:element name="Instances" minOccurs="1" maxOccurs="1"
            type="type_Instances" />
    </xs:all>
</xs:complexType>
<xs:complexType name="type_PLCs">
    <xs:sequence>
        <xs:element name="PLC" minOccurs="0" maxOccurs="unbounded" type="type_PLC" />
    </xs:sequence>
</xs:complexType>
<!--Type: Modules!-->
<xs:simpleType name="type_ecataddr">
    <xs:restriction base="xs:integer">
        <xs:minInclusive value="1000"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_ecatport">
    <xs:restriction base="xs:string">
        <xs:enumeration value="A"/>
        <xs:enumeration value="B"/>
        <xs:enumeration value="C"/>
        <xs:enumeration value="D"/>
        <xs:enumeration value=""/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_pdoseelction">
    <xs:restriction base="xs:string">
        <xs:pattern value="|#x[0-9a-fA-F]{4}(, \w?#x[0-9a-fA-F]{4})*"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_PDO">
    <xs:all>
        <xs:element name="Inputs" minOccurs="1" maxOccurs="1"
            type="type_pdoseelction" />
    </xs:all>
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<xs:element name="Outputs" minOccurs="1" maxOccurs="1" type="type_pdoseelction" />
</xs:all>
</xs:complexType>
<xs:simpleType name="type_smtrans">
  <xs:restriction base="xs:string">
    <xs:enumeration value="IP"/>
    <xs:enumeration value="PS"/>
    <xs:enumeration value="SO"/>
    <xs:enumeration value="SP"/>
    <xs:enumeration value="SI"/>
    <xs:enumeration value="OS"/>
    <xs:enumeration value="OP"/>
    <xs:enumeration value="OI"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_coeindex">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="65535"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_coesubindex">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="255"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_coedata">
  <xs:restriction base="xs:string">
    <xs:pattern value="([0-9a-fA-F][0-9a-fA-F])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_CMD">
  <xs:sequence>
    <xs:element name="Transition" minOccurs="1" maxOccurs="8" type="type_smtrans" />
    <xs:element name="Comment" minOccurs="0" maxOccurs="1" type="xs:string" />
    <xs:element name="Timeout" minOccurs="0" maxOccurs="1" type="xs:nonNegativeInteger" default="0" />
    <xs:element name="Ccs" minOccurs="0" maxOccurs="1" type="xs:boolean" default="1" />
    <xs:element name="Index" minOccurs="1" maxOccurs="1" type="type_coeindex" />
    <xs:element name="SubIndex" minOccurs="1" maxOccurs="1" type="type_coesubindex" />
    <xs:element name="Data" minOccurs="1" maxOccurs="1" type="type_coedata" />
  </xs:sequence>
  <xs:attribute name="CompleteAccess" type="xs:boolean" use="optional" default="false" />

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</xs:complexType>
<xs:complexType name="type_COMMANDs">
  <xs:sequence>
    <xs:element name="InitCmd" minOccurs="0" maxOccurs="unbounded"
      type="type_CMD" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="type_Previous">
  <xs:all>
    <xs:element name="Path" minOccurs="0" maxOccurs="1" type="xs:token" />
    <xs:element name="Addr" minOccurs="1" maxOccurs="1" type="type_ecataddr" />
    <xs:element name="Port" minOccurs="1" maxOccurs="1" type="xs:string" />
  </xs:all>
</xs:complexType>
<xs:complexType name="type_Module">
  <xs:all>
    <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Part" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Type" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Subtype" minOccurs="1" maxOccurs="1"
      type="xs:nonNegativeInteger" />
    <xs:element name="Parent" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Disabled" minOccurs="0" maxOccurs="1" type="xs:boolean"
      default="false" />
    <xs:element name="ECatAddr" minOccurs="0" maxOccurs="1"
      type="type_ecataddr" />
    <xs:element name="SyncUnit" minOccurs="0" maxOccurs="1" type="xs:token" />
    <xs:element name="PDO" minOccurs="0" maxOccurs="1" type="type_PDO" />
    <xs:element name="InitCmds" minOccurs="0" maxOccurs="1" type="type_COMMANDs" />
    <xs:element name="Previous" minOccurs="0" maxOccurs="1"
      type="type_Previous" />
    <xs:element name="Modules" minOccurs="0" maxOccurs="1" type="type_Modules" />
  </xs:all>
</xs:complexType>
<xs:complexType name="type_Modules">
  <xs:sequence>
    <xs:element name="Module" minOccurs="0" maxOccurs="unbounded"
      type="type_Module" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="type_ip">
  <xs:restriction base="xs:string">
    <xs:pattern value="(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25
      [0-5]|2[0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])\.(25[0-5]|2[0-4][0-9]|1[0-9]
      [0-9]|[1-9]?[0-9])\.(25[0-5]|2[0-4][0-9]|1[0-9][0-9]|[1-9]?[0-9])" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="type_MAC">
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<xs:restriction base="xs:string">
  <xs:pattern value="[0-9a-fA-F]{12}"/>
</xs:restriction>
</xs:simpleType>
<xs:complexType name="type_Device">
  <xs:sequence>
    <xs:element name="Name" minOccurs="0" maxOccurs="1" type="xs:token" />
    <xs:element name="IpAddr" minOccurs="0" maxOccurs="1" type="type_ip" />
    <xs:element name="Description" minOccurs="0" maxOccurs="1"
      type="xs:string" />
    <xs:element name="MAC" minOccurs="0" maxOccurs="1" type="type_MAC" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="type_DcMode">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Automatic"/>
    <xs:enumeration value="Master"/>
    <xs:enumeration value="Slave"/>
    <xs:enumeration value="External"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="type_DeviceModule">
  <xs:all>
    <xs:element name="Name" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Id" minOccurs="1" maxOccurs="1"
      type="xs:nonNegativeInteger" />
    <xs:element name="Part" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Type" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Subtype" minOccurs="1" maxOccurs="1"
      type="xs:nonNegativeInteger" />
    <xs:element name="Parent" minOccurs="1" maxOccurs="1" type="xs:token" />
    <xs:element name="Disabled" minOccurs="0" maxOccurs="1" type="xs:boolean"
      default="false"/>
    <xs:element name="ECatAddr" minOccurs="0" maxOccurs="1"
      type="type_ecataddr" />
    <xs:element name="Device" minOccurs="0" maxOccurs="1" type="type_Device" />
    <xs:element name="DcTimeMode" minOccurs="0" maxOccurs="1" type="type_DcMode"
      default="Automatic"/>
    <xs:element name="Modules" minOccurs="0" maxOccurs="1" type="type_Modules" />
  </xs:all>
</xs:complexType>
<xs:complexType name="type_DevModules">
  <xs:sequence>
    <xs:element name="Module" minOccurs="0" maxOccurs="unbounded"
      type="type_DeviceModule"/>
  </xs:sequence>
</xs:complexType>
<!--Elements!-->
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<xs:complexType name="type_TcAltium">
  <xs:sequence>
    <xs:element name="System" minOccurs="1" maxOccurs="1" type="type_System" />
    <xs:element name="RealTime" minOccurs="1" maxOccurs="1"
      type="type_RealTime" />
    <xs:element name="Tasks" minOccurs="1" maxOccurs="1" type="type_Tasks" />
    <xs:element name="PLCs" minOccurs="0" maxOccurs="1" type="type_PLCs" />
    <xs:element name="Modules" minOccurs="0" maxOccurs="1" type
      ="type_DevModules" />
  </xs:sequence>
</xs:complexType>
<xs:element name="TcAltium" type="type_TcAltium" />
</xs:schema>
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