```
<?xml version="1.0" encoding="UTF-8" ?>
- <SCL xmlns="http://www.iec.ch/61850/2006/SCL"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.iec.ch/61850/2006/SCL SCL.xsd">
  - <Header id="1">
      <Text>DataTypeTemplate de la parte hidráulica del regulador de
        velocidad</Text>
    - <History>
        <Hitem when="21/10/2010" revision="1" version="1.0">Este ICD fue
          iniciado a partir de la version 1.2 revisión 3 del ICD del tanque
          principal.</Hitem>
        <Hitem when="21/10/2010" revision="2" version="1.0">TODO: Falta
          corregir los números de instancias de cada nodo lógico. TODO: Falta
          eliminar los DataTypeTemplates que no se usan aqui.</Hitem>
      </History>
    </Header>
  - <Communication>
    - <SubNetwork name="SN1">
      - <ConnectedAP iedName="IED_MAIN_TNK" apName="AP1">
        - <Address>
            <P type="IP">192.168.10.1</P>
            <P type="IP-SUBNET">0.0.0.0</P>
            <P type="IP-GATEWAY">0.0.0.0</P>
          </Address>
        </ConnectedAP>
      </SubNetwork>
    </Communication>
  - <IED name="IEDcmprsAirPlant" configVersion="1" desc="IED de la planta de aire
      comprimido" manufacturer="David">
    - <Services>
        <DynAssociation />
        <GetDataObjectDefinition />
        <DataObjectDirectory />
        <GetDataSetValue />
        <SetDataSetValue />
        <DataSetDirectory />
        <ConfDataSet max="50" maxAttributes="250" />
        <GetDirectory />
        <ReadWrite />
        <ConfReportControl max="7" />
        <GetCBValues />
        <ReportSettings intgPd="Dyn" trgOps="Dyn" bufTime="Dyn" optFields="Dyn"
          rptID="Dyn" datSet="Fix" cbName="Fix" />
        <GSESettings appID="Fix" cbName="Fix" dataLabel="Dyn" datSet="Fix" />
        <GOOSE max="5" />
        <FileHandling />
        <ConfLNs fixLnInst="true" fixPrefix="true" />
      </Services>
    - <AccessPoint name="AP1">
      - <Server>
          <Authentication />
        - <LDevice inst="1" ldName="LD1tank" desc="Air oil pressure-tanks">
            <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
```

```
        <LN lnType="ZMOTa" inst="4" lnClass="ZMOT" prefix="Pa_"
          desc="(AF) Motor for the compressor unit AF" />
        <LN lnType="KVLV_relief" inst="24" lnClass="KVLV" prefix="Pa_"
          desc="(24) Relief valve" />
        <LN lnType="TPRS_gauge" inst="10" lnClass="TPRS" prefix="Pa_"
          desc="(25) Pressure-gauge" />
        <LN lnType="TPOS_prs_sw" inst="29" lnClass="TPOS" prefix="Pa_"
          desc="(DE) Pressure switch" />
        <LN lnType="TPOS_prs_sw" inst="30" lnClass="TPOS" prefix="Pa_"
          desc="(DF) Pressure switch" />
        <LN lnType="TPOS_prs_sw" inst="31" lnClass="TPOS" prefix="Pa_"
          desc="(DG) Pressure switch" />
        <LN lnType="TPOS_prs_sw" inst="32" lnClass="TPOS" prefix="Pa_"
          desc="(LM) Pressure switch" />
        <LN lnType="TPOS_e" inst="33" lnClass="TPOS" prefix="Gv_"
          desc="(EC) Wicket-gate displacement sensor" />
        <LN lnType="FLIM_" inst="2" lnClass="FLIM" prefix="Gv_"
          desc="(LA) Limit to reach the overspeed (speed limit)" />
        <LN lnType="FSPT_for_flim" inst="1" lnClass="FSPT" prefix="Gv_"
          desc="(LA) Speed limit set-point" />
      </LDevice>
    </Server>
  </AccessPoint>
</IED>
- <DataTypeTemplates>
  - <LNodeType id="LLN0_1" lnClass="LLN0">
      <!-- Common logical node information   -->
      <DO name="Mod" type="Mod_1" />
      <DO name="Beh" type="Beh_1" />
      <DO name="Health" type="Health_1" />
      <DO name="NamPlt" type="NamPlt_1" />
    </LNodeType>
  - <LNodeType id="FLIM_" lnClass="FLIM" desc="Wicket gate closure travel
    limit">
      <!-- Common logical node information   -->
      <DO name="Mod" type="Mod_1" />
      <DO name="Beh" type="Beh_1" />
      <DO name="Health" type="Health_1" />
      <DO name="NamPlt" type="NamPlt_1" />
      <!--  Status information   -->
      <DO name="HiLim" type="xLim_1" desc="High Limit reached" />
      <DO name="LoLim" type="xLim_1" desc="Low Limit reached" />
      <!--  Measured values   -->
      <DO name="Out" type="Out_1" desc="Output signal" />
      <DO name="HiLimSpt" type="xLimSpt_1" desc="High Limit setpoint" />
      <DO name="LoLimSpt" type="xLimSpt_1" desc="Low Limit setpoint" />
      <DO name="Blk" type="Blk_1" desc="Block operation" />
    </LNodeType>
  - <LNodeType id="FSPT_for_flim" lnClass="FSPT" desc="Wicket gate closure
    travel limit set-point">
      <!--  Common logical node information   -->
      <DO name="Mod" type="Mod_1" />
      <DO name="Beh" type="Beh_1" />
```

```
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <!-- Measured values  -->
    <DO type="SptMem_1" name="SptMem" desc="Setpoint in memory" />
  </LNodeType>
- <LNodeType id="KVLV_relief" lnClass="KVLV" desc="Relief pressure valve">
    <!--  Common logical node information  -->
    <DO name="Mod" type="Mod_1" />
    <DO name="Beh" type="Beh_1" />
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <!--  Status information  -->
    <DO name="ClsPos" type="ClsPos_1" />
    <DO name="OpnPos" type="OpnPos_1" />
    <DO name="Mov" type="Mov_1" />
    <!--  Controls  -->
    <DO name="Opn" type="Opn_1" />
    <DO name="Cls" type="Cls_1" />
    <DO name="BlkOpn" type="BlkOpn_1" />
    <DO name="BlkCls" type="BlkCls_1" />
  </LNodeType>
- <LNodeType id="TPOS_e" lnClass="TPOS" desc="valve displacement sensor">
    <!--  Common logical node information  -->
    <DO name="Mod" type="Mod_1" />
    <DO name="Beh" type="Beh_1" />
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <!--  Measured values  -->
    <DO name="PosPc" type="PosPc_1" />
    <!--  Settings  -->
    <DO name="SmpRte" type="SmpRte_1" />
  </LNodeType>
- <LNodeType id="TPOS_prs_sw" lnClass="TPOS" desc="Pressure switch">
    <!--  Common logical node information  -->
    <DO name="Mod" type="Mod_1" />
    <DO name="Beh" type="Beh_1" />
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <DO name="SmpRteRng" type="SmpRteRng_1" />
    <!--  Measured values  -->
    <DO name="PosPc" type="PosPc_1" />
    <!--  Settings  -->
    <DO name="SmpRte" type="SmpRte_1" />
  </LNodeType>
- <LNodeType id="TPRS_gauge" lnClass="TPRS" desc="Pressure-gauge">
    <!--  Common logical node information  -->
    <DO name="Mod" type="Mod_1" />
    <DO name="Beh" type="Beh_1" />
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <DO name="SmpRteRng" type="SmpRteRng_4" />
    <!--  Measured values  -->
```

```
    <DO name="Pres" type="Pres_3" />
    <!-- Settings -->
    <DO name="SmpRte" type="SmpRte_4" />
  </LNodeType>
- <LNodeType id="ZMOTa" lnClass="ZMOT" desc="Motor for the pump unit">
    <!-- Common logical node information -->
    <DO name="Mod" type="Mod_1" />
    <DO name="Beh" type="Beh_1" />
    <DO name="Health" type="Health_1" />
    <DO name="NamPlt" type="NamPlt_1" />
    <DO name="OpTmh" type="OpTmh_1" />
    <!-- Controls -->
    <DO name="DExt" type="DExt_1" />
  </LNodeType>
  <!-- Data Objects - IEC 61850-7-3 -->
  <DOType cdc="ASG" id="VlmCap_1" desc="Total Volume capacity" />
  <DOType cdc="ASG" id="xLimSpt_1" desc="Hight limit set point" />
  <DOType cdc="ASG" id="TmpAlmSpt_1" desc="Temperature alarm level
    reached" />
  <DOType cdc="ASG" id="TmpTrSpt_1" desc="Temperature trip level
    reached" />
  <DOType cdc="DPC" id="Operate_1" desc="Operate pump" />
  <DOType cdc="DPC" id="ClsPos_1" desc="Closed end position reached (valve
    cannot move futher)" />
  <DOType cdc="DPC" id="OpnPos_1" desc="Open end position reached (valve
    cannot move futher)" />
  <DOType cdc="DPC" id="Opn_1" desc="Valve to full open position" />
  <DOType cdc="DPC" id="Cls_1" desc="Valve to full closed position" />
  <DOType cdc="ING" id="SmpRteSet_1" desc="Sampling rate setting" />
  <DOType cdc="ING" id="SmpRte_1" desc="Sampling rate setting" />
  <DOType cdc="ING" id="SmpRte_2" desc="Sampling rate setting" />
  <DOType cdc="ING" id="SmpRte_3" desc="Sampling rate setting" />
  <DOType cdc="ING" id="SmpRte_4" desc="Sampling rate setting" />
  <DOType cdc="ING" id="SmpRteRng_1" desc="Available sampling rate
    range" />
  <DOType cdc="ING" id="SmpRteRng_2" desc="Available sampling rate
    range" />
  <DOType cdc="ING" id="SmpRteRng_3" desc="Available sampling rate
    range" />
  <DOType cdc="ING" id="SmpRteRng_4" desc="Available sampling rate
    range" />
  <DOType cdc="INC" id="Mod_1" desc="Mode" />
  <DOType cdc="INS" id="Beh_1" desc="Behaviour" />
  <DOType cdc="INS" id="Health_1" desc="Health" />
  <DOType cdc="INS" id="TnkTyp_1" desc="Type of tank (pressure only, level
    only, both pressure and level)" />
  <DOType cdc="INS" id="OpCnt_1" desc="Operation counter" />
  <DOType cdc="INS" id="OpTmh_1" desc="Operation time" />
  <DOType cdc="LPL" id="NamPlt_1" desc="Name plate" />
  <DOType cdc="MV" id="Pres_1" desc="Pressure in the tank" />
  <DOType cdc="MV" id="LevPc_1" desc="Level in the tank (as percentage of
    full tank level)" />
  <DOType cdc="MV" id="Out_1" desc="Output signal" />
```

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    <DOType cdc="MV" id="SptMem_1" desc="Set point in memory" />
    <DOType cdc="MV" id="Vlm_1" desc="Volume of media in tank" />
    <DOType cdc="MV" id="Tmp_1" desc="Temperature of the media in the
      tank" />
    <DOType cdc="MV" id="Tmp_2" desc="Temperature (C)" />
    <DOType cdc="SAV" id="LevPc_2" desc="Level (percentage)" />
    <DOType cdc="SAV" id="PosPc_1" desc="Position given as percentage of full
      movement" />
    <DOType cdc="SAV" id="Pres_2" desc="Pressure of media [Pa]" />
    <DOType cdc="SAV" id="Pres_3" desc="Pressure of media [Pa]" />
    <DOType cdc="SPC" id="Blk_1" desc="Block operation" />
    <DOType cdc="SPC" id="BlkOpn_1" desc="Block opening of the valve" />
    <DOType cdc="SPC" id="BlkCls_1" desc="Block closing of the valve" />
    <DOType cdc="SPC" id="DExt_1" desc="De-excitation" />
    <DOType cdc="SPS" id="BlkSt_2" desc="The pump is blocked from
      operation" />
    <DOType cdc="SPS" id="xLim_1" desc="Limit reached" />
    <DOType cdc="SPS" id="Op_1" desc="Level of action reached" />
    <DOType cdc="SPS" id="ACAlm_1" desc="AC supply failure (fuse or other
      problem)" />
    <DOType cdc="SPS" id="ACAlm_2" desc="AC supply failure (fuse or other
      problem)" />
    <DOType cdc="SPS" id="Alm_1" desc="Temperature alarm level reached" />
    <DOType cdc="SPS" id="Trip_1" desc="Temperature trip level reached" />
    <DOType cdc="SPS" id="MotPro_1" desc="Motor protection tripped" />
    <DOType cdc="SPS" id="MotPro_2" desc="Motor protection tripped" />
    <DOType cdc="SPS" id="FilAlm_1" desc="Filter alarm" />
    <DOType cdc="SPS" id="Loc_1" desc="Local operation selected" />
    <DOType cdc="SPS" id="Mov_1" desc="Valve is moving" />
    <DOType cdc="SPS" id="Stuck_1" desc="Valve is blocked (cannot move from
      present position)" />
  </DataTypeTemplates>
</SCL>
```