```
<?xml version="1.0" encoding="UTF-8" ?>
- <SCL xmlns="http://www.iec.ch/61850/2006/SCL"</pre>
   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 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</P>
        </Address>
       </ConnectedAP>
     </SubNetwork>
   </Communication>
 - <IED name="IEDairOilTNK" configVersion="1" desc="IED de los tanques de aire y</p>
     aceite" 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"</pre>
        rptID="Dvn" 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" IdName="LD1tank" desc="Air oil pressure-tanks">
          <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
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<LN InType="KTNK air oil" inst="2" InClass="KTNK" prefix="Pa "
     desc="(15) Air-oil pressure-tank" />
   <LN InType="KVLV_aut_contr" inst="15" InClass="KVLV"</pre>
     prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
   <LN InType="TLEV_gauge" inst="2" InClass="TLEV" prefix="LvI_"</pre>
     desc="(18) Float level gauge" />
   <LN InType="TLEV_gauge" inst="3" InClass="TLEV" prefix="LvI_"</pre>
     desc="(18) Float level gauge" />
   <LN InType="TPOS_prs_sw" inst="11" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DB) Pressure-switch DB" />
   <LN InType="TPOS_prs_sw" inst="12" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DC) Pressure-switch DC" />
   <LN InType="TPOS_prs_sw" inst="13" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DD) Pressure-switch DD" />
   <LN InType="TPOS_prs_sw" inst="14" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LE) Pressure-switch LE" />
   <LN InType="TPOS_prs_sw" inst="15" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LF1) Pressure-switch LF1" />
   <LN InType="TPOS_prs_sw" inst="16" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LF2) Pressure-switch LF2" />
   <LN InType="TPRS_trans" inst="4" InClass="TPRS" prefix="Pa_"</pre>
     desc="(EE) Pressure transmitter" />
   <LN InType="KVLV_relief" inst="16" InClass="KVLV" prefix="Pa_"</pre>
     desc="(20) Relief valve" />
   <LN InType="KVLV_solenoid_operated" inst="17" InClass="KVLV"</pre>
     prefix="Pa_" desc="(BE) Solenoid valve for automatic
     compressed air make-up" />
   <LN InType="TPRS_gauge" inst="5" InClass="TPRS" prefix="Pa_"</pre>
     desc="(21) Pressure-gauge" />
  </LDevice>
- <LDevice inst="2" IdName="LD2tank" desc="Air pressure tanks">
   <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
   <LN InType="KTNK air oil" inst="3" InClass="KTNK" prefix="Pa "
     desc="(15) Air-oil pressure-tank" />
   <LN InType="KVLV_aut_contr" inst="18" InClass="KVLV"</pre>
     prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
   <LN InType="TLEV_gauge" inst="4" InClass="TLEV" prefix="LvI_"</pre>
     desc="(18) Float level gauge" />
   <LN InType="TLEV_gauge" inst="5" InClass="TLEV" prefix="LvI_"</pre>
     desc="(18) Float level gauge" />
   <LN InType="TPOS_prs_sw" inst="17" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DB) Pressure-switch DB" />
   <LN InType="TPOS_prs_sw" inst="18" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DC) Pressure-switch DC" />
   <LN InType="TPOS_prs_sw" inst="19" InClass="TPOS" prefix="Pa_"</pre>
     desc="(DD) Pressure-switch DD" />
   <LN InType="TPOS_prs_sw" inst="20" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LE) Pressure-switch LE" />
   <LN InType="TPOS_prs_sw" inst="21" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LF1) Pressure-switch LF1" />
   <LN InType="TPOS_prs_sw" inst="22" InClass="TPOS" prefix="Pa_"</pre>
     desc="(LF2) Pressure-switch LF2" />
   <LN InType="TPRS_trans" inst="6" InClass="TPRS" prefix="Pa_"</pre>
     desc="(EE) Pressure transmitter" />
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<LN InType="KVLV_relief" inst="19" InClass="KVLV" prefix="Pa_"</pre>
          desc="(20) Relief valve" />
         <LN InType="KVLV_solenoid_operated" inst="20" InClass="KVLV"</pre>
          prefix="Pa_" desc="(BE) Solenoid valve for automatic
          compressed air make-up" />
         <LN InType="TPRS_gauge" inst="7" InClass="TPRS" prefix="Pa_"</pre>
          desc="(21) Pressure-gauge" />
       </LDevice>
     - <LDevice inst="3" IdName="LD3tank" desc="Air oil pressure-tanks">
         <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
         <LN InType="KTNK_air_oil" inst="4" InClass="KTNK" prefix="Pa_"</pre>
          desc="(15) Air-oil pressure-tank" />
         <LN InType="KVLV_aut_contr" inst="21" InClass="KVLV"</pre>
          prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
         <LN InType="TLEV_gauge" inst="6" InClass="TLEV" prefix="LvI_"</pre>
          desc="(18) Float level gauge" />
         <LN InType="TLEV_gauge" inst="7" InClass="TLEV" prefix="LvI_"</pre>
          desc="(18) Float level gauge" />
         <LN InType="TPOS_prs_sw" inst="23" InClass="TPOS" prefix="Pa_"
          desc="(DB) Pressure-switch DB" />
         <LN InType="TPOS_prs_sw" inst="24" InClass="TPOS" prefix="Pa_"</pre>
          desc="(DC) Pressure-switch DC" />
         <LN InType="TPOS_prs_sw" inst="25" InClass="TPOS" prefix="Pa_"</pre>
          desc="(DD) Pressure-switch DD" />
         <LN InType="TPOS_prs_sw" inst="26" InClass="TPOS" prefix="Pa_"
          desc="(LE) Pressure-switch LE" />
         <LN InType="TPOS_prs_sw" inst="27" InClass="TPOS" prefix="Pa_"</pre>
          desc="(LF1) Pressure-switch LF1" />
         <LN InType="TPOS_prs_sw" inst="28" InClass="TPOS" prefix="Pa_"
          desc="(LF2) Pressure-switch LF2" />
         <LN InType="TPRS_trans" inst="8" InClass="TPRS" prefix="Pa_"</pre>
          desc="(EE) Pressure transmitter" />
         <LN InType="KVLV_relief" inst="22" InClass="KVLV" prefix="Pa_"</pre>
          desc="(20) Relief valve" />
         <LN InType="KVLV_solenoid_operated" inst="23" InClass="KVLV"</pre>
          prefix="Pa " desc="(BE) Solenoid valve for automatic
          compressed air make-up" />
         <LN InType="TPRS_gauge" inst="9" InClass="TPRS" prefix="Pa_"</pre>
          desc="(21) Pressure-gauge" />
       </LDevice>
     </Server>
   </AccessPoint>
  </IED>
- <DataTypeTemplates>
 - <LNodeType id="LLN0_1" InClass="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="KTNK_air_oil" InClass="KTNK" desc="Air-oil pressure tank">
     <!-- Common logical node information -->
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<DO name="Beh" type="Beh 1" />
   <DO name="Health" type="Health_1" />
   <DO name="NamPlt" type="NamPlt_1" />
   <!-- Status information -->
   <DO name="TnkTyp" type="TnkTyp_1" />
   <!-- Settings
                 -->
   <DO name="VImCap" type="VImCap_1" />
   <!-- Measured values -->
   <DO name="Pres" type="Pres_1" />
   <DO name="LevPc" type="LevPc_1" />
   <DO name="Vlm" type="Vlm_1" />
   <DO name="Tmp" type="Tmp_1" />
 </LNodeType>
- <LNodeType id="KVLV_solenoid_operated" InClass="KVLV" desc="Solenoid</p>
   operated 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" />
   <DO name="Stuck" type="Stuck_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="KVLV_relief" InClass="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="KVLV_aut_contr" InClass="KVLV" desc="Automatic controlled</p>
   isolating valve">
   <!-- Common logical node information -->
   <DO name="Mod" type="Mod_1" />
```

<DO name="Mod" type="Mod\_1" />

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<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="TLEV_gauge" InClass="TLEV" desc="Level 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="NamPit" type="NamPit_1" />
   <!-- Measured values -->
   <DO name="LevPc" type="LevPc 2" />
   <DO name="SmpRteSet" type="SmpRteSet_1" />
 </LNodeType>
- <LNodeType id="TPOS_prs_sw" InClass="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_trans" InClass="TPRS" desc="Pressure transmitter">
   <!-- 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_2" />
   <!-- Measured values -->
   <DO name="Pres" type="Pres_2" />
   <!-- Settings
                 -->
   <DO name="SmpRte" type="SmpRte_2" />
 </LNodeType>
- <LNodeType id="TPRS_gauge" InClass="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" />
```

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<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>
<!-- Data Objects - IEC 61850-7-3 -->
<DOType cdc="ASG" id="VImCap_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" />
<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</pre>
<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
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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="ACAIm_1" desc="AC supply failure (fuse or other
     problem)"/>
   <DOType cdc="SPS" id="ACAIm_2" desc="AC supply failure (fuse or other</pre>
     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>
```