```xml
<?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="IEDairOilTNK" configVersion="1" desc="IED de los tanques de aire y
      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"
              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" />
```

```xml
        <LN lnType="KTNK_air_oil" inst="2" lnClass="KTNK" prefix="Pa_"
          desc="(15) Air-oil pressure-tank" />
        <LN lnType="KVLV_aut_contr" inst="15" lnClass="KVLV"
          prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
        <LN lnType="TLEV_gauge" inst="2" lnClass="TLEV" prefix="Lvl_"
          desc="(18) Float level gauge" />
        <LN lnType="TLEV_gauge" inst="3" lnClass="TLEV" prefix="Lvl_"
          desc="(18) Float level gauge" />
        <LN lnType="TPOS_prs_sw" inst="11" lnClass="TPOS" prefix="Pa_"
          desc="(DB) Pressure-switch DB" />
        <LN lnType="TPOS_prs_sw" inst="12" lnClass="TPOS" prefix="Pa_"
          desc="(DC) Pressure-switch DC" />
        <LN lnType="TPOS_prs_sw" inst="13" lnClass="TPOS" prefix="Pa_"
          desc="(DD) Pressure-switch DD" />
        <LN lnType="TPOS_prs_sw" inst="14" lnClass="TPOS" prefix="Pa_"
          desc="(LE) Pressure-switch LE" />
        <LN lnType="TPOS_prs_sw" inst="15" lnClass="TPOS" prefix="Pa_"
          desc="(LF1) Pressure-switch LF1" />
        <LN lnType="TPOS_prs_sw" inst="16" lnClass="TPOS" prefix="Pa_"
          desc="(LF2) Pressure-switch LF2" />
        <LN lnType="TPRS_trans" inst="4" lnClass="TPRS" prefix="Pa_"
          desc="(EE) Pressure transmitter" />
        <LN lnType="KVLV_relief" inst="16" lnClass="KVLV" prefix="Pa_"
          desc="(20) Relief valve" />
        <LN lnType="KVLV_solenoid_operated" inst="17" lnClass="KVLV"
          prefix="Pa_" desc="(BE) Solenoid valve for automatic
          compressed air make-up" />
        <LN lnType="TPRS_gauge" inst="5" lnClass="TPRS" prefix="Pa_"
          desc="(21) Pressure-gauge" />
    </LDevice>
  – <LDevice inst="2" ldName="LD2tank" desc="Air pressure tanks">
      <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
      <LN lnType="KTNK_air_oil" inst="3" lnClass="KTNK" prefix="Pa_"
        desc="(15) Air-oil pressure-tank" />
      <LN lnType="KVLV_aut_contr" inst="18" lnClass="KVLV"
        prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
      <LN lnType="TLEV_gauge" inst="4" lnClass="TLEV" prefix="Lvl_"
        desc="(18) Float level gauge" />
      <LN lnType="TLEV_gauge" inst="5" lnClass="TLEV" prefix="Lvl_"
        desc="(18) Float level gauge" />
      <LN lnType="TPOS_prs_sw" inst="17" lnClass="TPOS" prefix="Pa_"
        desc="(DB) Pressure-switch DB" />
      <LN lnType="TPOS_prs_sw" inst="18" lnClass="TPOS" prefix="Pa_"
        desc="(DC) Pressure-switch DC" />
      <LN lnType="TPOS_prs_sw" inst="19" lnClass="TPOS" prefix="Pa_"
        desc="(DD) Pressure-switch DD" />
      <LN lnType="TPOS_prs_sw" inst="20" lnClass="TPOS" prefix="Pa_"
        desc="(LE) Pressure-switch LE" />
      <LN lnType="TPOS_prs_sw" inst="21" lnClass="TPOS" prefix="Pa_"
        desc="(LF1) Pressure-switch LF1" />
      <LN lnType="TPOS_prs_sw" inst="22" lnClass="TPOS" prefix="Pa_"
        desc="(LF2) Pressure-switch LF2" />
      <LN lnType="TPRS_trans" inst="6" lnClass="TPRS" prefix="Pa_"
        desc="(EE) Pressure transmitter" />
```

```xml
          <LN lnType="KVLV_relief" inst="19" lnClass="KVLV" prefix="Pa_"
            desc="(20) Relief valve" />
          <LN lnType="KVLV_solenoid_operated" inst="20" lnClass="KVLV"
            prefix="Pa_" desc="(BE) Solenoid valve for automatic
            compressed air make-up" />
          <LN lnType="TPRS_gauge" inst="7" lnClass="TPRS" prefix="Pa_"
            desc="(21) Pressure-gauge" />
        </LDevice>
      - <LDevice inst="3" ldName="LD3tank" desc="Air oil pressure-tanks">
          <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
          <LN lnType="KTNK_air_oil" inst="4" lnClass="KTNK" prefix="Pa_"
            desc="(15) Air-oil pressure-tank" />
          <LN lnType="KVLV_aut_contr" inst="21" lnClass="KVLV"
            prefix="Pa_" desc="(17) Automatic controlled isolating valve" />
          <LN lnType="TLEV_gauge" inst="6" lnClass="TLEV" prefix="Lvl_"
            desc="(18) Float level gauge" />
          <LN lnType="TLEV_gauge" inst="7" lnClass="TLEV" prefix="Lvl_"
            desc="(18) Float level gauge" />
          <LN lnType="TPOS_prs_sw" inst="23" lnClass="TPOS" prefix="Pa_"
            desc="(DB) Pressure-switch DB" />
          <LN lnType="TPOS_prs_sw" inst="24" lnClass="TPOS" prefix="Pa_"
            desc="(DC) Pressure-switch DC" />
          <LN lnType="TPOS_prs_sw" inst="25" lnClass="TPOS" prefix="Pa_"
            desc="(DD) Pressure-switch DD" />
          <LN lnType="TPOS_prs_sw" inst="26" lnClass="TPOS" prefix="Pa_"
            desc="(LE) Pressure-switch LE" />
          <LN lnType="TPOS_prs_sw" inst="27" lnClass="TPOS" prefix="Pa_"
            desc="(LF1) Pressure-switch LF1" />
          <LN lnType="TPOS_prs_sw" inst="28" lnClass="TPOS" prefix="Pa_"
            desc="(LF2) Pressure-switch LF2" />
          <LN lnType="TPRS_trans" inst="8" lnClass="TPRS" prefix="Pa_"
            desc="(EE) Pressure transmitter" />
          <LN lnType="KVLV_relief" inst="22" lnClass="KVLV" prefix="Pa_"
            desc="(20) Relief valve" />
          <LN lnType="KVLV_solenoid_operated" inst="23" lnClass="KVLV"
            prefix="Pa_" desc="(BE) Solenoid valve for automatic
            compressed air make-up" />
          <LN lnType="TPRS_gauge" inst="9" lnClass="TPRS" prefix="Pa_"
            desc="(21) Pressure-gauge" />
        </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="KTNK_air_oil" lnClass="KTNK" desc="Air-oil pressure tank">
      <!--  Common logical node information   -->
```

```xml
      <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="TnkTyp" type="TnkTyp_1" />
      <!-- Settings    -->
      <DO name="VlmCap" type="VlmCap_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" lnClass="KVLV" desc="Solenoid
   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" 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="KVLV_aut_contr" lnClass="KVLV" desc="Automatic controlled
   isolating valve">
      <!-- Common logical node information    -->
      <DO name="Mod" type="Mod_1" />
```

```xml
        <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" lnClass="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="NamPlt" type="NamPlt_1" />
        <!-- Measured values    -->
        <DO name="LevPc" type="LevPc_2" />
        <DO name="SmpRteSet" type="SmpRteSet_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_trans" lnClass="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" 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" />
```

```xml
      <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="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" />
  <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
```

```xml
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>
```