```
<?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 hidr\'aulica del regulador de
        velocidad</Text>
    - <History>
        <Hitem when="22/10/2010" revision="1" version="1.0">Empez\'e a
          construir este ICD a partir del ICD del tanque principal.</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="IEDRV" configVersion="1" desc="IED del regulador de velocidad"
      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="LD1" desc="L\'imites de los valores
            t\'ipicos de ajuste">
            <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
            <LN lnType="FLIM_tipical" inst="1" lnClass="FLIM" prefix="Drp_"
              desc="L\'imites del estatismo DROOP temporario de la
              m\'aquina" />
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    <LN lnType="FLIM_tipical" inst="2" lnClass="FLIM" prefix="Reg_"
      desc="L\'imites de la constante de tiempo derivada, Tn" />
    <LN lnType="FLIM_tipical" inst="3" lnClass="FLIM" prefix="Reg_"
      desc="L\'imites de la constante de tiempo del dispositivo
      amortiguador, Td" />
    <LN lnType="FLIM_tipical" inst="4" lnClass="FLIM" prefix="Drp_"
      desc="L\'imites del estatismo DROOP permanente de la
      m\'aquina" />
    <LN lnType="FLIM_tipical" inst="5" lnClass="FLIM" prefix="Reg_"
      desc="L\'imites de la constante de tiempo de la prontitud,
      Tx" />
  </LDevice>
- <LDevice inst="2" ldName="LD2" desc="L\'imites de valores de
    ajuste">
    <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
    <LN lnType="FLIM_tipical" inst="6" lnClass="FLIM" prefix="Spd_"
      desc="L\'imites del selector de velocidad" />
    <LN lnType="FLIM_tipical" inst="7" lnClass="FLIM" prefix="Gv_"
      desc="L\'imites del valor de ajuste de apertura" />
    <LN lnType="FLIM_tipical" inst="8" lnClass="FLIM" prefix="Reg_"
      desc="L\'imites del valor de ajuste de la frecuencia" />
    <LN lnType="FLIM_tipical" inst="9" lnClass="FLIM" prefix="Hz_"
      desc="L\'imites de la frecuencia de referencia" />
    <LN lnType="FLIM_tipical" inst="10" lnClass="FLIM" prefix="Pos_"
      desc="L\'imites del control limitador de apertura" />
  </LDevice>
- <LDevice inst="3" ldName="LD3" desc="Valores t\'ipicos de ajuste">
    <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
    <LN lnType="FSPT_1" inst="1" lnClass="FSPT" prefix="Drp_"
      desc="Estatismo DROOP temporario de la m\'aquina" />
    <LN lnType="FSPT_1" inst="2" lnClass="FSPT" prefix="Reg_"
      desc="Constante de tiempo derivada, Tn" />
    <LN lnType="FSPT_1" inst="3" lnClass="FSPT" prefix="Reg_"
      desc="Constante de tiempo del dispositivo amortiguador, Td" />
    <LN lnType="FSPT_1" inst="4" lnClass="FSPT" prefix="Drp_"
      desc="Estatismo DROOP permanente de la m\'aquina" />
    <LN lnType="FSPT_1" inst="5" lnClass="FSPT" prefix="Reg_"
      desc="Constante de tiempo de la prontitud, Tx" />
  </LDevice>
- <LDevice inst="4" ldName="LD4" desc="Par\'ametros configurables del
    regulador de velocidad">
    <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
    <LN lnType="FSPT_1" inst="6" lnClass="FSPT" prefix="V_"
      desc="Bias de tensi\'on de puesta en marcha" />
    <LN lnType="FSPT_1" inst="7" lnClass="FSPT" prefix="Hz_"
      desc="Frecuencia de referencia" />
    <LN lnType="FSPT_1" inst="8" lnClass="FSPT" prefix="Spd_"
      desc="Selector de velocidad" />
    <LN lnType="FSPT_1" inst="9" lnClass="FSPT" prefix="Gv_"
      desc="Valor de ajuste de apertura" />
    <LN lnType="FSPT_1" inst="10" lnClass="FSPT" prefix="Hz_"
      desc="Bias de velocidad sin carga" />
    <LN lnType="FSPT_1" inst="11" lnClass="FSPT" prefix="V_"
      desc="Bias de tensi\'on de velocidad sin carga" />
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        <LN lnType="FSPT_1" inst="12" lnClass="FSPT" prefix="Lim_"
          desc="Limitador de apertura" />
        <LN lnType="FSPT_1" inst="13" lnClass="FSPT" prefix="Hz_"
          desc="Control frecuencia de carga" />
        <LN lnType="FSPT_1" inst="14" lnClass="FSPT" prefix="Reg_"
          desc="Valor de ajuste de la frecuencia" />
      </LDevice>
    - <LDevice inst="5" ldName="LD5" desc="Funci\'on PID">
        <LN0 lnType="LLN0_1" inst="" lnClass="LLN0" />
        <LN lnType="FPID_reg" inst="1" lnClass="FPID" desc="Funci\'on
          PID" />
      </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_tipical" lnClass="FLIM" desc="Limits of typical values">
      <!-- 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 type="HiLim_typical" name="HiLim" desc="High limit reached (input
        signal above limit)" />
      <DO type="LoLim_typical" name="LoLim" desc="Low limit reached (input
        signal below limit)" />
      <!-- Measured values  -->
      <DO type="Out_typical" name="Out" desc="Output signal" />
      <!-- Settings  -->
      <DO type="HiLimSpt_typical" name="HiLimSpt" desc="High limit set
        point" />
      <DO type="LoLimSpt_typical" name="LoLimSpt" desc="Minimum limit set
        point" />
    </LNodeType>
  - <LNodeType id="FSPT_1" lnClass="FSPT" desc="Set point control function">
      <!-- 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 value  -->
      <DO type="SptMem_1" name="SptMem" />
    </LNodeType>
  - <LNodeType id="FPID_reg" lnClass="FPID" desc="PID Function">
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    <!-- 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="Out_pid" name="Out" />
    <DO type="PAct_pid" name="PAct" />
    <DO type="IAct_pid" name="IAct" />
    <DO type="DAct_pid" name="DAct" />
    <DO type="P_pid" name="P" />
    <DO type="I_pid" name="I" />
    <DO type="D_pid" name="D" />
    <!-- Settings  -->
  - <!--
       DO type="PidAlg_pid" name="PidAlg"/>
                              <DO type="Kp_pid" name="Kp"/>
                              <DO type="Kl_pid" name="Kl"/
    -->
  </LNodeType>
- <LNodeType id="IHMI_reg" lnClass="IHMI" desc="Indicadores de
    par\'ametros PID, frecuencia de la unidad, fallas y volt\'imetro">
    <!-- 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="TRTN_1" lnClass="TRTN" desc="Tacometer">
    <!-- 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 type="SmpRteRng_1" name="SmpRteRng" />
    <!-- Measured values  -->
    <DO type="Spd_1" name="Hz" />
    <!-- Settings  -->
    <DO type="SmpRte_1" name="SmpRte" />
  </LNodeType>
- <LNodeType id="HSPD_1" lnClass="HSPD">
    <!-- 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 type="SmpRteRng_1" name="SmpRteRng" />
    <!-- TODO: falta completar bien  -->
  </LNodeType>
  <!--   Data Objects - IEC 61850-7-3   -->
  <DOType cdc="ASG" id="HiLimSpt_typical" />
  <DOType cdc="ASG" id="LoLimSpt_typical" />
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    <DOType cdc="ASG" id="Kp_pid" desc="Proportional gain" />
    <DOType cdc="ASG" id="Kl_pid" desc="Integral gain" />
    <DOType cdc="ING" id="PidAlg_pid" desc="PID" />
    <DOType cdc="ING" id="SmpRte_1" desc="Sampling rate setting" />
    <DOType cdc="ING" id="SmpRteRng_1" 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="LPL" id="NamPlt_1" desc="Name plate" />
    <DOType cdc="MV" id="Out_typical" />
    <DOType cdc="MV" id="SptMem_1" desc="Set point in memory" />
    <DOType cdc="MV" id="Out_pid" desc="PID output" />
    <DOType cdc="MV" id="PAct_pid" desc="Proportional action" />
    <DOType cdc="MV" id="IAct_pid" desc="Integral action" />
    <DOType cdc="MV" id="DAct_pid" desc="Derivative action" />
    <DOType cdc="MV" id="P_pid" desc="P output" />
    <DOType cdc="MV" id="I_pid" desc="I output" />
    <DOType cdc="MV" id="D_pid" desc="D output" />
    <DOType cdc="SPS" id="HiLim_typical" />
    <DOType cdc="SPS" id="LoLim_typical" />
    <DOType cdc="SAV" id="Spd_1" desc="Rotational speed (Hz)" />
  </DataTypeTemplates>
</SCL>
```