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<?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 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</P>
         </Address>
       </ConnectedAP>
     </SubNetwork>
   </Communication>
 - <IED name="IEDRV" configVersion="1" desc="IED del regulador de velocidad"</p>
     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"</p>
         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="LD1" desc="L\'imites de los valores</pre>
          t\'ipicos de ajuste">
          <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
          <LN InType="FLIM tipical" inst="1" InClass="FLIM" prefix="Drp "</pre>
            desc="L\'imites del estatismo DROOP temporario de la
            m\'aquina" />
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<LN InType="FLIM tipical" inst="2" InClass="FLIM" prefix="Reg "
     desc="L\'imites de la constante de tiempo derivada, Tn" />
   <LN InType="FLIM_tipical" inst="3" InClass="FLIM" prefix="Reg_'</pre>
     desc="L\'imites de la constante de tiempo del dispositivo
     amortiguador, Td" />
   <LN InType="FLIM tipical" inst="4" InClass="FLIM" prefix="Drp "</pre>
     desc="L\'imites del estatismo DROOP permanente de la
     m\'aquina" />
   <LN InType="FLIM_tipical" inst="5" InClass="FLIM" prefix="Reg_"</pre>
     desc="L\'imites de la constante de tiempo de la prontitud,
     Tx" />
  </LDevice>
- <LDevice inst="2" IdName="LD2" desc="L\'imites de valores de</p>
   <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
   <LN InType="FLIM_tipical" inst="6" InClass="FLIM" prefix="Spd "</pre>
     desc="L\'imites del selector de velocidad" />
   <LN InType="FLIM_tipical" inst="7" InClass="FLIM" prefix="Gv_"</pre>
     desc="L\'imites del valor de ajuste de apertura" />
   <LN InType="FLIM_tipical" inst="8" InClass="FLIM" prefix="Reg_"</pre>
     desc="L\'imites del valor de ajuste de la frecuencia" />
   <LN InType="FLIM_tipical" inst="9" InClass="FLIM" prefix="Hz_"</pre>
     desc="L\'imites de la frecuencia de referencia" />
   <LN InType="FLIM_tipical" inst="10" InClass="FLIM" prefix="Pos_"</pre>
     desc="L\'imites del control limitador de apertura" />
  </LDevice>
- <LDevice inst="3" IdName="LD3" desc="Valores t\'ipicos de ajuste">
   <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
   <LN InType="FSPT 1" inst="1" InClass="FSPT" prefix="Drp "</pre>
     desc="Estatismo DROOP temporario de la m\'aquina" />
   <LN InType="FSPT_1" inst="2" InClass="FSPT" prefix="Reg_'</pre>
     desc="Constante de tiempo derivada, Tn" />
   <LN InType="FSPT_1" inst="3" InClass="FSPT" prefix="Reg_"</pre>
     desc="Constante de tiempo del dispositivo amortiquador, Td" />
   <LN InType="FSPT_1" inst="4" InClass="FSPT" prefix="Drp_"</pre>
     desc="Estatismo DROOP permanente de la m\'aquina" />
   <LN InType="FSPT_1" inst="5" InClass="FSPT" prefix="Reg_"</pre>
     desc="Constante de tiempo de la prontitud, Tx" />
  </LDevice>
- <LDevice inst="4" IdName="LD4" desc="Par\'ametros configurables del</p>
   regulador de velocidad">
   <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
   <LN InType="FSPT_1" inst="6" InClass="FSPT" prefix="V_"</pre>
     desc="Bias de tensi\'on de puesta en marcha" />
   <LN InType="FSPT_1" inst="7" InClass="FSPT" prefix="Hz_"</pre>
     desc="Frecuencia de referencia" />
   <LN InType="FSPT_1" inst="8" InClass="FSPT" prefix="Spd_"</pre>
     desc="Selector de velocidad" />
   <LN InType="FSPT 1" inst="9" InClass="FSPT" prefix="Gv "</pre>
     desc="Valor de ajuste de apertura" />
   <LN InType="FSPT_1" inst="10" InClass="FSPT" prefix="Hz_"</pre>
     desc="Bias de velocidad sin carga" />
   <LN InType="FSPT_1" inst="11" InClass="FSPT" prefix="V_"</pre>
     desc="Bias de tensi\'on de velocidad sin carga" />
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<LN InType="FSPT 1" inst="12" InClass="FSPT" prefix="Lim "</pre>
          desc="Limitador de apertura" />
        <LN InType="FSPT_1" inst="13" InClass="FSPT" prefix="Hz_"</pre>
          desc="Control frecuencia de carga" />
        <LN InType="FSPT_1" inst="14" InClass="FSPT" prefix="Reg_"</pre>
          desc="Valor de ajuste de la frecuencia" />
       </LDevice>
     - <LDevice inst="5" IdName="LD5" desc="Funci\'on PID">
        <LN0 InType="LLN0_1" inst="" InClass="LLN0" />
        <LN InType="FPID_reg" inst="1" InClass="FPID" desc="Funci\'on"</pre>
          PID"/>
       </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="FLIM_tipical" InClass="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" InClass="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"/</pre>
   -->
  </LNodeType>
- <LNodeType id="IHMI req" InClass="IHMI" desc="Indicadores de</p>
   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" InClass="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" InClass="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="NamPit" type="NamPit_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>
```