S&A - Lab10 - I005

Turma 1

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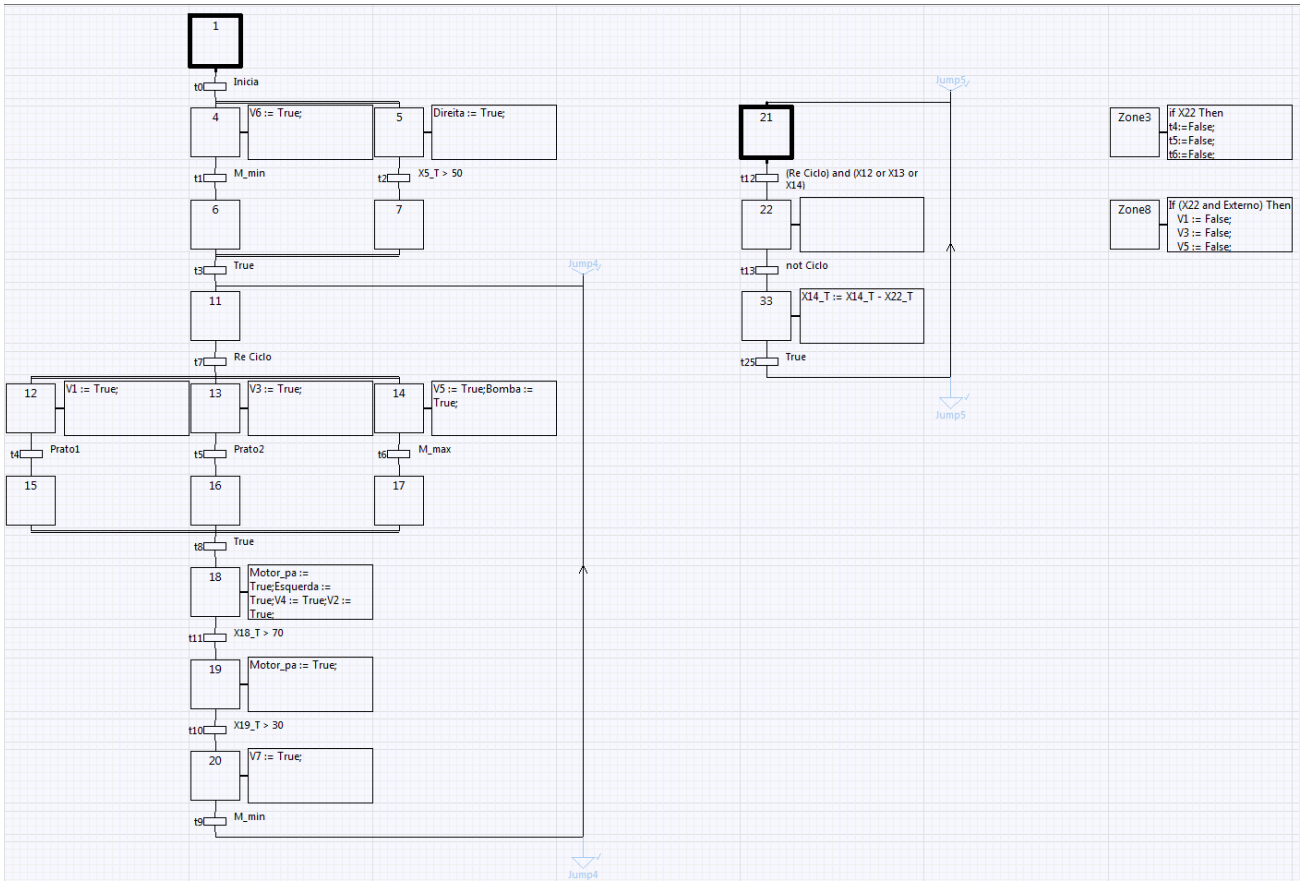
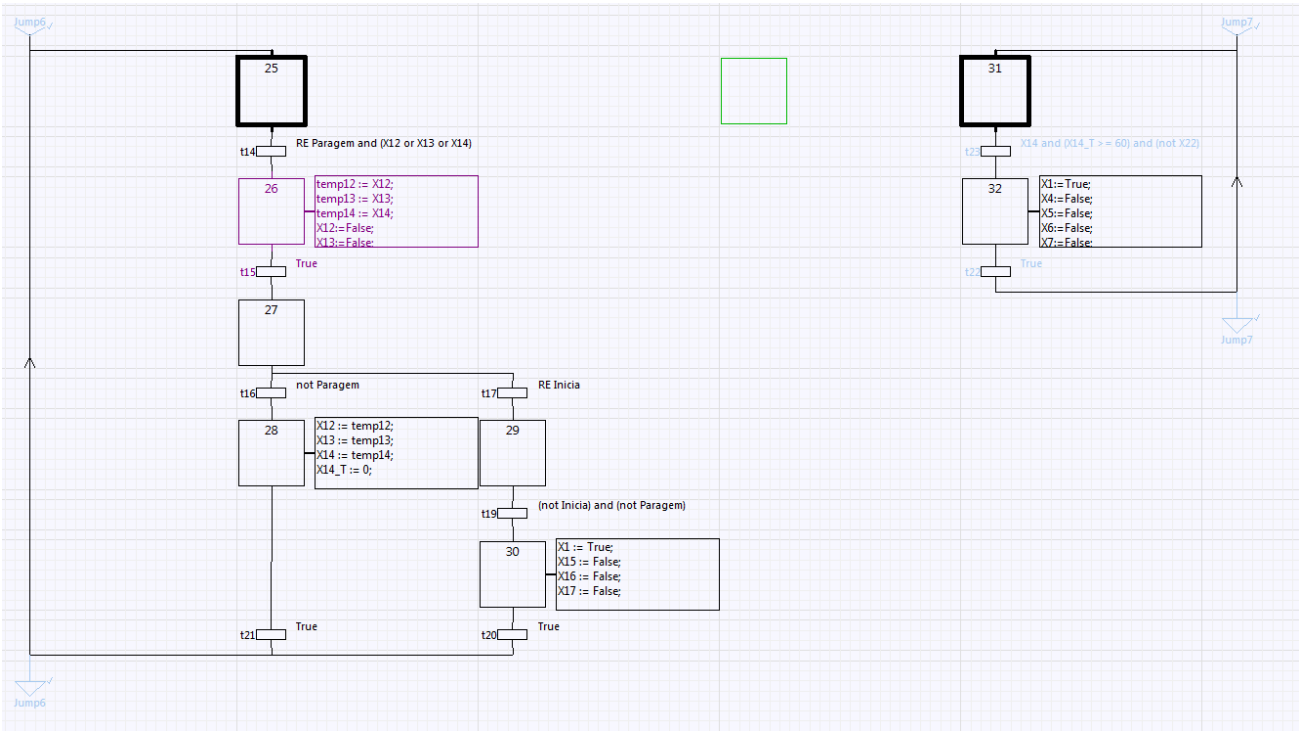
Contents

1 Printscreens





2 Código

```
////////////////////////////////////////////////////////////
// FEUPAutom - 5.4.0.68 -
// Code Automatically Generated:20-04-2018 16:26:02
////////////////////////////////////////////////////////////

//#######################################//
//################ Page 3 ###############//
//#######################################//

////////////////////////////////////////////////////////////
////////////// If boot => Set Initial Steps ////////////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////////

  If (sw0=0) Then
  End_If;
if (sw0>0) then  // ** Prevent evolution in initial cycle

////////////////////////////////////////////////////////////
///////////////// Calc Fired Transitions ///////////////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////////

end_if; //** Prevent evolution in initial cycle

////////////////////////////////////////////////////////////
///////////////// ReSet Steps Above fired Tr ///////////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////////
```

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////////////////////////////////////////////////////////
///////////////// Set Steps below fired Tr /////////////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////


////////////////////////////////////////////////////////
////////// Unset all Outputs (once for all pages) //////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////

  Iluminar:=False;
  Esquerda:=False;
  Direita:=False;
  Bomba:=False;
  Motor_pa:=False;
  V7:=False;
  V6:=False;
  V5:=False;
  V4:=False;
  V3:=False;
  V2:=False;
  V1:=False;
  Q12:=False;
  Q13:=False;
  Q14:=False;
  Q15:=False;
  Q16:=False;
  Q17:=False;
  Q18:=False;
  Q19:=False;
  Q20:=False;
  Q21:=False;
  Q22:=False;
  Q23:=False;
  Q24:=False;
  Q25:=False;
  Q26:=False;
  Q27:=False;
  Q28:=False;
  Q29:=False;
  Q30:=False;
  Q31:=False;
  Q32:=False;
  Q33:=False;
  Q34:=False;
  Q35:=False;
  Q36:=False;
  Q37:=False;
  Q38:=False;
  Q39:=False;
```

```
  Q40:=False;
  Q41:=False;
  Q42:=False;
  Q43:=False;
  Q44:=False;
  Q45:=False;
  Q46:=False;
  Q47:=False;

////////////////////////////////////////////////////////
///// If step active increment MW timer of step @ %s16 /////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////


////////////////////////////////////////////////////////
//////// If step active, execute its action code ///////////
//######################## Page 3 ########################//
////////////////////////////////////////////////////////


//#####################################//
//################ Page 2 ##############//
//#####################################//

////////////////////////////////////////////////////////
////////////// If boot => Set Initial Steps /////////////////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////

  If (sw0=0) Then
  End_If;
if (sw0>0) then  // ** Prevent evolution in initial cycle

////////////////////////////////////////////////////////
///////////////// Calc Fired Transitions ///////////////////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////

end_if; //** Prevent evolution in initial cycle

////////////////////////////////////////////////////////
///////////////// ReSet Steps Above fired Tr ///////////////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////


////////////////////////////////////////////////////////
///////////////// Set Steps below fired Tr /////////////////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////
```

```
////////////////////////////////////////////////////////
///// If step active increment MW timer of step @ %s16 /////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////


////////////////////////////////////////////////////////
//////// If step active, execute its action code ///////////
//######################## Page 2 ########################//
////////////////////////////////////////////////////////


//#####################################//
//################ Page 1 ##############//
//#####################################//

////////////////////////////////////////////////////////
////////////// If boot => Set Initial Steps /////////////////
//######################## Page 1 ########################//
////////////////////////////////////////////////////////

  If (sw0=0) Then
  // ObjIdx=37 => INI_Step "X25"
    X25 := True;
  // ObjIdx=52 => INI_Step "X31"
    X31 := True;
  End_If;
if (sw0>0) then  // ** Prevent evolution in initial cycle

////////////////////////////////////////////////////////
///////////////// Calc Fired Transitions ///////////////////
//######################## Page 1 ########################//
////////////////////////////////////////////////////////

// ObjIdx=38 => Transition "t14"
  // Steps Above: id=37 => X25 ;
  // Steps Below: id=39 => X26 ;
  t14 :=  X25 AND  (RE Paragem and (X12 or X13 or X14));
// ObjIdx=40 => Transition "t15"
  // Steps Above: id=39 => X26 ;
  // Steps Below: id=41 => X27 ;
  t15 :=  X26 AND  (True);
// ObjIdx=42 => Transition "t16"
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=44 => X28 ;
  t16 :=  X27 AND  (not Paragem);
// ObjIdx=43 => Transition "t17"
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=45 => X29 ;
  t17 :=  X27 AND  (RE Inicia);
// ObjIdx=46 => Transition "t21"
  // Steps Above: id=44 => X28 ;
  // Steps Below: id=37 => X25 ;
```

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  t21 :=  X28 AND  (True);
// ObjIdx=47 => Transition "t19"
  // Steps Above: id=45 => X29 ;
  // Steps Below: id=48 => X30 ;
  t19 :=  X29 AND  ((not Inicia) and (not Paragem));
// ObjIdx=49 => Transition "t20"
  // Steps Above: id=48 => X30 ;
  // Steps Below: id=37 => X25 ;
  t20 :=  X30 AND  (True);
// ObjIdx=56 => Transition "t22"
  // Steps Above: id=53 => X32 ;
  // Steps Below: id=52 => X31 ;
  t22 :=  X32 AND  (True);
// ObjIdx=57 => Transition "t23"
  // Steps Above: id=52 => X31 ;
  // Steps Below: id=53 => X32 ;
  t23 :=  X31 AND  (X14 and (X14_T >= 60) and (not X22));
end_if; //** Prevent evolution in initial cycle

////////////////////////////////////////////////////////
///////////////// ReSet Steps Above fired Tr ///////////////
//######################## Page 1 ########################//
////////////////////////////////////////////////////////

// ObjIdx=38 => Transition "t14"
  // Steps Above: id=37 => X25 ;
  // Steps Below: id=39 => X26 ;
  If (t14) Then
     X25:=False;
  End_If;
// ObjIdx=40 => Transition "t15"
  // Steps Above: id=39 => X26 ;
  // Steps Below: id=41 => X27 ;
  If (t15) Then
     X26:=False;
  End_If;
// ObjIdx=42 => Transition "t16"
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=44 => X28 ;
  If (t16) Then
     X27:=False;
  End_If;
// ObjIdx=43 => Transition "t17"
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=45 => X29 ;
  If (t17) Then
     X27:=False;
  End_If;
// ObjIdx=46 => Transition "t21"
  // Steps Above: id=44 => X28 ;
  // Steps Below: id=37 => X25 ;
  If (t21) Then
     X28:=False;
```

```
  End_If;
// ObjIdx=47 => Transition "t19"
  // Steps Above: id=45 => X29 ;
  // Steps Below: id=48 => X30 ;
  If (t19) Then
     X29:=False;
  End_If;
// ObjIdx=49 => Transition "t20"
  // Steps Above: id=48 => X30 ;
  // Steps Below: id=37 => X25 ;
  If (t20) Then
     X30:=False;
  End_If;
// ObjIdx=56 => Transition "t22"
  // Steps Above: id=53 => X32 ;
  // Steps Below: id=52 => X31 ;
  If (t22) Then
     X32:=False;
  End_If;
// ObjIdx=57 => Transition "t23"
  // Steps Above: id=52 => X31 ;
  // Steps Below: id=53 => X32 ;
  If (t23) Then
     X31:=False;
  End_If;

////////////////////////////////////////////////////////
///////////////// Set Steps below fired Tr /////////////////
//######################## Page 1 ########################//
////////////////////////////////////////////////////////

// ObjIdx=38 => Transition "t14"
  // Steps Above: id=37 => X25 ;
  // Steps Below: id=39 => X26 ;
  If (t14) Then
    X26 := True;
    X26_T := 0;
  End_If;
// ObjIdx=40 => Transition "t15"
  // Steps Above: id=39 => X26 ;
  // Steps Below: id=41 => X27 ;
  If (t15) Then
    X27 := True;
    X27_T := 0;
  End_If;
// ObjIdx=42 => Transition "t16"
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=44 => X28 ;
  If (t16) Then
    X28 := True;
    X28_T := 0;
  End_If;
// ObjIdx=43 => Transition "t17"
```

```
  // Steps Above: id=41 => X27 ;
  // Steps Below: id=45 => X29 ;
  If (t17) Then
    X29 := True;
    X29_T := 0;
  End_If;
// ObjIdx=46 => Transition "t21"
  // Steps Above: id=44 => X28 ;
  // Steps Below: id=37 => X25 ;
  If (t21) Then
    X25 := True;
    X25_T := 0;
  End_If;
// ObjIdx=47 => Transition "t19"
  // Steps Above: id=45 => X29 ;
  // Steps Below: id=48 => X30 ;
  If (t19) Then
    X30 := True;
    X30_T := 0;
  End_If;
// ObjIdx=49 => Transition "t20"
  // Steps Above: id=48 => X30 ;
  // Steps Below: id=37 => X25 ;
  If (t20) Then
    X25 := True;
    X25_T := 0;
  End_If;
// ObjIdx=56 => Transition "t22"
  // Steps Above: id=53 => X32 ;
  // Steps Below: id=52 => X31 ;
  If (t22) Then
    X31 := True;
    X31_T := 0;
  End_If;
// ObjIdx=57 => Transition "t23"
  // Steps Above: id=52 => X31 ;
  // Steps Below: id=53 => X32 ;
  If (t23) Then
    X32 := True;
    X32_T := 0;
  End_If;

////////////////////////////////////////////////////////
///// If step active increment MW timer of step @ %s16 /////
//######################## Page 1 ########################//
////////////////////////////////////////////////////////

  // ObjIdx=37 => Step "X25"
  If (s16) and (X25) Then
    X25_T := X25_T+1;
  end_if;
  // ObjIdx=39 => Step "X26"
  If (s16) and (X26) Then
```

```
    X26_T := X26_T+1;
  end_if;
  // ObjIdx=41 => Step "X27"
  If (s16) and (X27) Then
    X27_T := X27_T+1;
  end_if;
  // ObjIdx=44 => Step "X28"
  If (s16) and (X28) Then
    X28_T := X28_T+1;
  end_if;
  // ObjIdx=45 => Step "X29"
  If (s16) and (X29) Then
    X29_T := X29_T+1;
  end_if;
  // ObjIdx=48 => Step "X30"
  If (s16) and (X30) Then
    X30_T := X30_T+1;
  end_if;
  // ObjIdx=52 => Step "X31"
  If (s16) and (X31) Then
    X31_T := X31_T+1;
  end_if;
  // ObjIdx=53 => Step "X32"
  If (s16) and (X32) Then
    X32_T := X32_T+1;
  end_if;

////////////////////////////////////////////////////////////
//////// If step active, execute its action code ///////////
//#######################  Page 1 ########################//
////////////////////////////////////////////////////////////

  // ObjIdx=39 => Step "X26" (code...)
  If X26 Then
    temp12 := X12;

    temp13 := X13;

    temp14 := X14;



    X12:=False;

    X13:=False;

    X14:=False;



  End_If;
  // ObjIdx=44 => Step "X28" (code...)
  If X28 Then
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  X12 := temp12;

  X13 := temp13;

  X14 := temp14;

  X14_T := 0;

End_If;
// ObjIdx=48 => Step "X30" (code...)
If X30 Then
  X1 := True;

  X15 := False;

  X16 := False;

  X17 := False;

End_If;
// ObjIdx=53 => Step "X32" (code...)
If X32 Then
  X1:=True;

  X4:=False;

  X5:=False;

  X6:=False;

  X7:=False;

  X11:=False;

  X12:=False;

  X13:=False;

  X14:=False;

  X15:=False;

  X16:=False;

  X17:=False;

  X18:=False;

  X19:=False;

  X20:=False;

  X21:=True;
```

```
    X22:=False;



  End_If;

//#######################################//
//################ Page 0 ##############//
//#######################################//

////////////////////////////////////////////////////////
////////////// If boot => Set Initial Steps ////////////////
//######################## Page 0 ########################//
////////////////////////////////////////////////////////

  If (sw0=0) Then
  // ObjIdx=0 => INI_Step "X1"
    X1 := True;
  // ObjIdx=29 => INI_Step "X21"
    X21 := True;
  End_If;
if (sw0>0) then  // ** Prevent evolution in initial cycle

////////////////////////////////////////////////////////
///////////////// Calc Fired Transitions //////////////////
//######################## Page 0 ########################//
////////////////////////////////////////////////////////

// ObjIdx=1 => Transition "t0"
  // Steps Above: id=0 => X1 ;
  // Steps Below: id=2 => X4 ;id=3 => X5 ;
  t0 :=  X1 AND  (Inicia);
// ObjIdx=6 => Transition "t1"
  // Steps Above: id=2 => X4 ;
  // Steps Below: id=4 => X6 ;
  t1 :=  X4 AND  (M_min);
// ObjIdx=7 => Transition "t2"
  // Steps Above: id=3 => X5 ;
  // Steps Below: id=5 => X7 ;
  t2 :=  X5 AND  (X5_T > 50);
// ObjIdx=8 => Transition "t3"
  // Steps Above: id=4 => X6 ;id=5 => X7 ;
  // Steps Below: id=9 => X11 ;
  t3 :=  X6 AND  X7 AND  (True);
// ObjIdx=16 => Transition "t4"
  // Steps Above: id=10 => X12 ;
  // Steps Below: id=13 => X15 ;
  t4 :=  X12 AND  (Prato1);
// ObjIdx=17 => Transition "t5"
  // Steps Above: id=11 => X13 ;
  // Steps Below: id=14 => X16 ;
  t5 :=  X13 AND  (Prato2);
```

```
// ObjIdx=18 => Transition "t6"
  // Steps Above: id=12 => X14 ;
  // Steps Below: id=15 => X17 ;
  t6 :=  X14 AND  (M_max);
// ObjIdx=19 => Transition "t7"
  // Steps Above: id=9 => X11 ;
  // Steps Below: id=10 => X12 ;id=11 => X13 ;id=12 => X14 ;
  t7 :=  X11 AND  (Re Ciclo);
// ObjIdx=20 => Transition "t8"
  // Steps Above: id=13 => X15 ;id=14 => X16 ;id=15 => X17 ;
  // Steps Below: id=21 => X18 ;
  t8 :=  X15 AND  X16 AND  X17 AND  (True);
// ObjIdx=24 => Transition "t9"
  // Steps Above: id=23 => X20 ;
  // Steps Below: id=9 => X11 ;
  t9 :=  X20 AND  (M_min);
// ObjIdx=25 => Transition "t10"
  // Steps Above: id=22 => X19 ;
  // Steps Below: id=23 => X20 ;
  t10 :=  X19 AND  (X19_T > 30);
// ObjIdx=26 => Transition "t11"
  // Steps Above: id=21 => X18 ;
  // Steps Below: id=22 => X19 ;
  t11 :=  X18 AND  (X18_T > 70);
// ObjIdx=31 => Transition "t12"
  // Steps Above: id=29 => X21 ;
  // Steps Below: id=30 => X22 ;
  t12 :=  X21 AND  ((Re Ciclo) and (X12 or X13 or X14));
// ObjIdx=32 => Transition "t13"
  // Steps Above: id=30 => X22 ;
  // Steps Below: id=58 => X33 ;
  t13 :=  X22 AND  (not Ciclo);
// ObjIdx=59 => Transition "t25"
  // Steps Above: id=58 => X33 ;
  // Steps Below: id=29 => X21 ;
  t25 :=  X33 AND  (True);
end_if; //** Prevent evolution in initial cycle

//////////////////////////////////////////////////////////
/////////////////////////// Zone3 ////////////////////////
//######################## Page 0 ########################//
//////////////////////////////////////////////////////////

 if X22 Then

 t4:=False;

 t5:=False;

 t6:=False;

 end_if;
```

```
////////////////////////////////////////////////////////
///////////////// ReSet Steps Above fired Tr ///////////////
//######################## Page 0 ########################//
////////////////////////////////////////////////////////

// ObjIdx=1 => Transition "t0"
  // Steps Above: id=0 => X1 ;
  // Steps Below: id=2 => X4 ;id=3 => X5 ;
  If (t0) Then
     X1:=False;
  End_If;
// ObjIdx=6 => Transition "t1"
  // Steps Above: id=2 => X4 ;
  // Steps Below: id=4 => X6 ;
  If (t1) Then
     X4:=False;
  End_If;
// ObjIdx=7 => Transition "t2"
  // Steps Above: id=3 => X5 ;
  // Steps Below: id=5 => X7 ;
  If (t2) Then
     X5:=False;
  End_If;
// ObjIdx=8 => Transition "t3"
  // Steps Above: id=4 => X6 ;id=5 => X7 ;
  // Steps Below: id=9 => X11 ;
  If (t3) Then
     X6:=False;  X7:=False;
  End_If;
// ObjIdx=16 => Transition "t4"
  // Steps Above: id=10 => X12 ;
  // Steps Below: id=13 => X15 ;
  If (t4) Then
     X12:=False;
  End_If;
// ObjIdx=17 => Transition "t5"
  // Steps Above: id=11 => X13 ;
  // Steps Below: id=14 => X16 ;
  If (t5) Then
     X13:=False;
  End_If;
// ObjIdx=18 => Transition "t6"
  // Steps Above: id=12 => X14 ;
  // Steps Below: id=15 => X17 ;
  If (t6) Then
     X14:=False;
  End_If;
// ObjIdx=19 => Transition "t7"
  // Steps Above: id=9 => X11 ;
  // Steps Below: id=10 => X12 ;id=11 => X13 ;id=12 => X14 ;
  If (t7) Then
     X11:=False;
```

```
  End_If;
// ObjIdx=20 => Transition "t8"
  // Steps Above: id=13 => X15 ;id=14 => X16 ;id=15 => X17 ;
  // Steps Below: id=21 => X18 ;
  If (t8) Then
     X15:=False;  X16:=False;  X17:=False;
  End_If;
// ObjIdx=24 => Transition "t9"
  // Steps Above: id=23 => X20 ;
  // Steps Below: id=9 => X11 ;
  If (t9) Then
     X20:=False;
  End_If;
// ObjIdx=25 => Transition "t10"
  // Steps Above: id=22 => X19 ;
  // Steps Below: id=23 => X20 ;
  If (t10) Then
     X19:=False;
  End_If;
// ObjIdx=26 => Transition "t11"
  // Steps Above: id=21 => X18 ;
  // Steps Below: id=22 => X19 ;
  If (t11) Then
     X18:=False;
  End_If;
// ObjIdx=31 => Transition "t12"
  // Steps Above: id=29 => X21 ;
  // Steps Below: id=30 => X22 ;
  If (t12) Then
     X21:=False;
  End_If;
// ObjIdx=32 => Transition "t13"
  // Steps Above: id=30 => X22 ;
  // Steps Below: id=58 => X33 ;
  If (t13) Then
     X22:=False;
  End_If;
// ObjIdx=59 => Transition "t25"
  // Steps Above: id=58 => X33 ;
  // Steps Below: id=29 => X21 ;
  If (t25) Then
     X33:=False;
  End_If;

//////////////////////////////////////////////////////////
///////////////// Set Steps below fired Tr /////////////////
//######################## Page 0 ########################//
//////////////////////////////////////////////////////////

// ObjIdx=1 => Transition "t0"
  // Steps Above: id=0 => X1 ;
  // Steps Below: id=2 => X4 ;id=3 => X5 ;
  If (t0) Then
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```
    X4 := True;  X5 := True;
    X4_T := 0; X5_T := 0;
  End_If;
// ObjIdx=6 => Transition "t1"
  // Steps Above: id=2 => X4 ;
  // Steps Below: id=4 => X6 ;
  If (t1) Then
    X6 := True;
    X6_T := 0;
  End_If;
// ObjIdx=7 => Transition "t2"
  // Steps Above: id=3 => X5 ;
  // Steps Below: id=5 => X7 ;
  If (t2) Then
    X7 := True;
    X7_T := 0;
  End_If;
// ObjIdx=8 => Transition "t3"
  // Steps Above: id=4 => X6 ;id=5 => X7 ;
  // Steps Below: id=9 => X11 ;
  If (t3) Then
    X11 := True;
    X11_T := 0;
  End_If;
// ObjIdx=16 => Transition "t4"
  // Steps Above: id=10 => X12 ;
  // Steps Below: id=13 => X15 ;
  If (t4) Then
    X15 := True;
    X15_T := 0;
  End_If;
// ObjIdx=17 => Transition "t5"
  // Steps Above: id=11 => X13 ;
  // Steps Below: id=14 => X16 ;
  If (t5) Then
    X16 := True;
    X16_T := 0;
  End_If;
// ObjIdx=18 => Transition "t6"
  // Steps Above: id=12 => X14 ;
  // Steps Below: id=15 => X17 ;
  If (t6) Then
    X17 := True;
    X17_T := 0;
  End_If;
// ObjIdx=19 => Transition "t7"
  // Steps Above: id=9 => X11 ;
  // Steps Below: id=10 => X12 ;id=11 => X13 ;id=12 => X14 ;
  If (t7) Then
    X12 := True;  X13 := True;  X14 := True;
    X12_T := 0; X13_T := 0; X14_T := 0;
  End_If;
// ObjIdx=20 => Transition "t8"
```

```
  // Steps Above: id=13 => X15 ;id=14 => X16 ;id=15 => X17 ;
  // Steps Below: id=21 => X18 ;
  If (t8) Then
    X18 := True;
    X18_T := 0;
  End_If;
// ObjIdx=24 => Transition "t9"
  // Steps Above: id=23 => X20 ;
  // Steps Below: id=9 => X11 ;
  If (t9) Then
    X11 := True;
    X11_T := 0;
  End_If;
// ObjIdx=25 => Transition "t10"
  // Steps Above: id=22 => X19 ;
  // Steps Below: id=23 => X20 ;
  If (t10) Then
    X20 := True;
    X20_T := 0;
  End_If;
// ObjIdx=26 => Transition "t11"
  // Steps Above: id=21 => X18 ;
  // Steps Below: id=22 => X19 ;
  If (t11) Then
    X19 := True;
    X19_T := 0;
  End_If;
// ObjIdx=31 => Transition "t12"
  // Steps Above: id=29 => X21 ;
  // Steps Below: id=30 => X22 ;
  If (t12) Then
    X22 := True;
    X22_T := 0;
  End_If;
// ObjIdx=32 => Transition "t13"
  // Steps Above: id=30 => X22 ;
  // Steps Below: id=58 => X33 ;
  If (t13) Then
    X33 := True;
    X33_T := 0;
  End_If;
// ObjIdx=59 => Transition "t25"
  // Steps Above: id=58 => X33 ;
  // Steps Below: id=29 => X21 ;
  If (t25) Then
    X21 := True;
    X21_T := 0;
  End_If;

//////////////////////////////////////////////////////////
///// If step active increment MW timer of step @ %s16 /////
//######################## Page 0 ########################//
//////////////////////////////////////////////////////////
```

```
// ObjIdx=0 => Step "X1"
If (s16) and (X1) Then
  X1_T := X1_T+1;
end_if;
// ObjIdx=2 => Step "X4"
If (s16) and (X4) Then
  X4_T := X4_T+1;
end_if;
// ObjIdx=3 => Step "X5"
If (s16) and (X5) Then
  X5_T := X5_T+1;
end_if;
// ObjIdx=4 => Step "X6"
If (s16) and (X6) Then
  X6_T := X6_T+1;
end_if;
// ObjIdx=5 => Step "X7"
If (s16) and (X7) Then
  X7_T := X7_T+1;
end_if;
// ObjIdx=9 => Step "X11"
If (s16) and (X11) Then
  X11_T := X11_T+1;
end_if;
// ObjIdx=10 => Step "X12"
If (s16) and (X12) Then
  X12_T := X12_T+1;
end_if;
// ObjIdx=11 => Step "X13"
If (s16) and (X13) Then
  X13_T := X13_T+1;
end_if;
// ObjIdx=12 => Step "X14"
If (s16) and (X14) Then
  X14_T := X14_T+1;
end_if;
// ObjIdx=13 => Step "X15"
If (s16) and (X15) Then
  X15_T := X15_T+1;
end_if;
// ObjIdx=14 => Step "X16"
If (s16) and (X16) Then
  X16_T := X16_T+1;
end_if;
// ObjIdx=15 => Step "X17"
If (s16) and (X17) Then
  X17_T := X17_T+1;
end_if;
// ObjIdx=21 => Step "X18"
If (s16) and (X18) Then
  X18_T := X18_T+1;
end_if;
```

```
  // ObjIdx=22 => Step "X19"
  If (s16) and (X19) Then
    X19_T := X19_T+1;
  end_if;
  // ObjIdx=23 => Step "X20"
  If (s16) and (X20) Then
    X20_T := X20_T+1;
  end_if;
  // ObjIdx=29 => Step "X21"
  If (s16) and (X21) Then
    X21_T := X21_T+1;
  end_if;
  // ObjIdx=30 => Step "X22"
  If (s16) and (X22) Then
    X22_T := X22_T+1;
  end_if;
  // ObjIdx=33 => Step "Zone3"
  If (s16) and (Zone3) Then
    Zone3_T := Zone3_T+1;
  end_if;
  // ObjIdx=34 => Step "Zone8"
  If (s16) and (Zone8) Then
    Zone8_T := Zone8_T+1;
  end_if;
  // ObjIdx=58 => Step "X33"
  If (s16) and (X33) Then
    X33_T := X33_T+1;
  end_if;

////////////////////////////////////////////////////////////
//////// If step active, execute its action code ///////////
//######################### Page 0 ########################//
////////////////////////////////////////////////////////////

  // ObjIdx=2 => Step "X4" (code...)
  If X4 Then
    V6 := True;
  End_If;
  // ObjIdx=3 => Step "X5" (code...)
  If X5 Then
    Direita := True;
  End_If;
  // ObjIdx=10 => Step "X12" (code...)
  If X12 Then
    V1 := True;
  End_If;
  // ObjIdx=11 => Step "X13" (code...)
  If X13 Then
    V3 := True;
  End_If;
  // ObjIdx=12 => Step "X14" (code...)
  If X14 Then
    V5 := True;
```

```
    Bomba := True;
  End_If;
  // ObjIdx=21 => Step "X18" (code...)
  If X18 Then
    Motor_pa := True;
    Esquerda := True;
    V4 := True;
    V2 := True;
  End_If;
  // ObjIdx=22 => Step "X19" (code...)
  If X19 Then
    Motor_pa := True;
  End_If;
  // ObjIdx=23 => Step "X20" (code...)
  If X20 Then
    V7 := True;
  End_If;
  // ObjIdx=33 => Step "Zone3" (code...)
  If Zone3 Then
    if X22 Then

    t4:=False;

    t5:=False;

    t6:=False;

    end_if;

  End_If;
  // ObjIdx=34 => Step "Zone8" (code...)
  If Zone8 Then
    If (X22 and Externo) Then

       Prato1 := False;

       Prato2 := False;

       V5 := False;

       Bomba := False;

    End_if;

  End_If;
  // ObjIdx=58 => Step "X33" (code...)
  If X33 Then
    X14_T := X14_T - X22_T

  End_If;

////////////////////////////////////////////////////////
////////////////////////// Zone8 //////////////////////////
```

```
//######################## Page 0 ########################//
////////////////////////////////////////////////////////////

 If (X22 and Externo) Then

    Prato1 := False;

    Prato2 := False;

    V5 := False;

    Bomba := False;

 End_if;


(*************** End of ST Code ***************)
```