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(* POS13, if two trains is in position 2, the train with the highest X-position is allowed to get POS13-----*)

IF ( TrainData_Prim.Direction and TrainData_Prim.Track_Number=1 and TrainData_Prim.Position=2 and ((TrainData_Prim.Pos_X_Cam2>TrainData_Sek.Pos_X_Cam2
and TrainData_Sek.Position=2 and TrainData_Sek.Track_Number=1) or (TrainData_Prim.Pos_X_Cam2>TrainData_Thrd.Pos_X_Cam2 and TrainData_Thrd.Position=2
and TrainData_Thrd.Track_Number=1)))
THEN
  TrainData_Prim.Pos13:=true;
Elsif(not TrainData_Prim.Direction and TrainData_Prim.Position=13) then
  TrainData_Prim.Reset_Cam2:=false;
  TrainData_Prim.Pos13:=false;
end_if;
(*-----*)

(* POS23, if two trains is in position 2, the train with the highest X-position is allowed to get POS23*)

IF ( TrainData_Prim.Direction and TrainData_Prim.Track_Number=2 and TrainData_Prim.Position=2 and ((TrainData_Prim.Pos_X_Cam2>TrainData_Sek.Pos_X_Cam2
and TrainData_Sek.Position=2 and TrainData_Sek.Track_Number=2) or (TrainData_Prim.Pos_X_Cam2>TrainData_Thrd.Pos_X_Cam2 and TrainData_Thrd.Position=2
and TrainData_Thrd.Track_Number=2)))
THEN
  TrainData_Prim.Pos23:=true;
Elsif(not TrainData_Prim.Direction and TrainData_Prim.Position=23) then
  TrainData_Prim.Reset_Cam2:=false;
  TrainData_Prim.Pos23:=false;
end_if;
(*-----*)

(* POS18, if the trains is in position 4, the train with the highest X-position is allowed to get POS18-----*)

IF ( TrainData_Prim.Direction and TrainData_Prim.Position=4 and TrainData_Prim.Track_Number=1 and ((TrainData_Prim.Pos_X_Cam4<TrainData_Sek.Pos_X_Cam4
and TrainData_Sek.Position=4 and TrainData_Sek.Track_Number=1) or (TrainData_Prim.Pos_X_Cam4<TrainData_Thrd.Pos_X_Cam4 and TrainData_Thrd.Position=4
and TrainData_Thrd.Track_Number=1)))
THEN
  TrainData_Prim.Pos18:=true;
Elsif(not TrainData_Prim.Direction and TrainData_Prim.Position=18) then
  TrainData_Prim.Reset_Cam4:=false;
  TrainData_Prim.Pos18:=false;
end_if;

(* POS28, if the trains is in position 4, the train with the highest X-position is allowed to get POS28-----*)

IF ( TrainData_Prim.Direction and TrainData_Prim.Position=4 and TrainData_Prim.Track_Number=2 and ((TrainData_Prim.Pos_X_Cam4<TrainData_Sek.Pos_X_Cam4
and TrainData_Sek.Position=4 and TrainData_Sek.Track_Number=2) or (TrainData_Prim.Pos_X_Cam4<TrainData_Thrd.Pos_X_Cam4 and TrainData_Thrd.Position=4
and TrainData_Thrd.Track_Number=2)))
THEN
  TrainData_Prim.Pos28:=true;
Elsif(not TrainData_Prim.Direction and TrainData_Prim.Position=28) then
  TrainData_Prim.Reset_Cam4:=false;
  TrainData_Prim.Pos28:=false;
end_if;

(*Resets the camera so it does not overwrite the reed relay-----*)

IF (TrainData_Prim.Position = 32) AND (TrainData_Prim.Next_Position = 2) AND (TrainData_Prim.Direction) AND (TrainData_Prim.Speed > 0)
THEN
  TrainData_Prim.Reset_Cam2 := FALSE;
  IF(TrainData_Prim.Pos_X_Cam2 > 0)
  THEN
    Position_Train := 2;
  END_IF;
  (*Same position*)

  (*POS11-----*)

ELSIF AS11A.Value AND TrainData_Prim.Next_Position = 11
THEN

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        Position_Train:=11;
ELSIF AS11A.Value AND TrainData_Prim.Next_Position=11 AND TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam1 := false;
ELSIF AS11A.Value AND TrainData_Prim.Next_Position=19 AND NOT TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam1:=True;

        (*POS21-----*)

ELSIF AS21A.Value AND TrainData_Prim.Next_Position=21
    THEN
        Position_Train := 21;
ELSIF AS21A.Value AND TrainData_Prim.Next_Position=21 AND TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam1 := false;
ELSIF AS21A.Value AND TrainData_Prim.Next_Position=29 AND NOT TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam1:=TRUE;

        (*Pos 13-----*)

ELSIF AS13A.Value AND TrainData_Prim.Next_Position=13 AND not TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam2 := false;
        TrainData_Prim.Reset_Cam3:=true;
        Position_Train := 13;
        TrainData_Prim.Pos13:=false;

ELSIF (AS13A.Value AND TrainData_Prim.Next_Position=13 AND TrainData_Prim.Direction and TrainData_Prim.Pos13 and not TrainData_Sek.Pos13
    and not TrainData_Thrd.Pos13)
    THEN
        TrainData_Prim.Reset_Cam2 := true;
        Position_Train := 13;
        TrainData_Prim.Pos13:=false;

ELSIF AS13A.Value AND TrainData_Prim.Next_Position=13 AND TrainData_Prim.Direction and not TrainData_Sek.Pos13 and not TrainData_Thrd.Pos13
    and not TrainData_Prim.Pos13
    THEN
        TrainData_Prim.Reset_Cam2 := true;
        Position_Train := 13;
        TrainData_Prim.Pos13:=false;

(*-----*)

        (*Pos 23-----*)

ELSIF AS23A.Value AND TrainData_Prim.Next_Position=23 AND not TrainData_Prim.Direction
    THEN
        TrainData_Prim.Reset_Cam2 := false;
        TrainData_Prim.Reset_Cam3:=true;
        Position_Train := 23;
        TrainData_Prim.Pos23:=false;

ELSIF (AS23A.Value AND TrainData_Prim.Next_Position=23 AND TrainData_Prim.Direction and TrainData_Prim.Pos23 and not TrainData_Sek.Pos23
    and not TrainData_Thrd.Pos23)
    THEN
        TrainData_Prim.Reset_Cam2 := true;
        Position_Train := 23;
        TrainData_Prim.Pos23:=false;

ELSIF AS23A.Value AND TrainData_Prim.Next_Position=23 AND TrainData_Prim.Direction and not TrainData_Sek.Pos23 and not TrainData_Thrd.Pos23
    and not TrainData_Prim.Pos23
    THEN
        TrainData_Prim.Reset_Cam2 := true;
        Position_Train := 23;
        TrainData_Prim.Pos23:=false;

(*-----*)

        (*Pos 18-----*)

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ELSIF AS18A.Value AND TrainData_Prim.Next_Position=18 AND not TrainData_Prim.Direction
THEN
  TrainData_Prim.Reset_Cam4 := false;
  TrainData_Prim.Reset_Cam1:=true;
  Position_Train := 18;

ELSIF (AS18A.Value AND TrainData_Prim.Next_Position=18 AND TrainData_Prim.Direction and TrainData_Prim.Pos18 and not TrainData_Sek.Pos18
and not TrainData_Thrd.Pos18)
THEN
  TrainData_Prim.Reset_Cam4 := true;
  Position_Train := 18;

ELSIF AS18A.Value AND TrainData_Prim.Next_Position=18 AND TrainData_Prim.Direction and not TrainData_Sek.Pos18 and not TrainData_Thrd.Pos18
and not TrainData_Prim.Pos18
THEN
  TrainData_Prim.Reset_Cam4 := true;
  Position_Train := 18;
(*-----*)

  (*Pos 28-----*)

ELSIF AS28A.Value AND TrainData_Prim.Next_Position=28 AND not TrainData_Prim.Direction
THEN
  TrainData_Prim.Reset_Cam4 := false;
  TrainData_Prim.Reset_Cam1:=true;
  Position_Train := 28;

ELSIF (AS28A.Value AND TrainData_Prim.Next_Position=28 AND TrainData_Prim.Direction and TrainData_Prim.Pos28 and not TrainData_Sek.Pos28
and not TrainData_Thrd.Pos28)
THEN
  TrainData_Prim.Reset_Cam4 := true;
  Position_Train := 28;

ELSIF AS28A.Value AND TrainData_Prim.Next_Position=28 AND TrainData_Prim.Direction and not TrainData_Sek.Pos28 and not TrainData_Thrd.Pos28
and not TrainData_Prim.Pos28
THEN
  TrainData_Prim.Reset_Cam4 := true;
  Position_Train := 28;
(*-----*)

  (*Pos 14-----*)

ELSIF AS14A.Value AND TrainData_Prim.Next_Position=14
THEN
  Position_Train := 14;
  TrainData_Prim.Pos13:=false;
ELSIF NOT TrainData_Prim.Direction AND AS14A.Value
THEN
  TrainData_Prim.Reset_Cam3 := TRUE;

  (*Pos 24-----*)

ELSIF AS24A.Value AND TrainData_Prim.Next_Position=24
THEN
  Position_Train := 24;
  TrainData_Prim.Pos23:=false;
ELSIF NOT TrainData_Prim.Direction AND AS24A.Value
THEN
  TrainData_Prim.Reset_Cam3 := TRUE;

  (*Pos 15-----*)

ELSIF AS15A.Value AND TrainData_Prim.Next_Position=15 and TrainData_Prim.Direction
THEN
  TrainData_Prim.Reset_Cam3:=false;
  Position_Train := 15;
ELSIF AS15A.Value AND TrainData_Prim.Next_Position=15 and not TrainData_Prim.Direction
THEN
  TrainData_Prim.Reset_Cam3:=true;
  Position_Train := 15;
ELSIF NOT TrainData_Prim.Direction AND AS15A.Value and not TrainData_Prim.Direction
THEN
  TrainData_Prim.Reset_Cam3 := TRUE;

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ELSIF NOT TrainData_Prim.Direction AND AS15A.Value and TrainData_Prim.Direction
THEN
    TrainData_Prim.Reset_Cam3 := false;

    (*Pos25-----*)

ELSIF AS25A.Value AND TrainData_Prim.Next_Position=25
THEN
    Position_Train := 25;
    TrainData_Prim.Pos23:=false;
ELSIF NOT TrainData_Prim.Direction AND AS25A.Value
THEN
    TrainData_Prim.Reset_Cam3 := TRUE;

    (*Pos19-----*)

ELSIF AS19A.Value AND TrainData_Prim.Next_Position=19
THEN
    Position_Train := 19;
    TrainData_Prim.Pos18:=false;

    (*Pos29-----*)

ELSIF AS29A.Value AND TrainData_Prim.Next_Position=29
THEN;
    Position_Train := 29;
    TrainData_Prim.Pos28:=false;

    (*Pos1 for when the train drives backward out from the parked position-----*)

ELSIF TrainData_Prim.Next_Position = 1 AND NOT TrainData_Prim.Direction AND Traindata_Prim.Pos_X_Cam1 > 0
THEN
    Position_Train := 1;

    (*Pos31-----*)

ELSIF AS31A.Value AND TrainData_Prim.Next_Position = 31 AND not (TrainData_Sek.Position = 31) AND not(TrainData_Thrd.Position = 31)
THEN
    TrainData_Prim.Reset_Cam1 := TRUE;
    TrainData_Prim.Reset_Cam2 := TRUE;
    Position_Train := 31;
ELSIF NOT AS31A.Value AND TrainData_Prim.Position = 31 AND NOT TrainData_Prim.Direction
THEN
    TrainData_Prim.Reset_Cam1 := FALSE;
    TrainData_Prim.Reset_Cam2 := FALSE;
ELSIF NOT AS31A.Value AND TrainData_Prim.Position = 32 AND TrainData_Prim.Direction
THEN
    TrainData_Prim.Reset_Cam1 := FALSE;
    TrainData_Prim.Reset_Cam2 := FALSE;

    (*Pos32-----*)

ELSIF AS32A.Value AND TrainData_Prim.Next_Position = 32 AND not (TrainData_Sek.Position = 32) AND not(TrainData_Thrd.Position = 32)
THEN
    TrainData_Prim.Reset_Cam2 := TRUE;
    Position_Train := 32;

(*Set false on every camera reset when a train enters one of the four cameras-----*)

ELSIF TrainData_Prim.Pos_X_Cam1 > 0
THEN
    Position_Train := 1;
    TrainData_Prim.Reset_Cam1:=False;
    TrainData_Prim.Reset_Cam2:=False;
    TrainData_Prim.Reset_Cam3:=False;
    TrainData_Prim.Reset_Cam4:=False;

    TrainData_Prim.Pos18:=false;
    TrainData_Prim.Pos28:=false;

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TrainData_Prim.Pos13:=false;
TrainData_Prim.Pos23:=false;

ELSIF TrainData_Prim.Pos_X_Cam2 > 0
THEN
Position_Train := 2;
TrainData_Prim.Reset_Cam1:=False;
TrainData_Prim.Reset_Cam2:=False;
TrainData_Prim.Reset_Cam3:=False;
TrainData_Prim.Reset_Cam4:=False;
ELSIF TrainData_Prim.Pos_X_Cam3 > 0
THEN
Position_Train := 3;
TrainData_Prim.Reset_Cam1:=False;
TrainData_Prim.Reset_Cam2:=False;
TrainData_Prim.Reset_Cam3:=False;
TrainData_Prim.Reset_Cam4:=False;
TrainData_Prim.Pos18:=false;
TrainData_Prim.Pos28:=false;
TrainData_Prim.Pos13:=false;
TrainData_Prim.Pos23:=false;
ELSIF TrainData_Prim.Pos_X_Cam4 > 0
THEN
Position_Train := 4;
TrainData_Prim.Reset_Cam1:=False;
TrainData_Prim.Reset_Cam2:=False;
TrainData_Prim.Reset_Cam3:=False;
TrainData_Prim.Reset_Cam4:=False;

END_IF;
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