```
(* Next position if train is moving in the forward direction *)

IF NOT (TrainData.Speed = 0)

   THEN

   (*Next Position 31, parked position*)
   IF TrainData.Direction AND TrainData.Position = 1 AND SwitchSignal.Servo_2
      THEN
      TrainData.Next_Position := 31;

   (*Next Position 13*)
   ELSIF TrainData.Direction AND TrainData.Position = 2 AND SwitchSignal.Servo_5 AND SwitchSignal.Servo_6
      THEN
      TrainData.Next_Position := 13;
   ELSIF TrainData.Direction AND TrainData.Position = 2 AND TrainData.Track_Number=1
      THEN
      TrainData.Next_Position := 13;

   (*Next Position 2*)
   ELSIF TrainData.Direction AND TrainData.Position = 32
      THEN
      TrainData.Next_Position := 2;
   ELSIF TrainData.Direction AND TrainData.Position = 1 AND SwitchSignal.Servo_5
      THEN
      TrainData.Next_Position := 2;
   ELSIF TrainData.Direction AND TrainData.Position = 1 AND NOT SwitchSignal.Servo_5
      THEN
      TrainData.Next_Position := 2;

      (*Next Position 1*)
   ELSIF TrainData.Direction AND TrainData.Position = 11 AND NOT SwitchSignal.Servo_1 AND TrainData.Track_Number = 1
      THEN
      TrainData.Next_Position := 1;
   ELSIF TrainData.Direction AND TrainData.Position = 11 AND SwitchSignal.Servo_1 AND TrainData.Track_Number = 1
      THEN
      TrainData.Next_Position := 1;
   ELSIF TrainData.Direction AND TrainData.Position = 21  AND TrainData.Track_Number = 2
      THEN
      TrainData.Next_Position := 1;


      (*Next Position 3*)
   ELSIF TrainData.Direction AND TrainData.Position = 25
      THEN
      TrainData.Next_Position := 3;
   ELSIF TrainData.Direction AND TrainData.Position = 15
      THEN
      TrainData.Next_Position := 3;

      (*Next Position 4*)
   ELSIF TrainData.Direction AND TrainData.Position = 3
      THEN
      TrainData.Next_Position := 4;

      (*Next Position 11*)
   ELSIF TrainData.Direction AND TrainData.Position = 19
      THEN
      TrainData.Next_Position := 11;


      (*Next Position 14*)
   ELSIF TrainData.Direction AND TrainData.Position = 13
      THEN
      TrainData.Next_Position := 14;

      (*Next Position 15*)
   ELSIF TrainData.Direction AND TrainData.Position = 14
      THEN
      TrainData.Next_Position := 15;

      (*Next Position 18*)
   ELSIF TrainData.Direction AND TrainData.Position = 4 AND TrainData.Track_Number=1
```

```
      THEN
      TrainData.Next_Position := 18;

      (*Next Position 19*)
   ELSIF TrainData.Direction AND TrainData.Position = 18
      THEN
      TrainData.Next_Position := 19;

      (*Next Position 21*)
   ELSIF TrainData.Direction AND TrainData.Position = 29
      THEN
      TrainData.Next_Position := 21;

      (*Next Position 23*)
   ELSIF TrainData.Direction AND TrainData.Position = 2 AND TrainData.Track_Number=2
      THEN
      TrainData.Next_Position := 23;

      (*Next Position 24*)
   ELSIF TrainData.Direction AND TrainData.Position = 23
      THEN
      TrainData.Next_Position := 24;

      (*Next Position 25*)
   ELSIF TrainData.Direction AND TrainData.Position = 24
      THEN
      TrainData.Next_Position := 25;

      (*Next Position 28*)
   ELSIF TrainData.Direction AND TrainData.Position = 4 AND TrainData.Track_Number=2
      THEN
      TrainData.Next_Position := 28;

      (*Next Position 29*)
   ELSIF TrainData.Direction AND TrainData.Position = 28
      THEN
      TrainData.Next_Position := 29;
```

```
(* Next position if the train is moving in the backward direction *)


      (*Next Position 32, parked position*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 2 AND TrainData.Track_Number = 2 AND SwitchSignal.Servo_4
      THEN
      TrainData.Next_Position := 32;;

      (*Next Position 11*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 1 AND TrainData.Track_Number = 2 AND SwitchSignal.Servo_3 AND SwitchSignal.Servo_1
      THEN
      TrainData.Next_Position := 11;
   ELSIF NOT TrainData.Direction AND TrainData.Position = 1 AND TrainData.Track_Number = 1
      THEN
      TrainData.Next_Position := 11;

       (*Next Position 21*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 1 AND TrainData.Track_Number = 2 AND NOT SwitchSignal.Servo_3
      THEN
      TrainData.Next_Position := 21;


      (*Next Position 1*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 31
      THEN
      TrainData.Next_Position := 1;
   ELSIF NOT TrainData.Direction AND TrainData.Position = 2
      THEN
      TrainData.Next_Position := 1;

      (*Next Position 2*)
```

```
   ELSIF NOT TrainData.Direction AND TrainData.Position = 13
      THEN
      TrainData.Next_Position := 2;
   ELSIF NOT TrainData.Direction AND TrainData.Position = 23
      THEN
      TrainData.Next_Position := 2;

      (*Next Position 3*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 4
      THEN
      TrainData.Next_Position := 3;

      (*Next Position 4)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 18
      THEN
      TrainData.Next_Position := 4;
   ELSIF NOT TrainData.Direction AND TrainData.Position = 28
      THEN
      TrainData.Next_Position := 4;


      (*Next Position 13*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 14
      THEN
      TrainData.Next_Position := 13;

      (*Next Position 14*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 15
      THEN
      TrainData.Next_Position := 14;

      (*Next Position 15*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 3 and TrainData.Track_Number = 1
      THEN
      TrainData.Next_Position := 15;

      (*Next Position 18*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 19
      THEN
      TrainData.Next_Position := 18;

      (*Next Position 19*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 11
      THEN
      TrainData.Next_Position := 19;


      (*Next Position 23*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 24
      THEN
      TrainData.Next_Position := 23;

      (*Next Position 24*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 25
      THEN
      TrainData.Next_Position := 24;

      (*Next Position 25*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 3 and TrainData.Track_Number = 2
      THEN
      TrainData.Next_Position := 25;

      (*Next Position 28*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 29
      THEN
      TrainData.Next_Position := 28;

      (*Next Position 29*)
   ELSIF NOT TrainData.Direction AND TrainData.Position = 21
      THEN
      TrainData.Next_Position := 29;
      END_IF;
```

```
Else
   TrainData.Next_Position:=NoValue;
   END_IF;
```