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<description>

2. Software Architecture

2.1. Project Architecture

This section displays the package hierarchy of projects.

Project ModesAndLevels
- InputManagement
- OutputManagement

2.2. Call Graph

This Call Graph displays the dependency tree of model operators.

1. ManageLevelAndMode
    - 1.1. CheckLevelAndMode
    - 1.2. Input
        - 1.2.1. InputManagement::InputDMI
        - 1.2.2. InputManagement::InputLocalisation
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3. ModesAndLevels Project

3.1. Root Elements

3.1.1. CheckLevelAndMode Operator

Declared as **`public function`**

3.1.1.1. Interface

Table 1: Inputs of CheckLevelAndMode

Name	Type	Comments and Information
Level	M_LEVEL	
Mode	Level_And_Mode_Types_Pkg::T_Mode	

Table 2: Outputs of CheckLevelAndMode

Name	Type	Comments and Information
Level_Mode_Compatible	bool	

3.1.1.2. Operator Hierarchy

diagram : diagram_CheckLevelAndMode_1

3.1.1.3. Graphical and Textual Diagrams

3.1.1.3.1. View of diagram_CheckLevelAndMode_1 (CheckLevelAndMode)

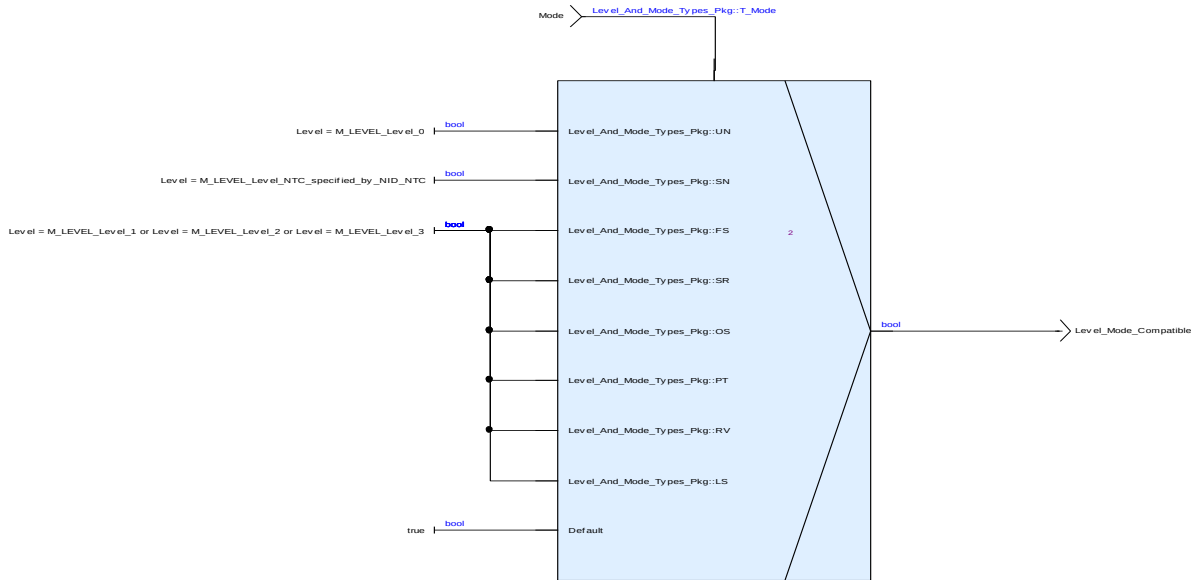


Figure 1: View of diagram_CheckLevelAndMode_1 (CheckLevelAndMode)

3.1.2. Input Operator

Declared as **`public function`**

3.1.2.1. Interface

Table 3: Inputs of Input

Name	Type	Comments and Information
Data_From_DMI	DMI_Types_Pkg::DMI_To_Modes_T	
Data_From_TIU	TIU_Types_Pkg::Message_Train_Interface_to_EVC_T	
Data_From_Track_Messages	Level_And_Mode_Types_Pkg::T_Data_From_Track_Mess	
Data_From_Track_Packets	Level_And_Mode_Types_Pkg::T_Data_From_Track_Packet	
Data_From_STM	Level_And_Mode_Types_Pkg::T_Data_From_STM	
Data_From_Localisation	Level_And_Mode_Types_Pkg::T_Data_From_Localisation	
Data_From_Speed_and_Supervision	Level_And_Mode_Types_Pkg::T_Data_From_Speed_Supervision	
Data_From_F2_Functions	Level_And_Mode_Types_Pkg::T_Data_From_F2_functions	
Cab_In	TIU_Types_Pkg::cab_ID_T	
driver_level_transition_In	Level_And_Mode_Types_Pkg::T_LevelTransition	
ERTMS_capabilities_In	Level_And_Mode_Types_Pkg::T_ERTMS_capabilities	
Data_From_Track_MASSPGradient	Level_And_Mode_Types_Pkg::T_Data_From_Track_MASSPGradient_Available	

Table 4: Outputs of Input

Name	Type	Comments and Information
train_standstill	bool	
driver_level_transition	Level_And_Mode_Types_Pkg::T_LevelTransition	
levelAck	bool	
trainPosition	TrainPosition_Types_Pck::trainPosition_T	
ERTMS_capabilities	Level_And_Mode_Types_Pkg::T_ERTMS_capabilities	
Data_From_Track_to_Level	Level_And_Mode_Types_Pkg::T_Data_From_Track_To_Level	
Cab	TIU_Types_Pkg::cab_ID_T	

Name	Type	Comments and Information
Data_From_DMI_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_DMI	
Data_From_F2_Functions_to_Mode	Level_And_Mode_Types_Pkg::T_Data_From_F2_functions	
Data_From_Localisation_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Localisation	
Data_From_Speed_and_Supervision_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Speed_Supervision	
Data_From_STM_to_Mode	Level_And_Mode_Types_Pkg::T_Data_From_STM	
Data_From_TIU_To_Mode	TIU_Types_Pkg::Message_Train_Interface_to_EVC_T	
Data_From_Track_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Track_To_Mode	

3.1.2.2. Operator Hierarchy

diagram : diagram_Input_1

3.1.2.3. Graphical and Textual Diagrams

3.1.2.3.1. View of diagram_Input_1 (Input)

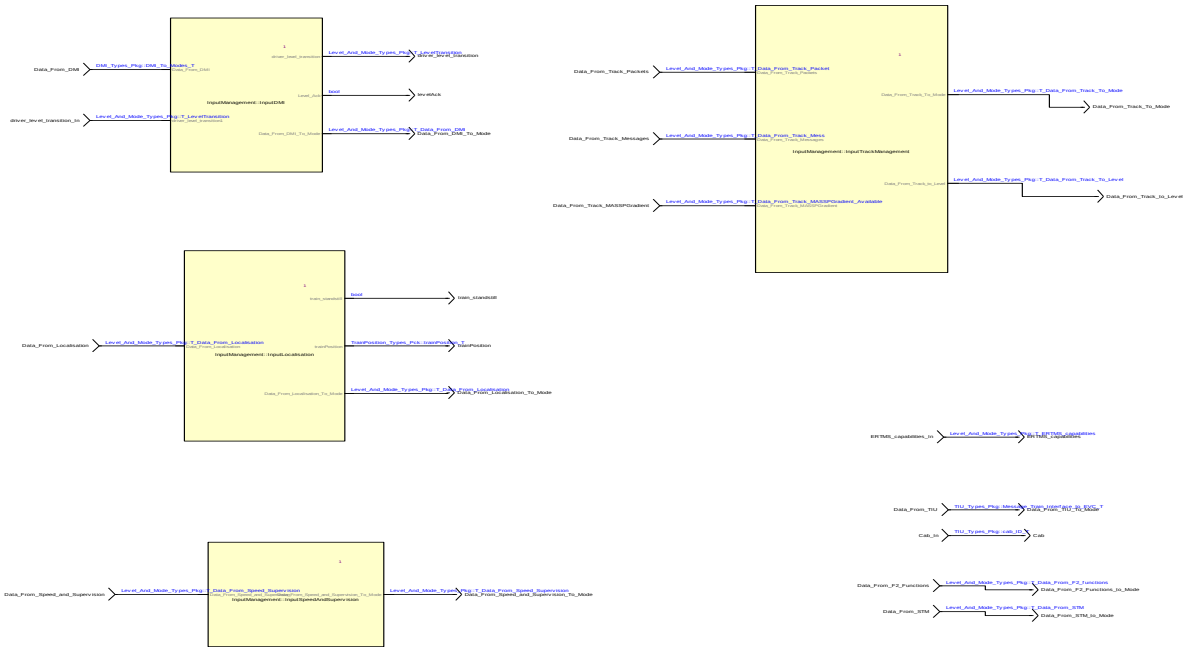


Figure 2: View of diagram_Input_1 (Input)

3.1.3. ManageLevelAndMode Operator

Declared as **`public node`**

3.1.3.1. Interface

Table 5: Inputs of ManageLevelAndMode

Name	Type	Comments and Information
Data_From_DMI	DMI_Types_Pkg::DMI_To_Modes_T	
Data_From_Localisation	Level_And_Mode_Types_Pkg::T_Data_From_Localisation	
Data_From_TIU	TIU_Types_Pkg::Message_Train_Interface_to_EVC_T	
Data_From_Track_Messages	Level_And_Mode_Types_Pkg::T_Data_From_Track_Mess	
Data_From_Track_Packets	Level_And_Mode_Types_Pkg::T_Data_From_Track_Packet	
Data_From_Speed_and_Supervision	Level_And_Mode_Types_Pkg::T_Data_From_Speed_Supervision	
Cab_In	TIU_Types_Pkg::cab_ID_T	
driver_level_transition_In	Level_And_Mode_Types_Pkg::T_LevelTransition	
ERTMS_capabilities_In	Level_And_Mode_Types_Pkg::T_ERTMS_capabilities	
Data_from_Track_MASSPGradient	Level_And_Mode_Types_Pkg::T_Data_From_Track_MASSPGradient_Available	
Data_From_F2_Functions	Level_And_Mode_Types_Pkg::T_Data_From_F2_functions	
Data_From_STM	Level_And_Mode_Types_Pkg::T_Data_From_STM	

Table 6: Outputs of ManageLevelAndMode

Name	Type	Comments and Information
Compatible_Mode_And_Level	Level_And_Mode_Types_Pkg::T_Mode_Level	
Data_To_DMI	DMI_Types_Pkg::DMI_ModesToDMI_T	
Data_To_BG_Management	Level_And_Mode_Types_Pkg::T_Data_To_BG_Management	
Service_Brake_Command	bool	
EB_Requested	bool	
announcedLevelTransitionOut	Level_And_Mode_Types_Pkg::T_LevelTransition	
isAvailableForUseOut	bool	

3.1.3.2. Locals

Table 7: Locals of ManageLevelAndMode

Name	Type	Comments and Information
Loc_Level_To_Apply	M_LEVEL	
Loc_Mode_To_Apply	Level_And_Mode_Types_Pkg::T_Mode	
Loc_TripFromLevel	bool	

3.1.3.3. Operator Hierarchy

diagram : diagram_ManageLevelAndMode_1

3.1.3.4. Graphical and Textual Diagrams

3.1.3.4.1. View of diagram_ManageLevelAndMode_1 (ManageLevelAndMode)

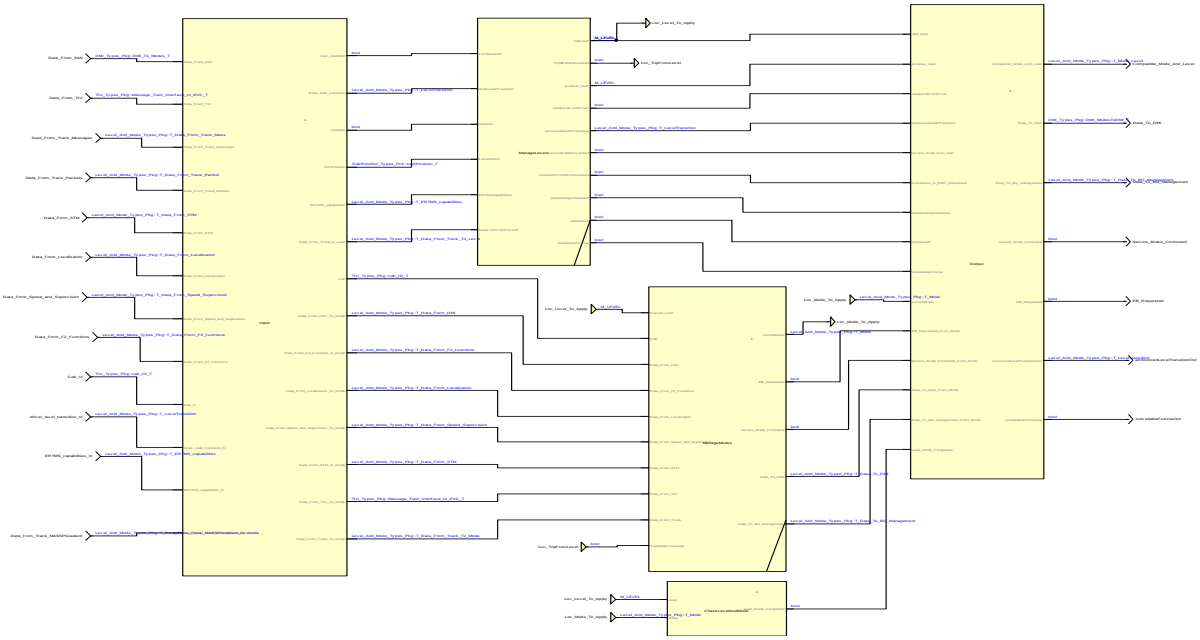


Figure 3: View of diagram_ManageLevelAndMode_1 (ManageLevelAndMode)

3.1.4. Output Operator

Declared as **`public node`**

3.1.4.1. Interface

Table 8: Inputs of Output

Name	Type	Comments and Information
next_level	M_LEVEL	
previous_level	M_LEVEL	
needsAckFromDriver	bool	
announcedLevelTransition	Level_And_Mode_Types_Pkg::T_LevelTransition	

Name	Type	Comments and Information
service_brake_from_level	bool	
Connection_to_RBC_Requested	bool	
PositionReportNeeded	bool	
isNewLevel	bool	**Comments:** The requested transition was not successfull, e.g., because of missing confirmation by the driver.
isAvailableForUse	bool	
currentMode	Level_And_Mode_Types_Pkg::T_Mode	
EB_Requested_From_Mode	bool	
Service_Brake_Command_From_Mode	bool	
Data_To_DMI_From_Mode	Level_And_Mode_Types_Pkg::T_Data_To_DMI	
Data_To_BG_Management_From_Mode	Level_And_Mode_Types_Pkg::T_Data_To_BG_Management	
Level_Mode_Compatible	bool	

Table 9: Outputs of Output

Name	Type	Comments and Information
Compatible_Mode_And_Level	Level_And_Mode_Types_Pkg::T_Mode_Level	
Data_To_DMI	DMI_Types_Pkg::DMI_ModesToDMI_T	
Data_To_BG_Management	Level_And_Mode_Types_Pkg::T_Data_To_BG_Management	
Service_Brake_Command	bool	
EB_Requested	bool	
announcedLevelTransitionOut	Level_And_Mode_Types_Pkg::T_LevelTransition	
isAvailableForUseOut	bool	

3.1.4.2. Operator Hierarchy

diagram : diagram_Output_1

3.1.4.3. Graphical and Textual Diagrams

3.1.4.3.1. View of diagram_Output_1 (Output)

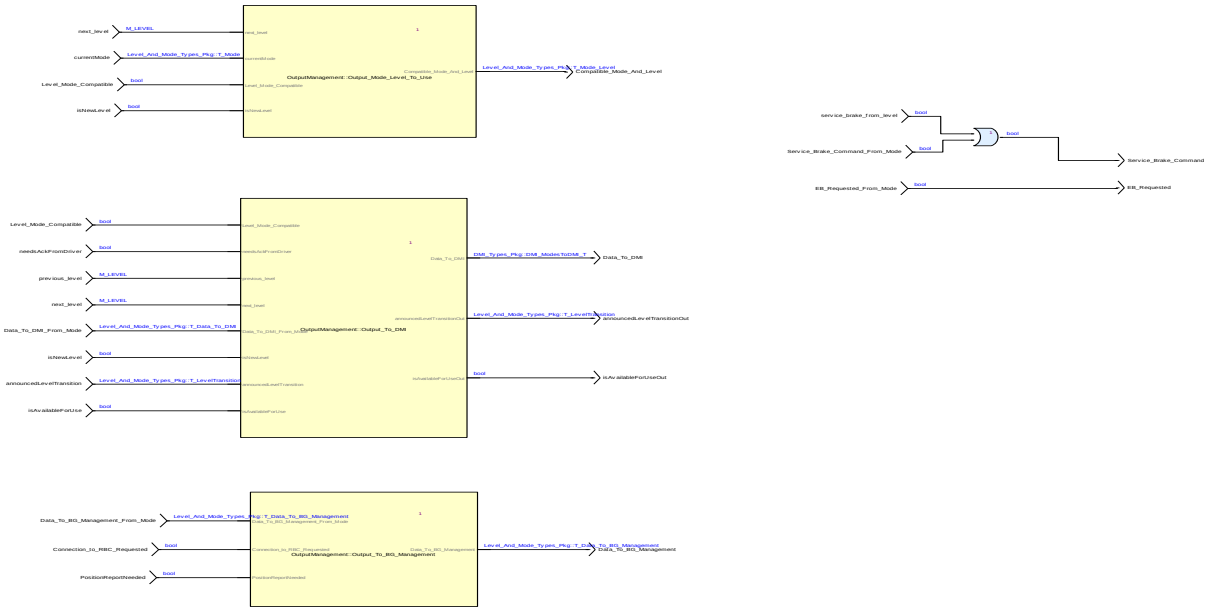


Figure 4: View of diagram_Output_1 (Output)

3.2. InputManagement Package

3.2.1. Constants

Table 10: Public Constants of InputManagement

Name	Type	Value	Comments and Information
cImmediateAck_Distance	D_LEVELTR	32767	

3.2.2. ConditionnalTransition Operator

Declared as **`public function`**

3.2.2.1. Interface

Table 11: Inputs of ConditionnalTransition

Name	Type	Comments and Information
LRBG	NID_LRBG	
referenceLocation	Obu_BasicTypes_Pkg::L_internal_Type	
Packet_46_One_Iter	Packet_Types_Pkg::P46_ConditionalLevelTransitionOrder_T	

Table 12: Outputs of ConditionnalTransition

Name	Type	Comments and Information
One_Transition	Level_And_Mode_Types_Pkg::T_LevelTransition	

3.2.2.2. Locals

Table 13: Locals of ConditionnalTransition

Name	Type	Comments and Information
Loc_Level_Transition	M_LEVELTR	
Loc_Req_Level	M_LEVEL	

3.2.2.3. Operator Hierarchy

diagram : diagram_ConditionnalTransition_1

3.2.2.4. Graphical and Textual Diagrams

3.2.2.4.1. View of diagram_ConditionnalTransition_1 (ConditionnalTransition)

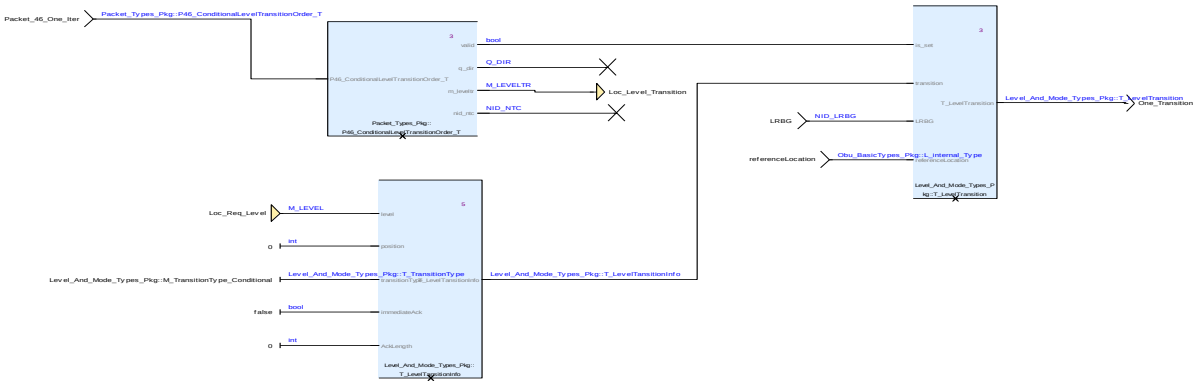


Figure 5: View of diagram_ConditionnalTransition_1 (ConditionnalTransition)

3.2.3. Input_Level_Transition Operator

Declared as **`public function`**

3.2.3.1. Interface

Table 14: Inputs of Input_Level_Transition

Name	Type	Comments and Information
Data_From_Track_Packets	Level_And_Mode_Types_Pkg::T_Data_From_Track_Packet	

Table 15: Outputs of Input_Level_Transition

Name	Type	Comments and Information
conditional_transition	Level_And_Mode_Types_Pkg::T_LevelTransition_PriorityTable	
level_transition_priority_table	Level_And_Mode_Types_Pkg::T_LevelTransition_PriorityTable	

3.2.3.2. Operator Hierarchy

diagram : diagram_Input_Level_Transition_1

3.2.3.3. Graphical and Textual Diagrams

3.2.3.3.1. View of diagram_Input_Level_Transition_1 (Input_Level_Transition)

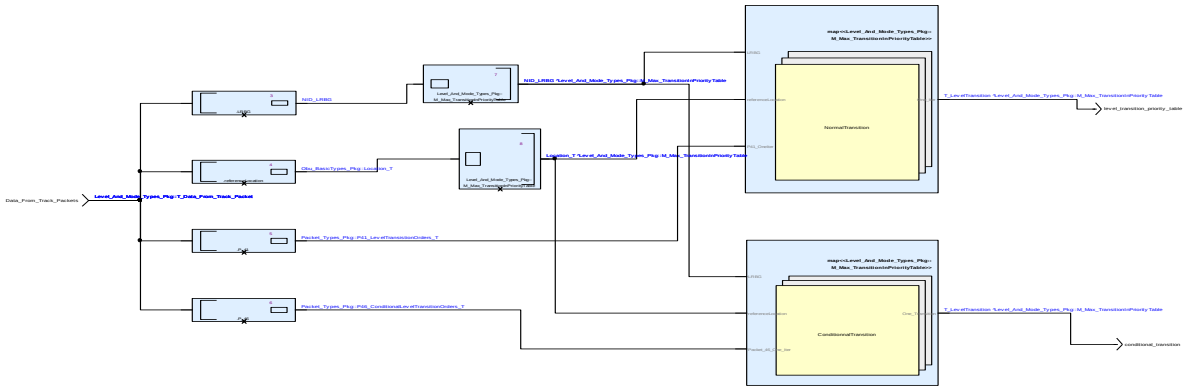


Figure 6: View of diagram_Input_Level_Transition_1 (Input_Level_Transition)

3.2.4. Input_MA_SSP_Gradient Operator

Declared as **`public function`**

3.2.4.1. Interface

Table 16: Inputs of Input_MA_SSP_Gradient

Name	Type	Comments and Information
Data_From_Track_MASSPGradient	Level_And_Mode_Types_Pkg::T_Data_From_Track_MASSPGradient_Available	

Table 17: Outputs of Input_MA_SSP_Gradient

Name	Type	Comments and Information
received_L2_L3_MA	bool	
received_L1_MA	bool	
MA_SSP_Gradient_Available	bool	

3.2.4.2. Operator Hierarchy

diagram : diagram_Input_MA_SSP_Gradient_1

3.2.4.3. Graphical and Textual Diagrams

3.2.4.3.1. View of diagram_Input_MA_SSP_Gradient_1 (Input_MA_SSP_Gradient)

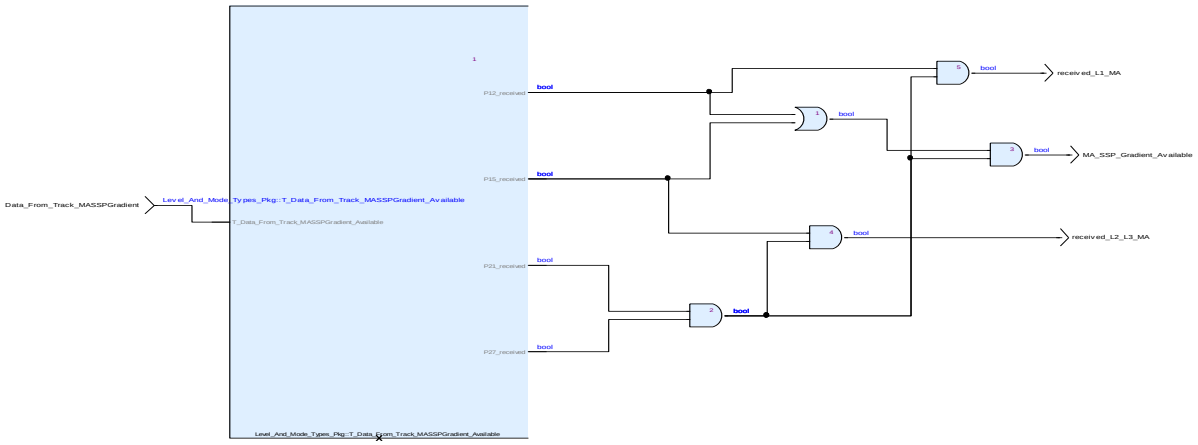


Figure 7: View of diagram_Input_MA_SSP_Gradient_1 (Input_MA_SSP_Gradient)

3.2.5. Input_Messages Operator

Declared as **`public function`**

3.2.5.1. Interface

Table 18: Inputs of Input_Messages

Name	Type	Comments and Information
Data_From_Track_Messages	Level_And_Mode_Types_Pkg::T_Data_From_Track_Mess	

Table 19: Outputs of Input_Messages

Name	Type	Comments and Information
Emergency_Stop_Message_Received	bool	
Shunting_Granted_By_RBC	bool	
RCB_Ack_And_EB_Revocked	bool	
RBC_Authorized_SR	bool	

3.2.5.2. Locals

Table 20: Locals of Input_Messages

Name	Type	Comments and Information
Loc_Mess_15	bool	
Loc_Mess_16	bool	
Loc_Mess_2	bool	

Name	Type	Comments and Information
Loc_Mess_27	bool	
Loc_Mess_28	bool	
Loc_Mess_6	bool	

3.2.5.3. Operator Hierarchy

diagram : diagram_Input_Messages_1

3.2.5.4. Graphical and Textual Diagrams

3.2.5.4.1. View of diagram_Input_Messages_1 (Input_Messages)

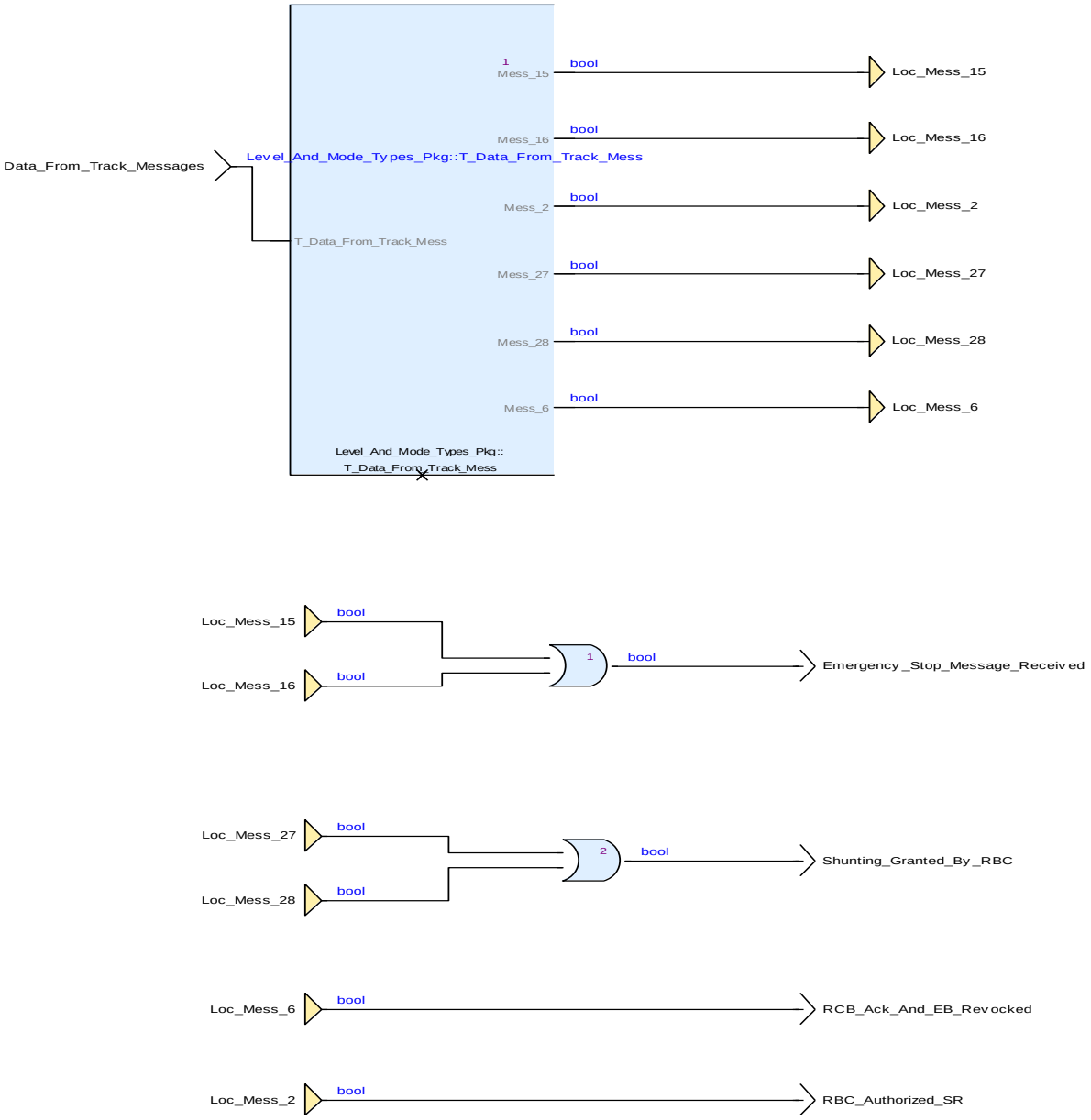


Figure 8: View of diagram_Input_Messages_1 (Input_Messages)

3.2.6. Input_ModeProfiles Operator

Declared as **`public function`**

3.2.6.1. Interface

Table 21: Inputs of Input_ModeProfiles

Name	Type	Comments and Information
P_80_One_Iter	Packet_Types_Pkg::P80_ModeProfile_T	

Table 22: Outputs of Input_ModeProfiles

Name	Type	Comments and Information
Mode_Profile_On_Bord	Level_And_Mode_Types_Pkg::T_Mode_Profile	

3.2.6.2. Locals

Table 23: Locals of Input_ModeProfiles

Name	Type	Comments and Information
Loc_MAMode	M_MAMODE	
Loc_MO_Profile_Available	bool	
Loc_Mode_Profile	Level_And_Mode_Types_Pkg::T_MA	

3.2.6.3. Operator Hierarchy

diagram : diagram_Input_ModeProfiles_1
    activate if : IfBlock1
        branch : then
        branch : else

3.2.6.4. Graphical and Textual Diagrams

3.2.6.4.1. View of diagram_Input_ModeProfiles_1 (Input_ModeProfiles)

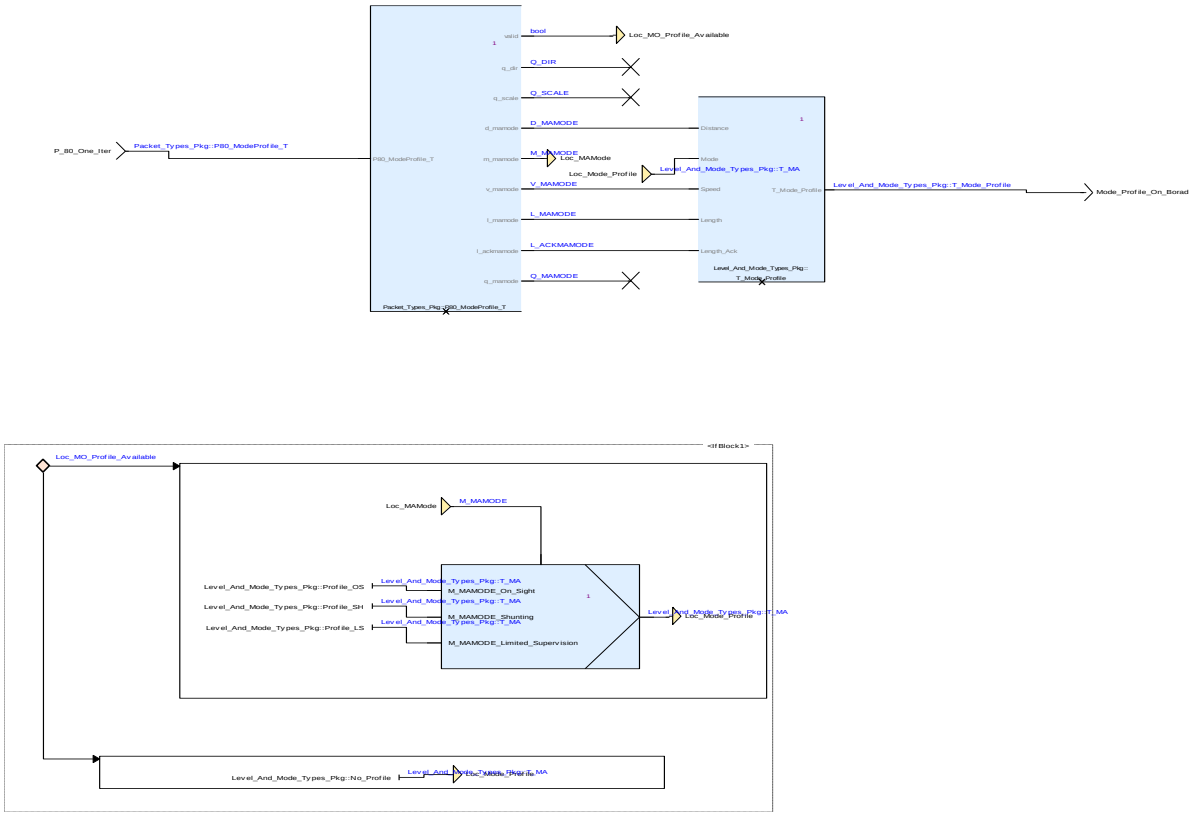


Figure 9: View of diagram_Input_ModeProfiles_1 (Input_ModeProfiles)

Table 24: Conditional Blocks of diagram_Input_ModeProfiles_1

Conditional Block	Comments and Information
IfBlock1	

Table 25: Actions of diagram_Input_ModeProfiles_1

Conditional Block Action	Comments and Information
IfBlock1:then	
IfBlock1:else	

3.2.7. Input_Modes Operator

Declared as **`public function`**

3.2.7.1. Interface

Table 26: Inputs of Input_Modes

Name	Type	Comments and Information
Data_From_Track_Packets	Level_And_Mode_Types_Pkg::T_Data_From_Track_Packet	

Table 27: Outputs of Input_Modes

Name	Type	Comments and Information
Stop_If_In_SH	bool	
Stop_if_In_SR	bool	
Reversing_Data	Level_And_Mode_Types_Pkg::T_Reversing_Data	
Mode_Profile_On_Borad	Level_And_Mode_Types_Pkg::T_Mode_Profile_Table	
List_BG_Related_SR_Empty	bool	
Trip_Order_givrn_By_Balise	bool	

3.2.7.2. Locals

Table 28: Locals of Input_Modes

Name	Type	Comments and Information
Loc_Packet_12	Packet_Types_Pkg::P12_Level1MovementAuthorities_T	
Loc_Packet_135	Packet_Types_Pkg::P135_StopShuntingOnDeskOpening_T	
Loc_Packet_137	Packet_Types_Pkg::P137_StopIfInStaffResponsible_T	
Loc_Packet_138	Packet_Types_Pkg::P138_ReversingAreaInformation_T	
Loc_Packet_139	Packet_Types_Pkg::P139_ReversingSupervisionInformation_T	
Loc_Packet_63	Packet_Types_Pkg::P63_ListofBalisesinSRAuthority_T	
Loc_Packet_80	Packet_Types_Pkg::P80_ModeProfiles_T	

3.2.7.3. Operator Hierarchy

diagram : diagram_Input_Modes_1

3.2.7.4. Graphical and Textual Diagrams

3.2.7.4.1. View of diagram_Input_Modes_1 (Input_Modes)

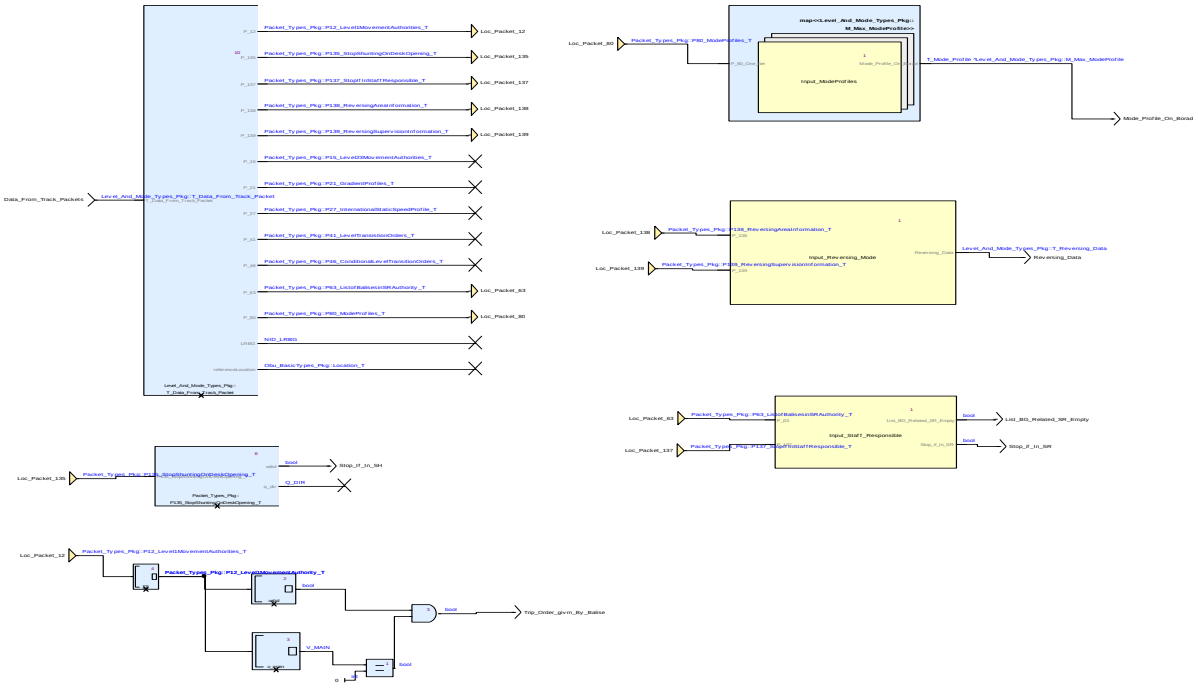


Figure 10: View of diagram_Input_Modes_1 (Input_Modes)

3.2.8. Input_Reversing_Mode Operator

Declared as **`public function`**

3.2.8.1. Interface

Table 29: Inputs of Input_Reversing_Mode

Name	Type	Comments and Information
P_138	Packet_Types_Pkg::P138_ReversingAreaInformation_T	
P_139	Packet_Types_Pkg::P139_ReversingSupervisionInformation_T	

Table 30: Outputs of Input_Reversing_Mode

Name	Type	Comments and Information
Reversing_Data	Level_And_Mode_Types_Pkg::T_Reversing_Data	

3.2.8.2. Operator Hierarchy

diagram : diagram_Input_Reversing_Mode_1

3.2.8.3. Graphical and Textual Diagrams

3.2.8.3.1. View of diagram_Input_Reversing_Mode_1 (Input_Reversing_Mode)

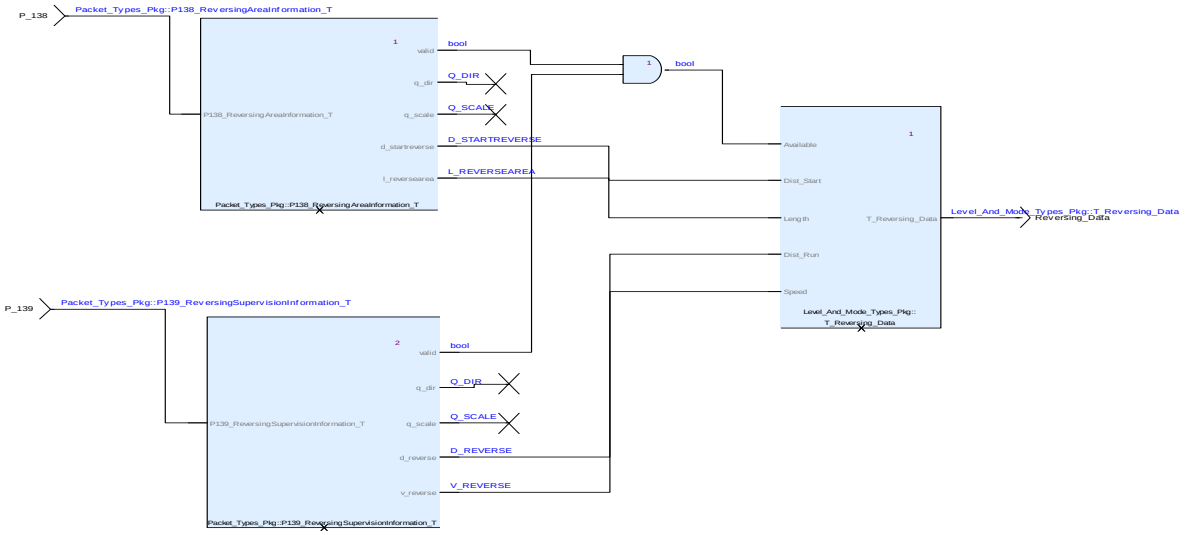


Figure 11: View of diagram_Input_Reversing_Mode_1 (Input_Reversing_Mode)

3.2.9. Input_Staff_Responsible Operator

Declared as **`public function`**

3.2.9.1. Interface

Table 31: Inputs of Input_Staff_Responsible

Name	Type	Comments and Information
P_63	Packet_Types_Pkg::P63_ListofBalisesinSRAuthority_T	
P_137	Packet_Types_Pkg::P137_StopIfInStaffResponsible_T	

Table 32: Outputs of Input_Staff_Responsible

Name	Type	Comments and Information
List_BG_Related_SR_Empty	bool	
Stop_if_In_SR	bool	

3.2.9.2. Operator Hierarchy

diagram : diagram_Input_Staff_Responsible_1

3.2.9.3. Graphical and Textual Diagrams

3.2.9.3.1. View of diagram_Input_Staff_Responsible_1 (Input_Staff_Responsible)

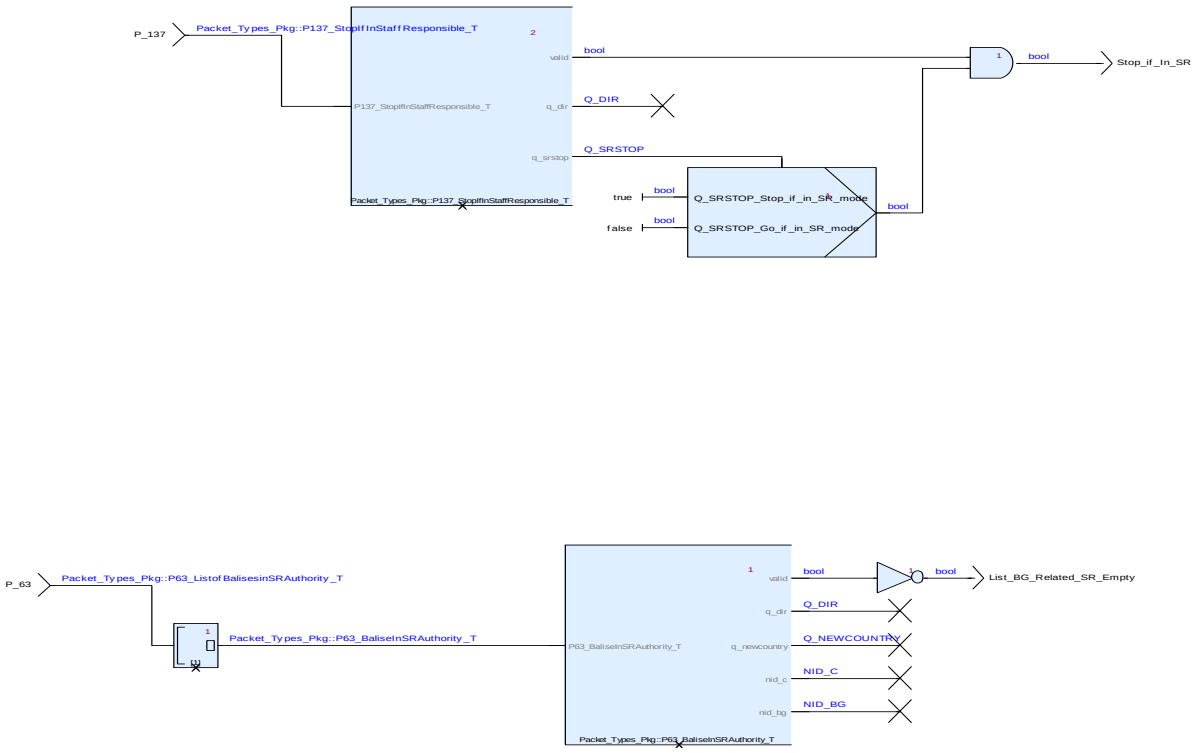


Figure 12: View of diagram_Input_Staff_Responsible_1 (Input_Staff_Responsible)

3.2.10. InputDMI Operator

Declared as **`public function`**

3.2.10.1. Interface

Table 33: Inputs of InputDMI

Name	Type	Comments and Information
Data_From_DMI	DMI_Types_Pkg::DMI_To_Modes_T	
driver_level_transition1	Level_And_Mode_Types_Pkg::T_LevelTransition	

Table 34: Outputs of InputDMI

Name	Type	Comments and Information
driver_level_transition	Level_And_Mode_Types_Pkg::T_LevelTransition	
Level_Ack	bool	
Data_From_DMI_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_DMI	

3.2.10.2. Locals

Table 35: Locals of InputDMI

Name	Type	Comments and Information
Loc_Ack_Mode_Valid	bool	
Loc_Acked_Mode	M_MODE	
Loc_DMI_Msg_Valid	bool	
Loc_DMI_Req_Valid	bool	
Loc_Driver_Ack_LS	bool	
Loc_Driver_Ack_OS	bool	
Loc_Driver_Ack_RV	bool	
Loc_Driver_Ack_SH	bool	
Loc_Driver_Ack_SN	bool	
Loc_Driver_Ack_SR	bool	
Loc_Driver_Ack_TR	bool	
Loc_Driver_Ack_UN	bool	
Loc_Driver_Req_Exit_SH	bool	
Loc_Driver_Req_NL	bool	
Loc_Driver_Req_Override	bool	
Loc_Driver_Req_SH	bool	
Loc_Driver_Req_Start	bool	
Loc_ETCS_Isolated	bool	

3.2.10.3. Operator Hierarchy

diagram : diagram_Operator5_1

3.2.10.4. Graphical and Textual Diagrams

3.2.10.4.1. View of diagram_Operator5_1 (InputDMI)

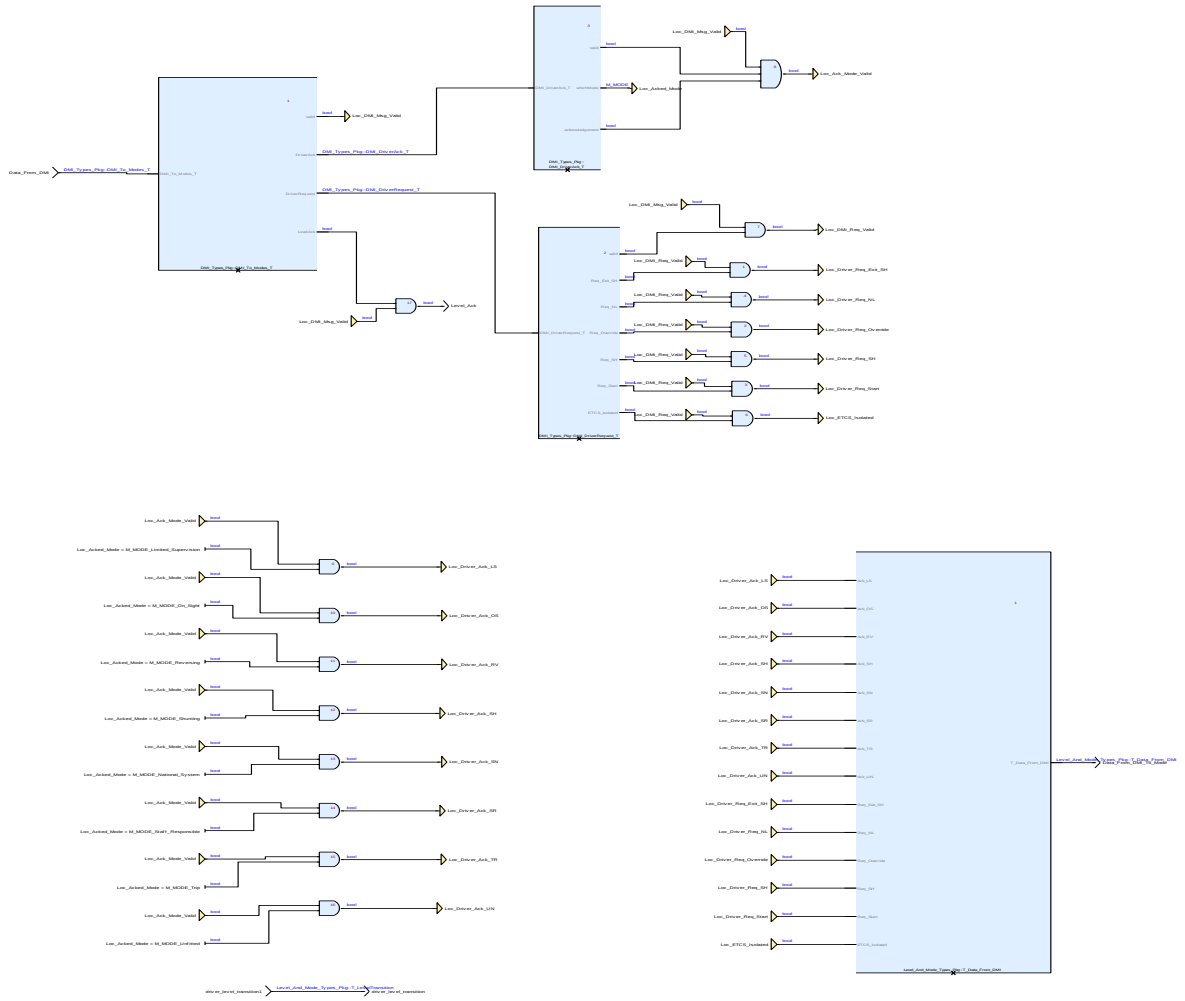


Figure 13: View of diagram_Operator5_1 (InputDMI)

3.2.11. InputLocalisation Operator

Declared as **`public function`**

3.2.11.1. Interface

Table 36: Inputs of InputLocalisation

Name	Type	Comments and Information
Data_From_Localisation	Level_And_Mode_Types_Pkg::T_Data_From_Localisation	

Table 37: Outputs of InputLocalisation

Name	Type	Comments and Information
train_standstill	bool	
trainPosition	TrainPosition_Types_Pck::trainPosition_T	

Name	Type	Comments and Information
Data_From_Localisation_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Localisation	

3.2.11.2. Locals

Table 38: Locals of InputLocalisation

Name	Type	Comments and Information
Loc_BG_In_Expected_List_In_SH	bool	
Loc_BG_In_Expected_List_In_SR	bool	
Loc_PositionErrors	TrainPosition_Types_Pck::positionErrors_T	
Loc_Train_Position	TrainPosition_Types_Pck::trainPosition_T	
Loc_Train_Speed	Obu_BasicTypes_Pkg::Speed_T	
Loc_Train_Standstill	bool	

3.2.11.3. Operator Hierarchy

diagram : diagram_InputSpeedAndSupervision1_1

3.2.11.4. Graphical and Textual Diagrams

3.2.11.4.1. View of diagram_InputSpeedAndSupervision1_1 (InputLocalisation)

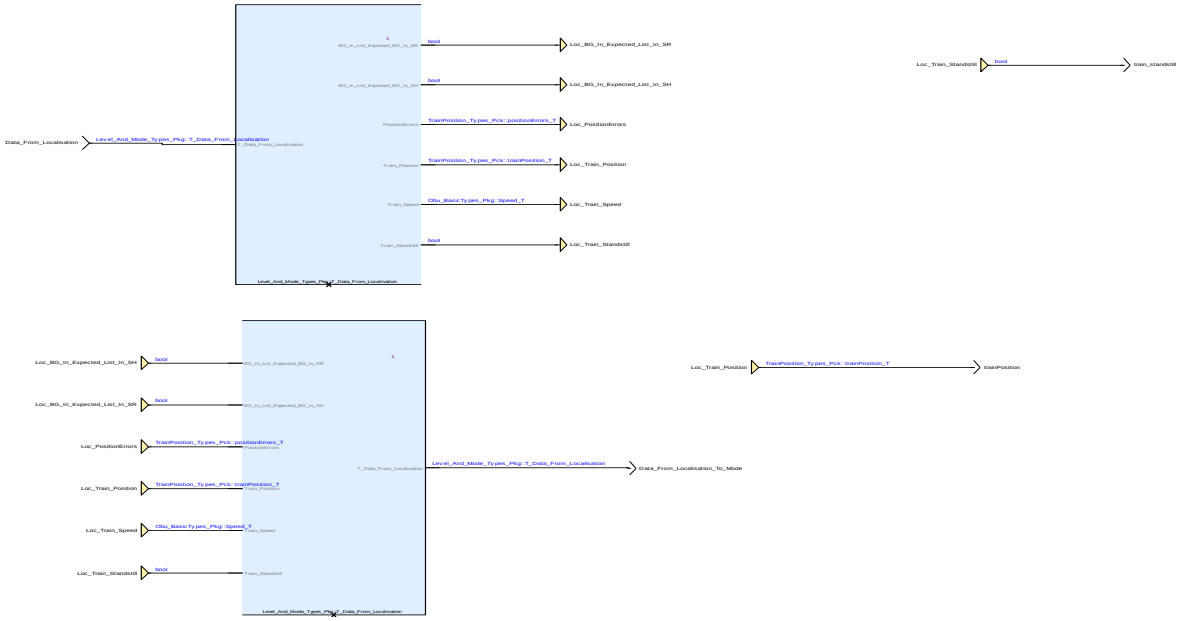


Figure 14: View of diagram_InputSpeedAndSupervision1_1 (InputLocalisation)

3.2.12. InputSpeedAndSupervision Operator

Declared as **`public function`**

3.2.12.1. Interface

Table 39: Inputs of InputSpeedAndSupervision

Name	Type	Comments and Information
Data_From_Speed_and_Supervision	Level_And_Mode_Types_Pkg::T_Data_From_Speed_Supervision	

Table 40: Outputs of InputSpeedAndSupervision

Name	Type	Comments and Information
Data_From_Speed_and_Supervision_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Speed_Supervision	

3.2.12.2. Locals

Table 41: Locals of InputSpeedAndSupervision

Name	Type	Comments and Information
Loc_Estimated_Front_End_Overpass_SR_Distance	bool	
Loc_Estimated_Front_End_Rear_Location_SSP_Or_Gradientl	bool	
Loc_Override_Function_Active	bool	
Loc_Train_Overpass_EOA_Antenna	bool	
Loc_Train_Overpass_EOA_Front_End	bool	
Loc_Train_Speed_Under_Override_Limit	bool	

3.2.12.3. Operator Hierarchy

diagram : diagram_InputSpeedAndSupervision_1

3.2.12.4. Graphical and Textual Diagrams

3.2.12.4.1. View of diagram_InputSpeedAndSupervision_1 (InputSpeedAndSupervision)

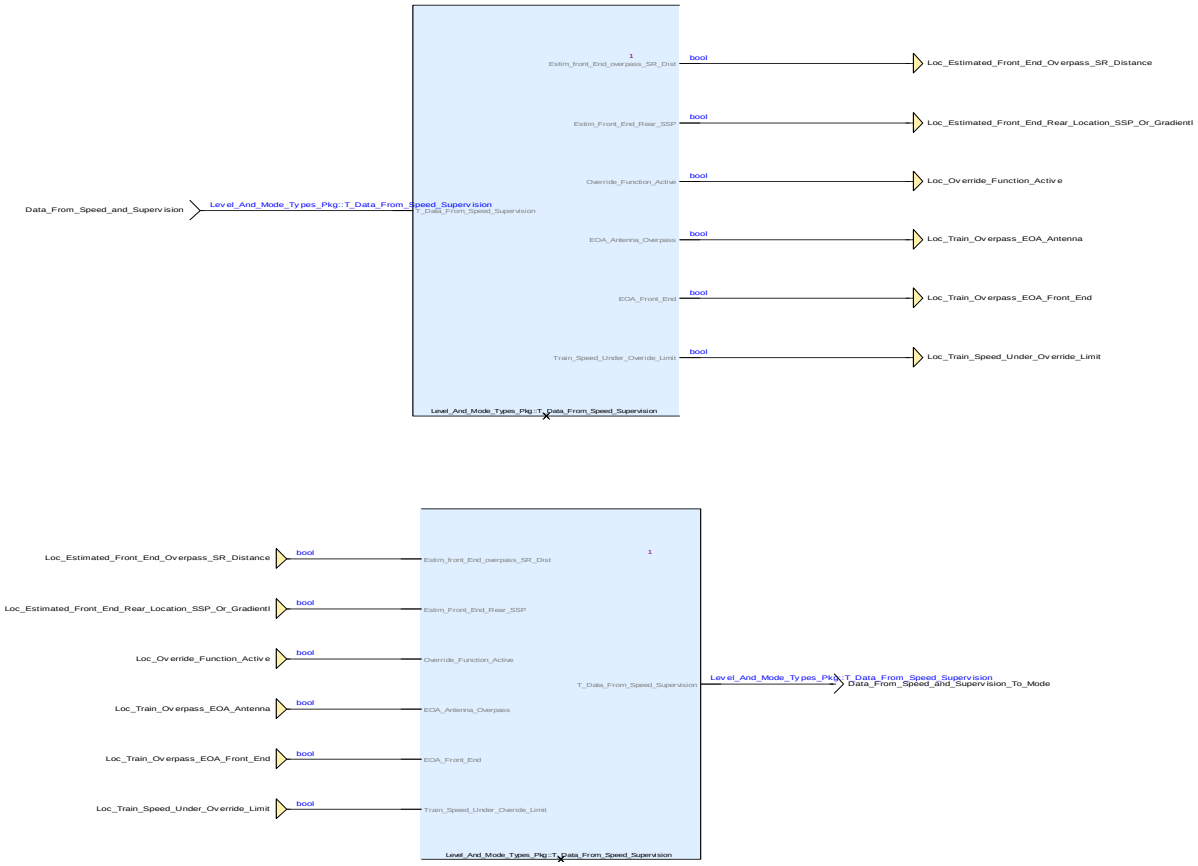


Figure 15: View of diagram_InputSpeedAndSupervision_1 (InputSpeedAndSupervision)

3.2.13. InputTrackManagement Operator

Declared as **`public function`**

3.2.13.1. Interface

Table 42: Inputs of InputTrackManagement

Name	Type	Comments and Information
Data_From_Track_Packets	Level_And_Mode_Types_Pkg::T_Data_From_Track_Packet	
Data_From_Track_Messages	Level_And_Mode_Types_Pkg::T_Data_From_Track_Mess	
Data_From_Track_MASSPGradient	Level_And_Mode_Types_Pkg::T_Data_From_Track_MASSPGradient_Available	

Table 43: Outputs of InputTrackManagement

Name	Type	Comments and Information
Data_From_Track_To_Mode	Level_And_Mode_Types_Pkg::T_Data_From_Track_To_Mode	
Data_From_Track_to_Level	Level_And_Mode_Types_Pkg::T_Data_From_Track_To_Level	

3.2.13.2. Locals

Table 44: Locals of InputTrackManagement

Name	Type	Comments and Information
Loc_conditionalTransitions	Level_And_Mode_Types_Pkg::T_LevelTransition_PriorityTable	
Loc_Emergency_Stop_Message_Received	bool	
Loc_levelTransitions	Level_And_Mode_Types_Pkg::T_LevelTransition_PriorityTable	
Loc_List_BG_Related_To_SR_Empty	bool	
Loc_MA_SSP_Gradient_Available	bool	
Loc_Mode_Profile_On_Board	Level_And_Mode_Types_Pkg::T_Mode_Profile_Table	
Loc_RBC_Authorized_SR	bool	
Loc_RCB_Ack_And_EB_Revocked	bool	
Loc_received_L1MA	bool	
Loc_received_L2L3MA	bool	
Loc_Reversing_Data	Level_And_Mode_Types_Pkg::T_Reversing_Data	
Loc_Shunting_Granted_By_RBC	bool	
Loc_Stop_If_In_Shunting	bool	
Loc_Stop_If_In_SR	bool	
Loc_Trip_Order_Given_By_Balise	bool	

3.2.13.3. Operator Hierarchy

diagram : diagram_InputTrackManagement_1

3.2.13.4. Graphical and Textual Diagrams

3.2.13.4.1. View of diagram_InputTrackManagement_1 (InputTrackManagement)

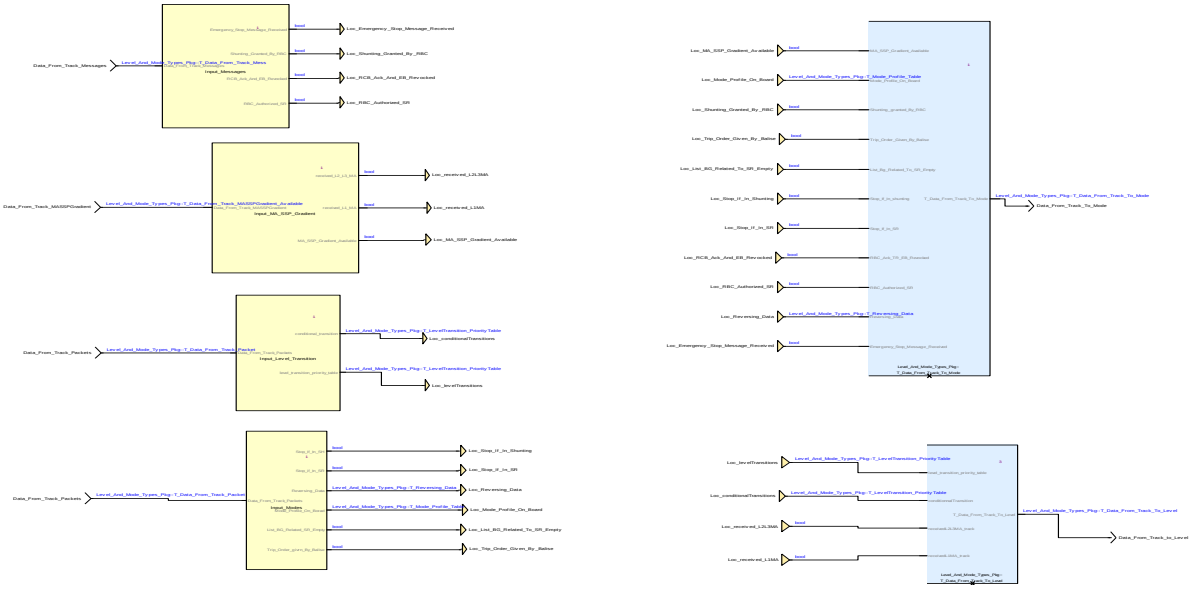


Figure 16: View of diagram_InputTrackManagement_1 (InputTrackManagement)

3.2.14. LevelTR2Level Operator

Declared as **`public function`**

3.2.14.1. Interface

Table 45: Inputs of LevelTR2Level

Name	Type	Comments and Information
InLevelTR	M_LEVELTR	

Table 46: Outputs of LevelTR2Level

Name	Type	Comments and Information
OutLevel	M_LEVEL	

3.2.14.2. Operator Hierarchy

diagram : diagram_LevelTR2Level_1

3.2.14.3. Graphical and Textual Diagrams

3.2.14.3.1. View of diagram_LevelTR2Level_1 (LevelTR2Level)

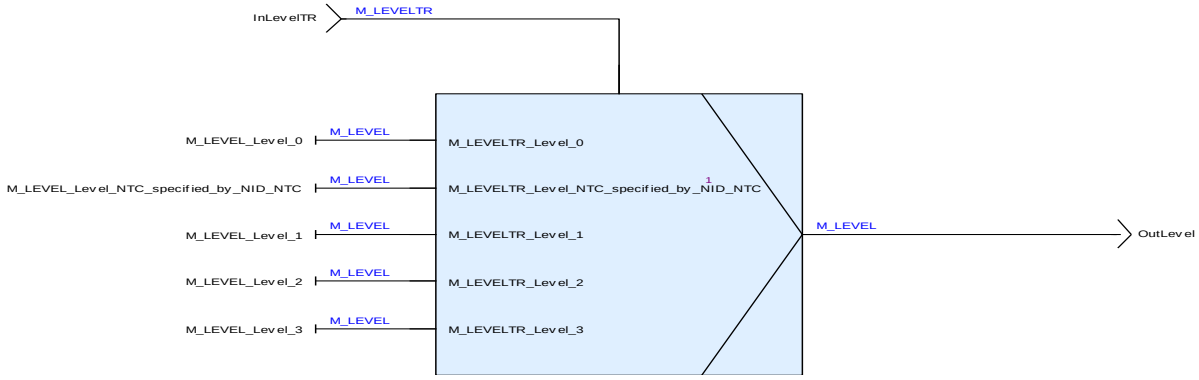


Figure 17: View of diagram_LevelTR2Level_1 (LevelTR2Level)

3.2.15. NormalTransition Operator

Declared as **`public function`**

3.2.15.1. Interface

Table 47: Inputs of NormalTransition

Name	Type	Comments and Information
LRBG	NID_LRBG	
referenceLocation	Obu_BasicTypes_Pkg::L_internal_Type	
P41_OneIter	Packet_Types_Pkg::P41_LevelTransitionOrder_T	

Table 48: Outputs of NormalTransition

Name	Type	Comments and Information
One_Iter	Level_And_Mode_Types_Pkg::T_LevelTransition	

3.2.15.2. Locals

Table 49: Locals of NormalTransition

Name	Type	Comments and Information
Loc_Ack_Length	Obu_BasicTypes_Pkg::L_internal_Type	
Loc_ImmediateAck	bool	
Loc_Level_Transition	M_LEVELTR	
Loc_Req_Level	M_LEVEL	

3.2.15.3. Operator Hierarchy

diagram : diagram_NormalTransition_1

3.2.15.4. Graphical and Textual Diagrams

3.2.15.4.1. View of diagram_NormalTransition_1 (NormalTransition)

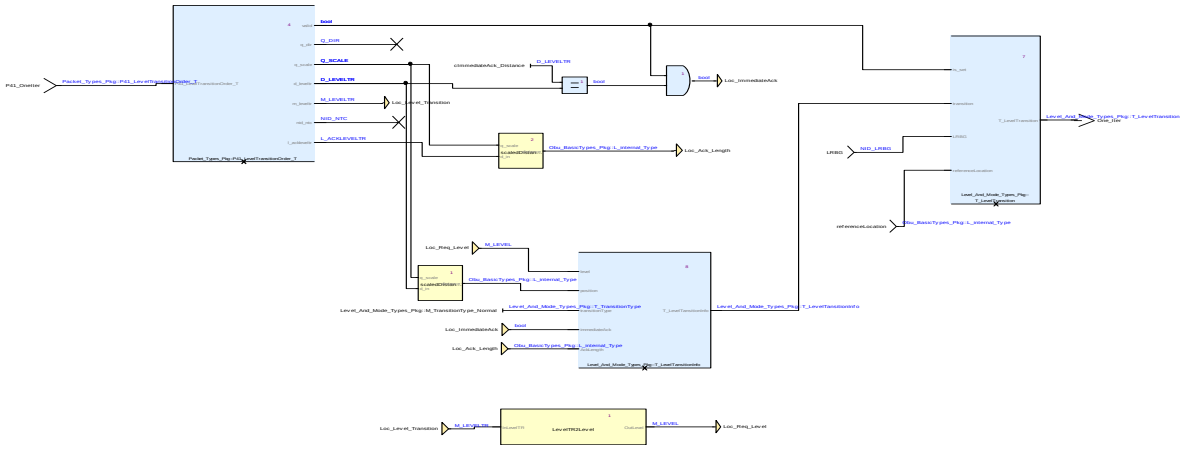


Figure 18: View of diagram_NormalTransition_1 (NormalTransition)

3.2.16. scaledDistance_2_distance Operator

Declared as **`public function`**

3.2.16.1. Comments and Information

scaledDistance_2_distance Comments:
Convertsa distance variables into scaled distance

3.2.16.2. Interface

Table 50: Inputs of scaledDistance_2_distance

Name	Type	Comments and Information
q_scale	Q_SCALE	
d_in	int	**Comments:** Distance taken from a package with q_scale attribute.

Table 51: Outputs of scaledDistance_2_distance

Name	Type	Comments and Information
distance	Obu_BasicTypes_Pkg:: L_internal_Type	

3.2.16.3. Operator Hierarchy

diagram : diagram_scaledDistance_2_distance_1

3.2.16.4. Graphical and Textual Diagrams

3.2.16.4.1. View of diagram_scaledDistance_2_distance_1 (scaledDistance_2_distance)

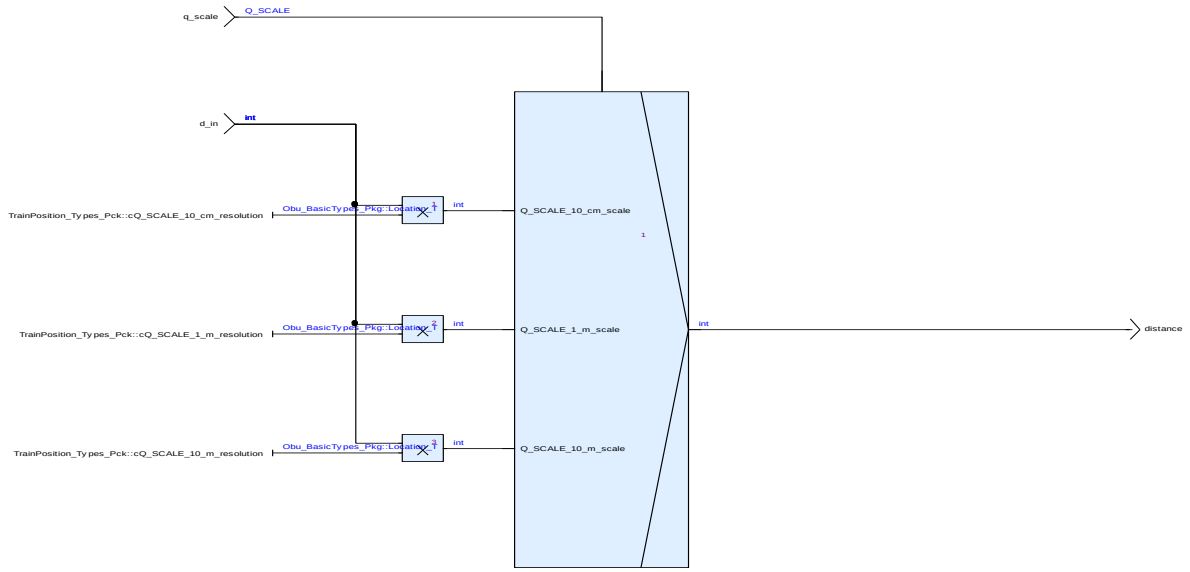


Figure 19: View of diagram_scaledDistance_2_distance_1 (scaledDistance_2_distance)

3.3. OutputManagement Package

3.3.1. Output_Mode_Level_To_Use Operator

Declared as **`public node`**

3.3.1.1. Interface

Table 52: Inputs of Output_Mode_Level_To_Use

Name	Type	Properties		Comments and Information
next_level	M_LEVEL			
currentMode	Level_And_Mode_Types_Pkg::T_Mode	last	Level_And_Mode_Types_Pkg::SB	
Level_Mode_Compatible	bool			
isNewLevel	bool			**Comments:** The requested transition was not successfull, e.g., because of missing confirmation by the driver.

Table 53: Outputs of Output_Mode_Level_To_Use

Name	Type	Comments and Information
Compatible_Mode_And_Level	Level_And_Mode_Types_Pkg::T_Mode_Level	

3.3.1.2. Operator Hierarchy

diagram : diagram_Output_Mode_Level_To_Use_1

3.3.1.3. Graphical and Textual Diagrams

3.3.1.3.1. View of diagram_Output_Mode_Level_To_Use_1 (Output_Mode_Level_To_Use)

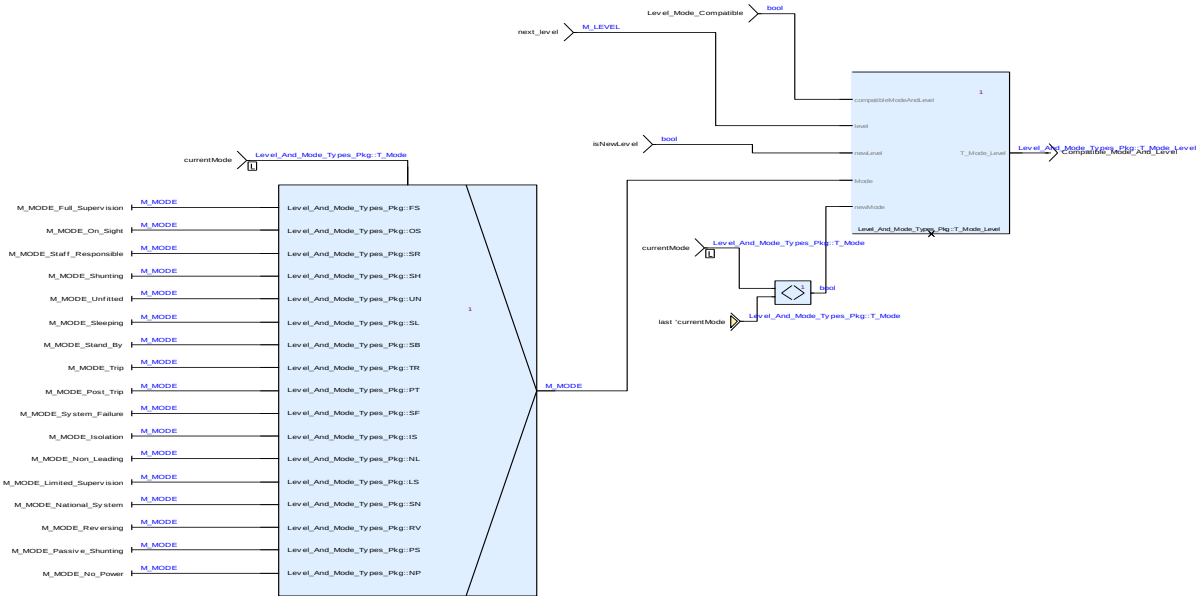


Figure 20: View of diagram_Output_Mode_Level_To_Use_1 (Output_Mode_Level_To_Use)

3.3.2. Output_To_BG_Management Operator

Declared as **`public function`**

3.3.2.1. Interface

Table 54: Inputs of Output_To_BG_Management

Name	Type	Comments and Information
Data_To_BG_Management_From_Mode	Level_And_Mode_Types_Pkg::T_Data_To_BG_Management	
Connection_to_RBC_Requested	bool	
PositionReportNeeded	bool	

Table 55: Outputs of Output_To_BG_Management

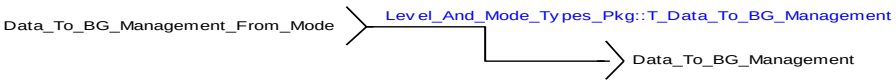
Name	Type	Comments and Information
Data_To_BG_Management	Level_And_Mode_Types_Pkg::T_Data_To_BG_Management	

3.3.2.2. Operator Hierarchy

diagram : diagram_Output_To_BG_Management_1

3.3.2.3. Graphical and Textual Diagrams

3.3.2.3.1. View of diagram_Output_To_BG_Management_1 (Output_To_BG_Management)



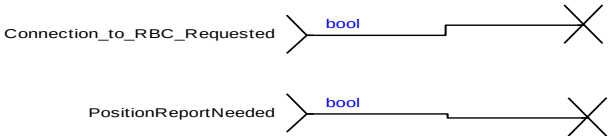


Figure 21: View of diagram_Output_To_BG_Management_1 (Output_To_BG_Management)

3.3.3. Output_To_DMI Operator

Declared as **`public function`**

3.3.3.1. Interface

Table 56: Inputs of Output_To_DMI

Name	Type	Comments and Information
Level_Mode_Compatible	bool	
needsAckFromDriver	bool	
previous_level	M_LEVEL	
next_level	M_LEVEL	
Data_To_DMI_From_Mode	Level_And_Mode_Types_Pkg::T_Data_To_DMI	
isNewLevel	bool	**Comments:** The requested transition was not successfull, e.g., because of missing confirmation by the driver.
announcedLevelTransition	Level_And_Mode_Types_Pkg::T_LevelTransition	
isAvailableForUse	bool	

Table 57: Outputs of Output_To_DMI

Name	Type	Comments and Information
Data_To_DMI	DMI_Types_Pkg::DMI_ModesToDMI_T	
announcedLevelTransitionOut	Level_And_Mode_Types_Pkg::T_LevelTransition	
isAvailableForUseOut	bool	

3.3.3.2. Locals

Table 58: Locals of Output_To_DMI

Name	Type	Comments and Information
Loc_Ack_LS_Req_To_Driver	bool	
Loc_Ack_OS_Req_To_Driver	bool	
Loc_Ack_RV_Req_To_Driver	bool	
Loc_Ack_SH_Req_To_Driver	bool	
Loc_Ack_SN_Req_To_Driver	bool	
Loc_Ack_SR_Req_To_Driver	bool	
Loc_Ack_TR_Req_To_Driver	bool	
Loc_Ack_UN_Req_To_Driver	bool	
Loc_Selected_Mode_For_Ack	M_MODE	
Loc_SH_Refused_By_RBC_To_DMI	bool	
Loc_Valid	bool	

3.3.3.3. Operator Hierarchy

diagram : diagram_Output_To_DMI_1
- *activate if* : IfBlock1
  - branch : then
  - branch : else
    - branch : then
    - branch : else
      - branch : then
      - branch : else
        - branch : then
        - branch : else
          - branch : then
          - branch : else
            - branch : then
            - branch : else
              - branch : then
              - branch : else
                - branch : then
                - branch : else

3.3.3.4. Graphical and Textual Diagrams

3.3.3.4.1. View of diagram_Output_To_DMI_1 (Output_To_DMI)

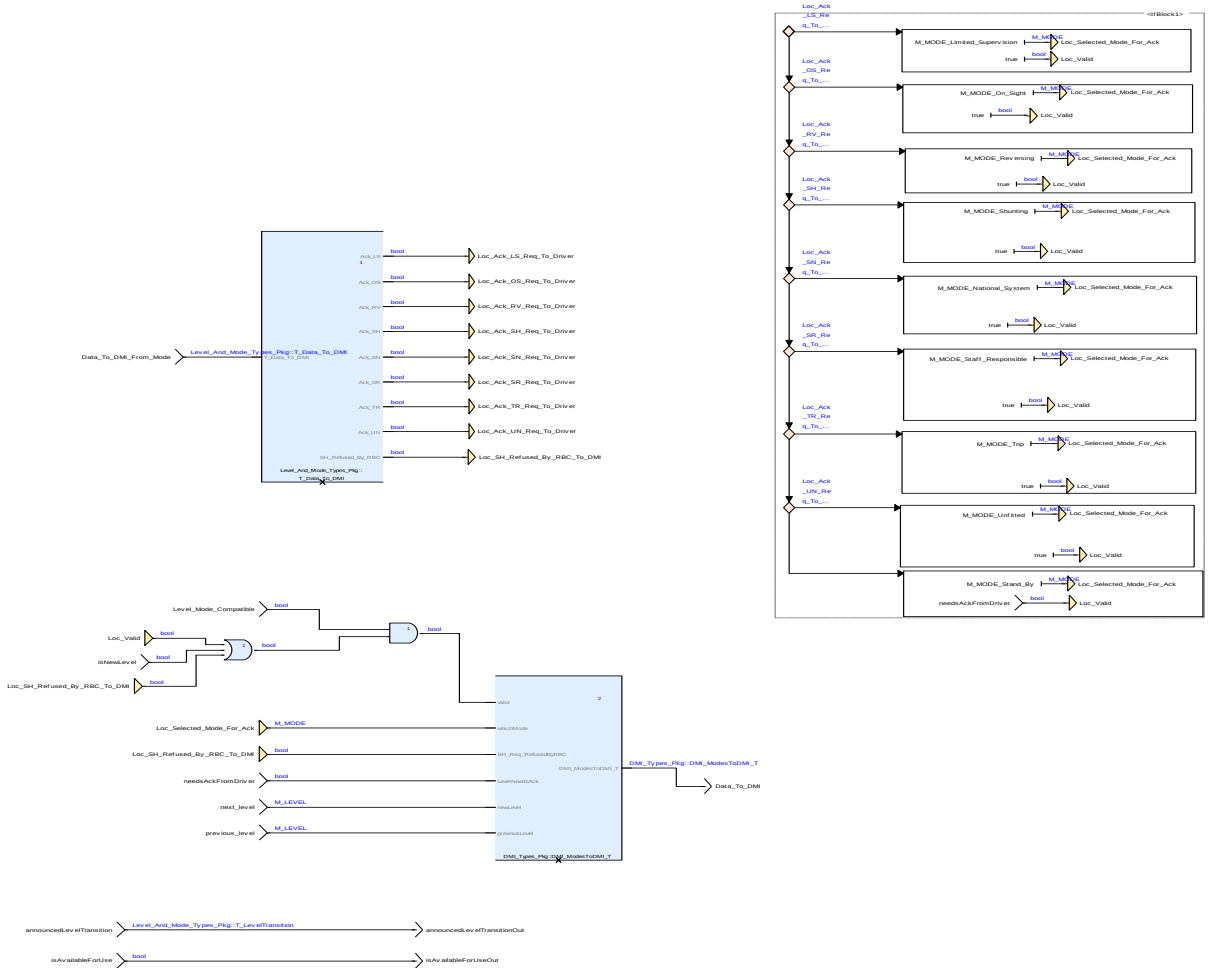


Figure 22: View of diagram_Output_To_DMI_1 (Output_To_DMI)

Table 59: Conditional Blocks of diagram_Output_To_DMI_1

Conditional Block	Comments and Information
IfBlock1	

Table 60: Actions of diagram_Output_To_DMI_1

Conditional Block Action	Comments and Information
IfBlock1:then	
IfBlock1:else:then	
IfBlock1:else:else:then	
IfBlock1:else:else:else:then	
IfBlock1:else:else:else:else:then	
IfBlock1:else:else:else:else:else:then	
IfBlock1:else:else:else:else:else:else:then	
IfBlock1:else:else:else:else:else:else:else:then	

Conditional Block Action	Comments and Information
IfBlock1:else:else:else:else:else:else:else:else	

End of document.