Generated report in ACE for the AutoFocus3 model SimpleTrafficLightsExample.af3_23

Data Dictionary

IndicatorSignal is a n:datatype. It has 2 elements that are DataOff and DataOn.
Signal is a n:datatype. It has 1 element that is Present.
PedestrianColor is a n:datatype. It has 2 elements that are Stop and Walk.
TrafficColor is a n:datatype. It has 4 elements that are Green and Red and RedYellow and Yellow.
TGreen is a constant. It is equal to 2.
TRed is a constant. It is equal to 5.
TYellow is a constant. It is equal to 1.

Component Architecture

The n:system-TL-Architecture consists-of 3 components that are Merge and Controller and Panel.
The channels in TL-Architecture are described by the following list.

The n:channel-ButtonA is an external input that goes to the n:component-Merge.

The n:channel-ButtonB is an n:output of the n:component-Panel. It goes to the n:component-Merge.

The n:channel-TrafficSignal and PedestrianSignal and IndicatorSignalA and IndicatorSignalB are the n:outputs of the n:component-Controller. They go to the n:component-Panel.

The n:channel-Request is an n:output of the n:component-Merge. It goes to the n:component-Controller.

The n:channel-TrafficSignal and PedestrianSignal and IndicatorSignalA and IndicatorSignalB are the n:outputs of the n:component-Controller and serve as the external n:outputs.

The n:component-Controller has 1 n:subcomponent that is Behavior.
The channels in Controller are described by the following list.

The n:channel-TrafficSignal and PedestrianSignal and IndicatorSignalA and IndicatorSignalB are the n:outputs of the n:component-Behavior and serve as the external n:outputs.

The n:channel-Request is an external input that goes to the n:component-Behavior.

The n:component-Panel has 2 n:subcomponents that are Display and HAL.
The channels in Panel are described by the following list.

The n:channel-TrafficSignal and PedestrianSignal and IndicatorSignalA and IndicatorSignalB are the n:outputs of the n:component-HAL. They go to the n:component-Display.

The n:channel-ButtonB is an n:output of the n:component-Display and serves as the external n:output.

The n:channel-TrafficSignal and PedestrianSignal and IndicatorSignalA and IndicatorSignalB are the external n:inputs that go to the n:component-HAL.

State Transition Diagram

The n:component-Merge has 1 state that is Merge.
The initial state of the n:component-Merge is Merge.
ForwardA is a transition from the n:state-Merge to the n:state-Merge.
The Guard for ForwardA is described by the following n:preconditions.
    The value of MergeInButtonA is equal to Present.
    The value of MergeInButtonB is not equal to Present.
The Action for ForwardA is described by the following n:postconditions.
    The value of MergeOutRequest is set to Present.

ForwardB is a transition from the n:state-Merge to the n:state-Merge.
The Guard for ForwardB is described by the following n:preconditions.
    The value of MergeInButtonB is equal to Present.
    The value of MergeInButtonA is not equal to Present.
The Action for ForwardB is described by the following n:postconditions.
    The value of MergeOutRequest is set to Present.

ForwardBoth is a transition from the n:state-Merge to the n:state-Merge.
The Guard for ForwardBoth is described by the following n:preconditions.
    The value of MergeInButtonB is equal to Present.
    The value of MergeInButtonA is equal to Present.
The Action for ForwardBoth is described by the following n:postconditions.
    The value of MergeOutRequest is set to Present.

The n:component-Behavior has 5 states that are Init and Green and RedYellow and Red and Yellow.
The initial state of the n:component-Behavior is Init.
InitializeWithNoVal is a transition from the n:state-Init to the n:state-Green.
The Guard for InitializeWithNoVal is described by the following n:preconditions.
    The value of Time is equal to -1.
    The value of BehaviorInRequest is equal to NoVal.
The Action for InitializeWithNoVal is described by the following n:postconditions.
    The value of BehaviorOutTrafficSignal is set to Green.
    The value of BehaviorOutPedestrianSignal is set to Stop.
    The value of BehaviorOutIndicatorSignal is set to DataOff.
    The value of Time is set to -1.

InitializeWithPresent is a transition from the n:state-Init to the n:state-Green.
The Guard for InitializeWithPresent is described by the following n:preconditions.
    The value of Time is equal to -1.
    The value of BehaviorInRequest is equal to Present.
The Action for InitializeWithPresent is described by the following n:postconditions.
    The value of BehaviorOutTrafficSignal is set to Green.
    The value of BehaviorOutPedestrianSignal is set to Stop.
    The value of BehaviorOutIndicatorSignal is set to DataOn.
    The value of Time is set to TGreen.

GreenToYellow is a transition from the n:state-Green to the n:state-Yellow.
The Guard for GreenToYellow is described by the following n:preconditions.
    The value of Time is equal to 0.

The Action for GreenToYellow is described by the following n:postconditions.
The value of BehaviorOutTrafficSignal is set to Yellow.
The value of BehaviorOutPedestrianSignal is set to Stop.
The value of BehaviorOutIndicatorSignal is set to DataOn.
The value of Time is set to TYellow.

YellowToRed is a transition from the n:state-Yellow to the n:state-Red.
The Guard for YellowToRed is described by the following n:preconditions.
The value of Time is equal to 0.
The Action for YellowToRed is described by the following n:postconditions.
The value of BehaviorOutTrafficSignal is set to Red.
The value of BehaviorOutPedestrianSignal is set to Walk.
The value of BehaviorOutIndicatorSignal is set to DataOff.
The value of Time is set to TRed.

RedToRedyellow is a transition from the n:state-Red to the n:state-RedYellow.
The Guard for RedToRedyellow is described by the following n:preconditions.
The value of Time is equal to 0.
The Action for RedToRedyellow is described by the following n:postconditions.
The value of BehaviorOutTrafficSignal is set to RedYellow.
The value of BehaviorOutPedestrianSignal is set to Stop.
The value of BehaviorOutIndicatorSignal is set to DataOff.
The value of Time is set to TYellow.

RedyellowToGreen is a transition from the n:state-RedYellow to the n:state-Green.
The Guard for RedyellowToGreen is described by the following n:preconditions.
The value of Time is equal to 0.
The Action for RedyellowToGreen is described by the following n:postconditions.
The value of BehaviorOutTrafficSignal is set to Green.
The value of BehaviorOutPedestrianSignal is set to Stop.
The value of BehaviorOutIndicatorSignal is set to DataOff.
The value of Time is set to -1.

Receive is a transition from the n:state-Green to the n:state-Green.
The Guard for Receive is described by the following n:preconditions.
The value of Time is equal to -1.
The value of BehaviorInRequest is equal to Present.
The Action for Receive is described by the following n:postconditions.
The value of BehaviorOutTrafficSignal is set to Green.
The value of BehaviorOutPedestrianSignal is set to Stop.
The value of BehaviorOutIndicatorSignal is set to DataOn.
The value of Time is set to TGreen.

Countdown is a transition from the n:state-Green to the n:state-Green.
The Guard for Countdown is described by the following n:preconditions.
The value of Time is greater than 0.
The Action for Countdown is described by the following n:postconditions.
The value of Time is set to (Time - 1).

Countdown is a transition from the n:state-Yellow to the n:state-Yellow.
The Guard for Countdown is described by the following n:preconditions.
The value of Time is greater than 0.
The Action for Countdown is described by the following n:postconditions.

The value of Time is set to (Time - 1).

Countdown is a transition from the n:state-Red to the n:state-Red.
The Guard for Countdown is described by the following n:preconditions.
The value of Time is greater than 0.
The Action for Countdown is described by the following n:postconditions.
The value of Time is set to (Time - 1).

Countdown is a transition from the n:state-RedYellow to the n:state-RedYellow.
The Guard for Countdown is described by the following n:preconditions.
The value of Time is greater than 0.
The Action for Countdown is described by the following n:postconditions.
The value of Time is set to (Time - 1).

The n:component-HAL has 1 state that is HAL.
The initial state of the n:component-HAL is HAL.
SetAndOutputVariables is a transition from the n:state-HAL to the n:state-HAL.
The Guard for SetAndOutputVariables is described by the following n:preconditions.
The value of HALInTrafficSignal is not equal to NoVal.
The value of HALInPedestrianSignal is not equal to NoVal.
The value of HALInIndicatorSignalA is not equal to NoVal.
The value of HALInIndicatorSignalB is not equal to NoVal.
The Action for SetAndOutputVariables is described by the following n:postconditions.
The value of TrafficSignal is set to HALInTrafficSignal.
The value of PedestrianSignal is set to HALInPedestrianSignal.
The value of IndicatorSignalA is set to HALInIndicatorSignalA.
The value of IndicatorSignalB is set to HALInIndicatorSignalB.
The value of HALOutTrafficSignal is set to TrafficSignal.
The value of HALOutPedestrianSignal is set to PedestrianSignal.
The value of HALOutIndicatorSignalA is set to IndicatorSignalA.
The value of HALOutIndicatorSignalB is set to IndicatorSignalB.

OutputVariables is a transition from the n:state-HAL to the n:state-HAL.
The Guard for OutputVariables is described by the following n:preconditions.
The value of HALInTrafficSignal is equal to NoVal.
The value of HALInPedestrianSignal is equal to NoVal.
The value of HALInIndicatorSignalA is equal to NoVal.
The value of HALInIndicatorSignalB is equal to NoVal.
The Action for OutputVariables is described by the following n:postconditions.
The value of HALOutTrafficSignal is set to TrafficSignal.
The value of HALOutPedestrianSignal is set to PedestrianSignal.
The value of HALOutIndicatorSignalA is set to IndicatorSignalA.
The value of HALOutIndicatorSignalB is set to IndicatorSignalB.

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