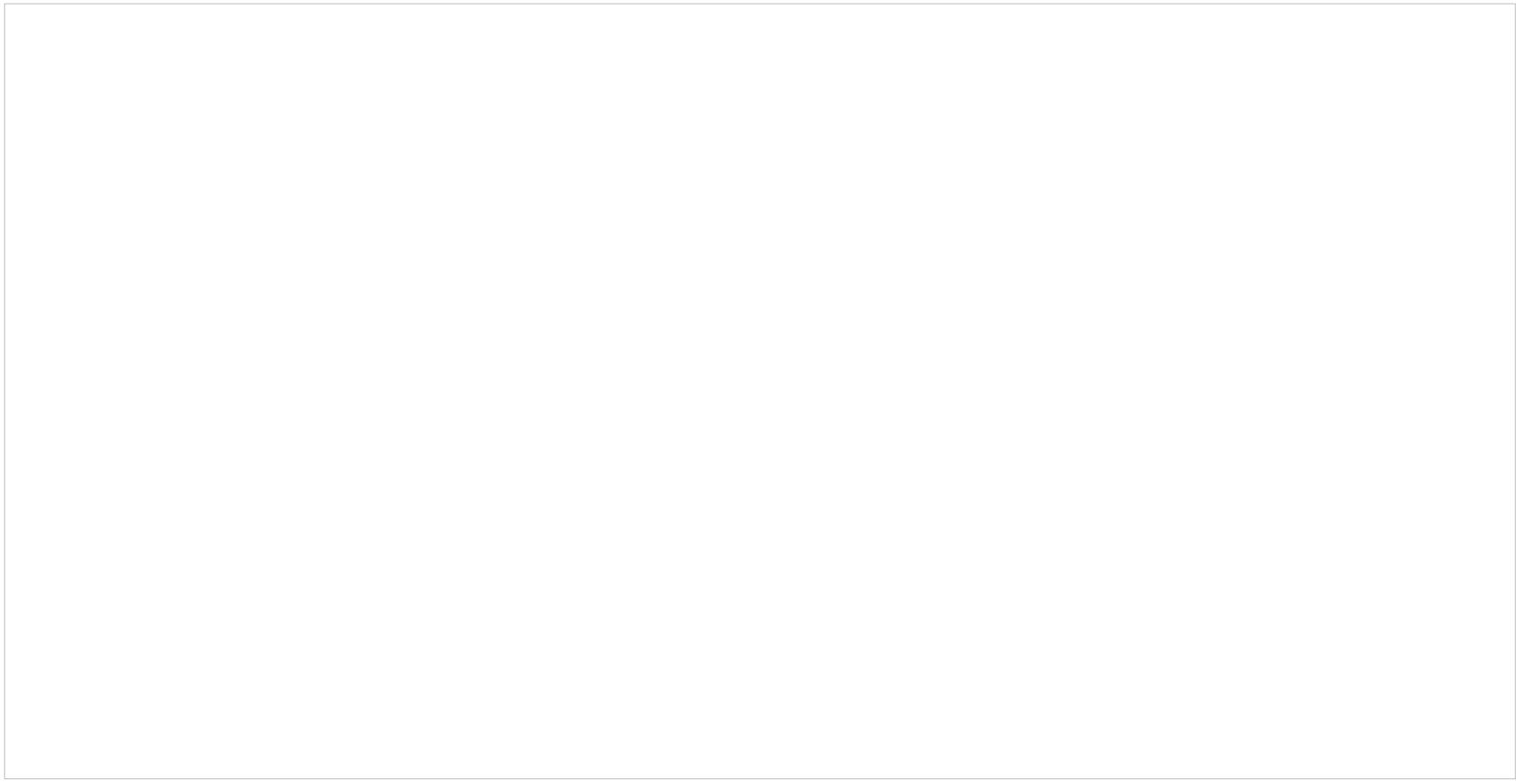
Model: LDCFModel



Place Attributes:

Place Names	Initial Markings
Primary	1
PrimarySafetyGate	1
PrimarySafetyGateFailed	0
PrimarySafetyGateSilent	0
PrimaryWrongValidation	0
PrioritySelectors	2
SafeState	0
Safing	1
SafingSafetyGate	1
SafingSafetyGateFailed	0
SafingSafetyGateSilent	0
SafingWrongValidation	0
UnsafeState	0

Timed Activity:	CCF
Distribution Parameters	**Rate** r_ccf
Activation Predicate	(none)
Reactivation Predicate	(none)
Case Distributions	**case 1** p_ccf **case 2** p_ccf **case 3** p_ccf **case 4** p_ccf

Timed Activity:	PrimaryFailure
Distribution Parameters	**Rate** fr_asilB
Activation Predicate	(none)
Reactivation Predicate	(none)

Timed Activity:	PrimarySafetyGateFailure
Distribution Parameters	**Rate** fr_asilC
Activation Predicate	(none)
Reactivation Predicate	(none)

Timed Activity:	PrioritySelectorsFailure
Distribution Parameters	**Rate** fr_asilD * PrioritySelectors->Mark()
Activation Predicate	(none)
Reactivation Predicate	(none)

Timed Activity:	SafingFailure
Distribution Parameters	**Rate** fr_asilB
Activation Predicate	(none)
Reactivation Predicate	(none)

Timed Activity:	SafingMRM

Distribution Parameters	**Rate** r_MRM
Activation Predicate	(none)
Reactivation Predicate	(none)

Timed Activity:	SafingSafetyGateFailure
Distribution Parameters	**Rate** fr_asilC
Activation Predicate	(none)
Reactivation Predicate	(none)

Instantaneous Activity:	PrimarySafetyGateFailureType
Case Distributions	**case 1** p_safetygatesilent **case 2** 1-p_safetygatesilent

Instantaneous Activity:	SafingSafetyGateFailureType
Case Distributions	**case 1** p_safetygatesilent **case 2** 1-p_safetygatesilent

Instantaneous Activity:	prebufferedMRM
Case Distributions	**case 1** 1-p_MRM **case 2** p_MRM

Instantaneous Activities Without Cases:
CatastrophicFailure

Input Gate:	CheckCatastrophicFailure
Predicate	UnsafeState->Mark()+SafeState->Mark()==0 && ((Primary->Mark()==0 && PrimaryWrongValidation->Mark()==1) || (((Primary->Mark()==0 && PrimarySafetyGate->Mark()==1) || Primary->Mark()+PrimaryWrongValidation->Mark()==2) && Safing->Mark()==0 && SafingWrongValidation->Mark()==1))
Function	;

Input Gate:	CheckNonCatastrophicFailure
Predicate	UnsafeState->Mark()+SafeState->Mark()==0 && (PrioritySelectors->Mark()==0 || PrimarySafetyGateSilent->Mark()+SafingSafetyGateSilent->Mark()==2 || (Primary->Mark()+Safing->Mark()==0 && PrimarySafetyGate->Mark()+SafingSafetyGate->Mark()==2) || (((Primary->Mark()==0 && PrimarySafetyGate->Mark()==1) || Primary->Mark()+PrimaryWrongValidation->Mark()==2) && Safing->Mark()+SafingWrongValidation->Mark()==2))
Function	;

Input Gate:	CheckSafingMRM
Predicate	UnsafeState->Mark()+SafeState->Mark()==0 && Safing->Mark()+SafingSafetyGate->Mark()==2 && ((Primary->Mark()==0 && PrimarySafetyGate->Mark()==1) || Primary->Mark()+PrimaryWrongValidation->Mark()==2)
Function	;

Output Gate:	CCFPrimaryPrimarySafetyGate

Function	if (Primary->Mark()+PrimarySafetyGate->Mark()==2)
	{
	Primary->Mark()=0;
	PrimarySafetyGate->Mark()=0;
	PrimarySafetyGateFailed->Mark()=1;
	}

Output Gate:	CCFPrimarySafing

Function	if (Primary->Mark()+Safing->Mark()==2)
	{
	Primary->Mark()=0;
	Safing->Mark()=0;
	}

Output Gate:	CCFPrimarySafingSafetyGates

Function	if (SafingSafetyGate->Mark()+PrimarySafetyGate->Mark()==2)
	{
	SafingSafetyGate->Mark()=0;
	PrimarySafetyGate->Mark()=0;
	PrimarySafetyGateFailed->Mark()=1;
	SafingSafetyGateFailed->Mark()=1;
	}

Output Gate:	CCFSafingSafingSafetyGate

Function	if (Safing->Mark()+SafingSafetyGate->Mark()==2)
	{
	Safing->Mark()=0;
	SafingSafetyGate->Mark()=0;
	SafingSafetyGateFailed->Mark()=1;
	}

Set Study: LDCFParameter:

Experiment	Variable	Type	Value
Experiment 1	fr_asilB	double	1.0E-7
	fr_asilC	double	1.0E-7
	fr_asilD	double	1.0E-8
	p_MRM	double	0.95
	p_ccf	double	0.25
	p_safetygatesilent	double	0.9
	r_MRM	double	6.0
	r_ccf	double	1.0E-9

Performance Variable Model: LDCFReward		
Top Level Model Information	Child Model Name	LDCFModel
	Model Type	SAN Model

Performance Variable : p_safestate			
Affecting Models	LDCFModel		
Impulse Functions			
Reward Function	*(Reward is over all Available Models)* if (LDCFModel->SafeState->Mark()==1) return 1;		
Simulator Statistics	Type	Instant of Time	
	Options	Estimate Mean	
		Include Lower Bound on Interval Estimate	
		Include Upper Bound on Interval Estimate	
		Estimate out of Range Probabilities	
		Confidence Level is Relative	
	Parameters	Start Time	1000.0,2000.0,3000.0,4000.0,5000.0,6000.0,7000.0,8000.0,
	Confidence	Confidence Level	0.95
		Confidence Interval	0.1

Performance Variable : p_unsafestate			
Affecting Models	LDCFModel		
Impulse Functions			
Reward Function	*(Reward is over all Available Models)* if (LDCFModel->UnsafeState->Mark()==1) return 1;		
Simulator Statistics	Type	Instant of Time	
	Options	Estimate Mean	
		Include Lower Bound on Interval Estimate	
		Include Upper Bound on Interval Estimate	
		Estimate out of Range Probabilities	
		Confidence Level is Relative	
	Parameters	Start Time	1000.0,2000.0,3000.0,4000.0,5000.0,6000.0,7000.0,8000.0,
	Confidence	Confidence Level	0.95
		Confidence Interval	0.1

Performance Variable : mttf_safestate			
Affecting Models	LDCFModel		
Impulse Functions			
Reward Function	*(Reward is over all Available Models)* if (LDCFModel->SafeState->Mark()==0) return 1;		
Simulator Statistics	Type	Interval of Time	
	Options	Estimate Mean	
		Include Lower Bound on Interval Estimate	
		Include Upper Bound on Interval Estimate	
		Estimate out of Range Probabilities	
		Confidence Level is Relative	
	Parameters	Start Time	0,
		Stop Time	1000000000000,
	Confidence	Confidence Level	0.95
		Confidence Interval	0.1

Performance Variable : mttf_unsafestate			
Affecting Models	LDCFModel		
Impulse Functions			
Reward Function	*(Reward is over all Available Models)* if (LDCFModel->UnsafeState->Mark()==0) return 1;		
Simulator Statistics	Type	Interval of Time	
	Options	Estimate Mean	
		Include Lower Bound on Interval Estimate	
		Include Upper Bound on Interval Estimate	
		Estimate out of Range Probabilities	
		Confidence Level is Relative	
	Parameters	Start Time	0.0,
		Stop Time	1000000000000,
	Confidence	Confidence Level	0.95
		Confidence Interval	0.1