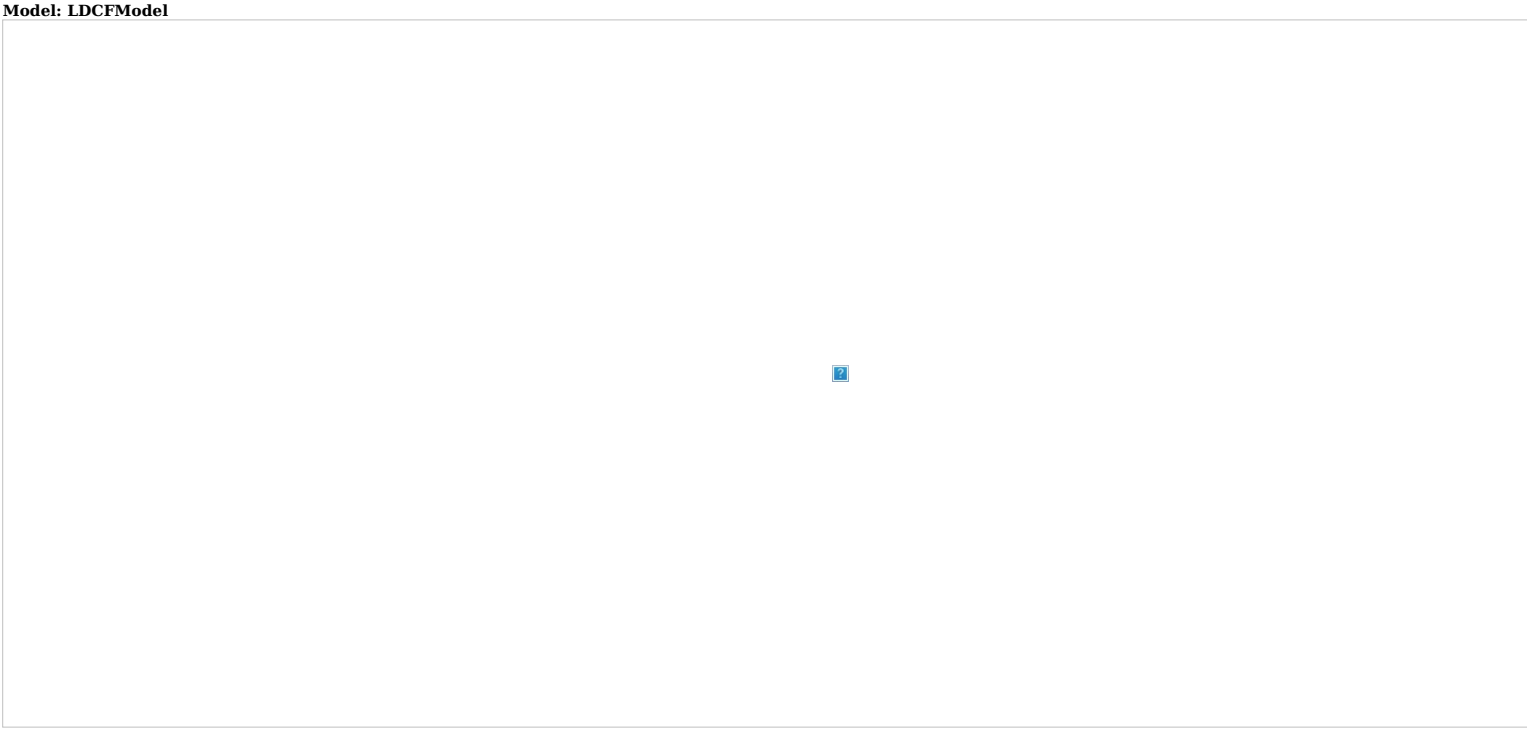
Model: LDCFModel



Place Attributes:

Place Names	Initial Markings
Primary	1
PrimaryErratic	0
PrimaryFailed	0
PrimaryLayerErratic	0
PrimaryLayerSilent	0
PrimarySG	1
PrimarySGFailed	0
PrimarySGSilent	0
PrimaryWrongValidation	0
PrioritySelectors	2
SafeState	0
Safing	1
SafingErratic	0
SafingFailed	0
SafingSG	1
SafingSGFailed	0
SafingSGSilent	0
SafingWrongValidation	0
SecondaryLayerErratic	0
SecondaryLayerSilent	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:	PrimarySGFailure
Distribution Parameters	**Rate** `fr_asilB`
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
	Rate

Distribution Parameters	r_safingMRM
Activation Predicate	(none)
Reactivation Predicate	(none)

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

Instantaneous Activity:	**PrimaryFailureType**
Case Distributions	**case 1** 1-p_primaryerratic **case 2** p_primaryerratic

Instantaneous Activity:	**PrimarySGFailureType**
Case Distributions	**case 1** 1-p_primarysgsilent **case 2** p_primarysgsilent

Instantaneous Activity:	**SafingFailureType**
Case Distributions	**case 1** 1-p_safingerratic **case 2** p_safingerratic

Instantaneous Activity:	**SafingSGFailureType**
Case Distributions	**case 1** 1-p_safingsgsilent **case 2** p_safingsgsilent

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

Instantaneous Activities Without Cases:
CatastrophicFailure
PrimaryLayerNoDecision
PrimaryLayerWrongDecision
SecondaryLayerNoDecision
SecondaryLayerWrongDecision

Input Gate:	**CheckCatastrophicFailure**
Predicate	SafeState->Mark()+UnsafeState->Mark()==0 && (PrimaryLayerErratic->Mark()==1 || PrimaryLayerSilent->Mark()+SecondaryLayerErratic->Mark()==2)
Function	;

Input Gate:	**CheckFallbackMRM**
Predicate	SafeState->Mark()+UnsafeState->Mark()==0 && SecondaryLayerSilent->Mark()+SecondaryLayerErratic->Mark()==0 && PrimaryLayerSilent->Mark()==1
Function	;

Input Gate:	**CheckNonCatastrophicFailure**
Predicate	SafeState->Mark()+UnsafeState->Mark()==0 && (PrioritySelectors->Mark()==0 || PrimaryLayerSilent->Mark()+SecondaryLayerSilent->Mark()==2)
Function	;

Input Gate:	**CheckPrimaryLayerErratic**
Predicate	PrimaryLayerSilent->Mark()+PrimaryLayerErratic->Mark()==0 && PrimaryErratic->Mark()+PrimaryWrongValidation->Mark()==2
Function	;

Input Gate:	**CheckPrimaryLayerSilent**
Predicate	PrimaryLayerSilent->Mark()+PrimaryLayerErratic->Mark()==0 && (PrimarySGSilent->Mark()==1 || Primary->Mark()+PrimaryWrongValidation->Mark()==2 || (Primary->Mark()==0 && PrimarySG->Mark()==1))
Function	;

Input Gate:	**CheckSecondaryLayerErratic**
Predicate	SecondaryLayerSilent->Mark()+SecondaryLayerErratic->Mark()==0 && SafingErratic->Mark()+SafingWrongValidation->Mark()==2
Function	;

Input Gate:	**CheckSecondaryLayerSilent**
Predicate	SecondaryLayerSilent->Mark()+SecondaryLayerErratic->Mark()==0 && (SafingSGSilent->Mark()==1 || Safing->Mark()+SafingWrongValidation->Mark()==2 || (Safing->Mark()==0 && SafingSG->Mark()==1))
Function	;

Output Gate:	**CCFPrimaryPrimarySG**

Function	if (Primary->Mark()+PrimarySG->Mark()==2)
	{
	Primary->Mark()=0;
	PrimarySG->Mark()=0;
	PrimaryFailed->Mark()=1;
	PrimarySGFailed->Mark()=1;
	}

Output Gate:	**CCFPrimarySGSafingSG**
	if (PrimarySG->Mark()+SafingSG->Mark()==2)

Function	{
	PrimarySG->Mark()=0;
	SafingSG->Mark()=0;
	PrimarySGFailed->Mark()=1;
	SafingSGFailed->Mark()=1;
	}

Output Gate:	CCFPrimarySafing

Function	if (Primary->Mark()+Safing->Mark()==2)
	{
	Primary->Mark()=0;
	Safing->Mark()=0;
	PrimaryFailed->Mark()=1;
	SafingFailed->Mark()=1;
	}

Output Gate:	CCFSafingSafingSG

Function	if (Safing->Mark()+SafingSG->Mark()==2)
	{
	Safing->Mark()=0;
	SafingSG->Mark()=0;
	SafingFailed->Mark()=1;
	SafingSGFailed->Mark()=1;
	}

Output Gate:	PrimaryNonSilent

Function	if (Primary->Mark()+PrimaryErratic->Mark()==0)
	{
	PrimarySG->Mark()=1;
	}
	else
	{
	PrimaryWrongValidation->Mark()=1;
	}

Output Gate:	SafingNonSilent

Function	if (Safing->Mark()+SafingErratic->Mark()==0)
	{
	SafingSG->Mark()=1;
	}
	else
	{
	SafingWrongValidation->Mark()=1;
	}

Range Study Variable Assignments for Study *LDCFParameter* in Project *LDCF* :

Variable	Type	Range Type	Range	Increment	Increment Type	Function	n
fr_asilB	double	Fixed	1.0E-7	-	-	-	-
fr_asilD	double	Fixed	1.0E-8	-	-	-	-
p_MRM	double	Fixed	0.99	-	-	-	-
p_ccf	double	Fixed	0.25	-	-	-	-
p_primaryerratic	double	Fixed	0.5	-	-	-	-
p_primarysgsilent	double	Fixed	0.5	-	-	-	-
p_safingerratic	double	Fixed	0.5	-	-	-	-
p_safingsgsilent	double	Fixed	0.5	-	-	-	-
r_ccf	double	Manual	[1.0E-8, 5.0E-9, 1.0E-9]	-	-	-	-
r_safingMRM	double	Fixed	6.0	-	-	-	-

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	1000.0,1500.0,2000.0,2500.0,3000.0,3500.0,4000.0,4500.0,5000.0,5500.0,6000.0,6500.0,7000.0,7500.0,8000.0,
	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	1000.0,1500.0,2000.0,2500.0,3000.0,3500.0,4000.0,4500.0,5000.0,5500.0,6000.0,6500.0,7000.0,7500.0,8000.0,
	Confidence	Confidence Level	0.95
		Confidence Interval	0.1