

GRIF TREE MODULE 2018

CARDINALITY GATE

At most can be modified in data table

File Edit Tools Document Fault-Tree Data and Computations Group ?

1,2 Card2 1,2/4

3 Evt3 4 Evt4 5 Evt5 6 Evt6

Gates

Number	Name	K Out Of N	At most
1	And1	1	1
2	Card2	1	2

3

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NEW EVENT PROPERTIES WINDOW

1st tab

General: User chooses the law, reliability data and type of event

Number: 1

Name (Automatic) Evt1

Description: My event 1 Failure of component 1

General Attributes Advanced...

Law: EXP / Exponential

Parameter(s): Lambda (λ) 1E-3 h⁻¹

Type: Basic event

OK Cancel Help

2nd tab

Attributes: to attach an attribute to the event.

Number: 1

Name (Automatic) Evt1

Description: My event 1 Failure of component 1

General Attributes Advanced...

Attribute Value

Manufacturer ManufacturerA

Zone ZoneB

OK Cancel Help

3rd tab

Advanced: to attach an attribute to the event.

Number: 1

Name (Automatic) Evt1

Description: My event 1 Failure of component 1

General Attributes Advanced...

Behavior: By default

OK Cancel Help

4

2

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RESULTS IN RED IF TARGET NOT REACHED

Columns manager

Select columns that have to be displayed and their order

☒ Number

☒ Name

☒ Automatic

☒ Description

☒ Results Uavg

☒ Target

☒ Allocation

☐ Law type

OK

Cancel

Help

Target: User defines target for a gates.

Dangerous undetected

SIS

$U(5000h)=1.1097E-3$

Actuator Part Failure

Valve 1 Fail to Close

5

V1

Valve 2 Fail to Close

4

V2

Solver

Solver

3

Sensor Part Failure

Sensor 1 Dangerous

2

S1

Sensor 2 Dangerous

1

S2

Events

Gates

Attributes

Results

Number	Name	Results U(last)	Target	Allocation
1	SIS	1.1097E-3	1E-4	NaN
2	And2	3.8416E-7	0	NaN
3	And3	6.096E-4	0	NaN

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RESULTS IN RED IF TARGET NOT REACHED

Data and Computations

Edit all data

Edit Parameters

Edit Events

Edit Gates

Edit CCF

Edit laws

Edit Attributes

Edition of assumptions

Delete unused data

Parameters database

Compute manager

Invalidate the calculation cache

Let names and IDs be unique

Verify

Preprocessing of Markov graphs (not computed only)

Preprocessing of Markov graphs

Set-up and start computation

Re-start computation

Display last results

Batch computations

Start Moca

Re-start Moca with current settings

Compute target probability value for sub-tree

Events

Gates

Number	Name	Description	Results Uavg	Target	Allocation
1	S2	Sensor 2 Danger...	1.9541E-3	5.7736E-3	0
2	S1	Sensor 1 Danger...	1.9541E-3	5.7736E-3	0
3	Solver	Solver	3E-4	3.3334E-5	0
4	V2	Valve 2 Fail To Cl...	1.2388E-2	5.7736E-3	0
5	V1	Valve 1 Fail to Cl...	1.2388E-2	5.7736E-3	0

Results in Red → Target not reached

Events

Gates

Number	Name	Results U(last)	Target	Allocation
1	SIS	1.1097E-3	1E-4	NaN
2	And2	3.8416E-7	3.3334E-5	NaN
3	And3	6.096E-4	3.3334E-5	NaN

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ALLOCATION - DEFINITION

Columns manager

Select columns that have to be displayed and their order

☒ Number

☒ Name

☒ Description

☒ Results Uavg

☒ Target

☒ Allocation

☐ Law type

☐ Disable sorting data.
Data will be displayed in the order of creation

OK

Cancel

Help

Allocation: Probability allocated by user can be defined for each event in Allocation column in Events tab

Dangerous undetected

+

SIS

Actuator Part Failure

•

And3

Solver

3

Solver

Sensor Part Failure

•

And2

Valve 1 Fail To Close

5

V1

Valve 2 Fail To Close

4

V2

Sensor 1 Dangerous

2

S1

Sensor 2 Dangerous

1

S2

Events

Results

Number	Name	Description	Results Uavg	Target	Allocation
1	S2	Sensor 2 Danger...	NaN	0	1E-2
2	S1	Sensor 1 Danger...	NaN	0	1E-2
3	Solver	Solver	NaN	0	5E-4
4	V2	Valve 2 Fail To Cl...	NaN	0	5E-3
5	V1	Valve 1 Fail To Cl...	NaN	0	5E-3

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ALLOCATION - RESULTS

U(t)

Alloc

Margin

Type = Alloc , Name = SIS

Time	Value	Average	Integral
0	6.2494E-4	6.2494E-4	0
5E3	6.2494E-4	6.2494E-4	3.1247

Allocation

U(t)

Alloc

Margin

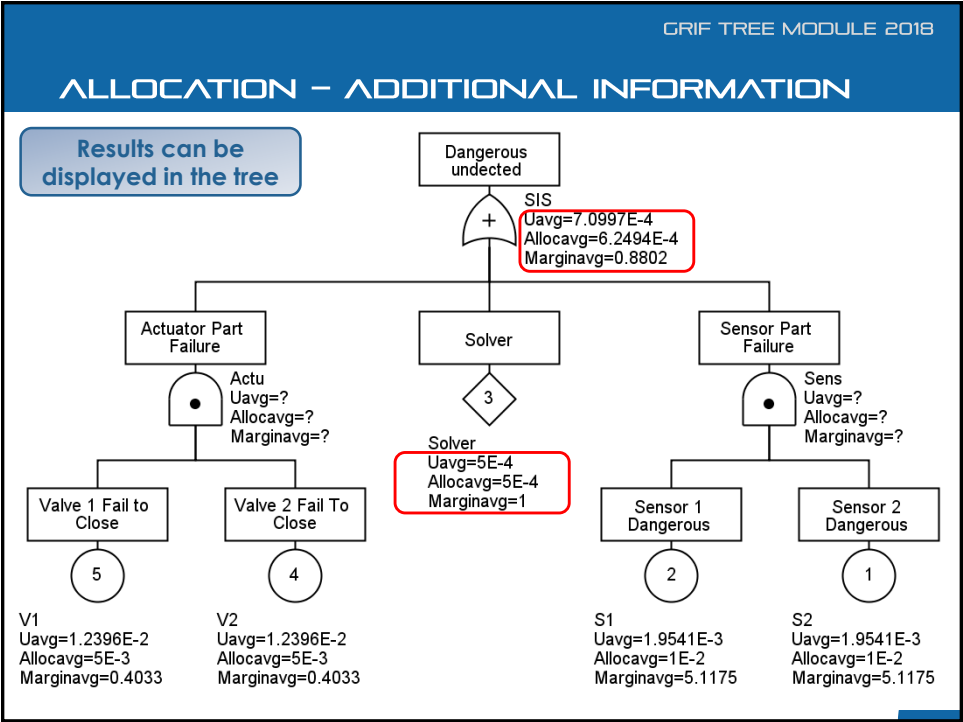
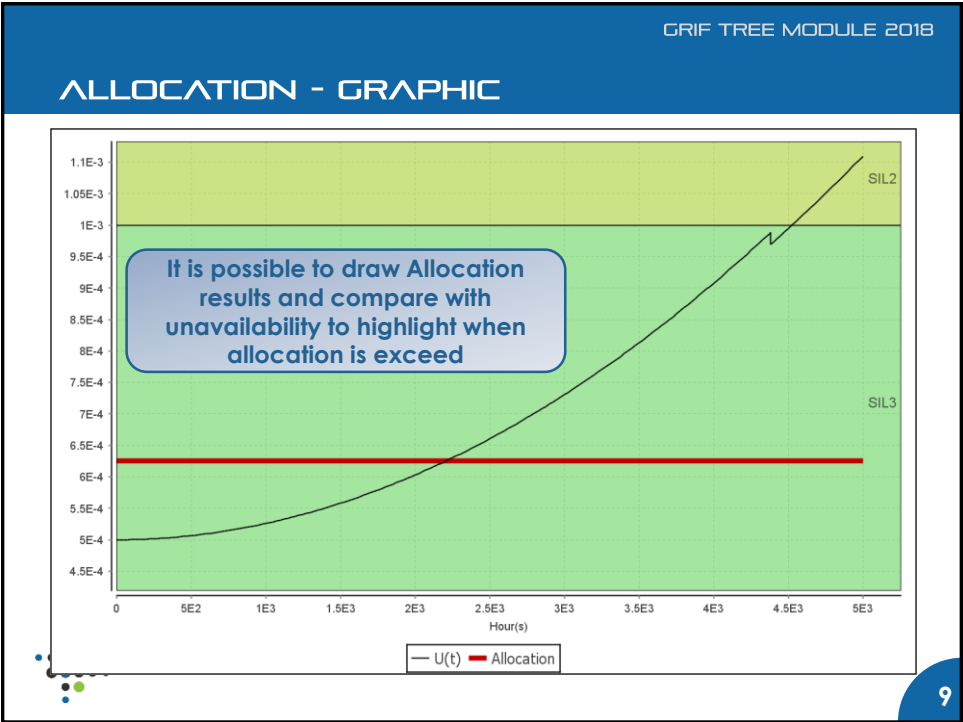
Type = Margin , Name = SIS

Time	Value	Average	Integral
0	1.2499	NaN	NaN
2.5E1	1.2498	NaN	NaN
5E1	1.2497	NaN	NaN
7.5E1	1.2495	NaN	NaN
1E2	1.2492	NaN	NaN
1.25E2	1.2489	NaN	NaN

Margin

Margin

$$= \frac{\text{Allocated probability}}{\text{Computed probability}}$$



THE END 😊

