

RISK 2020



SATODEV

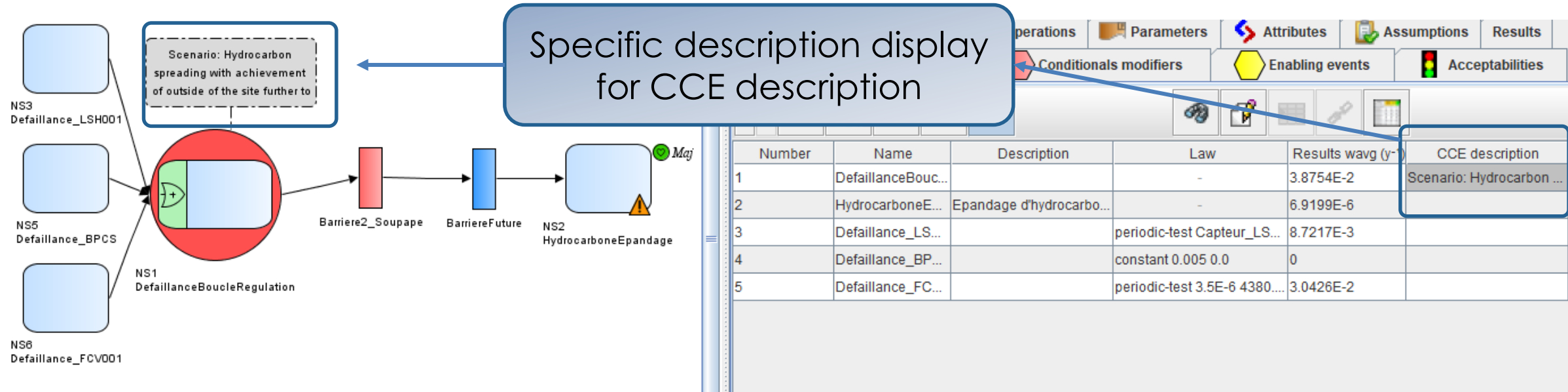
SAFETY TOOLS DEVELOPMENT

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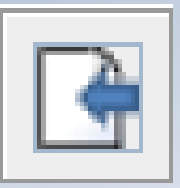
- Input IHM improvement
- New options for bow-tie presentation
- Modifier factor for initiators frequencies and barrier probabilities
- Barrier duplication
- Scenarios duplication
- PHA-Pro import (TOTAL template)
- Export Risk table in PDF



INPUT IHM IMPROVEMENT

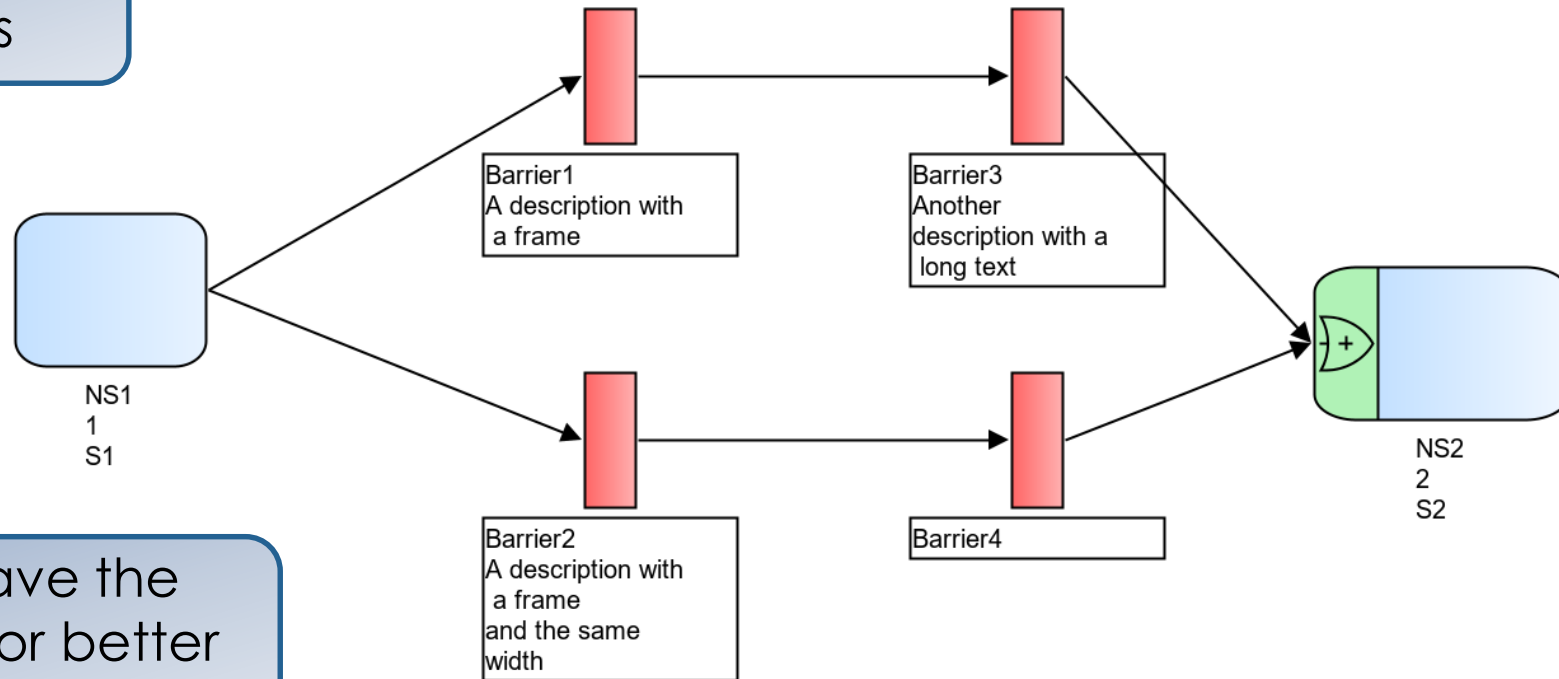


As in Tree, it will be possible to add a barrier in a page using data table



NEW OPTIONS FOR BOW-TIE PRESENTATION

Frame for
informations



Option to have the
same width (for better
alignment)



MODIFIER FACTOR FOR INITIATORS FREQUENCIES AND BARRIER PROBABILITIES

A factor to modify probability or frequency is added

Law Attributes Advanced...

Law (simplified) Law (advanced)

☐ Probability:

☐ RRF:

☐ SIL level: 4

☒ Failure rate (λ): 2.2E-6 h^{-1}

☒ with periodic test

Duration between tests (T1): 12.0 Month(s)

Time of the first test (T0): 12.0 Month(s)

☐ Apply a factor

In barrier

Law Attributes

Law (simplified) Law (advanced)

☐ Event frequency:

☐ Event occurrence: by 1 Hour(s)

☒ Probability: 5E-3

☐ Failure rate (λ): h^{-1}

☐ with periodic test

Duration between tests (T1): Hour(s)

Time of the first test (T0): Hour(s)

☐ Apply a factor

In events



BARRIER DUPLICATION

A duplication action is added in the contextual menu

The diagram illustrates the process of duplicating a barrier in a software interface. A red barrier is selected, and a contextual menu is shown with the 'Duplicate' option highlighted. An arrow points from the selected barrier to a new barrier labeled 'Barriere2_Soupape_2'. A properties dialog box for the new barrier is also shown, indicating identical properties.

Identical properties but new barrier

Properties of 'Barriers' - Barriere2_Soupape_2

Property	Value
Number	4
Name (<input type="checkbox"/> Automatic)	Barriere2_Soupape_2
Mode	Barrier
Type	Existing
Description	Pressure relief device

Law (simplified) Law (advanced)

Probability: ☐ ☐ RRF: ☐ SIL level: 4

Rate (λ): 2.2E-6 h⁻¹

Periodic test

Interval between tests (T1): 12.0 Month(s)

Interval of the first test (T0): 12.0 Month(s)

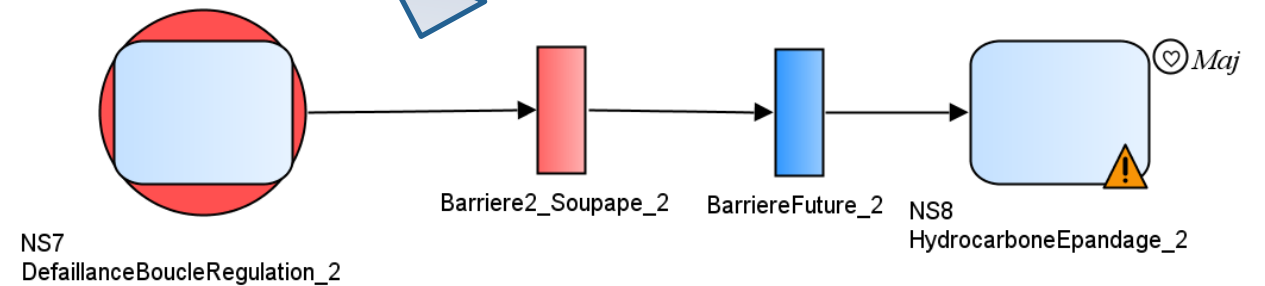
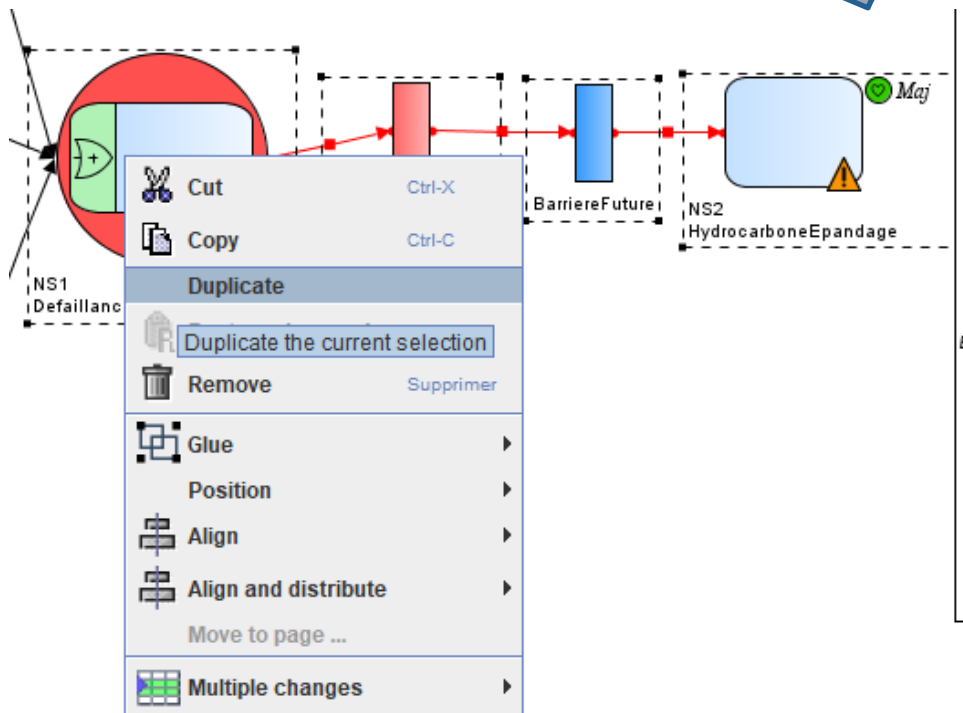
Factor

OK Cancel Help



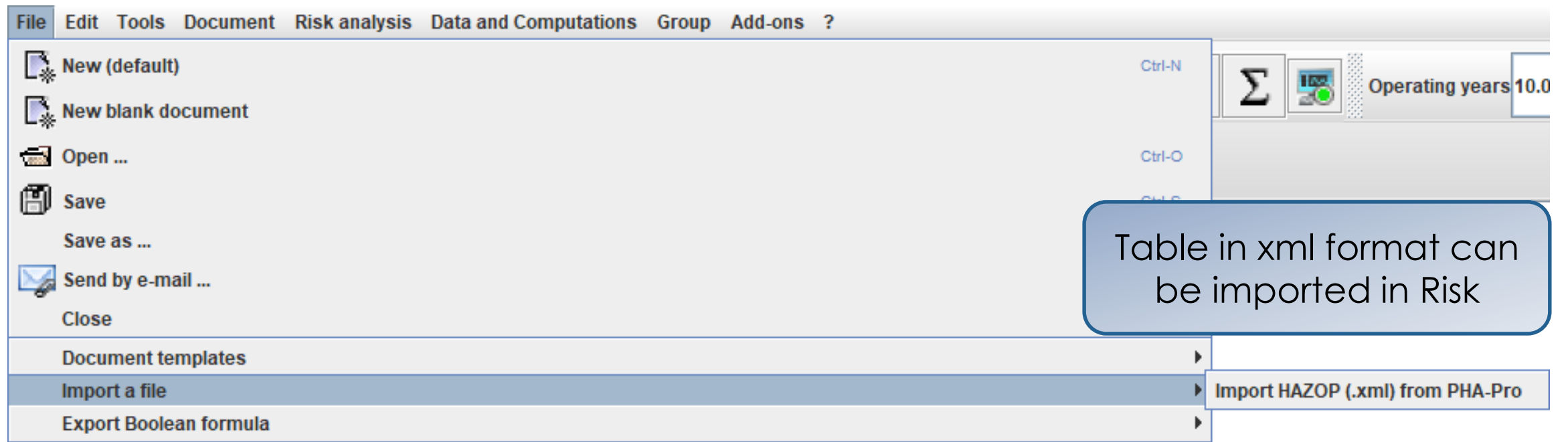
SCENARIO DUPLICATION

It is also possible to duplicate a full scenario



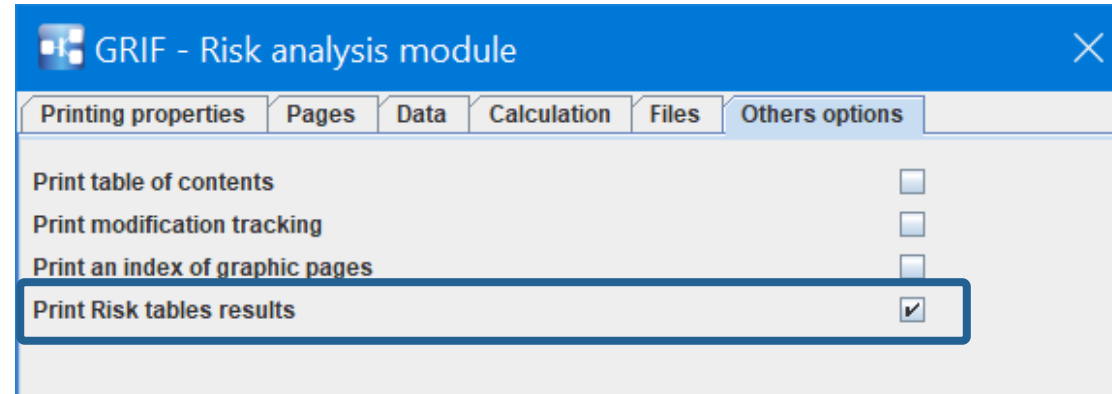
PHA-PRO IMPORT (TOTAL TEMPLATE)

Import from PHA-Pro



EXPORT RISK TABLE IN PDF

Risk table results can be exported in PDF



SIL Assignment - Barriers

Add. Bar.	Consequence	IC	Used severity	Demand (γ^{-1})	Low demand				High demand		User target
					Proposed RRF	Max RRF	Proposed PFD	Min PFD	Proposed PFH	Min PFH	
BarriereFuture	HydrocarboneEpa ndage	Defaillance_BPCS / Defaillance_FCV0 01 / Defaillance_LSH0 01	Majeur ()	6.9199E-4	6.9199	6.9199	0.1445	0.1445	1.1416E-8	1.1416E-8	PFD AVG 0.1445

SIL Assignment - Events

Consequence	IC	IC Wavg (γ^{-1})	Barriers		Wavg (γ^{-1})	Event Wavg (γ^{-1})	Used target (γ^{-1})	Used severity	RRF	SIL	Add. Bar.
			Bar. 1	Uavg							
HydrocarboneEpa ndage	Defaillance_BPCS	0	Barriere2_Soupap e	9.5743E-3	9.5437E-5	6.9199E-4	1E-4 ()	Majeur ()	6.9199	0	BarriereFuture
	Defaillance_FCV0 01	3.0426E-2	Barriere2_Soupap e	9.5743E-3	4.3625E-4			Majeur ()		0	BarriereFuture
	Defaillance_LSH0 01	8.7217E-3	Barriere2_Soupap e	9.5743E-3	1.6647E-4			Majeur ()		0	BarriereFuture



THE END 😊



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