SIL MODULE 2016

SATODEV
SAFETY TOOLS DEVELOPMENT

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SUMMARY (1/2)

- New computation management
- LOW/HIGH demand mode
- New identification fields
- 4 Lambda input
- Database for components
- Logic Solver detail
- M Mode between A and S

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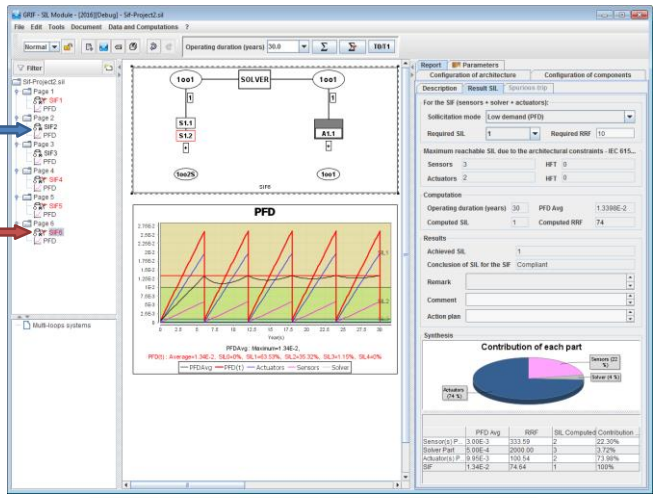
SUMMARY (2/2)

- Failed component
- Identical to
- Component edition window
- SIF duplication
- CCF warnings
- PDF report
- SIF import
- New types of sensors/actuators

NEW COMPUTATION MANAGEMENT

Results are up to date

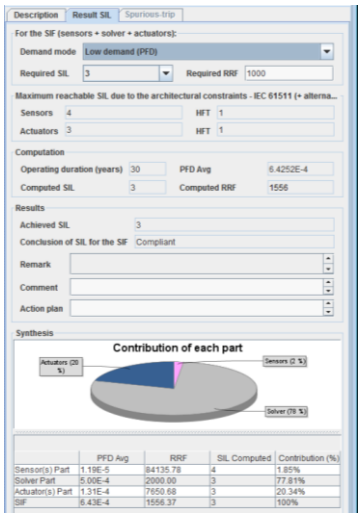
Computation must be done



- starts the computation for each SIF with a red flag,
- does not compute a SIF if a result is up to date,
- does one computation for one SIF,
- handles hundreds of SIF without memory issue

LOW DEMAND / HIGH DEMAND

- PFD and PFH are always computed
- Each SIF has its own demand mode
- Displayed results depend on the demand mode



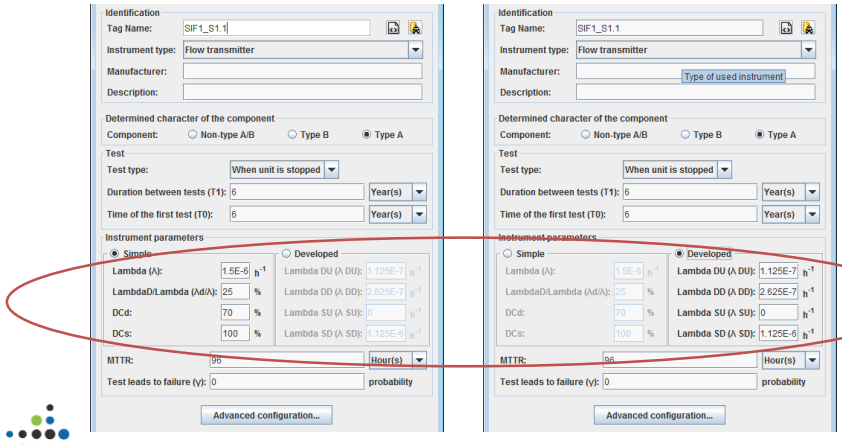
NEW IDENTIFICATION FIELDS

- New fields :
  - Manufacturer
  - Data source
  - Description

- Included in reports

NEW INPUT FOR LAMBDA AND DC

- 2 input ways for lambda:

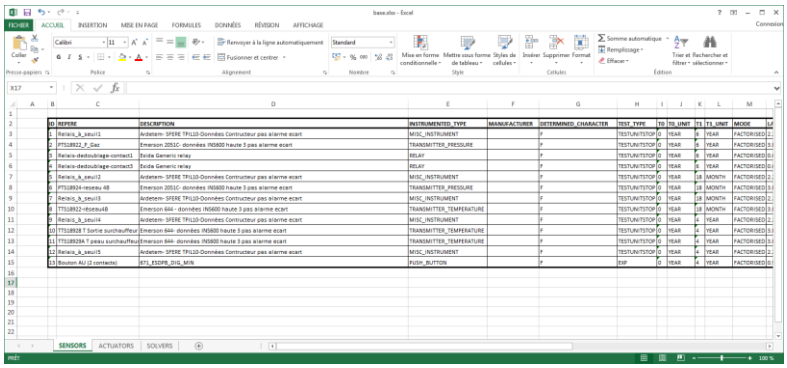


DATABASE FOR COMPONENTS

- New database for component:

DATABASE FOR COMPONENTS

- Components stored in EXCEL file:



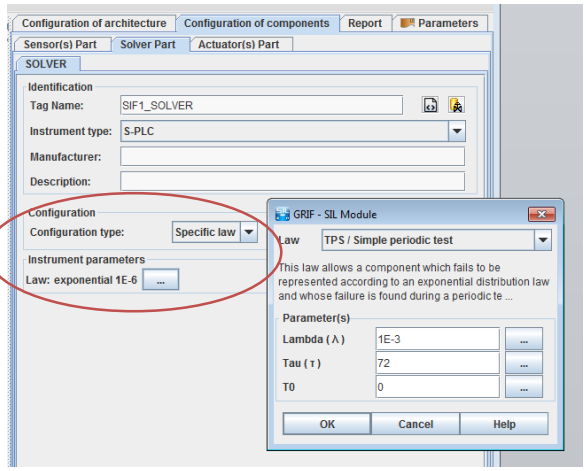
GRIF MODULE SIL 2016

DATABASE FOR COMPONENTS

- Component database:
  - Will contain EMERSON components
  - Will contain Phoenix contact components
  - Should be filled with your value from field
  - Can be shared on the network
  - Can be created from an existing .sil

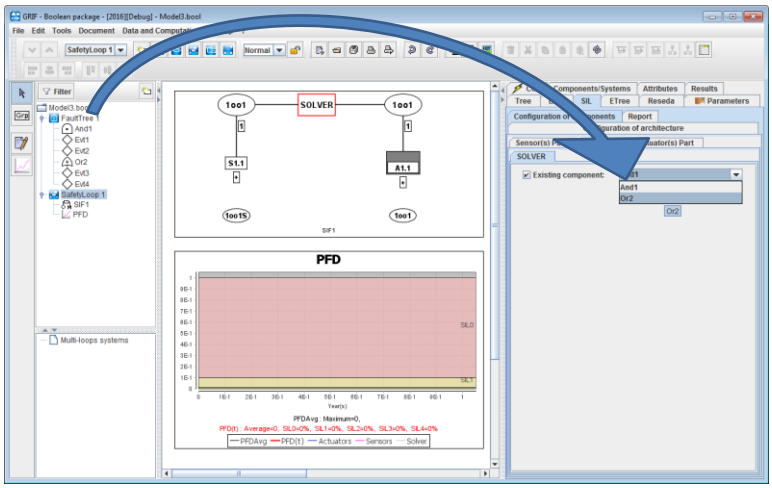
LOGIC SOLVER DETAIL

- Specific law for solver:



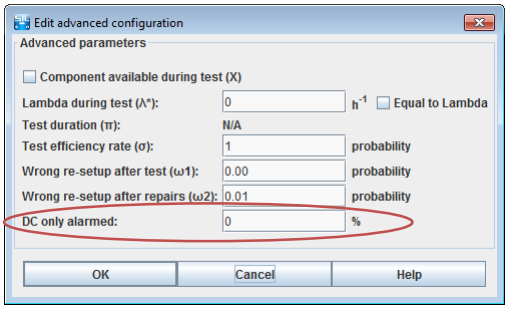
LOGIC SOLVER DETAIL

- Fault-Tree for solver in Bool module:



MODE M BETWEEN A AND S

- % of detected failures which lead to alarm only



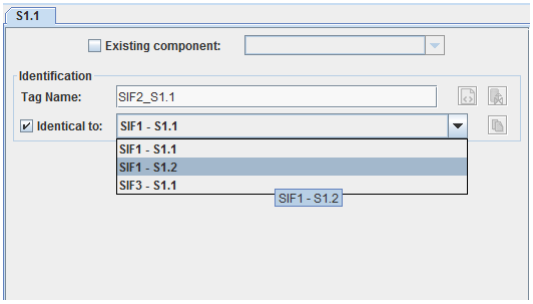
FAILED COMPONENTS

- You want to compute the SIL of your system assuming a component has failed ?
- Select the behaviour of the component among :
  - Default
  - Detected failure
  - Undetected failure
- Restart computation.

Not yet implemented

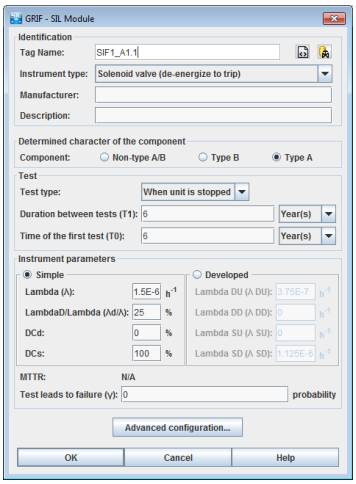
IDENTICAL TO

- The "identical to" function can now use a component of another SIF

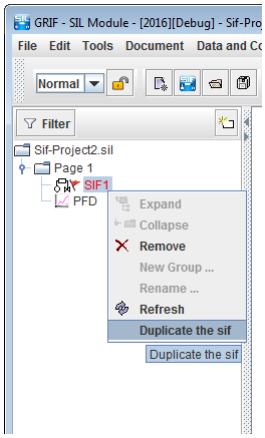


COMPONENT EDITION WINDOW

- Double-click on component opens :

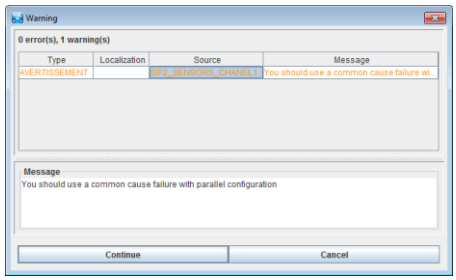


DUPLICATE SIF IN LEFT-TREE



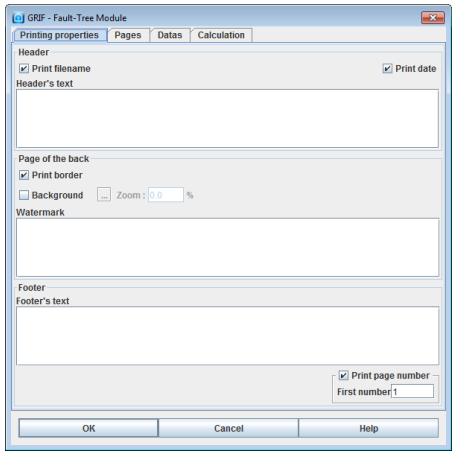
CCF WARNING

- SIL module will warn if no CCF is applied on parallel/redundant architecture
- SIL module will warn if CCF is applied on serial architecture



PDF REPORTS

- Customizable headers and footer for PDF report



Not yet implemented

SIF IMPORT

- Import SIF from another .sil
- Used to gather the work of different person in one document (and one report)

Not yet implemented

NEW TYPES OF SENSORS

- Burner flame detector
- Fire detector
- Gas detector
- Pilot flame detector
- Vibration detector
- Energize to trip link
- Analog Input
- Digital Input
- IS Barrier
- Miscellaneous instrument
- Miscellaneous sensor
- Motor status
- Power supply
- Push button
- Relay
- Safety Relay
- Fire switch
- Flow switch
- Gas switch
- Level switch
- Limit switch
- Pressure switch
- Speed switch
- Temperature switch
- Flow transmitter
- Level transmitter
- Position transmitter
- Pressure transmitter
- Speed transmitter
- Temperature transmitter
- Trip Amplifier

NEW TYPES OF ACTUATORS

- Circuit Breaker
- Contactor
- Hardwired motor control logic
- Energize to trip link
- Miscellaneous actuator
- Miscellaneous instrument
- Motor contactor
- Digital motor control logic
- Electric motor
- Digital Output
- Relay
- Safety Relay
- Pneumatic/hydraulic supply
- Power supply
- On/off valve
- Air operated on/off valve
- Control valve with actuator
- Deluge on/off valve
- Depressurization on/off valve
- Electrical on/off valve
- Hydraulic on/off valve
- Solenoid valve (de-energize to trip)
- Solenoid valve (energize to trip)
- Variable Speed Drive

THE END

SATODEV

SAFETY TOOLS DEVELOPMENT

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