

## Change history **SafetyBarrierManager**

History for versions from version 1.2

### **Version 1.2.3826**

- Various bug fixes, including a major error in calculating the management correction of operational PFD's.
- Copy graph to clipboard function included as a button, and default file name inserted in save graph dialog.
- Barriers can now be displayed with a mark indicating the common element. Each common element has its own colour.

As a preparation of version 2, timestamps of last time of editing are saved in the various elements, to enable updating of information between project versions (option not yet available).

Similarly, the Condition Edit Form is reduced in size (and some buttons re-arranged) to support display on low-resolution displays, such as projectors. This will be extended to the other forms in the next version.

### **Version 1.2.2909**

New functionality:

- On request it is now possible to remove the lower panel from the screen, so the whole screen is available for the diagram itself: main menu: View – and tick/tick off “Show Bottom Panel”
- When barriers contain “common elements” (causing common cause failure), this can now be (optionally) displayed in the diagram that can be saved and printed (sofar, only connecting lines could be drawn from the selected barrier). To discriminate common elements, each common element is assigned a colour (which can be chosen), and a small marker (a symbol that can be chosen, default is asterisk \*) is displayed next to the top right corner of each barrier if this option is selected in the Options-Colors and Sizes; “Other” tab (check “Mark Dependent Barriers” and change the marker symbol to the right as you wish).

The Help file is extended with a “Quick Guide” directly under the “Getting Started” chapter. This contains the most often used (and fastest) commands and actions. (Only in the English version)

Problems solved:

All existing problems as indicated in the Help file are solved (except the issue of items being drawn on top of each other). This involved changes in Options: Unit & Quantification; all tabs are now updated with current project information, and the time relations are now saved with the project settings. Critical events are now properly dealt with when splitting diagrams.

Some problems with adjusting the colours in the risk matrix have been solved.

### **Version 1.2.2522**

Bug repairs: Ensuring correct state of a replaced output condition of a gate; avoiding errors when evaluating probabilities involving event trees with branches with zero probability; and avoiding

erroneous detection of acyclic diagrams for some combinations of gates with multiple (even number of) inputs from a barrier or an event tree branch.

### **Version 1.2.2321**

Bug repaired originating from the ordering of inputs and outputs introduced in version 1.2.2126. This bug caused a mix-up of the selected items after a “move”, causing mixed-up diagrams with a further move when using multi-selection.

### **Version 1.2.2211**

Accuracy increased, so combination of events (OR) appears with “correct” frequency in normal output format (rounding leads to correct frequency). Achieved by maximizing probability of simultaneous events to  $10^{-8}$  per hour (was  $10^{-6}$  per hour).

### **Version 1.2.2207**

Repair of bug introduced in 1.2.2126

### **Version 1.2.2126**

Bugs corrected concerning event-tree branches not having outputs or inputs defined.

Ordering of inputs and outputs to/from gates and event-tree branches, respectively, is now automatic, depending on the position of the input or output conditions (i.e. arrows do not cross any more, manual ordering is disabled).

Manual reminder of checking updates (only relevant when internet access is blocked by proxy's or firewalls) is added.

### **Version 1.2.2109**

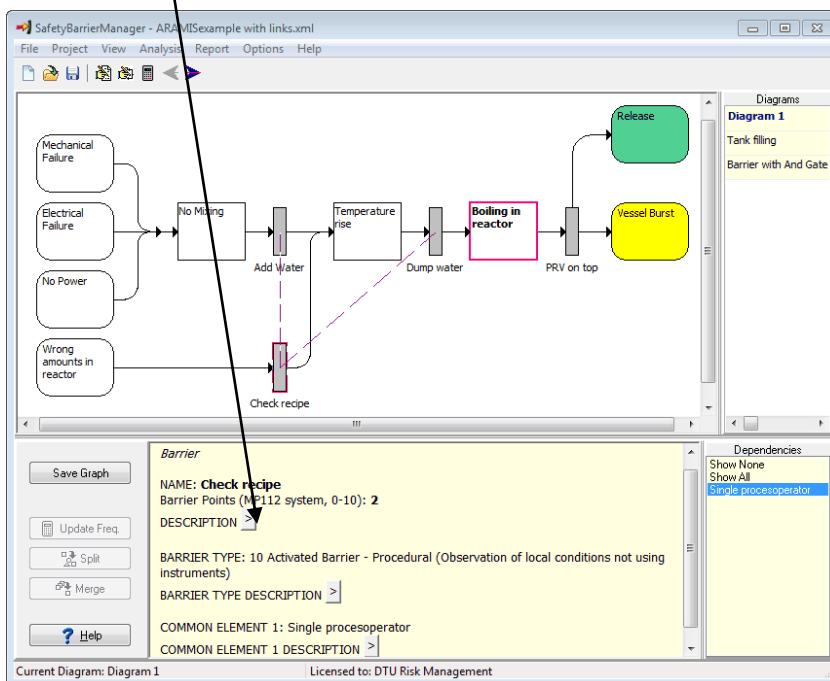
Some cosmetic improvements of the information browser that was introduced in version 1.2: line feeds in the descriptions are now correctly shown, and the “buttons” to expand and collapse the descriptions have been replaced by small blue and red arrows, allowing smooth line spacing. This requires IE8 to be installed.

Furthermore, the default type for a logical gate has been changed to “OR”, as the majority of gates are of OR type, and a minor bug fix.

## Version 1.2.2007

A major change is the update of the main window. The information about the selected element in the graph, shown in the center of the lower part of the main window now includes all information, i.e. also the information on probability, type, etc, that previously was displayed in some boxes in the lower left part (these boxes have now been removed). The descriptions can be toggled on and off by small buttons in the text area to improve a first overview of all the information available. Also any hyperlink contained in the element is now accessible through this form, viz it is included in the descriptions; the list with links on the lower right side has been removed, so here only the dependencies between barriers are shown. The major reason for this change has been that it was not clear to which description (barrier, barrier type, common element or one of the management measures), the links on the right belonged to.

The display is actually a small html browser, and the contents can be copied and exported (right click).



Some small other updates are related to splitting diagrams: diagrams with multiple paths to a condition are now treated correctly, and also the Critical Condition is transferred to the new diagram, if necessary.