BowTie XP

visual risk assessment

Advanced

Sudaksha
Strategic & Innovative Solutions

CGE
Risk Management Solutions
Making risk understandable

Extra Features

1 Scrapbook

The scrapbook allows bowtie items to be collected for quickly building or expanding a bowtie. From single barriers to complete threat lines and even hazards with all associated information. Pieces of bowtie can be dragged to quickly create a new diagram. The information is gathered from a variety of places, such as Excel or manual input. From there it can be saved into a file, separate from the case file, in order to build bowtie registers.
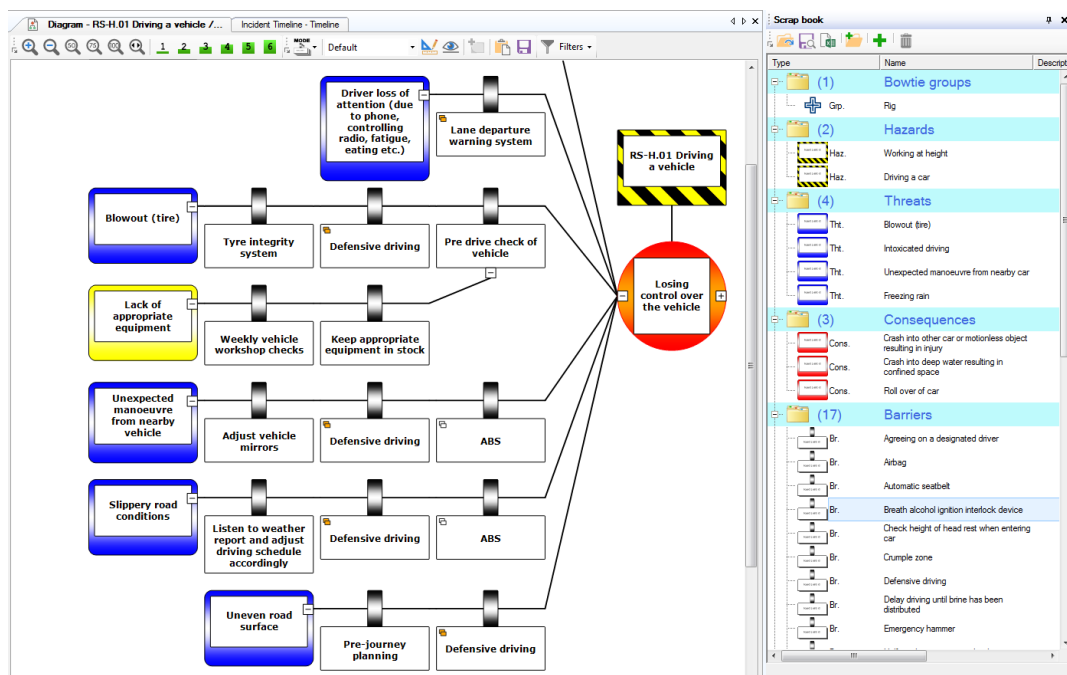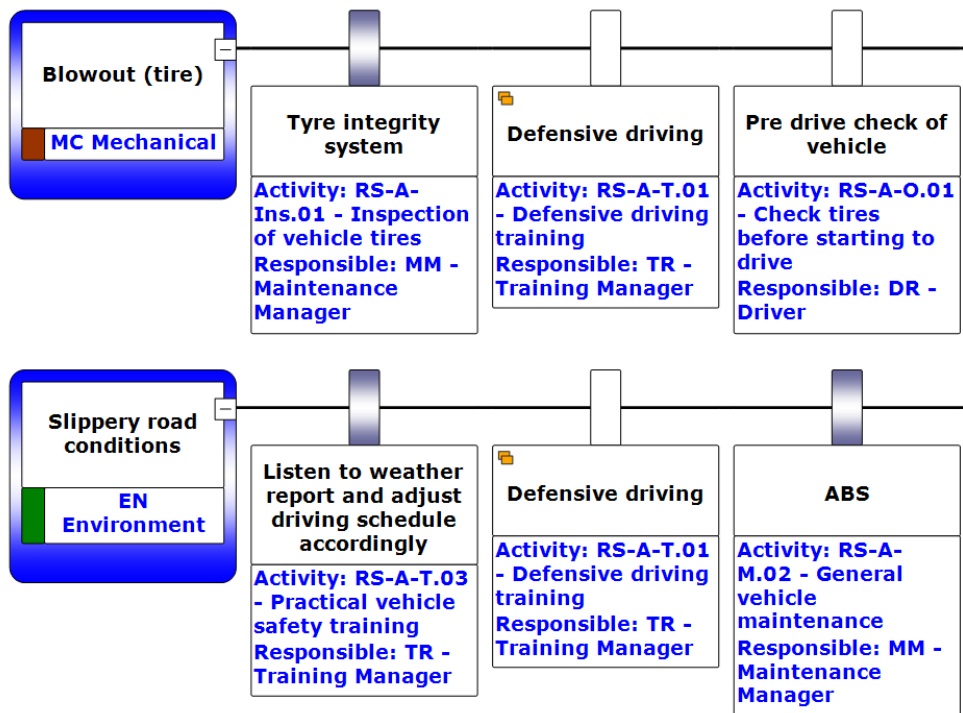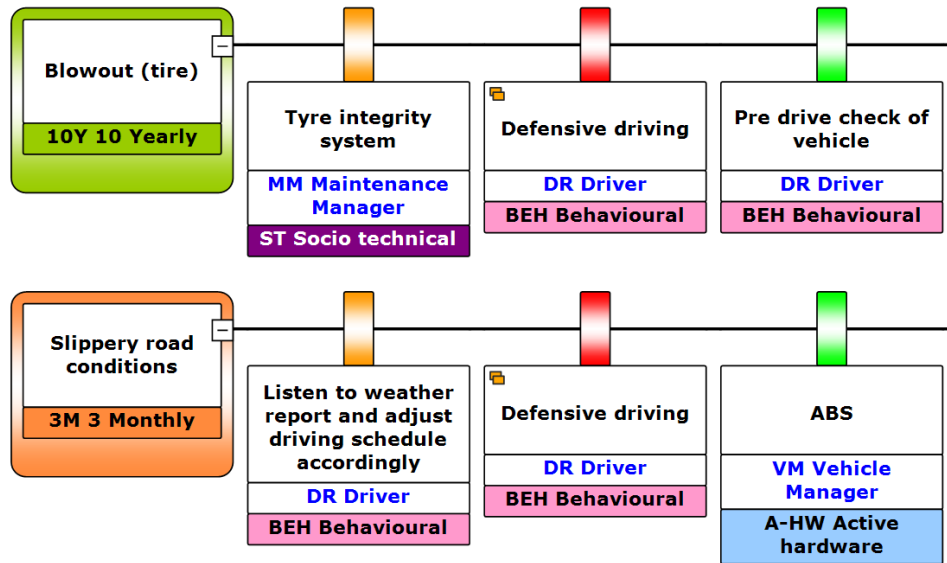

2 Advanced filter

Filtering a bowtie on multiple criteria is possible with the advanced filter. So whether you would like to find out how many barriers belong to a certain job title, or to visualize only those critical improvement actions that belong to hardware barriers, it can be done using BowTieXP Advanced.

BowTie XP
visual risk assessment
Advanced

3 Diagram display profiles

Diagram display profiles can now be saved and used to quickly change the layout of the bowtie diagram.

Blowout (tire) — 10Y 10 Yearly

Tyre integrity system	Defensive driving	Pre drive check of vehicle
MM Maintenance Manager	**DR Driver**	**DR Driver**
ST Socio technical	BEH Behavioural	BEH Behavioural

Slippery road conditions — 3M 3 Monthly

Listen to weather report and adjust driving schedule accordingly	Defensive driving	ABS
DR Driver	**DR Driver**	**VM Vehicle Manager**
BEH Behavioural	BEH Behavioural	A-HW Active hardware

Blowout (tire) — MC Mechanical

Tyre integrity system	Defensive driving	Pre drive check of vehicle
Activity: RS-A-Ins.01 – Inspection of vehicle tires Responsible: MM - Maintenance Manager	Activity: RS-A-T.01 – Defensive driving training Responsible: TR - Training Manager	Activity: RS-A-O.01 – Check tires before starting to drive Responsible: DR - Driver

Slippery road conditions — EN Environment

Listen to weather report and adjust driving schedule accordingly	Defensive driving	ABS
Activity: RS-A-T.03 – Practical vehicle safety training Responsible: TR - Training Manager	Activity: RS-A-T.01 – Defensive driving training Responsible: TR - Training Manager	Activity: RS-A-M.02 – General vehicle maintenance Responsible: MM - Maintenance Manager

Sudaksha
Strategic & Innovative Solutions

CGE
Risk Management Solutions
Making risk understandable

Extra Features

4 Barrier families

This feature allows you to group barriers per threat or consequence line based on their common values. Do you quickly want to see whether at least two different persons are accountable for barriers on a threat line? Or do you want to focus on the distribution of your barrier types?
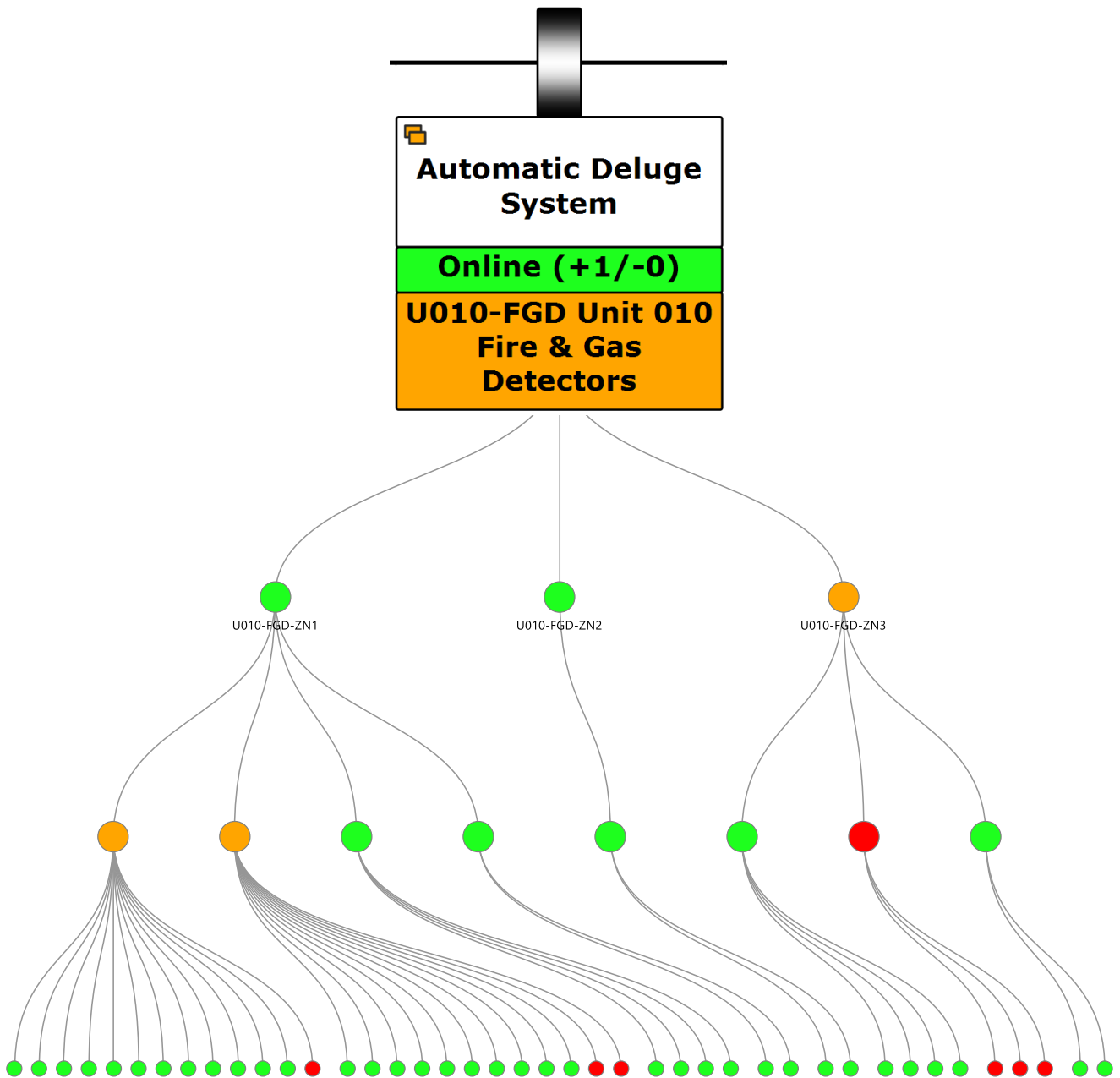
This feature introduces an extra variable on your barrier: barrier families. Barrier families can be used as independent barrier name, while the 'normal' barriers can be used as more specific (not independent) barrier elements. This improves communication of bowties to different stakeholders.
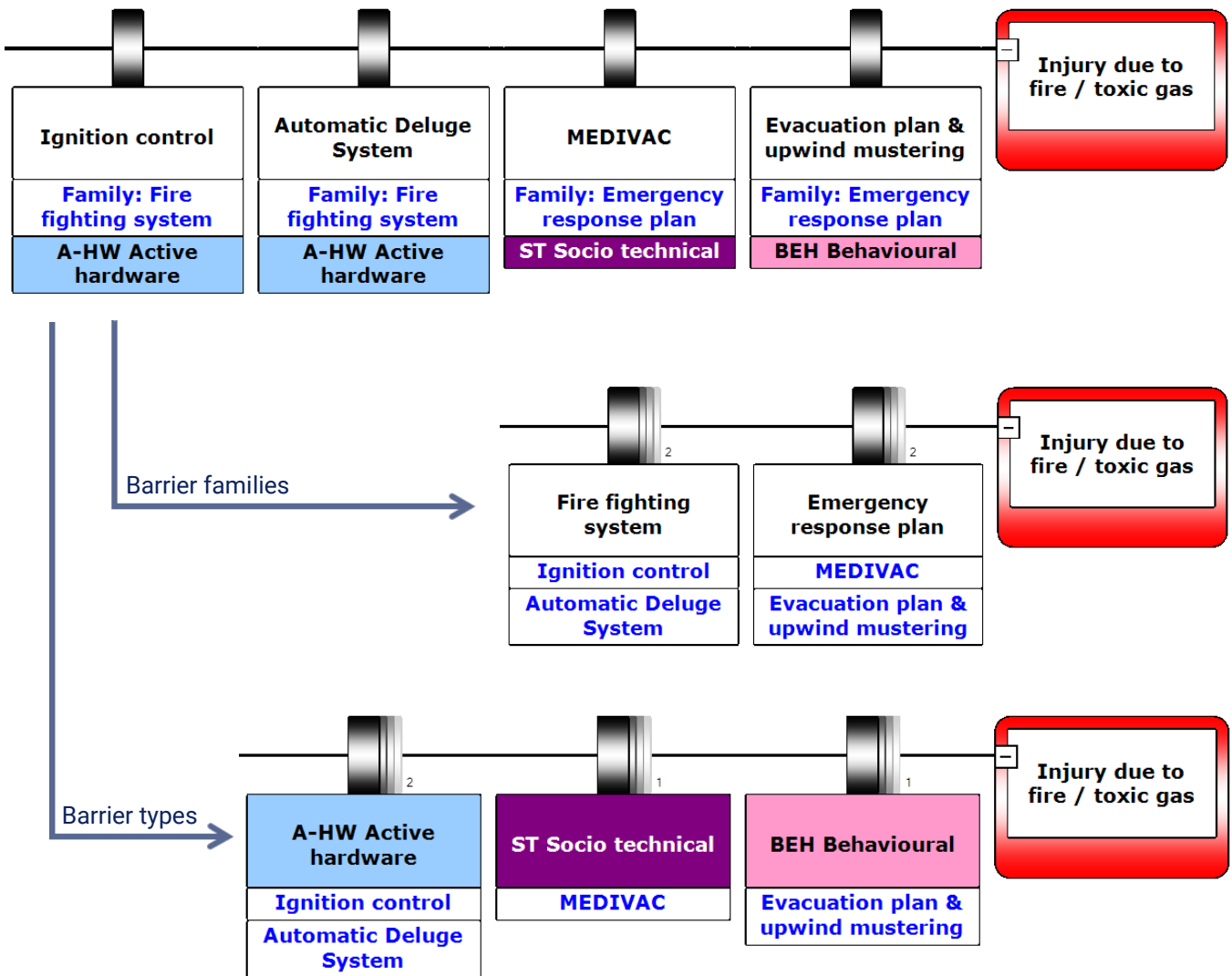
5 Link barriers to your maintenance data

The maintenance status of your equipment / parts can now be linked to your barriers. Barriers will automatically switch from online to offline (or visa versa) when the online / offline status of the parts is changed. Via self-defined online criteria you can make decisions how many parts may be offline to keep the "parent-element" online.

Automatic Deluge System

Online (+1/-0)

U010-FGD Unit 010 Fire & Gas Detectors

U010-FGD-ZN1

U010-FGD-ZN2

U010-FGD-ZN3

Sudaksha
Strategic & Innovative Solutions

CGE
Risk Management Solutions
Making risk understandable

Extra Features

6 File and tree comparison

On many occasions you want to find out what your colleague changed in the latest revision of the case file. Do you need to see what the differences are between two versions of the same case file in your document management system? Then compare the files side by side, see the differences visually or generate a report of these changes. You can do it all with the file compare function in BowTieXP Advanced.

BowTie XP
visual risk assessment
Advanced

7 SOOB Matrices

The Summary of Operation Boundaries Matrix is a record of operations used to determine under which circumstances extra caution should be taken or work should no longer be allowed to proceed. This is to help the decision process of whether to proceed with operations when encountering suboptimal conditions. The matrix gives you three different overviews:

- The first tells you which operations can be performed simultaneously.
- The second tells you which operations you can perform, with a control under reduced effectiveness.
- The third provides an overview of which operations you can perform given that there are certain operational risk factors, such as heavy wind or rain.

These three views can be combined or isolated, and both give you an operational map of what you can and cannot do under certain conditions.

Extra Features

8 Treeview Filtering & Tooltips

The treeview contains every available option for adding data into BowTieXP, some of which you will never use and some which you will only use during certain phases of bowtie building. You can make the treeview a lot more compact by temporarily hiding these collections and objects by means of the Treeview filter profiles.
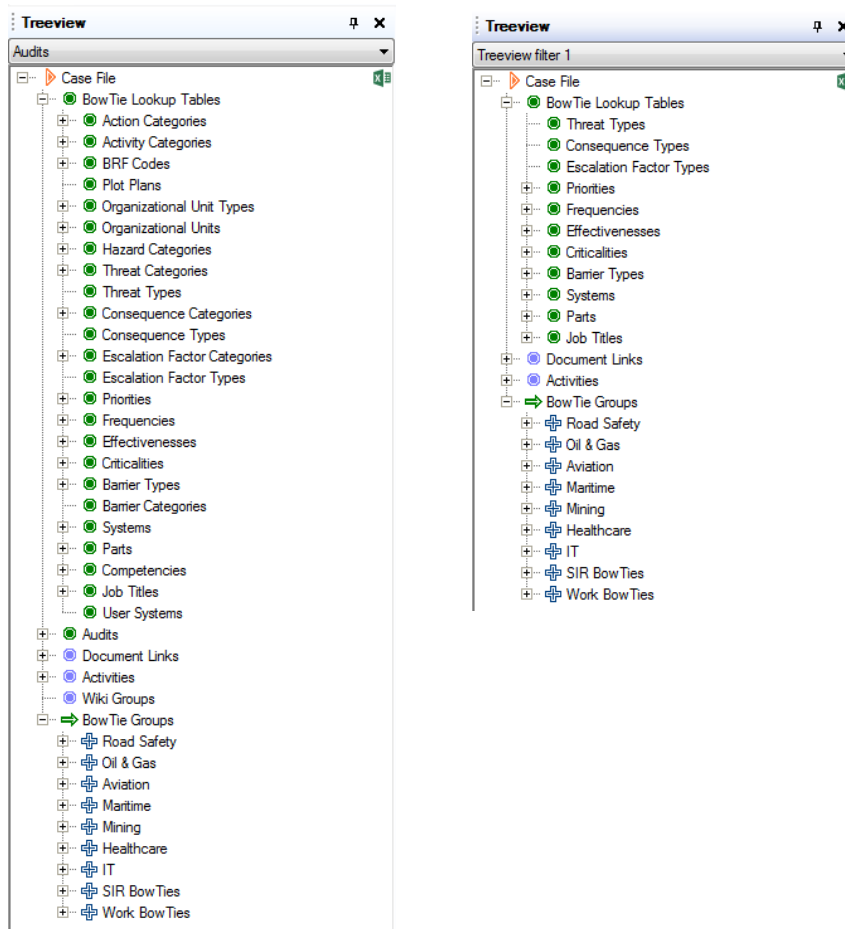
Tooltips can be used to explain what an item in the treeview is supposed to be used for.
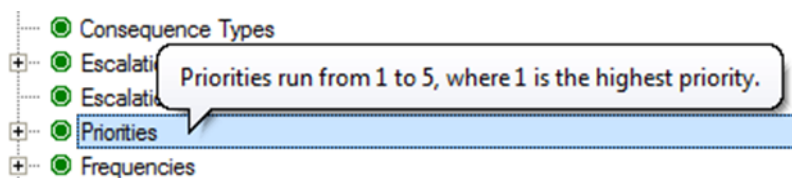
9 Custom terminology

Each case file contains a large table containing the names of all object types and their properties present within BowTieXP. This allows customers to make adjustments to terminology and allows them to tailor-fit the software to their organization. For example, you could rename controls to barriers.

Edit Property Descriptions

WARNING: Editing of property descriptions is complex functionality. DO NOT USE THIS FUNCTIONALITY WITHOUT PROPER TRAINING AND INSTRUCTION.

Action	Action	Actions	Actn.
Action Category	Action Category	Action Categories	Cat.
Action Category Container	Action Category Container	Action Category Containers	Action cat. cont.
Activity	Activity	Activities	Act.
Activity Category	Activity Category	Activity Categories	Act. Cat.
Activity Category Container	Activity Category Container	Activity Category Containers	Act. Cat. cont.
Activity Container	Activity Container	Activity Containers	Act. cont.
Answer	Answer	Answers	Answ.
Attachment	Attachment	Attachments	Att.
Audit	Audit	Audits	Aud.
Audits	Audits	Audits	Aud. Cont.
Barrier	Barrier	Barriers	Br.
Barrier Category	Barrier Category	Barrier Categories	Br. Cat.
Barrier Category Container	Barrier Category Container	Barrier Category Containers	Br. Cat. cont.
Barrier Type	Barrier Type	Barrier Types	Br. Tpe.
Barrier Type Container	Barrier Type Container	Barrier Type Containers	Br. Tpe. cont.
Barrier Type Container	Barrier Type Container	Barrier Type Containers	Br. Tpe. cont.
BFA Causation	BFA Causation	BFA Causations	Assmnt.
BFA Primary Cause	BFA Primary Cause	BFA Primary Causes	BFA 1C
BFA Primary Causes	BFA Primary Causes	BFA Primary Cause Containers	BFA 1C Cont.
BFA Secondary Cause	BFA Secondary Cause	BFA Secondary Causes	BFA 2C
BFA Secondary Causes	BFA Secondary Causes	BFA Secondary Cause Containers	BFA 2C Cont.
BFA Tertiary Cause	BFA Tertiary Cause	BFA Tertiary Causes	BFA 3C
BFA Tertiary Causes	BFA Tertiary Causes	BFA Tertiary Cause Containers	BFA 3C Cont.

Export to Excel... Import from Excel... OK Cancel
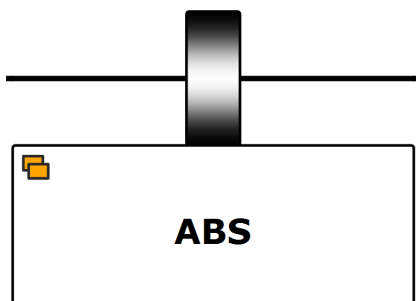
Enhancements in editing your data

10 Copy and paste between multiple files

Similar to importing data from a case file, there is also another way of copying data. You can simply use copy and paste to import all kinds of entities between bowtie files.

11 Automatic grouping

You can now edit every bowtie element with the same name at the same time instead of going through all of them individually. Elements will be automatically grouped by name and/ or code. Click on the group edit button on any barrier (or any other element) that appears more than once, and you'll be able to change values for all of them simultaneously.
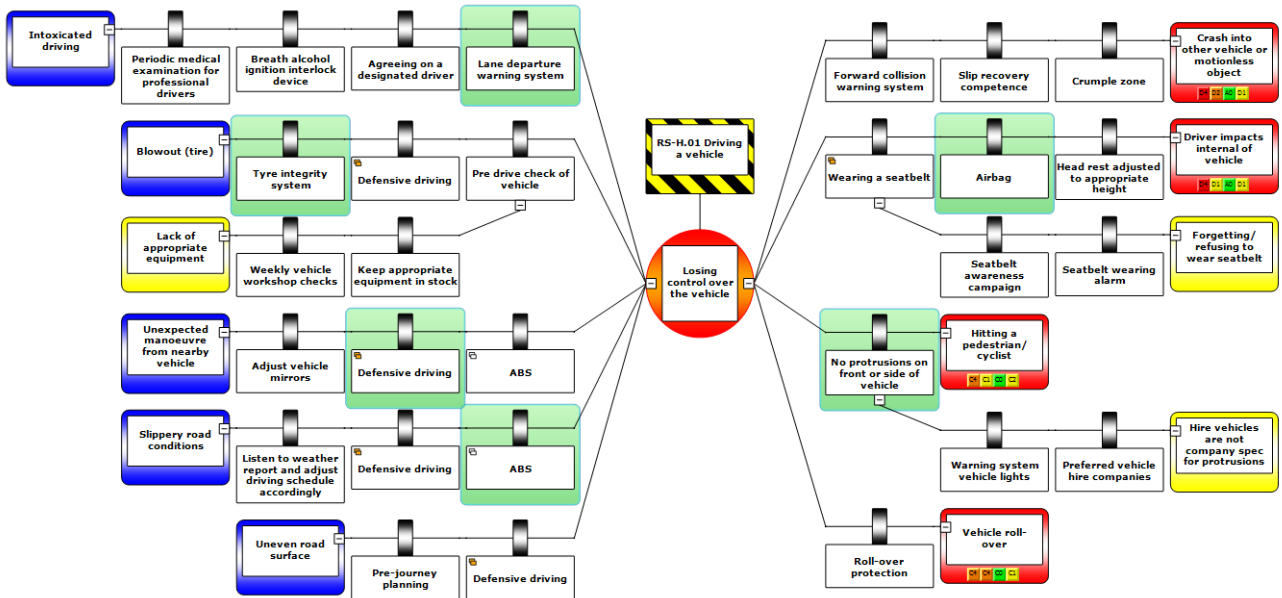

Edit 2 Barriers

| General | Online Criteria | Performance | User Data | Lopa | Systems | Activities | User Systems | Questions | Document Links | Aud |

Code:

Name: ABS

Description: Anti-lock Braking System

(edit in popup)

Family:

Barrier Category: \<No Value Assigned>

Barrier type: Active hardware

Effectiveness: Good

Accountable: Vehicle Manager

BRF code: \<No Value Assigned>

Criticality: Highly Critical

Equivalent Top Event: \<NULL> /

☐ Acceptance criteria have been met   View Criteria...

2 Barriers group selected   OK   Cancel   Apply

BowTie
XP   **Advanced**
visual risk assessment

12 Multi select

You can select multiple bowtie elements (Ctrl + click). This allows you to change values for all of them simultaneously.

Enhancements in editing your data

13 Full import from other BowTieXP case files

BowTieXP Standard edition is limited to importing the diagrams only, and cannot import

BowTie
XP
visual risk assessment **Advanced**
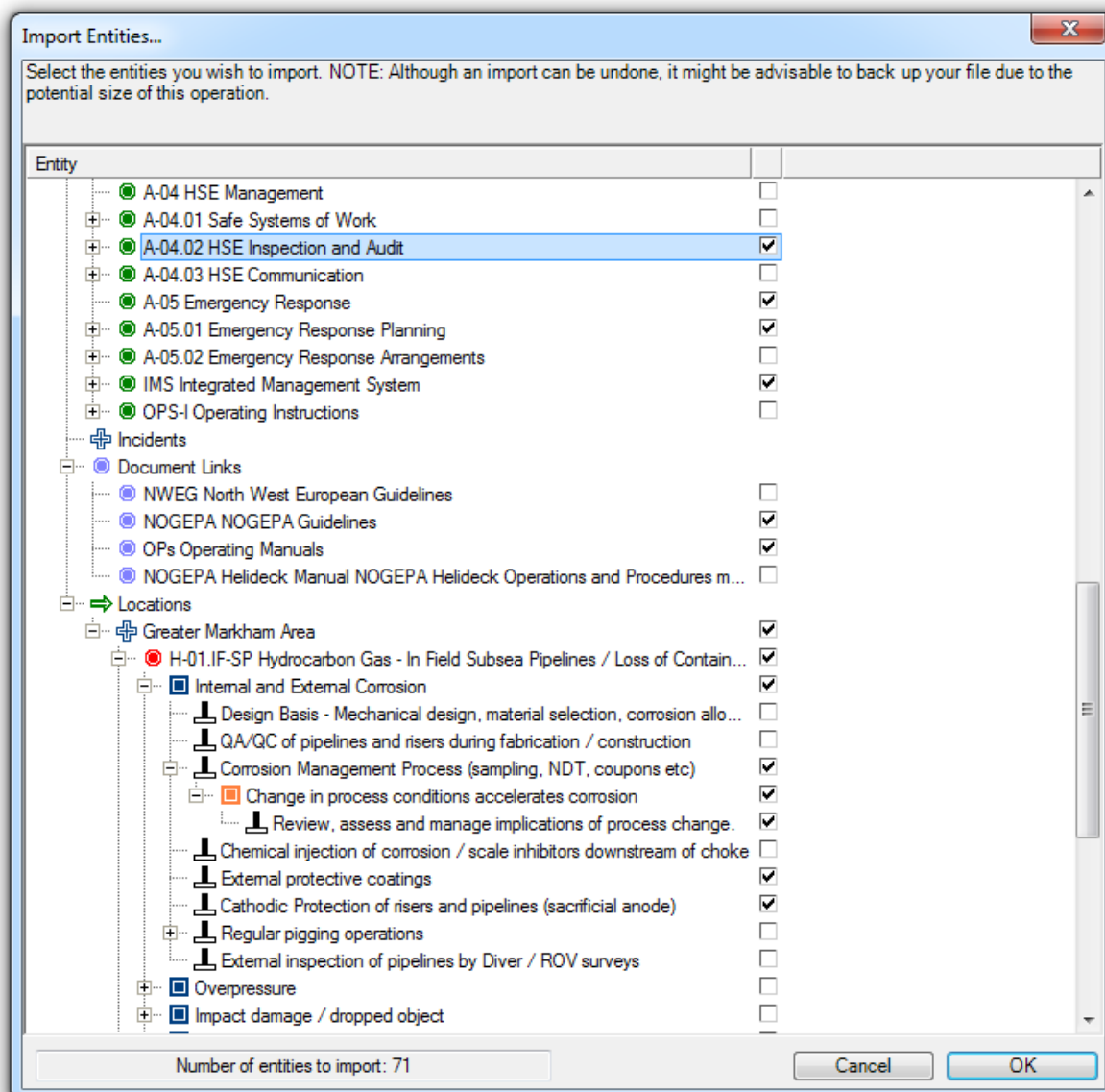
14 Import from Excel files

Having to enter your whole management system one activity at a time can be a time consuming effort. BowTieXP Advanced allows you to import Excel sheets to be able to copy in entire lookup tables and quickly populate your case file.

Job Titles
- CA Captain
- DE Design Manager
- DIS Distribution Manager
- DO Doctor
- DR Driver
- EMM Emergency Manager
- EN Engineer
- EM Engineering Manager
- EX Explosives Authority
- FC Flight crew
- GM General Manager
- GSM Geological Services Manager
- HSE HSE Manager
- ITM IT Manager
- LO Logistic Manager
- MM Maintenance Manager
- METEO Meteorological Services Manager
- NU Nurse
- OP Operations Manager
- PH Permit Holder
- PM Production Manager
- PR Public Relations Manager
- QM Quality Manager
- SEC Security
- TR Training Manager
- UVO Underground ventilation officer
- VM Vehicle Manager
- WM Watchman
- 3rd Third Party

Activities
- RS-A Road Safety
  - RS-A-M Maintenance
    - RS-A-M.01 Maintain internal vehicle safety devices
    - RS-A-M.02 General vehicle maintenance
  - RS-A-T Training
    - RS-A-T.01 Defensive driving training
    - RS-A-T.02 Confined space training
    - RS-A-T.03 Practical vehicle safety training
  - RS-A-Ins Inspection
    - RS-A-Ins.01 Inspection of vehicle tires
    - RS-A-Ins.02 Tyre pressure check
  - RS-A-Inv Inventory
    - RS-A-Inv.01 Lane departure system present in car
    - RS-A-Inv.02 Forward collision warning system present in car
    - RS-A-Inv.03 ABS present in car
    - RS-A-Inv.04 Airbag present in car
    - RS-A-Inv.05 Spare lights present in car
    - RS-A-Inv.06 Seatbelt present in car
    - RS-A-Inv.07 AED present in car
  - RS-A-P Planning
    - RS-A-P.01 Schedule driving breaks
    - RS-A-P.02 Pre-journey planning
  - RS-A-O Operation
    - RS-A-O.01 Check tires before starting to drive
    - RS-A-O.02 Turn vehicle lights on
    - RS-A-O.03 Wear seatbelt before starting to drive
    - RS-A-O.04 Perform regular driving break

# Improvements to get extra insight into your case files

15 Extra Reports

To accommodate the extra information you can input in Advanced, and to gain some more complex insights into your data, the Advanced edition has a number of extra reports:
twelve extra reports:

- Activities linked to controls as hierarchical list
- Activities linked to controls as hierarchical list - filtered
- Activities of a specific operation grouped by activity. Responsible (short version)
- Activities of a specific operation grouped by activity. Responsible (long version)
- Required competencies for a specific operation, grouped by activity. Responsible
- Hazard register complete
- Traditional hazard register
- Hazard register without activities
- Bowtie register report for data export
- Operations overview
- Bowtie report from template
- Systems linked to barriers

	A	B	C	D	E	F	G	H	I
2	**Hazard**	RS-H.01 Driving a vehicle							
3	**Top event**	Losing control over the vehicle							
4	Inherent	Residual							
5	**[D4]**	**B4**	People						
6	**[D2]**	**D2**	Assets						
7	**[A0]**	**A0**	Environment						
8	**[D1]**	**C1**	Reputation						
9									
10	**Intoxicated driving**								**HF Human Factors**
11	**Barriers & Escalation Factors**		**Crit.**	**Barrier type**	**Eff.**	**Br. Cat.**	**Family**	**Accountable**	**Activities**
12	Periodic medical examination for professional drivers		Medium Critical	BEH Behavioural	Good			Doctor	
13	Breath alcohol ignition interlock device		Highly Critical	A-HW Active hardware	Very Good			Engineer	• RS-A-M.02 General vehicle maintenance
14	Agreeing on a designated driver		Medium Critical	BEH Behavioural	Unknown			Driver	• RS-A-T.03 Practical vehicle safety training
15	Lane departure warning system		Medium Critical	A-HW Active hardware	Good			Engineer	• RS-A-Inv.01 Lane departure system present in car
16									
17	**Driver loss of attention (due to phone, controlling radio, fatigue, eating etc.)**								**HF Human Factors**
18	**Barriers & Escalation Factors**		**Crit.**	**Barrier type**	**Eff.**	**Br. Cat.**	**Family**	**Accountable**	**Activities**
19	Lane departure warning system		Highly Critical	A-HW Active hardware	Good			Engineer	• RS-A-Inv.01 Lane departure system present in car

BowTie XP
visual risk assessment **Advanced**

16 Relationship models

The relationship diagram can draw many different diagrams based in the data you have entered into your case file, visualizing the relationships between the data. For example, controls can be assigned activities, and activities have responsible persons. How do the responsible persons relate to the different hazards via the controls and activities defined? Or how are different bowtie diagrams linked to each other?
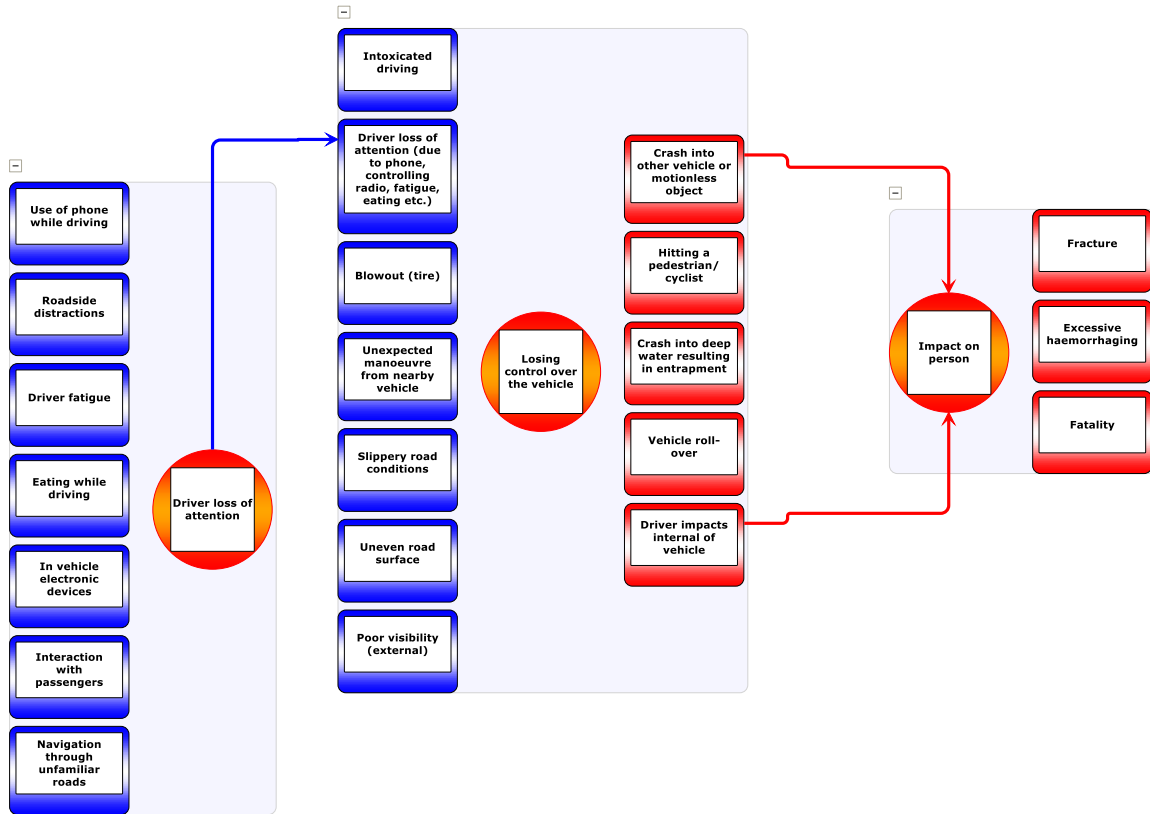
17 Case File Overview Extras

The Case File Overview has two extra perspectives:

- "Operations". The operations overview shows all operations which exist and where they are referenced.
- "Management System (activities, controls, hazard categories)". This overview shows a powerful alternate view of all defined activities, which allows you to drill down and see to which controls they are assigned, and to drill down into the controls' parents all the way up to the hazard. A cumulative overview of the hazard categories is also shown.

Contact

Sudaksha Management Solutions

#206, V S COZY Apartment, 28th A main,
18th Cross, 6th Phase, JP Nagar,
Bangalore, Karnataka - 560078, India.

+91 80 2695 0538 (office)
+91 96111 26272 (mobile)
info@sudakshaconsulting.com
www.sudakshaconsulting.com

CGE Risk Management Solutions

Vlietweg 17v
2266 KA, Leidschendam
The Netherlands

+31 (0) 88 100 13 50
support@cgerisk.com
https://cgerisk.com

Sudaksha
Strategic & Innovative Solutions

CGE
Risk Management Solutions
Making risk understandable