BOW TIE METHOD – USER CONCEPT

BOW TIE METHODOLOGY WITH THE SOFTWARE AG GOVERNANCE, RISK AND COMPLIANCE SOLUTION

Bow Tie Basics

The Bow Tie methodology can be seen as the combination of a fault tree analysis on the causes combined with an event tree analyzing the consequences. However the Bow Tie takes into account the barriers (controls) between cause, risk event and consequences. Bow Tie analysis is easier to understand and communicate than more complex fault and event techniques.

For this reason an increasing number of government regulators for Major Hazard Facilities (MHFs), offshore oil & gas, aviation, etc. welcome safety case submissions which use diagrammatic representation of risks at their core.

Process of creating Bow Tie diagrams

A Bow Tie diagram is created by defining the:

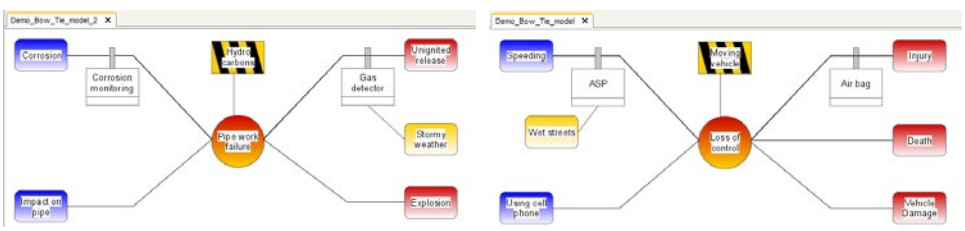
- Hazard (potential to cause harm)
- Event to be prevented
- Threats that could cause the event to occur and release the hazard
- Consequences of the event occurring
- Controls to prevent the event occurring (threat barriers)
- Controls to mitigate against the consequences (recovery controls)

The threats are identified and listed to the left; the consequences are identified and displayed to the right of the risk event. Now that the hazard has been defined, preventive controls are defined and identified which will stop or reduce the hazard from occurring and (detective) controls which will prevent or lessen the outcome. The controls can also have "threats to the controls" called escalation factors which weaken the effectiveness.

Integration into the Software AG Governance, Risk and Compliance Solution

The Bow Tie modelling will enrich the Software AG Governance, Risk and Compliance Solution by offering:

- The possibility to describe and analyze the risk in detail
- To describe different risk scenarios for a threat
- Allow customers to communicate their risk treatment to third parties
- The possibility to show up current risk situation by combining the structural information of the Bow Tie diagram with control and risk data from ARIS Risk & Compliance Manager and webMethods products in dashboards, e.g. ARIS MashZone



Example Bow Tie Diagrams.

BOW TIE ORIGINS

In risk intensive businesses like the energy sector, a new risk analysis and description methodology has become more and more popular – Bow Tie diagrams. The success of this diagram lies in its clear structure and simplicity which is easy for the non-specialist to understand, but still has sufficient depth for an expert discussion.

The basic idea is to combine the cause (threats) with the consequence via the risk event. The diagrams main strength lies in scenarios where clear, independent paths lead to the occurrence of a risk event or consequence. They focus on controls to be established and thus form the basis for actively managing the risk situation.

Bow Tie diagrams are also a recommended technique mentioned in DIN ISO 31000 on Risk Management.

RELATED MODELS

In the Business Controls diagram for a control, it is described who is responsible and how this control is tested and verified. In the Event Process Chain (EPC) or other process diagram the control is displayed to show who is doing that task and where (in the process flow).

Bow tie modeling does not interfere with the standard modeling conventions used with the Software AG solution.

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