

## Conference on Process Safety and Big Data 2018, Abstract Submission form

Topic (choice your topic from Call for Abstracts/Papers)\*: Standards & Methods

Title\*: Search & Connect Your Safety Critical “Big Data”

### Authors and Affiliations\*:

First Name	Last Name	Organization	Department	City	Country	Status (Submitting Author, Presenting Author and/or Co Author)
Joep	Coenen	Versatec Energy B.V.	N.A.	Woerden	The Netherlands	Presenting Author
Mark	Van 't Zet	Radial SG B.V.	N.A.	Woerden	The Netherlands	Co Author

### Authors of the abstract come from\* :

- University or Research Institution  
 Industry  
 Both University and Industry

### Submit your abstract below (max. 400 words)\* :

#### Intro

More than 15,000.

This is the number of project engineering documents that has been made so far for a recent medium complex high pressure gas transport project in Eastern Europe. Safety critical information is interwoven into and linked between many of these documents. How can this information be searched quickly and how can it be kept up-to-date in case of (future) changes?

#### 'Big Data' Causes Accidents

The number of documents related to project design as well as plant operations has increased significantly over time. And it continues to grow in all kinds of formats ranging from drawings, data sheets, procedures, lists, etc. Several investigations of accidents [1] [2] [3] [4] reveal that late, wrong and/or incomplete data are an important contributing factor to the occurrence of accidents.

Safety information is found in all disciplines such as engineering, operations and maintenance. This information is usually 'siloe'd' in the various information systems used by these disciplines, such as SAP, Maximo, SharePoint and document control systems. Users do not (always) have access to all systems containing safety critical information, causing a fragmented and partial view on process safety.

If changes are made, usually only the documents that can be found within a reasonable time are updated as part of the Management of Change (MOC) process. Hardly ever do end users search the entire company 'library' for documents that must be updated as part of the MOC.

#### Solution

The likelihood and consequences of accidents can be reduced by a combination of in-depth safety knowledge and the use of intelligent software. Independent safety experts can support companies to identify which information is considered to be safety critical, as well as which of this safety (critical) information is connected to each other. To give an example, a pressure relief valve “PSV-1010” can have a datasheet and a specification and has been defined as safeguard in HAZOP scenario no. 15. Furthermore, “PSV-1010” has a calibration/maintenance status in SAP and an actual open/close status in OSIsoft PI. The only way to assess plant and process safety is by connecting these various types of content related to safety critical equipment and empowering end users to view this within seconds.

\*Mandatory fields



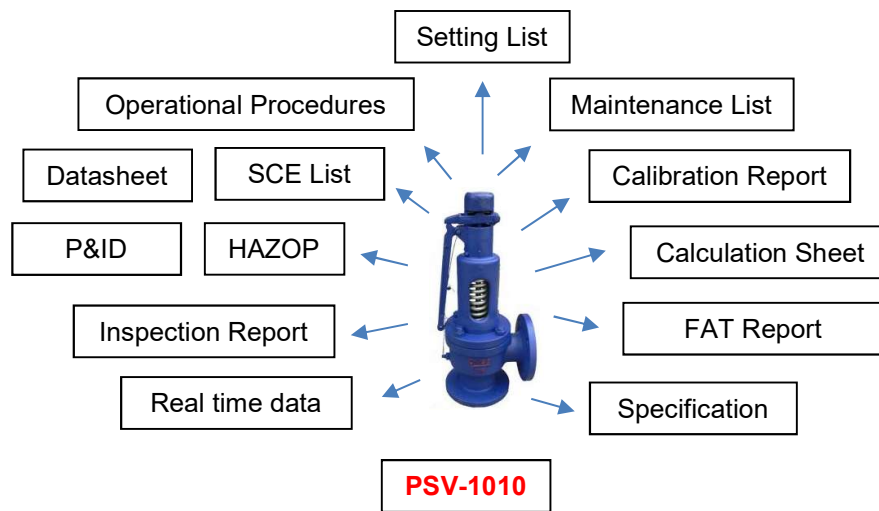
## Conclusion

The ability to quickly, consistently and completely find and connect safety (critical) information within the ever-expanding pile of technical “big data” is of utmost importance. This ability can be regarded as a safety barrier on its own, that can help prevent accidents from occurring and/or reducing the consequences of an accident. Application of Versatec’s safety expertise, in combination with Radial SG’s software tool Viewport, have provided remarkable results in the industry searching and connecting safety critical ‘Big Data’.

## Type of presentation\* :

- Oral
- Poster
- No preference

You can add figures: (2 figures max)



Example of documents related to PSV-1010 as Safety Critical Element.

**Keywords:** (choose 4 keywords)\*:

- Big Data Analytics
- Management of Change
- Knowledge Management
- Machine Learning

## Bibliography :

- Reference 1: ARIA, No. 38418, Explosion and fire at a pesticide manufacturing plant 28 August 2008 Institute, West Virginia United-States, 2008
- Reference 2: ARIA, No. 38418, Processing Function Hazards In The Control Room, 2014
- Reference 3: CCPS, Building Process Safety Culture: Tools to Enhance Process Safety Performance, Piper Alpha, 2005
- Reference 4: j5 International, [www.j5int.com/10-industrial-accidents-poor-shift-handover-contributory-factor](http://www.j5int.com/10-industrial-accidents-poor-shift-handover-contributory-factor)

\*Mandatory fields