

# *Implications of changes to Ex Equipment*

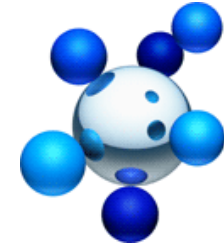
*Presented by : Ludolph de Klerk*

*17 April 2009*



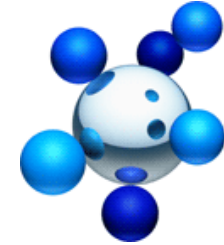
**SASOL**  
*reaching new frontiers*

# *Index*



- *Background for change*
- *Scoping and alignment*
- *Relevant SANS standards*
- *“Umbrella” certifications*
- *Certification Process*
- *Conclusion*

# *Background*



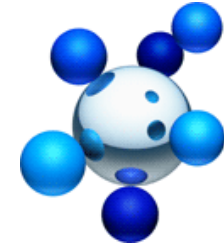
- *Operation of Certified Equipment (Ex)*
- *Continuous Improvement requirements*
- *Change imperatives*

# *Scoping and Alignment*



- *Consult applicable SANS standards and acts*
- *Determine OEM Requirements*
- *Determine 3<sup>rd</sup> Party Equipment Requirements*
- *Formulate Execution Plan*

# *Applicable Standards*



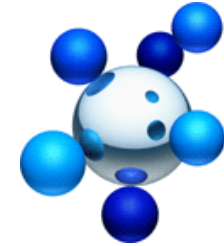
- *SANS 10108 & ARP 0108*
- *SANS 808*
- *SANS 60079*
- *SANS 10086-2*

**SABS**

---



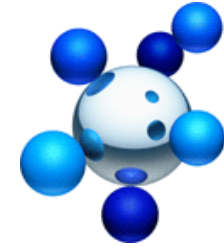
# SANS 10108 & ARP 0108



- *SANS 10108: The classification of hazardous locations and the selection of apparatus for use in such locations*
- *ARP 0108: Regulatory requirements for explosion protected apparatus*



# SANS 60079



- *SANS 60079: Electrical apparatus for explosive atmospheres*

- *Definitions*

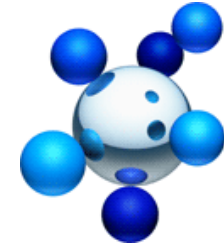
- *Applications*

- *Design & Construction*

- *Certification testing*



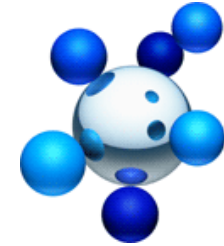
# SANS 10086



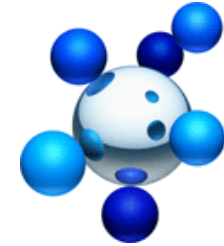
- *SANS 10086-2*: The installation, inspection and maintenance of equipment used in explosive atmospheres  
Part 2: Electrical apparatus installed underground in mines



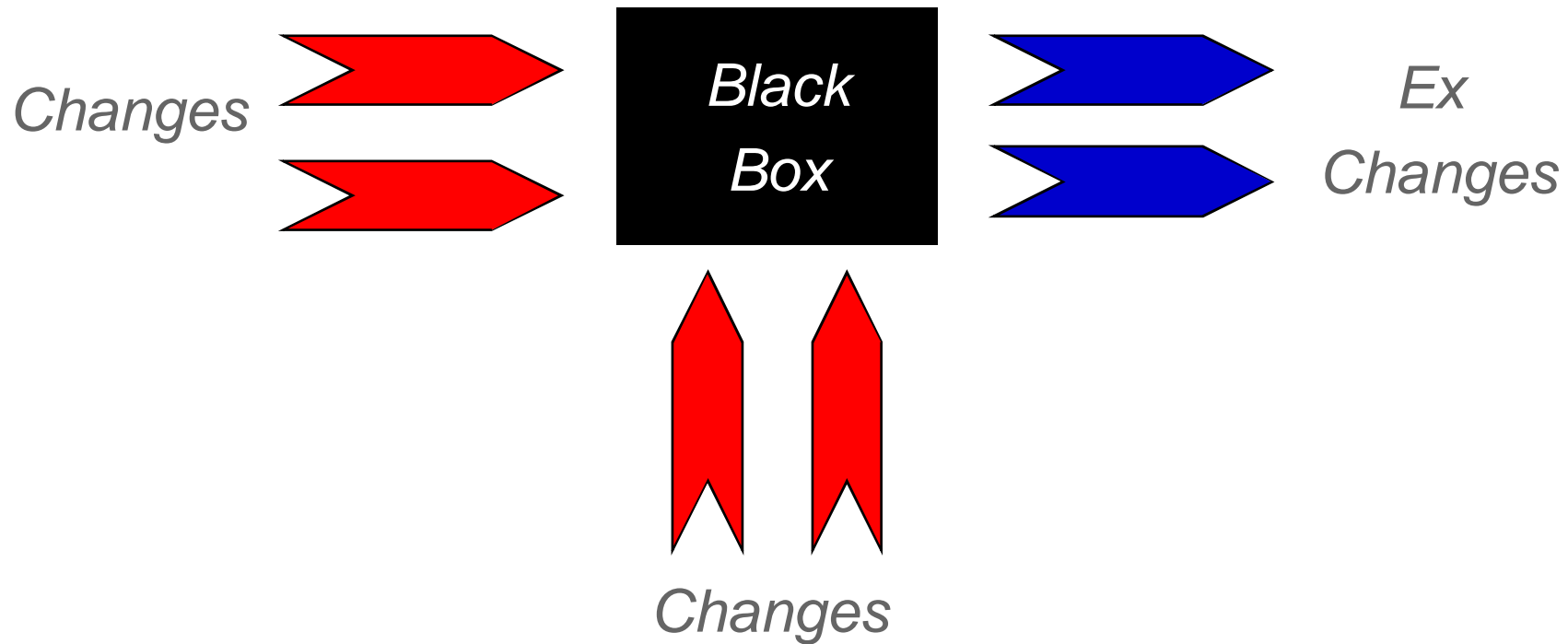
# *Umbrella Certification*



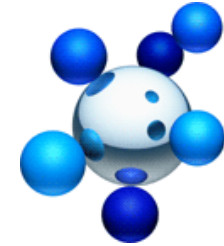
# Certification process



*Step 1: Write down system specifications and requirements*



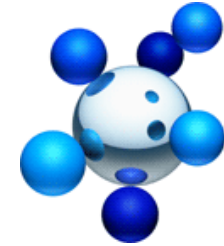
# *Certification process (Cont.)*



*Step 2: Submit all product requirements to OEM or 3<sup>rd</sup> party vendor*



# *Certification process (Cont.)*

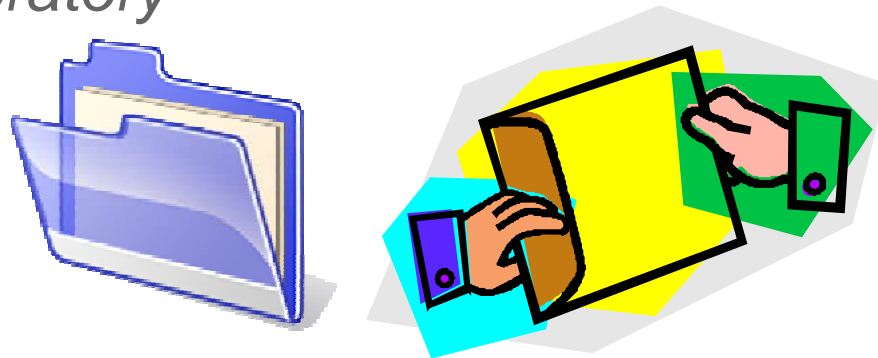


*Step 3.1: (OEM used partially) Acquire 3<sup>rd</sup> party documentation*

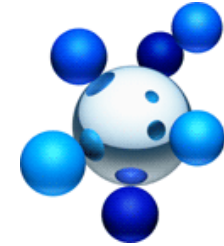
*Step 3.2: Hand documentation over to OEM*

*Step 3.3: OEM incorporates add-on's in original design*

*Step 3.4: OEM submits application to Approved Testing Laboratory*



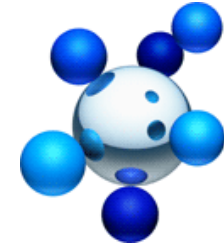
# *Certification process (Cont.)*



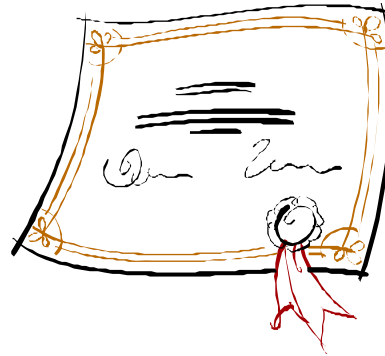
*Step 4: OEM acquires Type approval, for installations, from Approved Testing Laboratory*



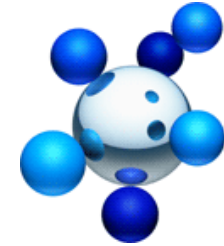
# *Certification process (Cont.)*



*Step 5: Installation to be conducted by competent person  
and overseen by OEM*

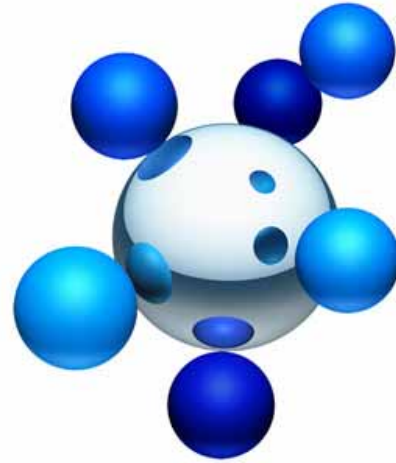


# Conclusion



- *Changes to Ex Equipment invalidates Umbrella Cert.*
- *Requirements influence type of certification*
- *SANS Standards gives clear guidelines on process to follow*
- *Involve all relevant parties*
- *It is good practice that the OEM retains accountability of the machine or equipment*





**SASOL**  
*reaching new frontiers*