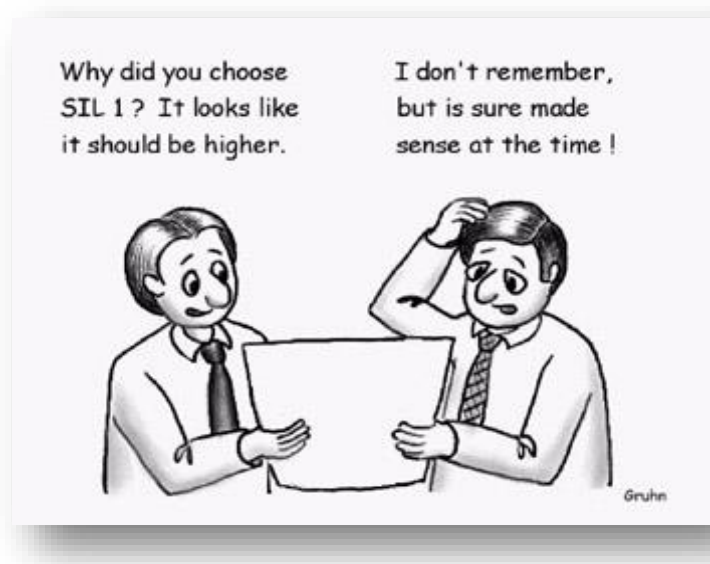


## SAFETY INTEGRITY LEVEL

### 4 days training on Safety Instrumented System (SIS)

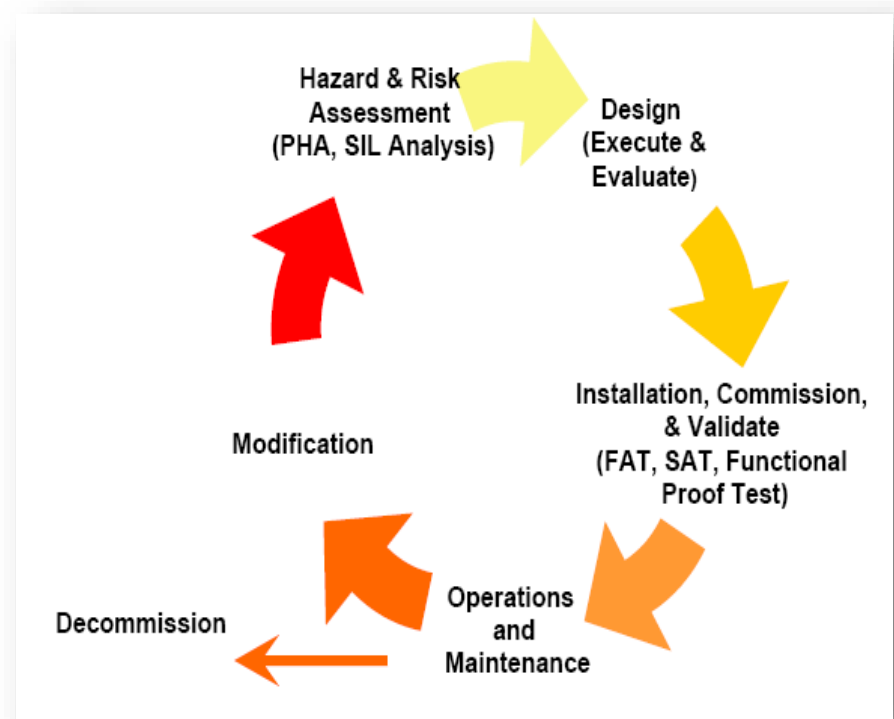
#### Learn how to design, verify and maintain safety instrumented systems.

The objective is to provide instrument engineers, application engineers, site engineers, project managers, operation engineers, maintenance engineers, process control engineer, process engineers and all those who are involved in the design, realisation, maintenance and operation of safety systems with elementary and necessary knowledge about functional safety, based on the international standards IEC 61508 and IEC 61511.



#### A Course tailored to your organizational needs.

Each participant receives a **PANAAM** certificate of course attendance.



#### Course content:

- General introduction to functional safety
- Introduction to International safety standards (IEC61508 and IEC 61511)
- Risk assessment methods (HAZID, HAZOP, LOPA)
- How to specify Safety Instrumented Function
- Determine Safety Integrity Level (SIL)
- Introduction to terms that are frequently used (Safe Failure Function (SFF), Hardware Fault Tolerance (HFT), ...)
- De-energize to Safe state (DTS) vs. Energize to Safe state (ETS)
- Process safety time and system response time
- Redundancy and Safety architectures
- Reliability Block Diagram (RDB)
- Overrides - by-passes – inhibits
- Common cause of failures
- Verification process including PFD calculation and understanding vendor's provided failure rates
- Examination

#### TRAINER:

##### EMAD GHAVANINI

TÜV Rheinland FS Engineer (#9690/ 14)

Certified DNV HAZOP Facilitator

CTO & Founder

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