In the framework of a fire risk assessment, the probability of failure on demand of a fire detection system can be assumed a priori thanks to literature data, operational data and expert judgement, or it can be determined through advanced techniques like Failure Mode and Effect Analysis (FMEA). The latter gives numerical estimate more appropriate to characterize a specific system through the analysis of its components and safety functions.

The objective of the study is therefore to determine the probability of failure on demand of a typical configuration of a fire detection system installed in CERN underground facilities through FMEA (other techniques like Markov chain models can also be explored). The scope of the study will be limited to the main installed fire central with the analysis of his detailed system architecture. The software ISOGRAF is available to support the reliability calculations.

**Job Position:**
- **Short Term Internship (6 months; paid) at CERN ‘HSE’**
- **Application Deadline: September 2019**
- **Possibility to write a thesis**

**Your skill set:**
- **Mandatory: passed ‘reliability engineering’ exam**
- **Fluent in English and/or French**
- **Willingness to spend six months in Geneva, Switzerland**

Contact: tamer.tevetoglu@ima.uni-stuttgart.de