

## **RASPE: Risk Advisory Smart System for Pipeline Projects in Egypt**

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**Abstract :** A knowledge-based expert system with the acronym RASPE is developed as an application tool to help decision makers in construction companies make informed decisions about managing risks in pipeline construction projects. Choosing to use expert systems from all available artificial intelligence techniques is due to the fact that an expert system is more suited to representing a domain's knowledge and the reasoning behind domain-specific decisions. The knowledge-based expert system can capture the knowledge in the form of conditional rules which represent various project scenarios and potential risk mitigation/response actions. The built knowledge in RASPE is utilized through the underlying inference engine that allows the firing of rules relevant to a project scenario into consideration. This paper provides an overview of the knowledge acquisition process and goes about describing the knowledge structure which is divided up into four major modules. The paper shows one module in full detail for illustration purposes and concludes with insightful remarks.

**Keywords :** expert system, knowledge management, pipeline projects, risk mismanagement

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020