Towards an integrated risk analysis security framework according to a systematic analysis of existing proposals

Antonio SANTOS-OLMO, Luis Enrique SÁNCHEZ, David G. ROSADO, Manuel A. SERRANO, Carlos BLANCO, Haralambos MOURATIDIS, Eduardo FERNÁNDEZ-MEDINA

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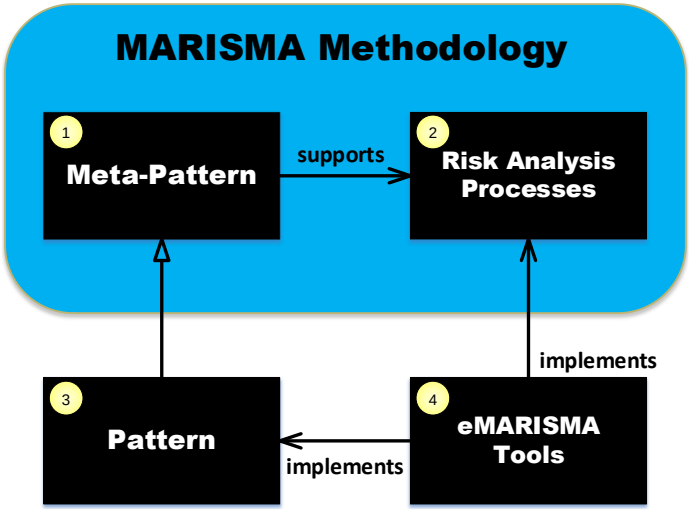
Problems & Ideas

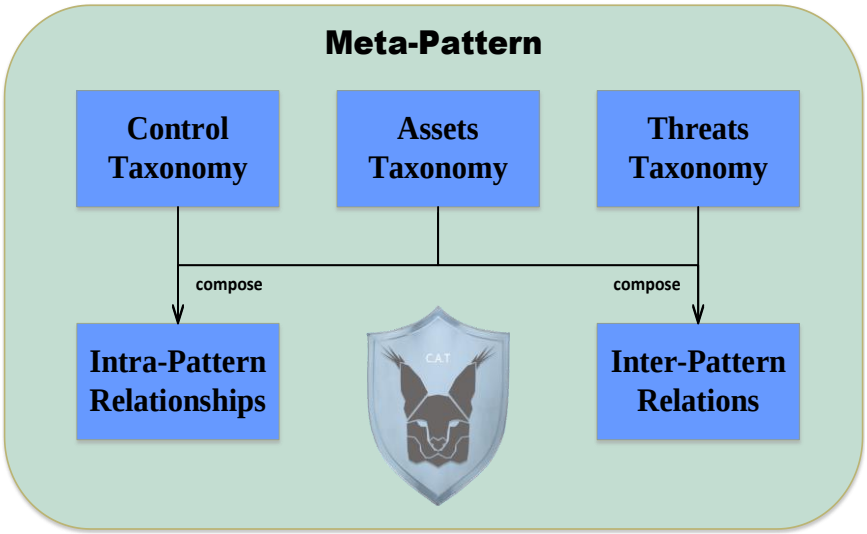
- Problems of classic risk analysis models:
  - Do not frequently consider some the new characteristics that appeared as the result of technological evolution (Cloud, IoT, CPS, etc.)
  - Do not fully adapt to new needs: Hierarchy and associativity risks, knowledge reuse and learning, dynamic aspects, low cost generation.
- Ideas: Improve the current risk analysis and management frameworks by addressing the main shortcomings found in the systematic review to adapt them to new market needs.

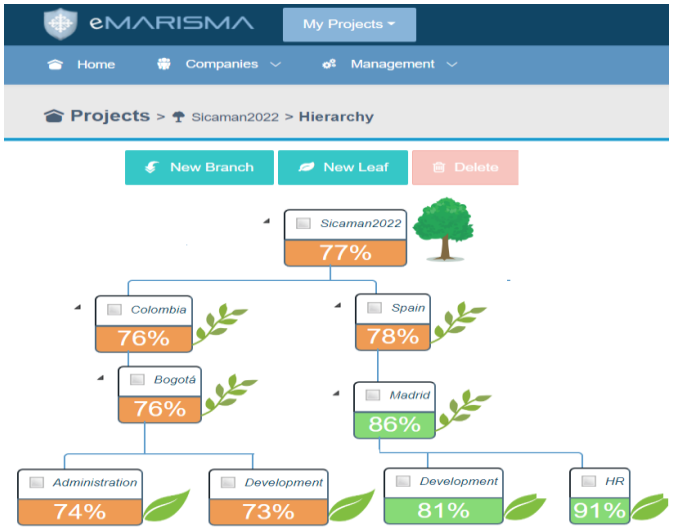


MARISMA framework. Consist of a structure denominated as a meta-pattern, a set of processes, a knowledge base and a tool that supports the aforementioned elements.

Main Contributions

- Contributions:
  - A systematic review of the different processes, frameworks, models and methodologies for risk analysis and management, with the aim of determining their main shortcomings with respect to the current technological state of the art.
  - A summary of the MARISMA framework built, after observing the main weaknesses found in the proposals analysed, and which attempts to solve these shortcomings by employing a methodological and technological perspective.





Left: Designed Risk Meta-Pattern. Right: Example of hierarchical risk tree on eMARISMA tool.