

*20th International Configuration Workshop September 27 – 28, 2018
Graz, Austria*

Knowledge retrieval for configuring risks when answering calls to tenders or direct customer demands

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September 2018*



Plan



Problematic



Risk Configuration Definition & Risk Knowledge



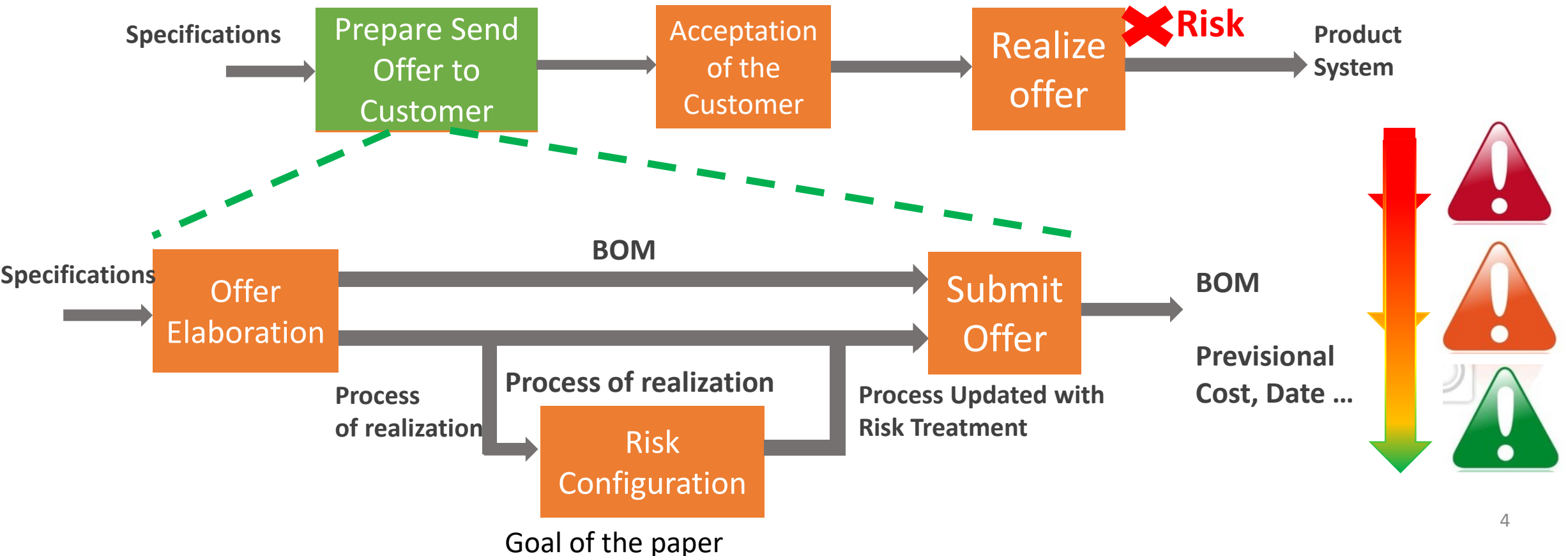
Aiding Risk Configuration with Case-Based Reasoning



Conclusion

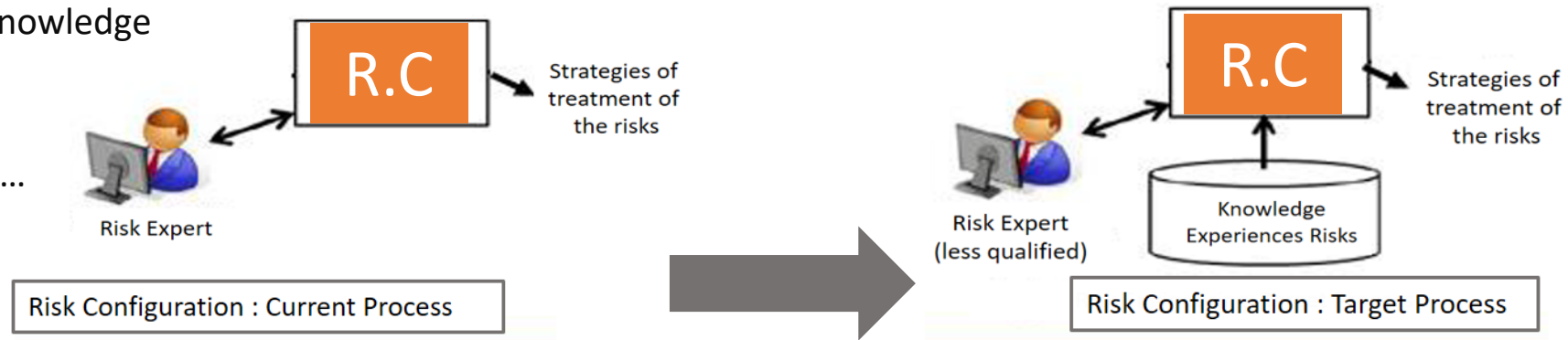
Problematic

- Customer/Supplier relationship for product/system/service
- Allow bidding companies to submit bids :
 - More relevant, more accurate, faster, with a higher confidence ⇔ “Less risky...”



Problematic and contributions

- No capitalization of knowledge
- Expert Training
- Absence of an Expert...



Provide a decision support tool, based on knowledge and experience, in order to help the expert in risk configuration.

Contributions :

- Generic Knowledge Model for Risk Configuration
- Approach to exploit the knowledge base

Plan

 **Problematic** **Risk Configuration Definition & Risk Knowledge** **Aiding Risk Configuration with Case-Based Reasoning** **Conclusion**

Risk Configuration Definition

Given :

- The tasks of the Delivery Process where risks can occur
- The general context of the offer that gathers :
 - Product or System main characteristics (Size, complexity ...)
 - Customer main characteristics (recurrence, importance ..)
- A set of generic risk characteristics that gathers :
 - Set of events and their probabilities
 - Set of impacted tasks with impact values
 - Set of P/C Actions with impact reductions
- A set of Constraints linking : Task, General context and Risk characteristics

Determine the delivery process risks, and for each :

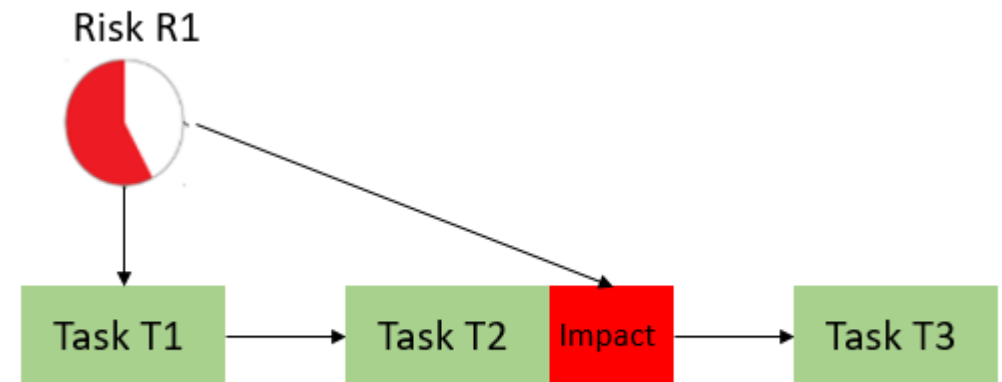
- Quantify its probability,
- Find impacted tasks with impact values
- Find the set of Preventive Corrective actions with impact reductions values

Risk Knowledge

➤ Risk : couple (Event, Task)

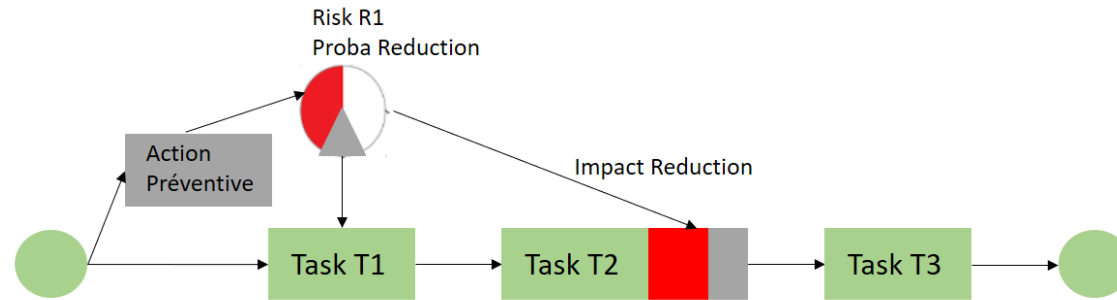
➤ *A risk can have multiple impacts*

➤ *An impact is defined for a single impacted task*



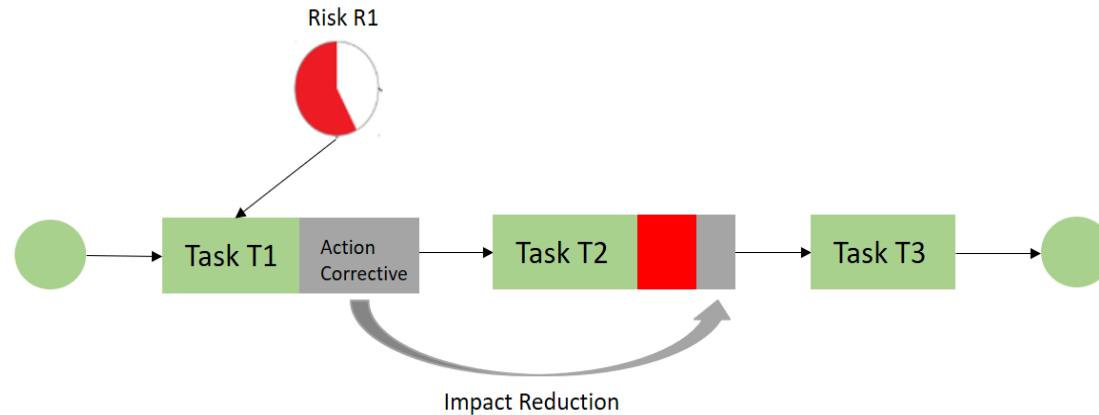
Risk Knowledge

➤ Preventive Action



➤ *A task can be impacted by several risks*

➤ Corrective Action



Risk Knowledge

Examples of constraints linking general context system characteristics and risk characteristics :

Descriptor : System Complexity	Risk Probability
Little complex [0,2]	Low probability [0.1,0.2]
Complex]2,4]	Average probability [0.3,0.5]
Very complex]4,5]	High probability [0.6,0.8]

Descriptor : Customer Importance	Impact Reduction
Regular [0,2]	Low reduction [10%,20%]
Important]2,4]	Average reduction]20%,40%]
Very important]4,5]	High reduction]40%,100%]

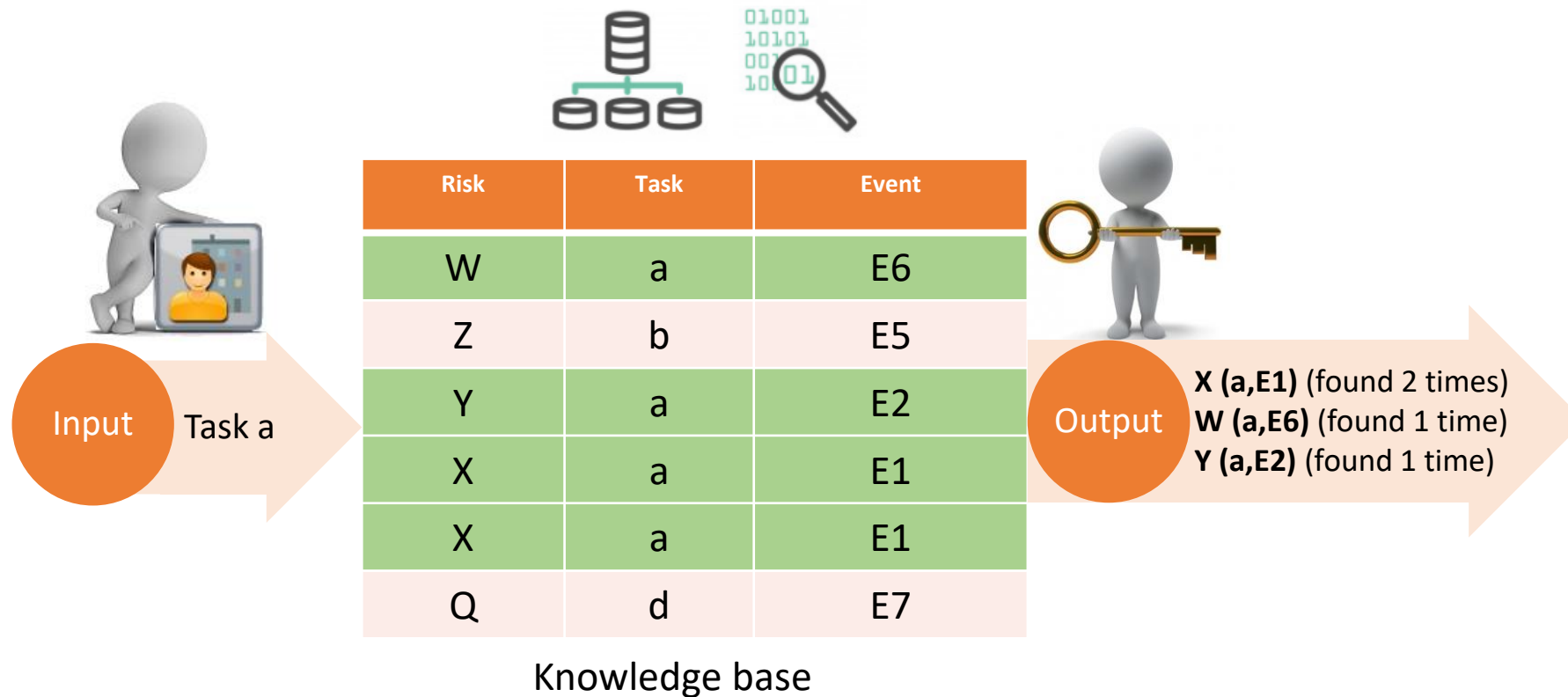
Plan

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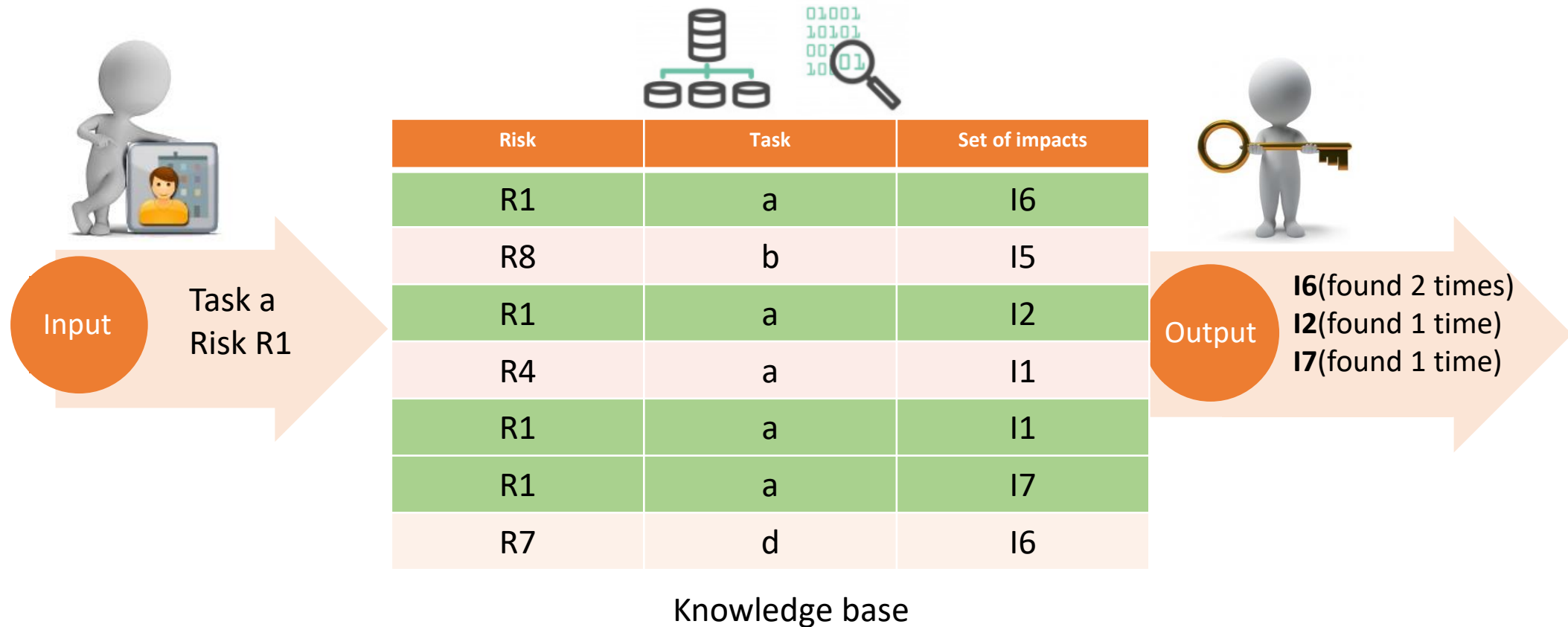
Aiding Risk Configuration with Case-Based Reasoning

- Queries :
 - Risks with Probabilities
 - Impacted tasks with impacts values
 - Strategies with P/C ations

Aiding Risk Configuration with Case-Based Reasoning



Aiding Risk Configuration with Case-Based Reasoning



Plan

 **Problematic** **Risk Configuration Definition & Risk Knowledge** **Aiding Risk Configuration with Case-Based Reasoning** **Conclusion**

Conclusion et perspectives

- Generic risk knowledge model
- Exploitation of the KN/Exp base

*if any body interested,
demo possible at coffee break ...*



- Select best Corrective/Preventive actions configurations
thanks to simulation of realization process.

