Conceptualization of a CyberSecurity Awareness Quiz

Sebastian Pape, Ludger Goeke, Alejandro Quintanar, Kristian Beckers

SOCIAL ENGINEERING ACADEMY

funded by:

European Commission | Horizon 2020 European Union funding for Research & Innovation

THREAT-ARREST (grant agreement number: 786890)
CyberSec4Europe (grant agreement number: 830929)

Cyber Security for Europe

MSTEC 2020, 17 – 18 September, Surrey

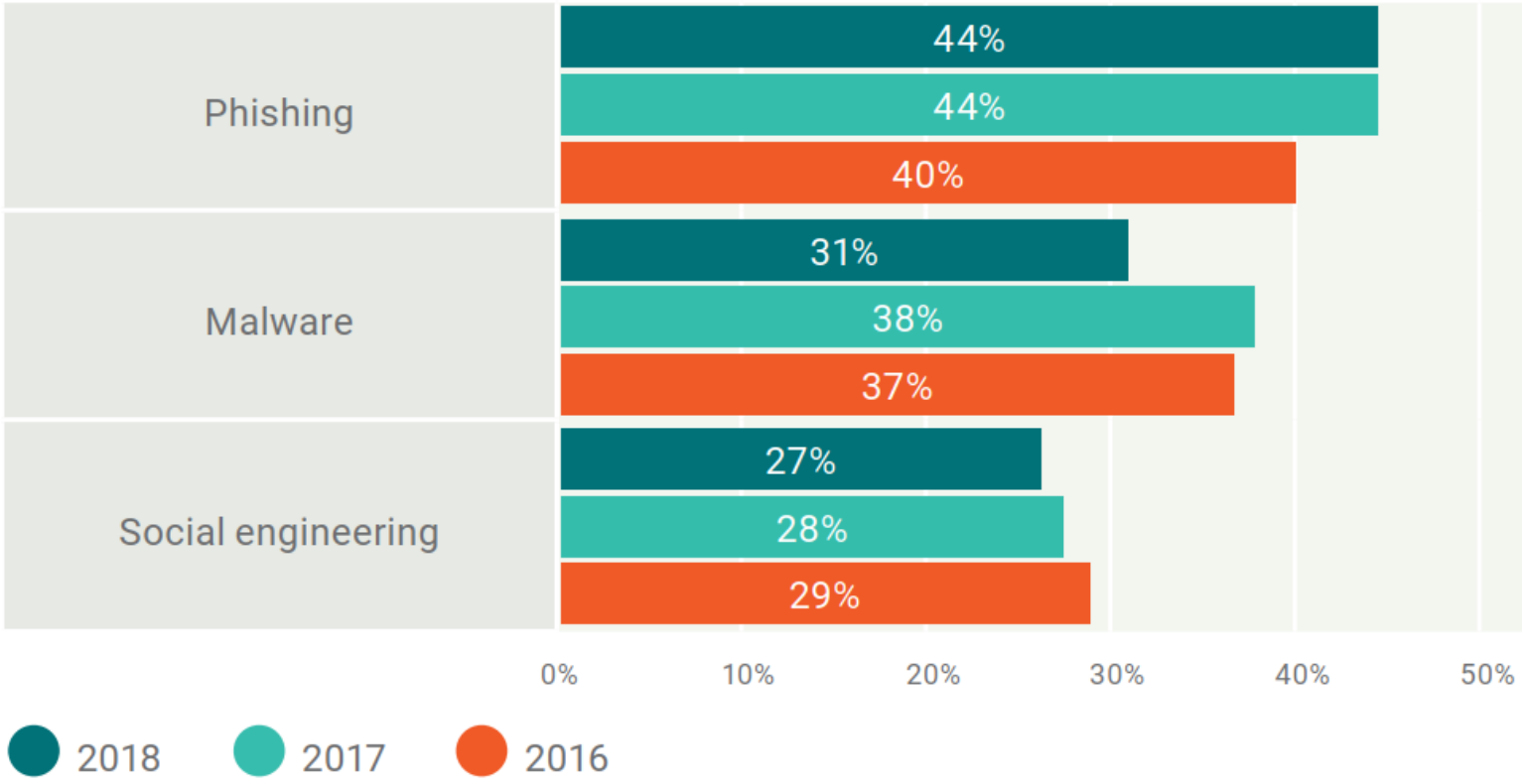
Outline

SOCIAL ENGINEERING ACADEMY

- Motivation
- Game design
- Creation of quiz content
  - Information procurement
  - Categorization by metadata
- Architecture
- Conclusion

Motivation

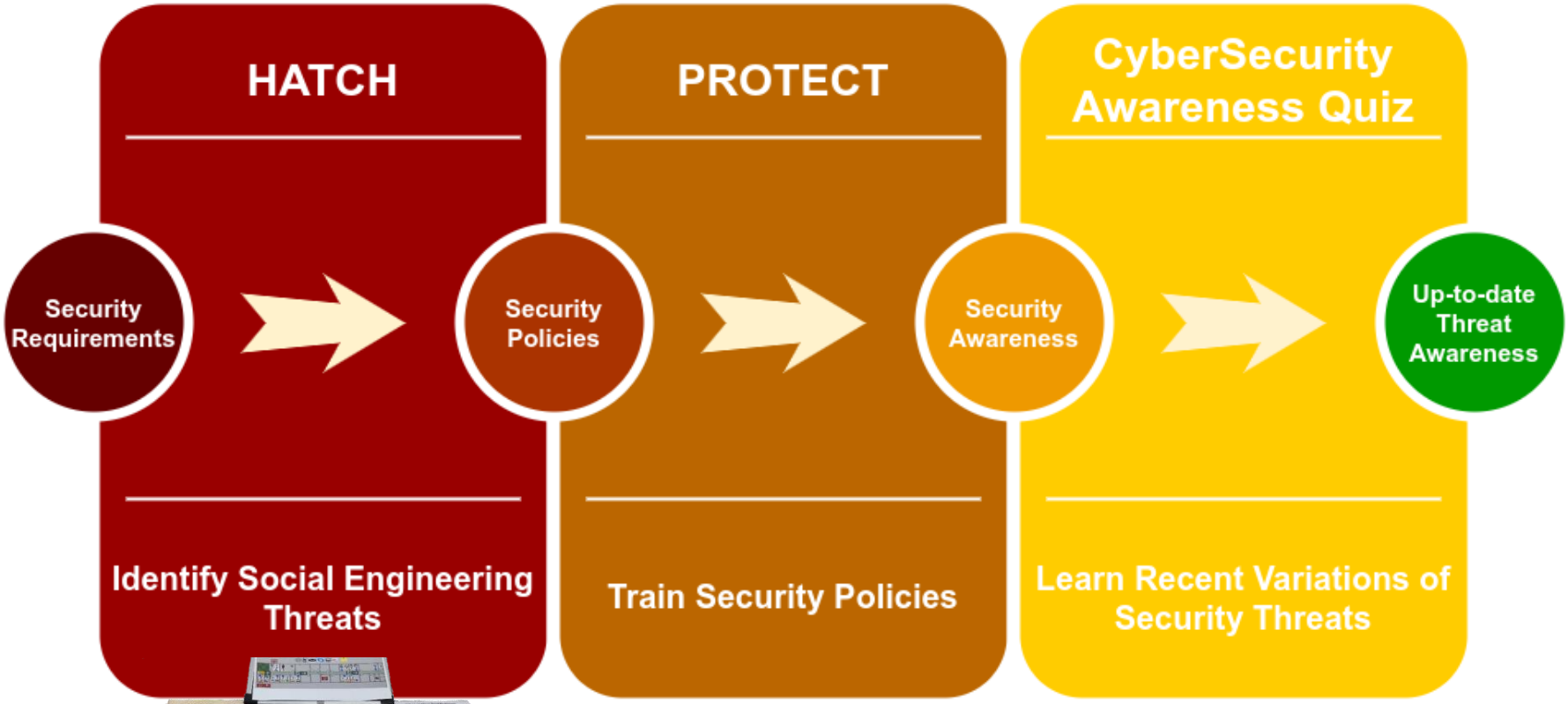
Current attack types

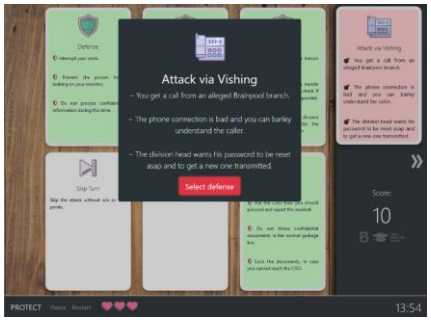


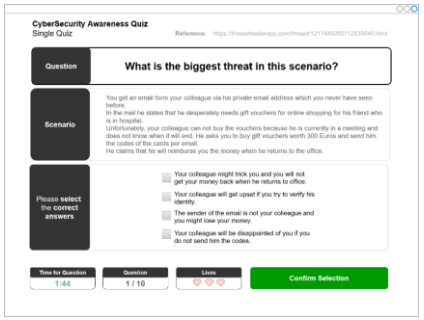
Source: State of Cybersecurity 2019 – Part 2 Current Trends in Attacks, Awareness and Governance, 2019, ISACA

Motivation (cont‘d)

SOCIAL ENGINEERING ACADEMY







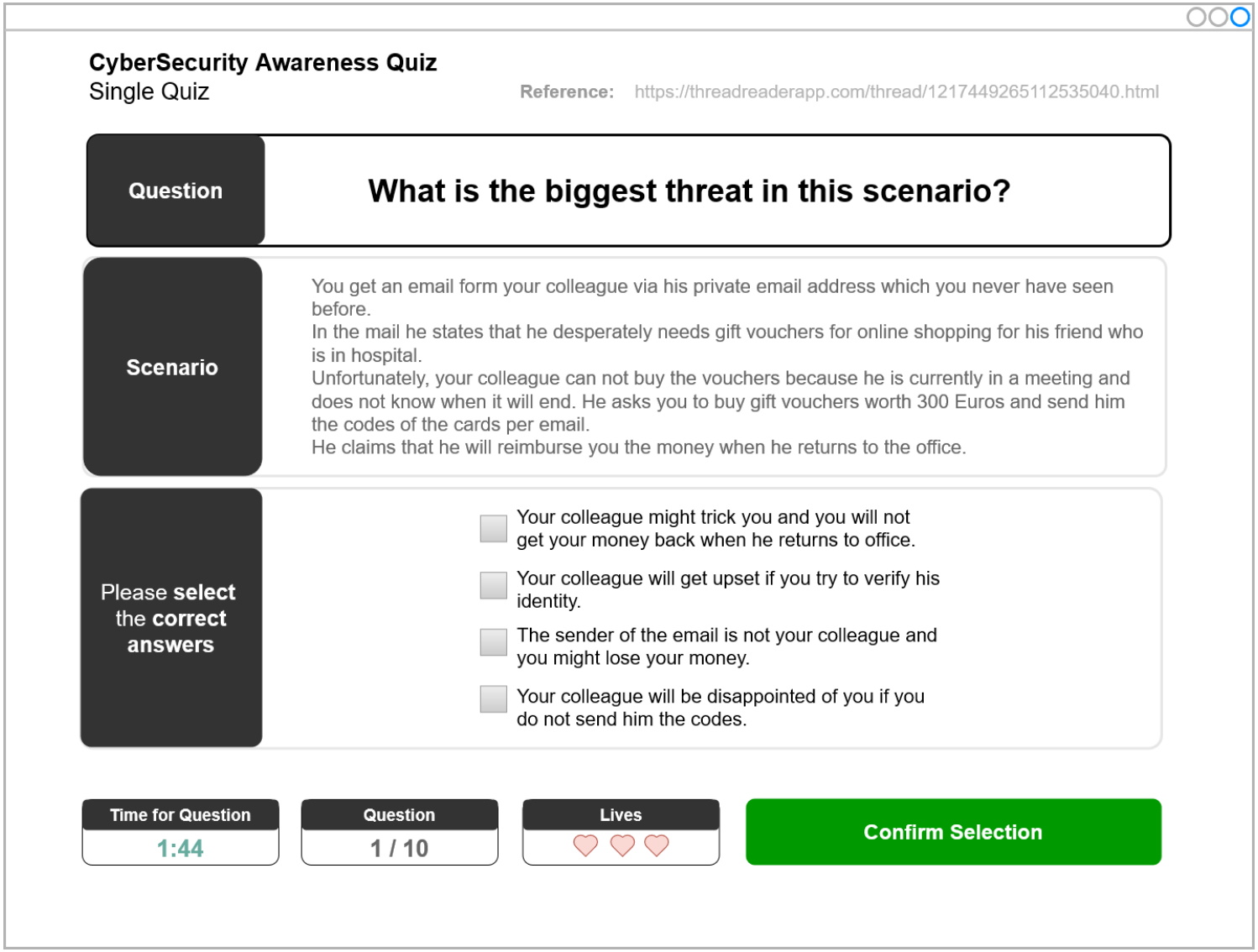
Game design: Requirements

SOCIAL ENGINEERING ACADEMY

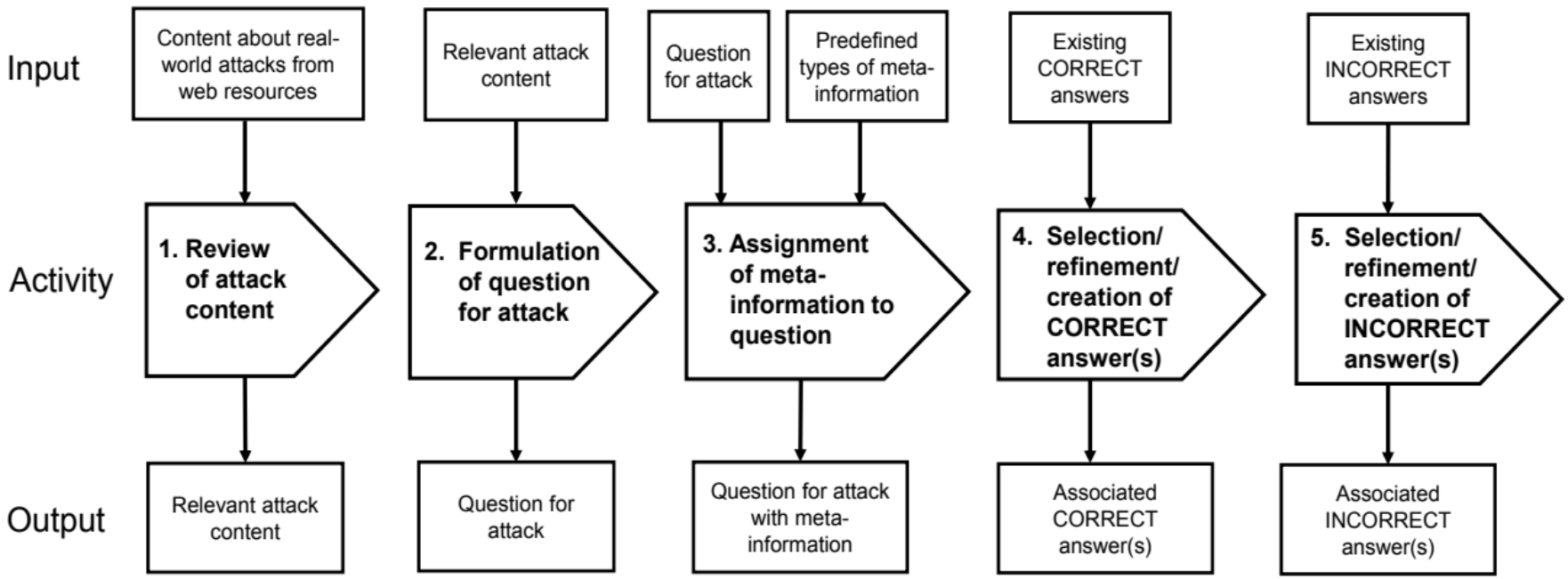
- Lightweight quiz game
- Playable on mobile devices
- Single and multi-player modes
- Question are based on

  real-world social engineering attacks

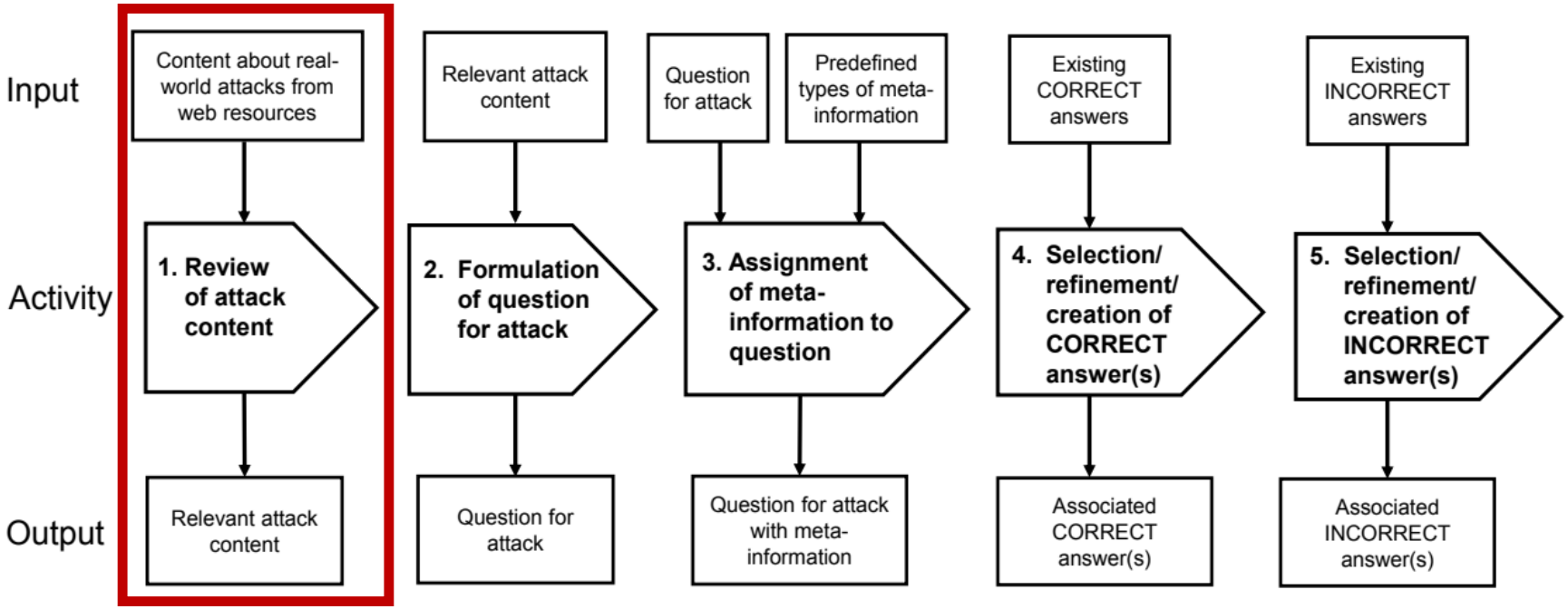
Game design: GUI



Creation of quiz content



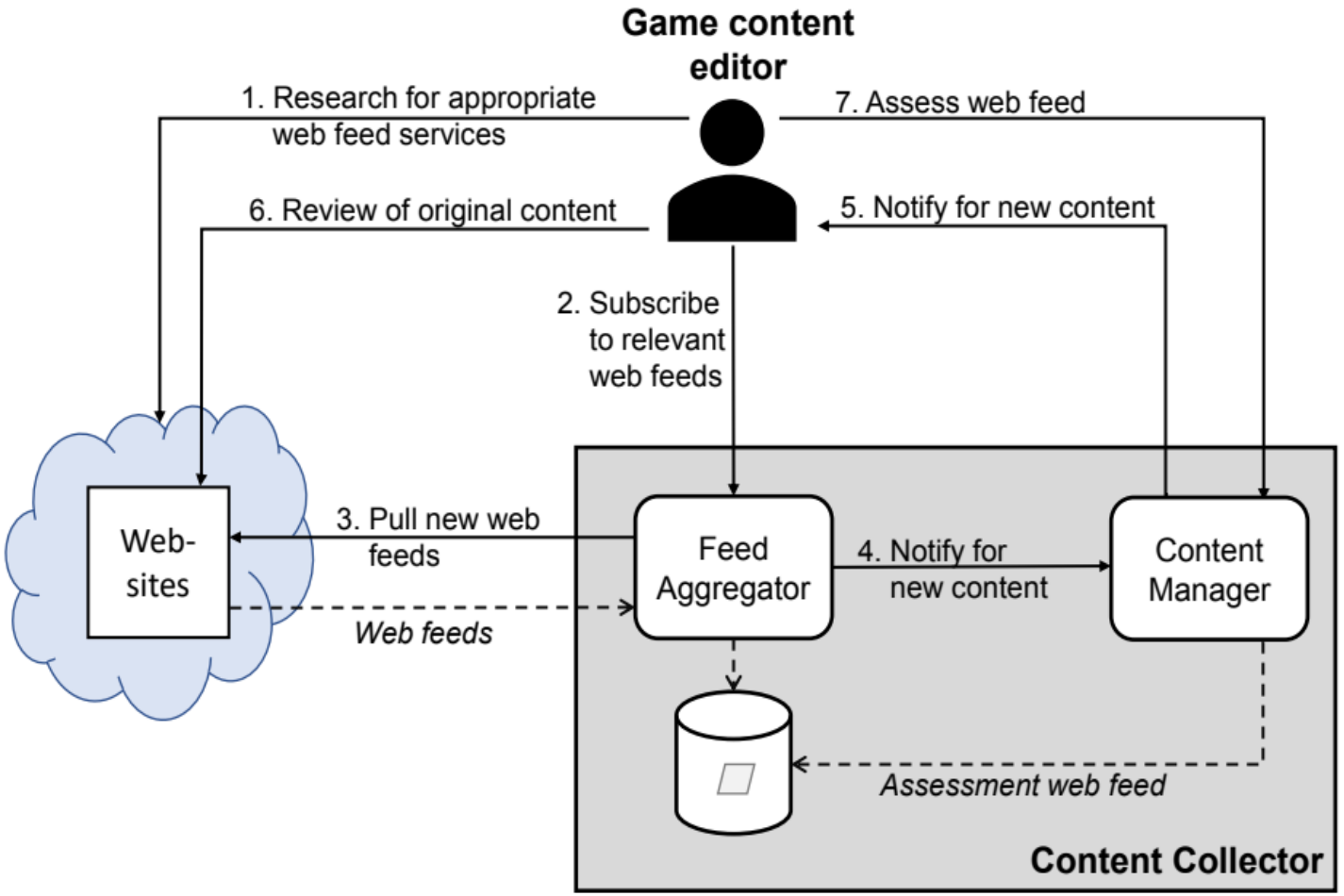
Information procurement



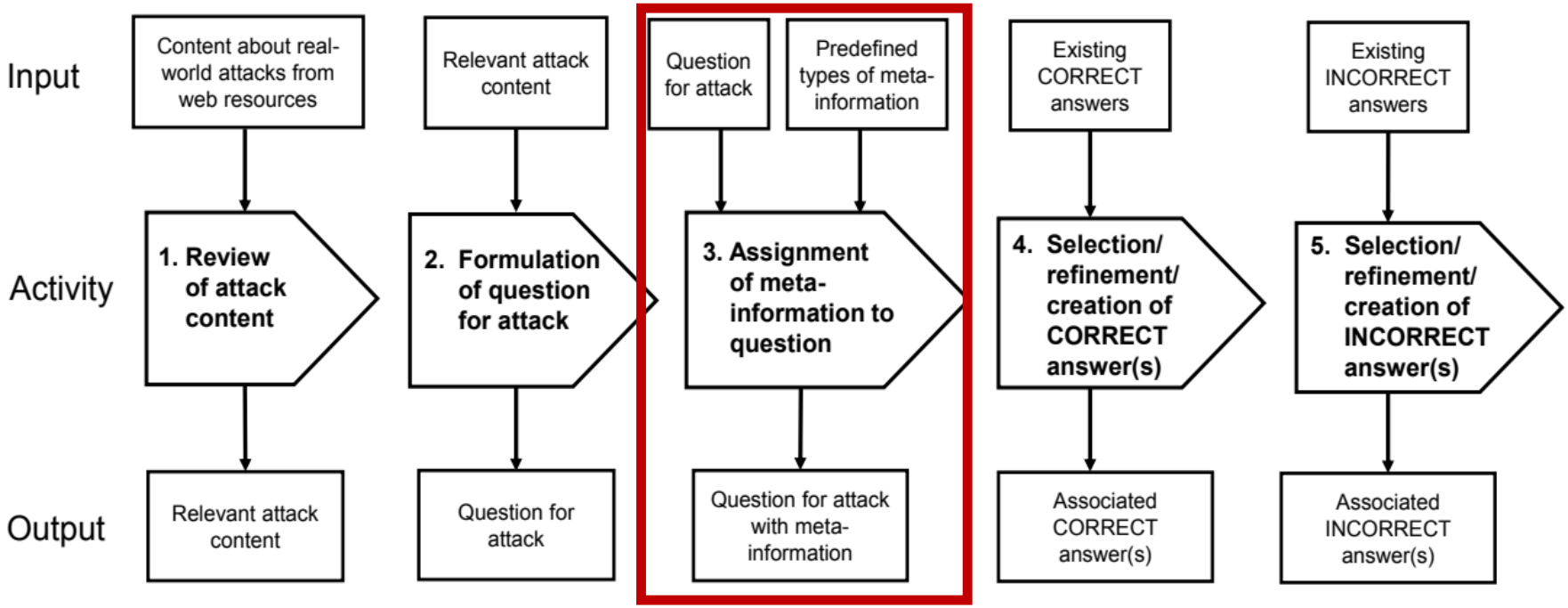
Information procurement (cont‘d)

SOCIAL ENGINEERING ACADEMY

Information collection



Categorization by metadata



Categorization by metadata (cont‘d)

SOCIAL ENGINEERING ACADEMY

- Tagging of questions with metadata, e.g.
  - Attack categories
  - Context of victims
  - Used technology
  - Time of attack
  - Geographical spreading

Categorization by metadata (cont‘d)

- Supports the creation of quizzes for certain topics
  - Identification of predefined
    - questions for new quizzes
    - answers for new questions

- Possible compilation of quizzes on the fly on the basis of indicated information

Categorization by metadata (cont‘d)

SOCIAL ENGINEERING ACADEMY

Example: Adding of predefined questions to quiz

Add Question

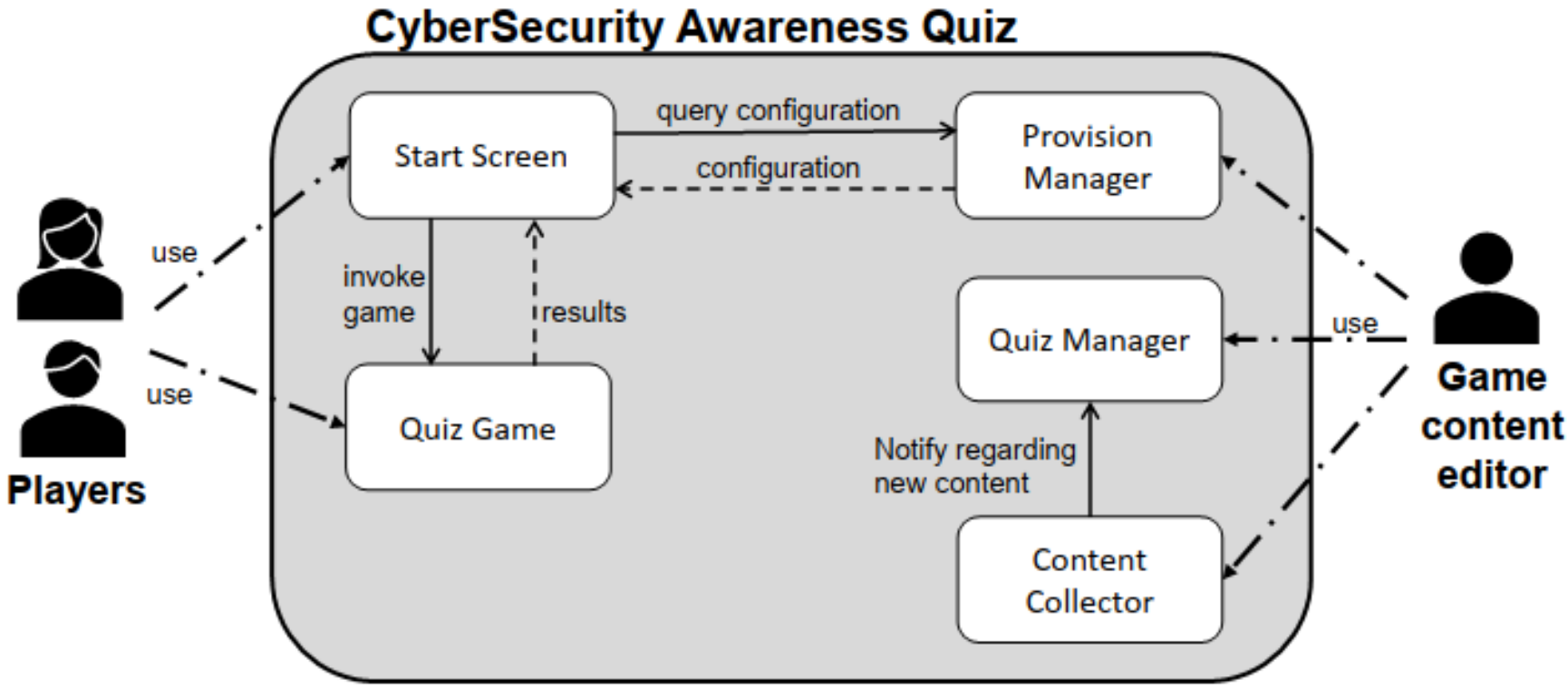
Filter parameter 1	Attack category	Email fraud
Filter parameter 2	Context of victims	Organisation
Filter parameter 3	Department	Accounting
Filter parameter 4		

ID	Scenario	Question	References
Q_008	You get an email with an invoice from a supplier of your company. The email is sent by an new employee of the supplier. He states that the format of invoices has been changed.	What is the biggest threat in this scenario?	https://...
...	...	...	...

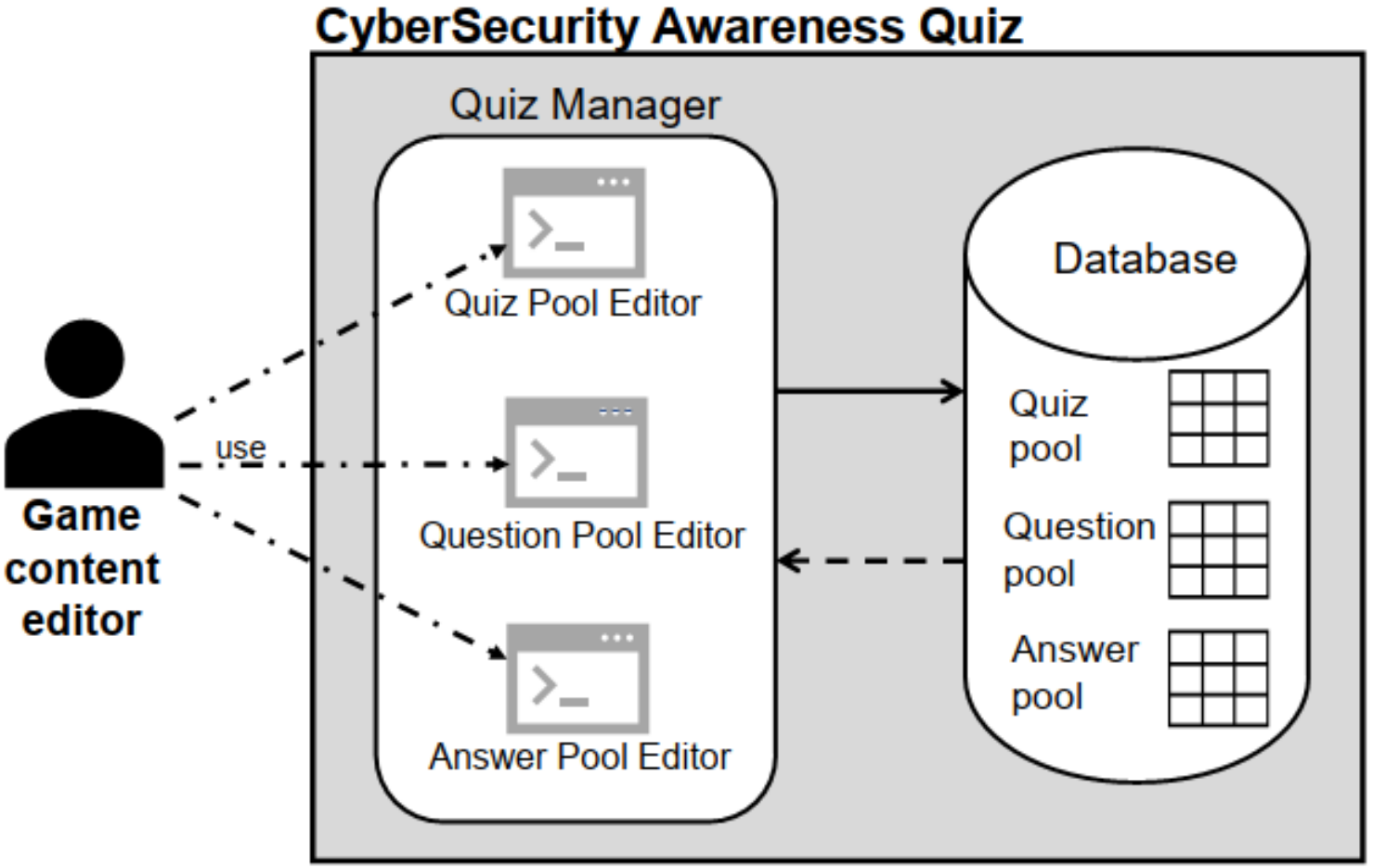
Cancel

Add Question

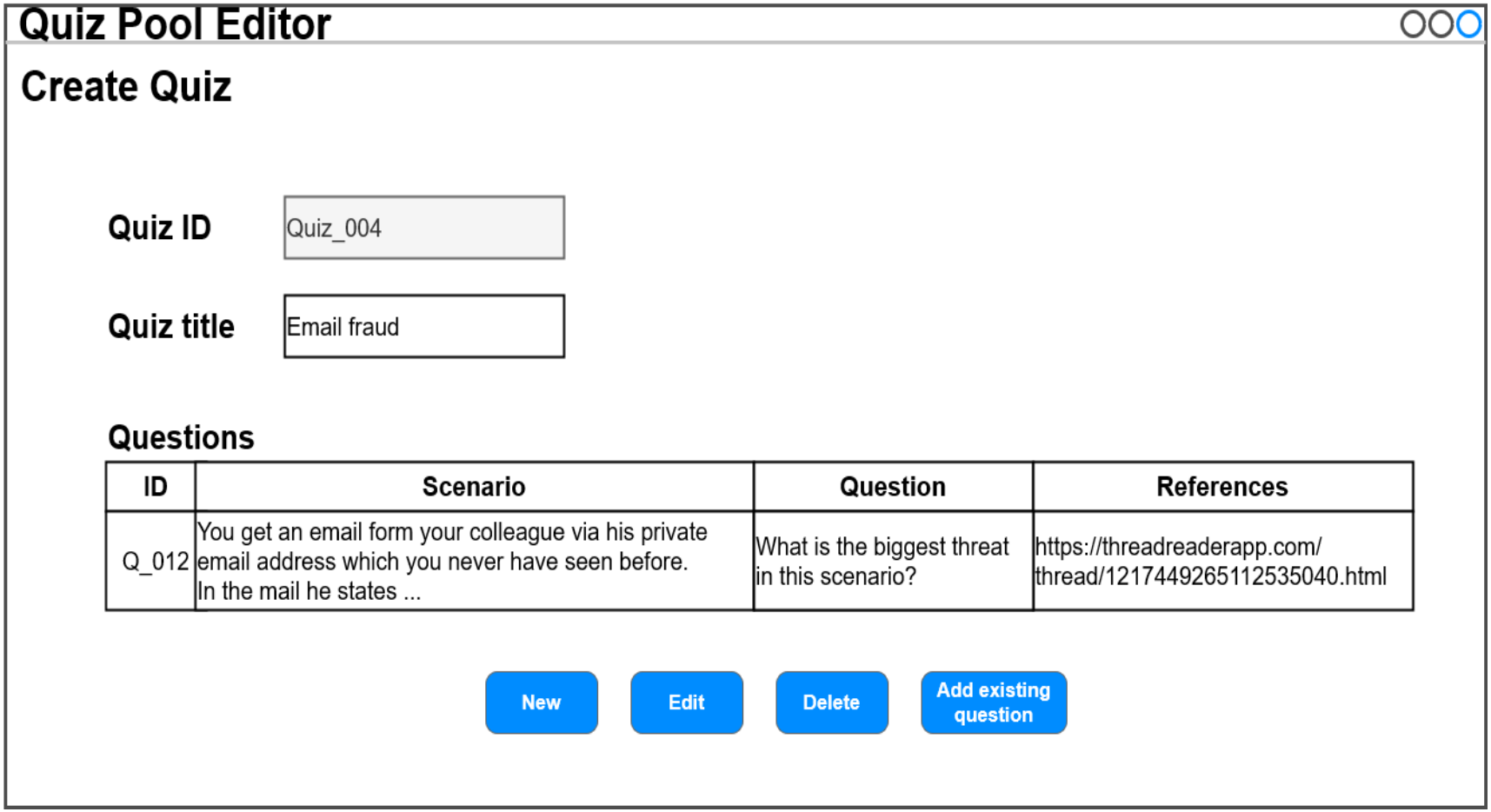
Architecture: Overview



Architecture: Quiz Manager



Architecture: Quiz Pool Editor



Conclusion

SOCIAL ENGINEERING ACADEMY

- Fullfilment of all requirements in conceptualization
- Process for information procurement
- Players motivation through different quiz modes
- Future work
  - Implementation
  - Evaluation

Thank you

Sebastian Pape

Social Engineering Academy
Frankfurt, Germany
sebastian.pape@social-engineering.academy

Goethe University
Frankfurt, Germany
sebastian.pape@m-chair.de

We are grateful to Pixabay for their image services.