Project Title: Assessing the functionality and enhancing the capabilities of Air Traffic Attack Simulator

Project Description

The Air Traffic Attack Simulator is an innovative tool designed to bolster the cyber awareness of Air Traffic Controllers by providing a realistic simulation environment. This simulator allows users to select from a variety of airports, weather conditions, and traffic scenarios, enriching their training experience. It includes an array of cybersecurity attacks sourced from the SecRAM catalogue of SESAR JU, thus offering a comprehensive testing ground that assesses impact on operational performance.

The simulator is robust and functional, yet ongoing enhancements are necessary to unlock its full potential. These improvements aim to provide more diverse environments, richer cyber-attack scenarios, and improved analytics for performance evaluation.

Objectives*

1. Enlarge the selection of airports within the simulator to offer a more diverse range of testing environments and challenges.
2. Integrate a more extensive set of cyber-attack scenarios from the SecRAM catalogue to enhance the realism and educational value of the simulator.
3. Develop sophisticated visual analytics tools to enable administrators to effectively review and analyze user performance in detail.
4. Perform a comprehensive evaluation of the simulator to identify and rectify any operational flaws or bugs.
5. Create a variety of testing scenarios and develop concise, informative educational content to strengthen cyber awareness training.

Deliverables

- Updated source code.
- Revised user manual detailing operations and new features.
- In-depth report highlighting strengths, limitations, and suggestions for improvements.

Prerequisites

- Proficiency in JavaScript programming.
- Basic knowledge of cybersecurity principles (e.g., a basic security course)

References and Resources

- **Project Repository:** Explore the simulator's development history and updates on GitLab: openscope-attacks and openscope-attack-simulator.
- **Research Article:** Delve into detailed analyses and findings in our dedicated article: Attack Simulator Paper.
- **Simulator Access:** Engage with the simulator directly through this link: Air Traffic Attack Simulator.
- **Tutorial:** Start with the basic tutorial to get acquainted with the simulator's functionalities: Simulator Tutorial.

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* Should any objective require more time than initially anticipated, priorities may be adjusted, and the scope of objectives may be reduced based on the available project timeline.
