Aerospace Cybersecurity Event Proposal

Knowledge Partners: ISAC (https://www.isacindia.org/), Cyberange (https://cyberange.io/)

Sponsors: GMRAA (https://gmraviationacademy.org/), Securzy (https://securzy.io/), IntelliMindz (www.trainingincoimbatore.in), HAL (https://hal-india.co.in/), icrewsystems (https://icrewsystems.com/en/), ecaps India (https://caps.in/), Pradhaan Air Express (http://pradhaanair.com/), FlyBig (https://flybig.in/), Planet X Aerospace (http://www.planetxaerospace.com/), IntellX Software Solutions (https://instagram.com/intellxlabs)

In-House Partners:

Knowledge Partners: GitHub Campus Club (https://www.instagram.com/github_campus_psg_tech/), Aero Modelling Club (https://www.instagram.com/psg_tech_aeromodelling_club/)

Sponsors: Institution's Innovation Council (https://psgtech.edu/IIC/), GitHub Campus Club (https://www.instagram.com/github_campus_psg_tech/)

Prize Pool: INR X (min: INR 10,000) in ratio of (6:3:1)

First Prize: INR 0.6X + 1 Month of Free Cyberange Labs (x2) + 1 Month of Securzy Pro (x2)

Second Prize: INR 0.3X + 1 Month of Free Cyberange Labs (x2)

Third Prize: INR 0.1X + 1 Month of Securzy Pro (x2)

Runner-Up: 1 Month of Securzy Pro (x2)

Other Expenses: INR 7,500

- Customized Pens for 80 participants of Round 2 ~ INR 1,500 (https://www.printland.in/customize/L131---Highway-Satin-Finish-Pen---Black-95133.html)

- Refreshments (Swiggy/Zomato) for upto 80 participants offline of Round 2 ~ INR50*80 = INR 4,000
- Banner Printing and Custom Lanyards for Winners - INR 2,500
- Hard Copy of Certificates of Certificates of Participation and Certificates of Achievements for 150 participants and 8 winning individuals = INR 2,000

Hosting Expenses:

- Domain Hosting and Server Hosting for CTF
- Server Spaces will be given to Participants for Secure Coding Stream

Financial Expenditure Plan: Prize Pool from Sponsors, Hosting Expenses by IntellX, Other Expenses from CSEA

Intellectual Property Agreement: Any intellectual property developed during and within the scope of the hackathon is under the command of the intellect that generated it. It is up to the participants to accept or not the proposals of the organizers on the post-event.

Proposed Dates

- January 3, 2023 - January 12, 2023
- January 10, 2023-January 19, 2023
- January 17, 2023-January 26, 2023

Maximum # of Participants: 150 Participants

Eligibility Criteria: Open to All Departments and Years of PSG College of Technology.

Pre-Requisites

- Knowledge in basic Coding Concepts
- A brief history showcasing the individual’s interest in either Coding, Security, or Aviation

Day 1 (Tuesday | 4:30PM - 6:00PM)

- [4:30PM - 4:45PM] Intro to the Event
- [4:45PM - 5:00PM] Partners and Panel Introduction
- [5:00PM - 5:15PM] Introduction to Aviation Security (Session by Aero Modelling Club)
    - What are we trying to protect?
    - Profile of an Airport, Profile of an Airplane
    - A peek into Drone Security and Drone Systems
- [5:15PM - 5:30PM] Secure Coding Techniques, GitHub and GitGuardian (Session by GitHub Campus Club)
- [5:30PM - 6:00PM] Linux and Python Basics for Security

Day 2 (Wednesday | Online Session [7:30PM])

GitHub Stream

- What is secure coding for aerospace?
- Top 10 vulnerabilities in
    - Commercial Aviation web portals
    - Aerospace Embedded Systems
- Using GitHub for private collaboration work (Session by GitHub Campus Club)
- What is Software-Defined Radio and ADS-B? (Session by ISAC)
- Problem Statements Release
    - Develop a simulated ECAM System as a Software Application
    - Develop a secure Ticketing and Aircraft Tracking system
    - Develop an in-flight entertainment system as a web-application, and simulate the aircraft parameters for live flight tracking
    - Develop an offline in-flight entertainment system with 0 internet dependencies, and simulate the aircraft parameters for live flight tracking

    - Develop a flight-scheduling and dispatch, and pilot management system
    - Develop a system for timely plane quality assurance, inspection management, engineering support
    - Develop a system for customer information management (e.g. flight history, contact data)
    - Develop a system for revenue cycle management, cost, and financial analysis
    - Develop a system for departure/arrival and runway flow management for airports
    - Develop a system to track passenger footfall and analyze the same based on the number of check-ins at an airport
    - Develop a radar system for air traffic controllers with a live radar screen based on ADS-B feed, and a wi-fi based communication system
    - Develop an airline reservation management system
    - Develop a system for fleet maintenance, inventory tracking and flight operations
    - Develop a tool for intercepting Drone Downlinks and Drone Hijacking
    - Develop an automated Drone Delivery system app like Swiggy
    - Develop a Drone-Based Transport App like Porter.In
    - Develop Software related to National Air Defense for war

Vulnerability Testing Stream

- What is a Capture-The-Flag? (Session by ISAC)
- Using the Lockheed KillChain to identify vulnerabilities
- OWASP Top 10
- What is SCADA?
- How to test SCADA?
- Tips to score in a CTF
- Release problem statement
    - There exists an airline company “iFly” whose website is available at ifly.intellx.in. Compile a list of all flags found in their services and submit

to portal.

Day 3 (Thursday | 5:00PM)

Offline MCQ Round (Round 1) at PSG College of Technology. [Different Kahoots for different streams]

Top 50 Members are taken for Secure Coding Stream Round 2

Top 30 Members are taken for Vulnerability Testing Stream Round 2

Day 4 - Day 7 [12AM - 11:59PM] (Friday, Saturday, Sunday, Monday)

Hackathon Takes Place.

Students will be allowed to use campus premises on Saturday from 10AM to 3PM for offline team-collaboration.

Day 8 (Tuesday)

All GitHub Repositories must be made public between 12:00AM and 10:00PM of this day.

Depending on whether the participant decides for the software solution to be Open-Source or Proprietary-Ware, they can choose to keep it public or change it to private after 10:00AM.

Submissions will be made on DevPost (https://devpost.com/)

Panels Review takes place.

Top 5 teams from each stream is released by 10:00PM

Day 9 (Wednesday | 8:00PM)

Online MCQ Round on Kahoot Platform and Google Meets Platform is conducted at 8PM, and top 4 out of 10 teams are announced as winners. [Kahoot will be conducted amongst all 10 teams on the topic of Secure Coding]

Day 10 (Thursday | 01:00PM)

Prize Distribution and Closing Ceremony at College (Audience: All participants that qualified to Round 2)

Av**CON Conference Event Friday 4:30PM - 6:00PM**

Audiences :- Interested and Available Event Organizing Partners, All available members from in-house partner clubs, All interested professors.

The 4 winning teams will have to present their unique ideas on-stage, and interested event-organizers/partners can put forward proposals to developers as to their interests post-event.

[4:30PM] Opening Keynote and Welcome to Partners and Winners by The Eye

[4:45PM] Team 1

[5:00PM] Team 2

[5:15PM] Team 3

[5:30PM] Team 4

[5:45PM] Closing Keynote