Letter of Collaboration

Date: 21 September 2025

To: NTSU Aviation

From: VIR-Group 2
Institution: Belgium Campus
Project: NLP Powered Drone

Dear NTSU Aviation Team,

We are writing to formally introduce our university project and request your collaboration as previously discussed.

Project Overview

Our group, VIR-Group 2 from Belgium Campus, is developing an innovative NLP Powered Drone system. The project enables natural language commands such as "go to the chair," whereupon our system:

- Processes the video feed to identify and locate the target object
- Calculates distance and movement parameters
- Directs the drone to the specified location
- Provides real-time video feedback with spatial information through MR/VR interfaces

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Current Limitations

Our university has provided a DJI Tello Drone for development. While functional, this basic model presents significant limitations:

- Fixed camera positioning
- No built-in spatial awareness capabilities
- Absence of ROS2 integration
- Limited SLAM functionality

These constraints require us to develop complex software-based SLAM systems using video feed analysis alone, which significantly impacts project scope and accuracy.

Collaboration Proposal

We respectfully request collaboration with NTSU Aviation to enhance our project through access to Enterprise Grade DJI drones. These advanced systems offer:

- Native ROS2 compatibility
- Built-in SLAM capabilities
- Enhanced spatial awareness
- Superior location data extraction
- Improved overall system reliability

Meeting Arrangement

We plan to visit your facilities in the coming week, pending confirmation, to discuss:

- Available drone models and specifications
- Potential sponsorship opportunities
- Technical capabilities alignment with our project requirements
- Collaboration framework and timeline

Conclusion

This collaboration would significantly advance our research capabilities while providing NTSU Aviation with insights into cutting-edge NLP drone applications. We look forward to exploring this mutually beneficial partnership.

Thank you for your consideration and support of our academic endeavour.

Sincerely,

VIR-Group 2, Belgium Campus

For any inquiries **Contact Information:**

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- Project Lead: Hayley Treutens (071 264 2729)