Aquall
Autonomous Quadcopters for All
54310 Takeoff Drive ● Ann Arbor, MI 48109

Technical Communication Assignment Specifications for Quadcopter Project
On October 28, 2020, Robert Dick, President, was contacted by Ariadne de Bothezat, a client who is planning to develop and market quadcopter platforms and sensor-electronic kits to enthusiasts and universities. This client is interested to learn every detail of our current prototypes. Therefore, Dr. Dick would like all development divisions to introduce to this client their autonomous quadcopters and their performances on an obstacle course. On **Saturday, December 5, 2020**, **teams will have 10 to 12 minutes** to present their prototypes and give a video demonstration of their quadcopter's performance on an obstacle course and other team-designed projects. Dr. Dick also needs all teams to write a formal report on their projects by **December 8, 2020**. All reports will be forwarded to the client. Please address the following technical specifications in your presentation and report:

Your autonomous quadcopter should
- successfully traverse an obstacle course and land gracefully in the landing zone.
- minimize collisions.
- traverse the course rapidly.

Your traversal algorithm should be
- correct and reliable in the presence of drifting conditions.

Your PID-controller parameters should enable flight that is
- reliable.
- fast.
- unlikely to result in collisions.

You may want to suggest improvements for a future iteration of your prototype.

Also, discuss your team-designed additional project and its progress.

We look forward to your presentations. Please use your division's logos and letterhead for the report and presentation.

Final Presentation Requirements
Presentations are on Dec. 5, 2020 from 12-4 pm; order TBD. Please use the following specifications for your presentation and **remember to dress formally** (even though you are presenting via Zoom). The specific technical content is listed in the bullet lists above, and **in detail in the document** *Final Project*.

Your PowerPoint presentation should contain the following:
1) Title Slide: Team name, team members' names + titles, report title, date, picture of quadcopter without labels.
2) Introduction: Background, task statement, purpose.
3) Summary: Main points of the presentation with quantification where possible.
4) Overview of prototype and its subsystems. Include labeled photo(s).
5) Function of the Device (video, labeled photos, block diagram, and flow chart of the program).
6) Technical specifications as listed above.
7) Recommendation for further development. (Optional, but good to think about.)
8) Conclusion (could be the same list as for summary slide).

Final Report

For the final report, please follow these specifications:

1) Times New Roman font (11 or 12-point font) for text
2) Front Matter: Title Page, Table of Contents, List of Figures, List of Tables
3) Executive Summary (Page numbers in lower case Roman numerals, but not on title page)
4) Introduction to Report: focus on problem definition, motivation (why the problem is important), and definitions.
5) Overview of prototype: Explain the system and its subsystems. Include labeled photo(s), block diagram, and flow chart.
6) Technical specifications and team's fulfillment thereof (see list on page 1).
7) Optional, but recommended: A paragraph or more discussing the improvements you would make to a future iteration of your quadcopter.
8) Conclusion (main points of presentation with salient data).
9) Appendices, if needed.