AIAA Engine Design Competition for Undergraduate Teams

Current Status and a Plan for 2022

This year, AIAA discontinued the Propulsion and Energy Forum in August and transferred most of its gas turbine engines content to the SciTech Forum in January for sound business reasons. This meant that the regular August venue for Round 2 of the Engine Design Competition was eliminated. August was always a good time to conclude our event because it occurred fairly soon after the end of the school year and meant that competition activities could be scheduled to suit both AIAA students and the AIAA members who participated as judges.

However, SciTech does not correspond to the end of the academic year, which makes scheduling of the Engine Design Competition extremely difficult. If the RFP were to be released at the beginning of the academic year, there would be insufficient time to accommodate the design work by student teams and the subsequent judging.

An alternative conference to host Round 2 is the Aviation Forum, which takes place in June. That would be suitable as a venue but the propulsion sessions that normally attract "our" students would be absent. AIAA professional members who comprise the judging panel and those from the corresponding Technical Committees with whom competition participants seek to interact would also be missing.

At AIAA, we look to the future with optimism and will use this opportunity to consider new paths forward to help our students learn effectively and get excited about engine design. Engine design is a truly remarkable field, and we will do everything we can to both attract students and to keep faculty advisors excited about what the future holds. So what can we do to ensure the competition continues? Presumably, you are reading this because you are interested, so please help us and give us your opinions concerning a solution for the long term.

- If we schedule the next Round 2 for SciTech in January 2023, is it viable to release the RFP early in 2022 and have the event bridge junior and senior years?
- If we schedule the next Round 2 for Aviation in June 2023, would student teams be interested in attending that conference perhaps of lesser technical relevance?
- Should we hold Round 2 virtually sometime in July/August?

In the meantime - especially for undergraduate teams who currently need a topic for propulsion project work this year - we are setting up a unique version of the competition for 2022. In this event, teams are invited to select a topic from two previous RFPs. These are

1. *An Ultra High Bypass Ratio Turbofan for the Future (2014/15)*
2. *Let's Re-Engine the Concorde (2020/21)*

Special versions of these RFPs will be released by the end of January. The technical requirements will be very close to that of their originals but the administrative content will be removed. Appendix 2 - *Competition Expectations* - will be revised and will be included in a special additional

RFP for 2022, along with the other administrative details. This RFP will also be available by the end of January.

Technical guidance will be available, proposals will be judged as usual, and comments will be provided. This year, tutorials on Preliminary Design of Gas Turbine Engines will also be offered to assist teams who submit letters of intent. These will be casual events, in which any topics you raise will be addressed.

Written proposals must be submitted by June 1. The best three teams will be selected to present their designs to a second judging panel at a special virtual session to be held sometime in August on a date to be decided.

Please address enquiries, and any responses you may have to the bulleted questions above, to

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and/or

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