TU/e

iNNOVATION SPACE

Challenge name	Sustainable Airline		
Challenge owner	Sustainable Aviation Youth Foundation (SAYF)		
	x Company	Research	Student team
	Thomas Driessen		
Email challenge owner			
Phone challenge owner			
CoC Number			
Preferred way to contact	x email x Phone call x SMS / what's app Other; …		
Account manager from TU/e innovation Space	???		
Availability	What is your availability as Challenge owner? Regular (weekly) meetings with project group Only during presentation moments (kick-off, midterm & final) x Other; every other week meetings with project group		
Brief summary	Recent advancements in sustainable technologies bring zero-emission aviation closer to reality. Although there are many projects working towards this goal (Solar Impulse), we have yet to see a sustainable airline becoming public. The impact that aviation is having on the climate will be felt most by the youth of today, and therefore, the initiative taken by them will be crucial to reach the climate goals set by climate plans such as the Paris Agreement.		

About the challenge owner

SAYF's vision is to facilitate youth engagement within the aviation industry as it is going through a major transformation. The path towards a more sustainable sector is a complex one that should involve youth as much as other types of actors. The Foundation will therefore allow youth to be part of this transformation by raising their voices and giving them a spot at the decision-making table. One objective is also to help members of SAYF on their professional journey by sharing opportunities and knowledge on specific fields of expertise. The overall goal is therefore to make sure youth voices matter and are being considered by all industry stakeholders.

Challenge description

Please describe the challenge in sufficient detail to allow evaluators at academic departments to estimate whether their students can contribute to it.
The students are challenged to ideate and develop a disruptive start-up in the aviation industry. This could potentially be prompted by the ideation of a sustainable (zero-emission) airline (whatever it takes) which relies on the currently available sustainable technologies but may also be changed throughout the course to any subject that interfaces with the development of a sustainable airline. If the students ideate an incredible idea outside of the scope of a sustainable airline, for example, a new disruptive sustainable technology, or a disruptive environmental tool that can be connected to a viable business case, we will gladly support the students to pursue such interests.

What is the overall goal you aim to achieve?
-For students to evaluate the current sustainable technologies related to aviation.
-To reach out to all relevant stakeholder for a sustainable airline.
-Design and user test a business plan.
-Develop tools for stakeholders to convince the value of sustainable airlines to their business. (Calculations regarding emissions, and costs benefits for an airport to close a deal with a sustainable airline instead of a regular one)
-Promote their sustainable via our existing network, and the one they have developed throughout this course.

What are possible components you see fitting in the work of the project group?
-There are many aspects relating to the evaluation of the plethora of technologies that are available for the aviation industry at this moment. Furthermore, the development of emission tools for stakeholders (e.g., airports and aircraft OEMs) to convince that the technology, chosen by the students, is environmentally and financially beneficial. These tools can be implemented in websites for example (which could even be an independent start-up idea, that

the students may pursue) in collaboration with our closest partner UN ICAO, which have a department dedicated to such tools (*UN ICAO E-tools*)
-Inter-modal transport business plans and technologies are supported equally. For example, start-up ideas to combine the aviation infrastructure with rail transport with the goal of reducing emissions on frequently travelled routes. Or designing multi-model transport hubs, and technologies that are required for such innovations in the future may be considered.
-The development of a business plan and a timeline towards a minimum viable product to present for stakeholders in the future. Reaching out to stakeholders in the industry is paramount for the students to design and perfect their business plan. Our network of stakeholders in the industry can function as a catalyst for the students to reach out to potential stakeholders that are usually hard to reach for students.
-Students have the freedom to ideate their own start-up and pursue this project after the course has finished, where we will support them continuously with our network and platform for young passionate entrepreneurs to collaborate in the aviation sector on a global scale.

Explain whether something already exists that students will build on.
-There are no physical attributes that the students will be able to continue their work on. Although there are several initiatives at the TU/e working towards sustainability, specifically in aviation, that may be consulted (Falcon, SAYF).

Challenge Picture
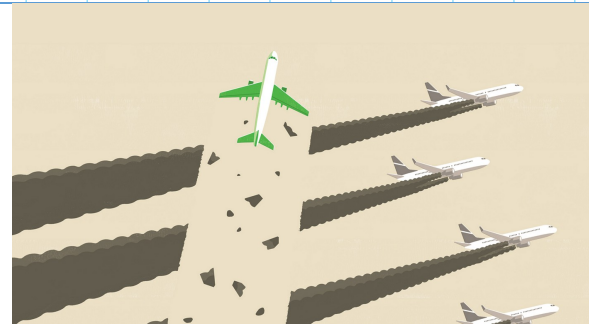
Input and involvement of challenge owner

Please indicate briefly what your involvement will be for the project group.
We will be closely involved with the development of the project in bi-weekly, and impromptu meeting requests (quick call to solve a problem as soon as possible) to relay connections within our network to the students. This way we can facilitate easy access for the students towards the aviation industry leaders.

> *How would solving this challenge help your organization?*
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> *The fact that ISP enables students to develop their entrepreneurial skills in the aviation industry is inherently the goal of our organization. We strive to involve passionate and entrepreneurial youth in sustainable aviation as we see that the industry is currently lead by senior executives who will not experience the climate crisis that will ensue when we do not address emission such as in aviation. Because of the conservative nature of the industry, young entrepreneurs and students are often rejected to join important conversations regarding the energy transition. The future project results from the students will give us a great example of the innovative and creative nature of students to push towards new solutions.*

Resources

> *What resources are necessary for the students to work on the challenge?*
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> *What resources do you offer to students?*
> *x Expertise; large network in the aviation industry and direct connection to leading figures in the energy transition of the aviation industry.*
> *Materials; ...*
> *Workplace; ...*
> *x Other; a platform for students to connect with fellow entrepreneurial youth who want to be come a leader in the energy transition for the aviation industry or want to be closely involved with the advancements that are made by companies and organizations that have a leading role in this transition.*
> *Direct contacts (employees at): Solar Impulse and UN ICAO*

Please note

For the purpose of introducing your challenge to the Master students you will later be asked to record a short pitch video. Please note that we will archive this video so that we have the possibility to also use it as promotion material for the ISP course. By delivering a challenge you automatically consent to this. In case you object, please let us know by emailing business.innospace@tue.nl.