2022 Vitual Showcase

Document Guidelines Form

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Virtual Showcase

What is the Virtual Showcase

The Virtual Showcase is an online event where student design teams can showcase their research/prototypes/designs for hyperloop pods or hyperloop infrastructure. The event is a great opportunity for hyperloop student design teams to exchange learnings and in turn create a collaborative hyperloop community. The event will consist of brief presentations from every participating team about a chosen subsystem followed by questions from the audience.

How to enroll for the Virtual Showcase

The participating team will have to submit the Virtual Showcase Application Document to this google form by **Nov 1, 2022**. This document will contain details of the system(s) that the team wishes to present at the virtual showcase event. Once submitted the document will be reviewed by the CHC technical team, and the participating team will be informed of the systems selected for presentation by **Nov 3, 2022**. There are a total of 14 categories from which teams can apply for any 4. All categories are mentioned below.

Once the team is informed of the category or categories they have been selected to present in, they will be instructed to prepare a presentation. This presentation will be submitted back to the CHC technical team for a final review on **Nov 13, 2022**. Once the final review is complete teams will receive email confirmation from the CHC technical team.

Important dates

Application opens	1 Oct, 2022
Application deadline	1 Nov, 2022
Final presentation submission deadline	13 Nov, 2022
Virtual Showcase Event	19–20 Nov, 2022

How to complete this application document

This document needs to be completed in English to be eligible for the CHC Virtual Showcase.

The application document should contain the following:

1. Team information

   a. Each team needs information about 1 team captain/team lead. We will be using their contact information for further communication.

   b. Optionally, teams can provide 1 alternative contact address.

2. Project description

   a. This section of the document will contain all the technical details about the system(s). There are 14 categories under which a team can submit their applications for the Virtual Showcase.

      Teams are only allowed to apply for 4 categories. If a team submits a document with more than four entries, only the first four will be considered. All categories are listed below:

       i. **Propulsion**

          This category can include the method of propulsion (e.g., linear induction motors, rotary motors, etc.), technical specs (e.g.,max acceleration), and special characteristics (e.g., if a custom motor controller is used).

       ii. **Levitation**

          This section can include development of any systems or methods that support suspension of the pod above the track.

       iii. **Electronics and Communication**

          This section can include software or hardware projects related to signals and controls on the pod. For example, custom PCB, workflow / script for trace routing, pod control logic / decision flow, user interface for pod interactions.

       iv. **Power systems**

          Power system is part of the pod responsible for high voltage. This can include any management systems like ESCs, BMS, contractors and wiring.

v. **Braking**

This category can include the method of braking (e.g., friction, eddy current brakes), technical specs (e.g., max braking force), and special characteristics (e.g., normal vs emergency brakes, reusability).

vi. **Guidance**

This category can include description of contact/conteless systems that can be implemented on a hyperloop pod to help keep it on track and help absorb any vibrations/shocks created by undulations on the track. CAD designs , FEA analysis , Testing results of designs are points which can be included in the description of a project in this category.

vii. **Structures/Chassis**

This category can include the main material (e.g., aluminium, carbon), the approximate physical characteristics (e.g., size, weight) and special characteristics (e.g., expandability, repairability).

viii. **Aeroshells**

This category can include designs related to the outer shell of a hyperloop pod. Innovative designs , CFD analysis and testing results.

ix. **Cooling systems**

This category can include the method of cooling (e.g., air, liquid), technical specs (e.g., cooling capacity), the design philosophy (cooling by system, integrated cooling, etc.)
Tech specs (W, etc.)

x. **Infrastructure**

This category can include track designs / tube models / test setups /pillar & pylon designs / hyperloop station or portal designs / vacuum locks and other projects that are related to the infrastructure of hyperloop.

xi. **Testing Rigs**

This category can include testing rigs designed to test braking , propulsion, levitation, guidance subsystems etc. Designs , Analysis , description of the working of the test rig can be included in the documentation.

xii. **Business**

This section can include a business case for implementing a hyperloop route between two cities of your choice. How will a hyperloop affect their economy? Can include topics like job creation, GDP, and transportation accessibility.

xiii. **Complete pod**

This category can include a brief description of a hyperloop pod designed by the team and its subsystems and one innovation implemented in the pod design.Detailed descriptions of every system are not expected in the documentation.

xiv. **Other**

This category can include any project that doesn't fall under the above mentioned categories.

b. A team does not need to submit an application for each category. The categories for which the team submits a project description in the virtual showcase application document will be the ones taken into consideration by the CHC team. Submitting for multiple categories does not increase chances of a team being selected.

c. Each document should provide the following information:

i. A brief explanation of the system/project that the team intends to present at the event.

ii. A list of the technical specifications of the system/project.

iii. The current stage of the system/project (design, manufacturing, assembly, testing, redesign, or complete)

iv. A clear explanation of which parts of the system/project were designed, programmed, and manufactured by the team and which were purchased from vendors, use publicly available software libraries, or reference external designs

d. The reason why the system presented by the team is unique and of interest to student Hyperloop teams (this is not required but recommended).

e. In the main document, the team can refer to the Appendix to provide images of design, schematics, layouts, tables of test results, links, and other supplementary material to support the application.

f. Virtual Showcase Application Document should take no longer than 3 pages : 12 font Montserrat or Times New Roman, with 1.15 line spacing.

3. Appendix

a. The appendix is where the team can include the technical proofs to the details provided in the Virtual Showcase Application Document.

i. The appendix can take a maximum of 4 pages.

ii. Even though it is not compulsory to include one, it is highly encouraged that an appendix is included and you refer to the appendix in the project description.

A template for the Virtual Showcase Application Document is provided below. A fillable form that you can submit to the Virtual Showcase Application google form.

The Virtual Showcase Application document must be submitted by **1 Nov, 2022** to the Virtual Showcase Application google form.

Email us at **chc@cahyperloop.ca** for any doubts or clarification.

1. Team Information

(Please fill the table with details regarding the team)

Hyperloop design team name	
Affiliated university name	
Team captain/lead name	
Team captain/lead email address	
Team email address	
Alternate contact information	

Categories that the team wishes to apply for:

Teams can apply to any 4 of the 14 categories mentioned from page 2–4

1.

2.

3.

4.

2. Project descriptions

(List the categories you are applying to and include the details of projects that the team wishes to apply for, for that specific category. (Max 3 pages per category)

Category 1:

Description of the project (Max 3 pages)

Category 2:

Description of the project (Max 3 pages)

Category 3:

Description of the project (Max 3 pages)

Category 4:

Description of the project (Max 3 pages)

3. Appendix