



KSHITIJ 2017
THE TECHNO-MANAGEMENT FEST 27TH-29TH JAN



Kryotech

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Introduction

As India emerges victorious from a rigorous and disciplined vaccination campaign against Polio, it still faces significant challenges when it comes to last mile connectivity for medication and vaccination supplies. On a worldwide level too, this has been a persistent issue.

The World Health Organisation reports that the Effective Vaccine Management assessment (carried out in more than 70 countries between 2010 and 2012) found that only 29% of countries met its minimum recommended standards for temperature control.

These stringent standards have to be put in place as there is no other way to ensure the quality of the vaccine than monitoring its temperature consistently. Thus it is of utmost priority that the temperature of the storage cabinet be precisely maintained within the prescribed range.

This problem is further exacerbated by poor cold chain infrastructure, lack of reliable electricity, disregard for hygienic storage conditions and insufficient technical personnel. Without technological evolution to complement the advancements in vaccines, these stand as the biggest challenge for developing countries in their fight against diseases, among the scale of time, outreach and resources.

The following problem statement gives you a chance to sling a stone at this Goliath of a problem blocking the way to reliable medication for all.

Problem Statement

You have to design a small vaccine storage cabinet to contain 200 litres as storage volume.

This cabinet will carry the vaccine supply to distant vaccination camps and will be in transit for 18 hours every day.

The cabinet will not get any form of electric power (live or stored) while in transit and is expected to get power at every vaccination camp.

The stay at every vaccination camp is limited to a stretch of 6 hours in a day.

To ensure that the quality of the vaccine is maintained, this storage cabinet must maintain the temperature of the vaccine at 2° C with a tolerance of $+/- 1^{\circ}\text{ C}$ along its usage at vaccination camps and while in transit.

Event Rules & Specifications

3.1 Event Structure

Primary round: Schematic Design Summary

This has to be submitted in the form of PDF document. (This document is basic set of drawings, calculations and write-ups to describe your project)

Final round: Final Design submission

Selected teams will submit A4 size project document or a presentation with all plans, 3D renders along with detailed write-ups of design narratives (maximum of 500 words), cost/value proposition, design strategy (based on need of the project) and descriptions of innovations, engineering and elements of design (based on need of the project). Post submission of the report the teams will present the in front of the judges and the presentation will be followed by a Q&A session.

3.2 Team

- Participating teams must be limited to a maximum of 5 individuals.
- The students must carry valid student ID cards of their college which they will be required to produce at the time of registration.

3.3 Eligibility

Students and emerging professionals (recently graduated students or interns) from any field of engineering are eligible to participate in the competition.

3.4 Prize

The winning team will be awarded prize money of Rs. 20,000/-

The First runner- up will be awarded prize money of Rs. 10,000/-

The Second runner – up will be awarded prize money of Rs. 5,000/-

Judging Criterion

The design will be evaluated on the following criterion:

- Innovation
- Performance
- Energy Economy
- Size
- Cost
- Weight
- Simplicity

All decisions taken by the organizing team will be deemed as final, and no more changes will be encouraged, thus holding the full authority to change any of the above rules as per circumstances.

Contact

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