

Student Design Challenge @ i-CREATe²⁰⁰⁹

international Convention on Rehabilitation Engineering & Assistive Technology

Quick Facts

- Conference dates : 22-26 April 2009
- Conference Venue : Singapore Management University
City Campus
- Submission of entries : 14 February 2009
- Notification of accepted entries : 20 February 2009
- At the Conference: All accepted design competition submissions will be required to give poster and oral presentations at the conference.

What is the Student Design Challenge?

The Student Design Challenge (SDC) targets to give our next generation a better understanding on disabilities and on how the use of assistive and rehabilitative technologies can help improve the quality of life of persons with disabilities.

The inaugural SDC, with Human Machine Interface as its theme, was one of the highlights for i-CREATe 2008 and has drawn a large number of audience. There were over 21 teams from 10 institutions, from 4 countries who participated in this event.

The second year of SDC will focus on the creative, innovative and systematic application of technologies and engineering methodologies to meet the needs of people with disabilities and help improve their quality of life in areas which include education, rehabilitation, employment, transportation, independent living, and recreation.

Categories are, but not limited to the following; Communication aids, Computer access aids, Daily living aids, Education and learning aids, Environmental aids, Hearing and listening aids, Recreation and leisure aids, Prosthetics and orthotics, Seating and positioning aids, vision and reading aids.

The competition is aimed at meeting three goals:

- Provide an opportunity for students to participate in i-CREATe and demonstrate their problem solving and innovation skills in an international competition against their peers, in the fields of Assistive, Rehabilitation Technology.

- Provide i-CREAtE attendees with refreshing perspectives on how the SDC teams from different parts of the world introduce innovative solutions for different disabilities.
- Provide i-CREAtE attendees with a chance to meet future professionals in our area, and provide competition participants with an opportunity to network with experienced Assistive Rehabilitation Technology practitioner and professionals.

Competition Requirements

This challenge is open to post-secondary education and undergraduates. These include Universities, Polytechnics and Institutes of Technical Education. Submissions are invited from all students at all stages of their academic studies.

There is no limit to the number of teams that may compete from any given academic institute and we accept individual and team entry (up to 5 students).

Entries or projects that will be submitted should not exceed two years of research. All participants must provide proof that they were students at the time the work for the challenge was conducted.

The student teams may bring their prototypes for presentation but this will not be considered as a requirement. Large prototypes that are not transportable will be taken into consideration during the judging.

Selected entries will be notified by emails and are required to register for i-CREAtE at the subsidized rate of **SGD 1,000 per team of 2 students. Additional students in each team will be charged at SGD50 (for up to 3 students)**. This rate includes lunches, tea breaks and full access to exhibition, workshops & conferences for the 3 day event. The top three winners of the competition will be invited to attend the gala dinner graced by Her Royal Highness Princess Maha Chakri Sirindhorn, from the Kingdom of Thailand.

*7% GST will apply to all local entries.

The Competition Structure

The competition follows a three round process. Each round focuses on communicating the individual/ team's ideas through a different mode, as follows:

1. Individual/ teams will submit an extended abstract between 600 to 1,000 words in length and include a minimum of two graphics (JPG / JPEG only at resolution rate of 800 x 600 dpi or better) describing their design solution. Expert reviewers will evaluate submissions to be selected to attend the i-CREAtE conference.

2. Accepted teams will be expected to attend the conference with an A1 size poster outlining their design and innovation. Prototypes will have to be displayed together with the posters at the convention to a panel of Student Design Challenge Judges.
3. The finalists will be given 10 minutes oral presentation on their design to the panel of the Student Design Challenge Judges and i-CREAtE conference attendees.
4. Based on the criteria below, the judges will rank and identify an overall winner of the competition, the two runner-ups, the two merit awards, the best presentation award and the best poster award. Other awards such as the peer's choice award, public's choice award, and industry's choice award will be decided by its respective groups (student teams, public, and exhibitors).

Judging Criteria

a. Creativity / Idea Novelty (30%)

- 4 – An ingenious idea/design to solve a genuine problem
- 3 – The idea/design is new, but there are probably better ways to solve the problem
- 2 – It is an improved version of existing designs/solutions
- 1 – It does slightly or no better than the existing designs/solutions

b. Practicality (10%)

- 4 – It can be easily accessible by the masses or brought to the market with little effort
- 3 – The design/idea is not difficult to be implemented in larger scale but possesses some challenges
- 2 – It may not be practical to implement it in a large scale given the constraints, but should do well in smaller scale
- 1 – There are major obstacles in making this idea/design work in real life

c. Implementation / Engineering (10%)

- 4 – The prototype is close to professional quality and/or has pleasing aesthetics
- 3 – It is robust and delivers its basic function(s)
- 2 – Workmanship can be improved but delivers its objective(s)
- 1 – Demonstrates only the basic idea

d. Usability / Ergonomics (20%)

- 4 – Intuitive and user friendly
- 3 – Need some efforts to learn to use, but easy to use after that

- 2 – Not difficult to learn, but not easy to master OR Difficult to learn, but easy to master
- 1 – Little or no consideration from the users' perspective

e. Impact on Society and/or Professional Practice (20%)

- 4 – It is revolutionary and might change the conventional practice
- 3 – It will make quality of lives of a fairly large group of needy people or professionals significantly better/easier
- 2 – It improves the current practices somewhat or helps a specific group of people
- 1 – It does not do much to impact the society/professional practice

f. Presentation (10%)

- 4 – Convincing, confident, and major points well delivered
- 3 – Clear in general but leave some doubts unanswered
- 2 – Key ideas are presented but somewhat unclear
- 1 – Poor presentation

Judging and Awards

A panel of international judges of different professional backgrounds will be invited to judge on the projects. All judges' score based on the judging criteria will carry equal weights and decision of winners need not to be unanimous. The panel will judge the project entries during the presentation session, followed by a tour to visit and assess the prototypes.

The judges will select the top three teams as well as two teams that deserve merit.

- Champion – S\$2,000 and certificate for all members
- Runner-up – S\$1,000 and certificate for all members
- 2nd Runner-up – S\$500 and certificate for all members
- 2 Merit awards- Special gift and certificate for all members

- Peer's choice award- certificate for all members

The award is to be decided by the SDC participants. Each team is allowed to cast one vote on the most deserving team entry but cannot vote for their own team. The votes have to be casted at the end of the presentation session.

- Public's choice award- certificate for all members

The award is to be decided by the public visiting the exhibition. Upon registering for the exhibition, each visitor will be given a voting sheet

where they have to complete and drop into the voting box at the registration booth after visiting the SDC booths.

- Industry's choice award- certificate for all members

The award is to be decided by the companies participating in the exhibition. The voting sheet will be provided on the first day of exhibition. Each company will have one representative and will be invited to visit the SDC booths and cast their top three choices. The voting sheet will be collected at the end of the day.

- Best presentation award- certificate for all members

The award will be decided by the panel of judges based on the presentation part of the judging criteria.

- Best poster award- certificate for all members

The award will be decided by the panel of judges based on the poster part of the judging criteria.

Intellectual Property

Kindly take note that i-CREAtE will not have any involvement concerning Intellectual Property (IP) protection. Like other academic conferences or competitions, it is the participating institution's responsibility to protect their IP before disclosing their projects.

Congratulations, 2008 Winners!

1st Student Design Challenge Prize & Award Winners

Gold Award:

SDC-14

Parkinson's Patient Mobility Aids

Peh Khian Huat, Yeo Yin Pin Edmund, Siti Fatimah

Ngee Ann Polytechnic, Singapore



Silver Award:

SDC-12

Manual Standing Wheelchair

Niran Maipothi, Anusit Srijanya, Konnarong Srimee
Thammasat University, Thailand



Bronze & Peers Choice Award:

SDC-5

Computer notebook for the visually impaired

Thanathip Limna, Suppachai Madue, Vorapol Thinnagonsutibut, Witchuda
Kiatjaroensak
Prince of Songkla University, Thailand



Merit Award:

SDC-16

Sensory Re-education device for Stroke Patient

Lau Mei Ling Sindy, Mei Po Ho
Hong Kong Polytechnic University, Hong Kong



SDC-1

3rd Eye Cup

Zhu Min Juan, Toh Jing Jing

ITE College Central (Tampines Campus), Singapore



Awarding Ceremony during the Gala dinner



HRH Princess Maha Chakri Sirindhorn awarding the prize money and certificates to the winners of the 1st Student Design Challenge

For Student Design Challenge enquiries, please contact:

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i-CREATe 2009

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