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ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

(A STATUTORY BODY OF THE GOVT. OF INDIA)

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Subject: SWACCHATHON 1.0 - The Swachh Bharat Hackathon being Organized by MoDWS

Dear Sir/ Madam,

As Swachh Bharat Mission is near to three years of completion, **Ministry of Drinking Water and Sanitation (MoDWS)** is organizing SWACCHATHON 1.0- a Swachh Bharat Hackathon to crowd source solutions to some of the pressing issues faced during the implementation of Swachh Bharat Mission. MoDWS looks forward to innovative solutions from the participants focusing on the target group of students, professionals and organizations including start ups. MoDWS is looking forward to solutions which are affordable easy to maintain, scalable, environment friendly and user friendly.

The event will be held in three rounds. In round ONE participants will be required to make online entries on the MyGov portal (innovate.mygov.in). Subsequently, the selected participants will be required to present a live demonstration of their solution in Round TWO. The finals are to be held on 8th of September, 2017 where the result will be announced after final presentation by qualified participants in the previous round.

Problems, against which **Ministry of Drinking Water and Sanitation** calling for solutions are:

- i. Innovative, sustainable, environment-friendly and toilet technology for hill, dry, flood-prone and remote areas.
- ii. Technological solutions to monitor usage of toilets.
- iii. Technological solutions for bringing behavioral change for toilet usage and hygiene.
- iv. Innovative models and methods to improve the operation and maintenance of school toilet.
- v. Innovative solutions for Menstrual Health Management.
- vi. Innovative solutions for early decomposition of faecal matter.

In this scenario, AICTE seeks the collaboration of all the institutes in reaching out to the targeted audience consisting of under-graduate and post-graduate students. Also AICTE requests you to create awareness related to the event.

The problem statements of the event are annexed to with this letter for ready reference.

Thanking You,

Yours sincerely,

(Prof. Anil D Sahasrabudhe)

To

All Director/Principals of AICTE Approved Institutes.

Problem Statement: Motivating individuals to use the toilets built under Swachh Bharat

Behaviour change is fundamental to the Swachh Bharat Mission. Several inter-personal techniques through community approaches to sanitation are being used across the country to trigger behaviour change. But old habits die hard and behaviour change takes time. Some people continue to defecate in the open even after having a household toilet.

The Swachh Bharat Mission invites innovative solutions to trigger and motivate people to stop open defecation and use toilets, at scale.

The solutions should be:

- Scalable
- Non coercive
- Socially acceptable
- Yield instant or immediate shift in behaviours

The solution could be in form of a technology, demonstration, technique, pictures, combination of things and others.

Problem Statement: Technological solutions for safe disposal of menstrual waste

With increase in education and awareness levels around Menstrual Health and Hygiene, more and more women and adolescent girls in the country are switching to safe sanitary options to manage their menstrual cycles. However, there is still no formal waste management system of sanitary waste. Often these are disposed off in fields, water bodies, flushed in toilets or dumped along with the regular solid waste.

MDWS is looking for technological solutions to manage and to dispose off sanitary waste. The solution should be:

- Safe for the environment, and not cause any air, water or soil pollution
- Cost-effective
- Scalable across villages and institutions such as schools, colleges, etc.

Problem statement: How can the technology help in early decomposition of faecal matter?

In large parts of rural India, on-site drainage is preferable over networked drainage owing to the ease of implementation and cost-effectiveness. Any solution which helps decompose faecal matter quickly will enable easy and safe emptying of the toilet pit/septic tank. This will reduce the turn-around time for re-use of the pit/septic tank and will lead to sustained use of the toilets.

The Swachh Bharat Mission invites solutions to expedite the process of decomposition of faecal material.

It is expected that the technology decomposes the faecal material in the shortest possible time, is cost-effective, scalable, easy to implement, weather proof and environmental-friendly.

Problem Statement: Affordable toilet technology for remote difficult terrains, flood prone areas and areas with hard rock surfaces

The Swachh Bharat Mission wants to promote affordable, sustainable and environmentally friendly toilet technologies across the nation. However, in certain parts of the country, these available technologies have not been successful in being robust and cost-effective. This is especially true for areas which are flood-prone, areas which have a hard rock surface, and areas which are remote and poorly connected with transportation infrastructure.

For example, in the hill states of Arunachal Pradesh and Meghalaya, it is very expensive to transport bricks and cement from the mainland, in parts of Gujarat the surface is rocky, making it difficult and expensive to dig holes in the ground for construction, and in parts of the Ganga belt which are prone to floods, it is difficult to build toilets which are robust and environmentally friendly owing to the high water-table in monsoons.

The Swachh Bharat Mission Gramin invites solutions for innovative toilet technologies from the participants for the following areas:

- a) Remote and poorly connected areas
or/and
- b) Hard rock areas
or/and
- c) Flood Prone areas

Any solutions for the Upgradation of the current technology that is being adopted by the ministry that is, the twin pit system are also welcome.

It is expected that the technology is cost-effective, sustainable, reliable and durable, user-friendly, weather proof, environmental-friendly, and preferably uses locally available material (locally implies the area to which the technology is built for).

Problem Statement: Measuring usage of Household toilets built under Swachh Bharat through technology

Usage of toilets is the key goal of the Swachh Bharat Mission Gramin. Toilet usage is presently measured on a sample basis through household surveys. There is however no technological solution available to directly measure usage of toilets. The ability to easily measure usage of toilets would allow the Swachh Bharat Mission to take immediate and responsive steps to promote usage.

The Swachh Bharat Mission Gramin invites technological solutions that can be adapted in rural areas to effectively measure usage of toilets. The solutions should be:

- Affordable
- Scalable
- Socially acceptable
- Easy to use
- Accurate

The solution could be either a technology or a technique or a combination of the two to monitor usage.

Problem Statement: Ensuring maintenance of school toilets in rural India

All government schools in India have been provided with toilets under the Swachh Vidyalaya initiative. However, due to the lack of human and monetary resources across many schools, continuous maintenance of these toilets is challenging. There are also other problems in certain areas like lack of adequate water.

The Swachh Bharat Mission Gramin invites solutions to:

- Ensure effective maintenance of school toilets
- Reduce the time needed/spent on maintenance of toilets
- Reduce the cost of maintenance of school toilets

The solutions should:

- Affordable by schools in rural India (which have very slim budgets)
- Scalable
- Be socially acceptable
- Not coercive and equitable
- Adaptable to varying sizes of school toilets