



Kingdom of the Netherlands

## Press Note

### **INDO-DUTCH JOINT RESEARCH PROJECT** **“THE KUMBH MELA EXPERIMENT: MEASURING AND UNDERSTANDING THE DYNAMICS OF MANKIND’S LARGEST CROWD”**

*Indo-Dutch Collaborative Research Camp to be set up at Ujjain (M.P.) during Kumbh-Mela (Simhastha) 2016*

*The Indo-Dutch team of scientists will use sensors, drones, satellite mapping and tracking devices during the Kumbh Mela in Ujjain to study micro crowd movements.*

#### **New Delhi, 10<sup>th</sup> May, 2016:**

In the period from April 22 - May 21, more than 60 million pilgrims are expected to gather in Ujjain, in Madhya Pradesh for [KUMBH MELA \(Simhastha\)](#). Such huge religious confluences are vulnerable to stampedes and other accidents. In order to address this issue, a research grant has been made available by the Indian Department of Electronic and Information Technology ([DEITY](#)) and The Netherlands Scientific Research Organization ([NWO](#)) together with contributions from the industry (i.a. [TATA](#), [Tech Mahindra](#)) for a joint Indo-Dutch research project on pervasive communications and computing: “The Kumbh Mela experiment: measuring and understanding the dynamics of mankind’s largest crowd”.

This inter-disciplinary project is amongst the first set of research projects funded under an MOU between DeitY and NWO and therefore marks an important milestone in terms of scientific collaboration between India and The Netherlands in the field of big-data, Internet of Things etc.

This research project directly co-relates to the visionary programs of Government of India, such as:

- Digital India (use of big data/IOT),
- Smart City (smarter and intelligent solutions for crowd management),
- Make in India (A global solution experimented and made in India) and
- Startup India (Promoting two India startups (Aarav Unmanned Aerial Systems (AUS) and Tarah Technologies) through this project.

**One of the research goals is to understand crowd dynamics, early signs of unrest in the crowd, to discover the so-called tipping points in the collective behavior and develop crowd management solutions. This is done by monitoring new Big Data analysis on the sensors, resulting in large-scale computer simulations. This can then be examined later to diagnose the reasons for panic and prevent disorder and rush in the future.**

To facilitate this research, a unique collaborative Indo-Dutch research camp has been set up at Ujjain in mela area (DU 244/1, Dutta Akhada Area, Inner Ring Road, next to Mohan Pura Flyover, Ujjain). A temporary laboratory has also been set-up in the base camp besides a visitor’s gallery named as “Tata- Dijkstra Visitor’s gallery” to showcase salient features of the research project. [Pictures of Research camp](#)

The research team (comprising of project members, research staff and about 200 internship students) will be part of the huge crowd in studying an area of 3000 hectares. The team will execute various data collection and experimentation tasks using numerous devices such as sensors, drones to specially designed tracking devices and head-mounted cameras on hundreds of volunteers, who will assess the dynamics of the crowd as "living sensors".

For the research group of Prof. Peter Sloot ([University of Amsterdam](#)) and Dr. Ashish Verma ([Indian Institute of Science, Bangalore](#)) and other industry partners (including a number of Indian start-ups), it is an unique opportunity to be the only research consortium to undertake this project during the Kumbh on the complex behavior of very large crowds.

*“The Netherlands centuries-old tradition of creativity, entrepreneurship, openness and cooperation is perfectly conducive for the joint collaboration with Indian scientists to undertake this research project to study micro crowd movements in India. I am hopeful that this exercise will be a path breaker and prove to be an inspiration for crowd management the world over!”* said **Mr. Alphonsus Stoeltinga, Ambassador of The Netherlands to India.**

For more information: <http://www.the-kumbh-mela-experiment.com/>

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