

Are you ready to take this challenge?

**APPLY NOW !**



This project runs from  
February 2012 - June 2012

**D-Challenge**

**Serious Business**

Delft Centre for Entrepreneurship

[www.designchallenge.tudelft.nl](http://www.designchallenge.tudelft.nl)

Open for Master students from all faculties

## Trans-African Hydro-Meteorological Observatory (TAHMO) A network of 20,000 hydro-meteorological stations



### Introduction

Monitoring Africa's environment is an important challenge if the continent's resources are to be used in an optimal and sustainable manner. Food production and harvest predictions would profit from improved understanding of water availability over space and time. Presently, the African observation network is very limited. National governments and regional planners do not have the data to make proper decisions regarding investments in water resources infrastructure.

The idea behind this project is to build a dense network of hydro-meteorological monitoring stations in sub-Saharan Africa; one every 30 km. This asks for 20,000 of such stations. By applying innovative sensors and ICT, each station should cost no more than \$200. The stations would be placed at schools and integrated in the educational program. The data will be combined with models and satellite observations to obtain a very complete insight in the distribution of water and energy stocks and fluxes. At the this link, [tahmo.shorturl.com](http://tahmo.shorturl.com), project member Rolf Hut explains the project further (see also [www.tahmo.org](http://www.tahmo.org)).

### Expertise Preferably Needed

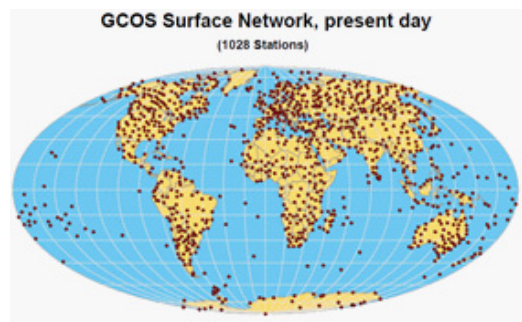
- Industrial Design (materials, geometry)
- Electrical engineering (backbone & modularity)
- 3ME / CiTG / TNW (smart user, specifications)
- TBM / Industrial Design (business case)

### Main Tasks

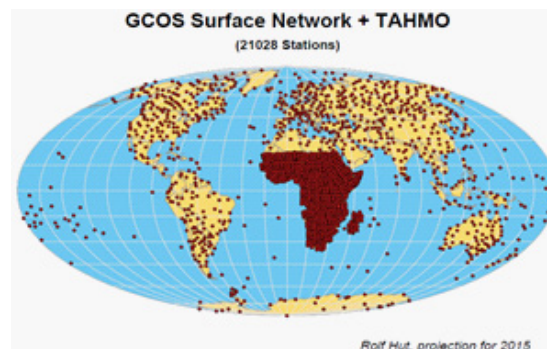
Within this project, we have built a prototype of an acoustic disdrometer (rain gauge) that can be produced for €10, less than one percent of the cost of a commercial equivalent with the same specifications. There are plenty ideas about additional sensors and we would like to draw on the creativity of students from around the world ("crowd sourcing"). What is lacking is a design of the station itself and of the business case surrounding this project. The outputs from this challenge are:

- Design of a prototype of the station that is robust, modular, and fit to be tested in Africa
- Business case that uses "crowd sourcing" for additional sensors
- Prototype TAHMO v0.9 to be tested in Africa

Before TAHMO:



After TAHMO:



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