



Cooperation Agreement

Preamble:

Both the institutions SCMS Group and NIVUS have interests on special fields of water and wastewater technology and it was found out that there could be synergies in working together. The goal of this cooperation between the both parties is to support the training and joint handling of projects in the field of flood prevention, new technologies and protection of the environment. We are focussing especially on flow measurement technologies.

1. This cooperation agreement is established between the following two institutions:

- **SCMS School of Engineering and Technology (SSET)**

SCMS Campus
Prathap Nagar, Muttom
Cochin 683 106, Kerala, India
Represented by Mr. Pramod P. Thevannoor
Vice Chairman

and

- **NIVUS GmbH**

Im Täle 2
75031 Eppingen
Represented by Mr. Schmalz and Mrs. Vondenhof

2. **SCMS** Group as a private educational institution offers undergraduate and graduate programs in management, business and technology and has R&D activities on various fields. SCMS Water Institute is a division of SCMS Group of Educational Institutions at SSET with the following objectives:

- Developing water and wastewater technologies including reuse of water and recycling of valuable components
- Fine-tuning of given technologies for local conditions
- Framing water policies
- Performing environmental impact assessments and water audits
- Offering water related capacity building on all levels



NIVUS GmbH
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NIVUS

NIVUS is a private, independent and owner-operated company.

Our focus lies on measurement technology for water and wastewater using the ultrasonic technology.

Our own investigation, development and production department secures our independence and international pole-position in the field of flow measurement technology.

These both institutions are interested in a close cooperation to develop and apply new technologies and to adapt approved technologies to the specific tropical conditions. The focus is water and wastewater technology, flow measurement in particular.

For the specific project applications separate *Letters of Intend* will be agreed on.

3. The role of the two partners is as follows:

SCMS:

- identification of fields for research and application
- basic investigation for the preparation of research and application projects
- providing of qualified project support by staff or students of SSET

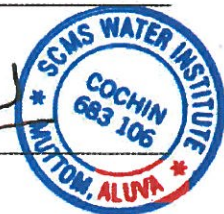
NIVUS:

- supply of the necessary technical equipment
- providing of qualified project support
- support and training of staff or students

4. Results, which are worked out in common projects will be published or used together, but only upon mutual agreement.
5. All technical information as well as information about projects, which are exchanged in the frame of this cooperation, will be handled confidentially. All rights will stay with the institution which has delivered this information.
6. The cooperation can be terminated from each side to the end of a year by written notice three months in advance.

Cochin, 4.09.2015

(signature/ stamp)



Eppingen, 04/09/2015

(signature/ stamp)



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MoU Signing Ceremony - NIVUS GmbH

NIVUS is another company having remarkable association with SCMS Group. NIVUS which is an internationally reputed company in ultrasonic flow measurements, has provided equipment's worth several lakhs for SCMS Water Institute for technical teaching, demonstration and training purposes.



SWI team and SSET students conducting field studies and projects using the instruments sponsored by NIVUS GmbH, Germany to SWI

SCMS brings sensor to rate water loss in transit

SMITHA N. | DC
KOCHI, FEB. 21

Transmission loss of water is a term Kerala, facing an acute drought, will have to grapple with now, and the SCMS Water Institute at SCMS School of Engineering, Karutty, has come up with an ultrasonic sensor which can help measure it.

The sensor can automatically assess water velocity, water level, depth of water body and quantity of water discharged and help quantify the water loss.

"The real-time measurements along with satellite remote sensing data of the area will help estimate the demand, supply and deficit," said Dr. Sunny George, director of SCMS Water Institute. "It will be helpful in preparing and implementing an effective water management system. It will also improve water use efficiency in the canal network."

A recent survey conducted by the students of the institute on various stretches of Chalakudy river diversion canal network revealed that a huge



SCMS students testing the ultrasonic sensor.

quantity of water is lost mainly through the unlined parts of the canal and unauthorised pumping to nearby areas. The total discharge at Ezhattumugham, where the right bank canal starts, was measured to be 4,700 litres per second while the measurements at Edalakkad junction, about 5.5 km downstream, showed a discharge of 2,000 litres per second. This means about 2,000 litres of water is lost during the transit.

Though the irrigation department has no actual data on the quantity of water transmission loss, an earlier study conducted by the Kerala Agricultural University in Palakkad had found that though targeted efficiency of canal irrigation system is more than 80 per cent, actual efficiency was only 40 to 60 per cent. As per the Directorate of Economics and Statistics, the net irrigated area in the state as on March 31, 2015 is 4.14 lakh hectares.



Two German technologists who are international experts on Environmental Hydraulics provided training for MTech Environmental Engineering students of SSET on 07-02-2018

Approved by

HOD