



## **ONE-DAY SHORT COURSE**

### **Impact of Free Air Cooling on Information and Communication Technology Equipment**

**When:** October 18, 2010

**Location:** University of Maryland, College Park, MD  
Also offered as Online Webinar for a Limited Audience

**Contact:** Dr. Diganta Das ([digudas@calce.umd.edu](mailto:digudas@calce.umd.edu))

Free Air Cooling is being increasingly used for Information and Communication Technology (ICT) equipment to improve energy efficiency. This method of cooling uses ambient air to cool ICT equipment in data centers, base stations and other telecom infrastructures; thereby reducing the energy consumed to cool and condition the air. This short course is an introduction to the methods of free air cooling with emphasis on the impact of free air cooling on equipment performance and reliability.

This course will address several topics related to fresh air cooling, including:

- Methods of cooling for ICT infrastructure
- The various methods of implementation of free air cooling
- Operating environment of equipment under free air cooling
- Identification of the risks associated with free air cooling on equipment performance and reliability
- How should equipment qualification processes be updated for use in free air cooling conditions
- How to design systems for free air cooling implementation

This course is a must for the infrastructure operators considering the use of fresh air cooling and for those designing and manufacturing equipment for use in such infrastructures, including but not limited to: data center operators, base station operators, and operators of other buildings with high power density telecom equipment, telecom product reliability engineers, and telecom product design engineers. For more information on this course, please contact Dr. Diganta Das at [digudas@calce.umd.edu](mailto:digudas@calce.umd.edu)

## Schedule

<b>8:00 AM</b>	Registration
<b>8:30 AM</b>	Welcome
<b>9:00 AM</b>	Introduction to Information and communication technology industry
<b>9:30 AM</b>	Cooling methods to improve energy efficiency
<b>10:15 AM</b>	Break
<b>10:30 AM</b>	implementation of free air cooling: air-side economizers
<b>11:15 AM</b>	Standards on ICT infrastructure and equipment
<b>12:00 Noon</b>	Break
<b>1:00 PM</b>	Possible risks from adoption of free air cooling: Failure causes and mechanisms
<b>2:00 PM</b>	Limitations of handbook based reliability prediction methods
<b>2:30 PM</b>	Guideline for part performance assessment for free air cooling
<b>3:00 PM</b>	Break
<b>3:15 PM</b>	Guideline for part reliability assessment for free air cooling
<b>4:00 PM</b>	Development of sub-system and system for use in free air cooling
<b>5:00</b>	Closure

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October 18, 2010

CALCE

University of Maryland  
College Park, MD, USA

### **Registration Form**

The fee for the full day short-course is **US \$300** per person. CALCE consortium members will receive a 20% discount on the registration fee per person.

Payments can be made by check or by credit card. Checks must be made out to **UNIVERSITY OF MARYLAND** and payable in US dollars only. Credit card payment requires card number, expiration date, and signature.

Please complete this registration form and mail it along with your check or credit card information to:

Joan Lee  
Building 89, Room 1101  
CALCE, Department of Mechanical Engineering  
University of Maryland  
College Park, MD 20742  
USA.

Forms may be faxed to 775-218-5209 (alternate fax number: 301-314-9269) (US country code is 1).

Please **DO NOT** email this registration form with your credit card information.

For more information on registration call 301-405-1905 or email: [joanyuan@calce.umd.edu](mailto:joanyuan@calce.umd.edu)

Website: [www.calce.umd.edu/](http://www.calce.umd.edu/)

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