

Option for online participation

## Sewers and Pipelines: Construction, Operation and Maintenance

Get the experts' overview of the major issues and their technical background, refresh your existing knowledge, and get an update on international developments. The course is focussed on sewerage, however, it offers insights for other types of pipe networks as well.

This course uses core elements from university lectures and a master course held by Professor Bert Bosseler, Scientific Director of IKT, supported by case studies and research results from IKT colleagues and updates from experts from international standardization committees at CEN and ISO. Contents of this masterclass are part of the curriculum at the Ruhr-University Bochum and Leibniz University Hanover, both being leading universities for civil engineering in Germany.

You can attend the course on site at IKT or online via web conference. Online participants are given full access to all course contents and can communicate with speakers and other attendees during the course. You will have the opportunity to meet and network with experts from network operators, industry, science, research, and international standardization.

### Key Subjects:

- Construction and installation of sewers and pipelines
- Operation, maintenance and rehabilitation of sewers and pipelines
- Testing and rehabilitation of large sewers and manholes
- Principles of asset management and smart community infrastructure

### Attendees:

The course is open to all professionals. Attendees can take an optional exam to receive a certificate of "Successful attendance of IKT's Masterclass *Sewers and pipelines: construction, operation and maintenance*". The certificate summarizes the course content, its role in university studies at German Universities and confirms the successful result for the attendee.

This course is linked to partner classes in various countries – enjoy a discussion on a real international level!

## International Partners

Belgium



[www.vlario.be](http://www.vlario.be)

Finland



[www.nrgfinland.fi](http://www.nrgfinland.fi)

Germany



[www.ikt.de](http://www.ikt.de)

India



[www.indstt.org](http://www.indstt.org)

Netherlands



[www.ikt-nederland.nl](http://www.ikt-nederland.nl)

United Kingdom

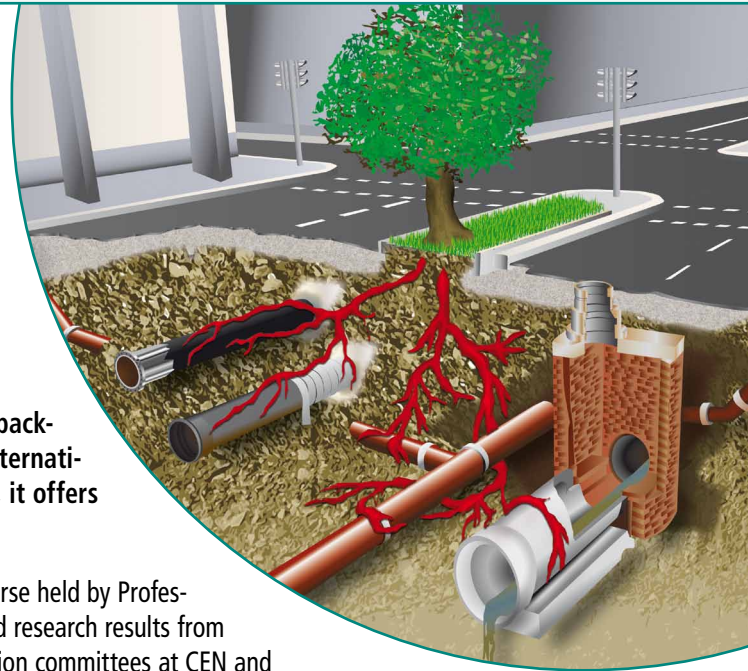


[www.thewaterbureau.co.uk](http://www.thewaterbureau.co.uk)

USA



[www.irwaonline.org](http://www.irwaonline.org)



## Agenda

### Monday, 10 October 2016

#### Construction and installation of sewers and pipelines

##### Host/Moderator:

Sissis Kamarianakis, Head of International Education, IKT

CET – Central European Time (Berlin)  
(UK/BST -1h – USA/EST -6h – India +3,5h)

- 9:00 CET **Registration of Attendees, International Roll Call and Introductions (online)**  
Mirko Salomon, Project Manager, IKT
- 9:30 CET **Welcome Address IKT**  
Roland W. Waniek, Managing Director, IKT
- 9:45 CET **International Masterclass, Programme Overview**  
Sissis Kamarianakis,  
Head of International Education, IKT
- 10:00 CET **Open cut sewer and pipeline installation**  
Engineering principles, structural behaviour, pipe-soil-systems, typical failures and defects, issues for rehabilitation  
Bert Bosseler, Scientific Director, IKT
  - 10:00-10:30 **Presentation I**
  - 10:30-10:45 Partner class discussion
  - 10:45-11:00 International discussion
  - 11:00-11:30 **Presentation II**
  - 11:30-11:45 Partner class discussion
  - 11:45-12:00 International discussion
- 12:00 CET **Practice/Exercise**
- 12:30 CET **Lunch/Study break**
- 14:00 CET **Construction by cut-and-cover method in accordance with EN 1610**  
Ulrich Bohle, Member CEN WG10
- 14:30 CET **EN 1610: Questions, answers, issues, remarks**  
Ulrich Bohle and Bert Bosseler:  
open discussion with attendees/partner classes
- 15:00 CET **Coffee break/Discussion in partner classes**
- 15:30 CET **Open cut construction and installation of sewers and pipelines – Case studies and practice demonstration**
- 16:30 CET **Conclusions on the day, Final Roll Call**
- 17:00 CET **End of Day 1**

### Tuesday, 11 October 2016

#### Trenchless installation and renewal of sewers and pipelines

##### Host/Moderator:

Sissis Kamarianakis, Head of International Education, IKT

CET – Central European Time (Berlin)  
(UK/BST -1h – USA/EST -6h – India +3,5h)

- 9:00 CET **Registration of Attendees, International Roll Call and Introductions (online)**  
Mirko Salomon, Project Manager, IKT
- 9:30 CET **Trenchless sewer and pipeline installation and renewal**  
Methods, engineering principles, opportunities and risks  
Bert Bosseler, Scientific Director, IKT
  - 9:30-10:00 **Presentation I**
  - 10:00-10:15 Partner class discussion
  - 10:15-10:30 International discussion
  - 10:30-11:00 **Presentation II**
  - 11:00-11:15 Partner class discussion
  - 11:15-11:30 International discussion
- 11:30 CET **Trenchless installation of sewers and pipelines – Case studies and practical demonstrations**
- 12:30 CET **Lunch/Study break**
- 14:00 CET **Trenchless construction in accordance with EN 12889**  
Ulrich Bohle, Member CEN WG10
- 14:30 CET **EN 12889: Discussing essential issues**  
Ulrich Bohle and Bert Bosseler
- 15:00 CET **Coffee break/Discussion in partner classes**
- 16:00 CET **Issues raised by the participants to be discussed with experts and other attendees**
- 17:00 CET **End of Day 2**



## Wednesday, 12 October 2016

### Rehabilitation and repair of sewers and pipelines

**Host/Moderator:**

**Sissis Kamarianakis, Head of International Education, IKT**

CET – Central European Time (Berlin)

(UK/BST -1h – USA/EST -6h – India +3,5h)

- 9:00 CET **Registration of Attendees, International Roll Call and Introductions (online)**  
**Mirko Salomon, Project Manager, IKT**
- 9:30 CET **Rehabilitation and repair of sewers and pipelines**  
Methods, engineering principles, structural evaluation  
**Bert Bosseler, Scientific Director, IKT**
- 9:30-10:00 **Presentation I**
  - 10:00-10:15 Partner class discussion
  - 10:15-10:30 International discussion
  - 10:30-11:00 **Presentation II**
  - 11:00-11:15 Partner class discussion
  - 11:15-11:30 International discussion
  - 11:30-12:00 **Presentation III**
  - 12:00-12:15 Partner class discussion
  - 12:15-12:30 International discussion
- 12:30 CET **Lunch/Study break**
- 14:00 CET **Rehabilitation and Repair methods according to ISO 11295, EN 15885**  
**Jörg Brunecker, Convenor CEN WG13**
- 14:30 CET **ISO/EN Standards: Discussion of essential issues**  
**Jörg Brunecker and Bert Bosseler**
- 15:00 CET **Coffee break/Discussion in partner classes**
- 16:00 CET **Issues raised by the participants to be discussed with experts and other attendees**
- 17:00 CET **End of Day 3**



## Thursday, 13 October 2016

### Operation and maintenance of sewers and pipelines

**Host/Moderator:**

**Sissis Kamarianakis, Head of International Education, IKT**

CET – Central European Time (Berlin)

(UK/BST -1h – USA/EST -6h – India +3,5h)

- 9:00 CET **Registration of Attendees, International Roll Call and Introductions (online)**  
**Mirko Salomon, Project Manager, IKT**
- 9:30 CET **Operation and maintenance of sewers and pipelines**  
Tasks, issues and methods, engineering principles for inspection and testing  
**Bert Bosseler, Scientific Director, IKT**
- 9:30-10:00 **Presentation I**
  - 10:00-10:15 Partner class discussion
  - 10:15-10:30 International discussion
  - 10:30-11:00 **Presentation II**
  - 11:00-11:15 Partner class discussion
  - 11:15-11:30 International discussion
- 11:30 CET **Structural inspection of large diameter sewers and pipelines – Case Studies / MAC-System**  
**Olivier Thépot, Eau de Paris**
- 12:30 CET **Lunch/Study break**
- 14:00 CET **Operation and maintenance of sewer systems according to EN 752, EN 14654 etc.**  
**Don Ridgers, Convenor CEN WG22**
- 14:30 CET **EN Standards: Discussion of essential issues**  
**Don Ridgers and Bert Bosseler**
- 15:00 CET **Coffee break/Discussion in partner classes**
- 15:30 CET **Inspection, Testing and Rehabilitation of Waste Water Pressure Pipes**  
**Sissis Kamarianakis, IKT**
- 16:15 CET **Sewer cleaning strategies**  
**Marco Schlüter, IKT**  
**Serdar Ulutaş, IKT**
- 17:00 CET **End of Day 4**

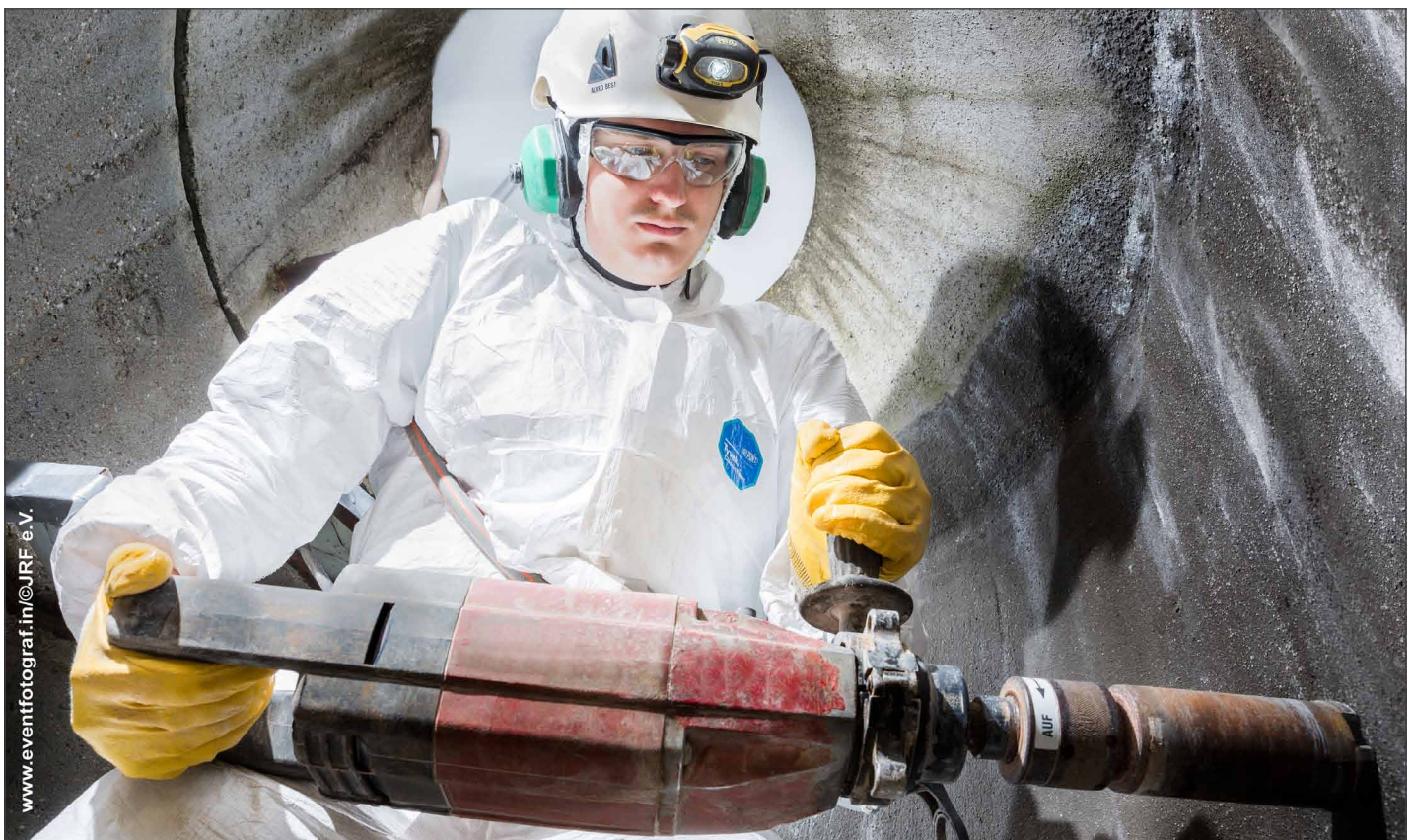
**Friday, 14 October 2016**

## Management of sewers and pipelines in cities and communities

**Host/Moderator: Sissis Kamarianakis, Head of International Education, IKT**

CET – Central European Time (Berlin)  
(UK/BST -1h – USA/EST -6h – India +3,5h)

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|-----------|--|-----------|--|
| 9:00 CET  | <b>Registration of Attendees, International Roll Call and Introductions (online)</b><br>Mirko Salomon, Project Manager, IKT  | 12:30 CET | <b>Lunch/Study break</b>   |
| 9:30 CET  | <b>Sustainable development and smart community infrastructure: Requirements and standards from UN/ISO/EU/CEN</b><br>Bert Bosseler, Scientific Director, IKT <ul style="list-style-type: none"><li>● 9:30-10:15 <b>Presentation</b></li><li>● 10:15-10:30 Partner class discussion</li><li>● 10:30-10:45 International discussion</li></ul> | 14:00 CET | <b>Asset Management according to ISO 55000 / ISO FDIS 24516</b><br>Horst Schlicht, Convenor ISO TC 224 WG6 |
| 10:45 CET | <b>Coffee break</b>  | 14:30 CET | <b>Asset Management – Case Studies</b>   |
| 11:15 CET | <b>ISO 37152 – Common framework for smart community infrastructure</b><br>Yoshikazu Ishihara, Convenor ISO/TC 268/SC1/WG2 <ul style="list-style-type: none"><li>● 11:15-11:45 <b>Presentation</b></li><li>● 11:45-12:00 Partner class discussion</li><li>● 12:00-12:30 International discussion</li></ul>                                  | 15:00 CET | <b>Coffee break/Discussion in partner classes</b>  |
|           |  | 16:00 CET | <b>Summary and key conclusions from the course</b><br>Bert Bosseler, IKT                                   |
|           |  | 16:30 CET | <b>Feedback discussion – all participants</b><br>Sissis Kamarianakis, IKT                                  |
|           |  | 17:00 CET | <b>End of Day 5</b>  |



## Sewers and Pipelines: Construction, Operation and Maintenance

### Dates

#### October 2016

- Lectures (at IKT or online): 10 to 14 October 2016 (9am to 5pm CET)
- Optional Exam (at IKT or online, max. 60 min): 10 or 11 November 2016
- Exam Graduates Conference (at IKT or online): 2 December 2016  
(with Certificate Awarding Ceremony)

#### January/February 2017

- Lectures (at IKT or online): 30 January to 3 February 2017 (9am to 5pm CET)
- Optional Exam (at IKT or online, max. 60 min): to be announced
- Exam Graduates Conference (at IKT or online): to be announced  
(with Certificate Awarding Ceremony)

#### October 2017

- Lectures (at IKT or online): 23 to 27 October 2017 (9am to 5pm CET)
- Optional Exam (at IKT or online, max. 60 min): to be announced
- Exam Graduates Conference (at IKT or online): to be announced  
(with Certificate Awarding Ceremony)

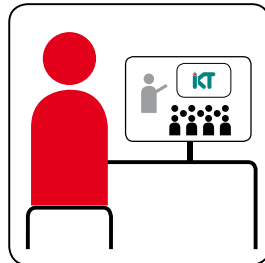
### Fees

#### Lecture Option 1



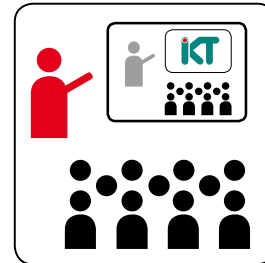
You attend lectures at IKT in Gelsenkirchen, Germany  
**2,900 Euro** (per attendee)

#### Lecture Option 2



You attend lectures online as an individual  
**2,400 Euro** (per online seat)

#### Lecture Option 3 (for partners)



You buy one online seat and use it to host your own partner class (no limit on number of attendees in your class)  
**price on request** (please contact Mr. Mirko Salomon)

Interested but not a partner yet?  
Please contact Mr. Mirko Salomon  
Phone: +49 209 17806-25  
E-mail: salomon@ikt.de

#### Optional Exam

Exam at IKT or online / Certificate  
**450 Euro** (per candidate)

#### Exam Graduates Conference

Exam Graduates Conference at IKT or attend online  
**150 Euro** (per participant)

### Course Venue

**IKT**  
IKT - Institute for Underground Infrastructure  
Exterbruch 1  
45886 Gelsenkirchen  
Germany

#### Online

Standard Personal Computer / Laptop / Smartphone app  
(microphone and webcam option)

### Contact

**Mr. Mirko Salomon, M.Sc.**  
Project Manager  
T: +49 209 17806-25  
F: +49 209 17806-88  
E: salomon@ikt.de

**Mr. Sissis Kamarianakis, Dr.-Ing. Dipl.-Wirt.-Ing.**  
Head of International Education  
T: +49 209 17806-42  
F: +49 209 17806-88  
E: kamarianakis@ikt.de

## Registration

please send this form to fax: +49 (0) 209 17806-88 or e-mail: [info@ikt.de](mailto:info@ikt.de)

H-16-10-IMC

## IKT International Masterclass „Sewers and Pipelines: Construction, Operation and Maintenance“

- |  |  |
|--|--|
| <p>Date: <input type="checkbox"/> 10-14 October 2016</p> <hr/> <p><input type="checkbox"/> 30 January - 3 February 2017</p> <hr/> <p><input type="checkbox"/> 23-27 October 2017</p> | <p>Optional Exam: <input type="checkbox"/> 10 November 2016</p> <p><input type="checkbox"/> 11 November 2016</p> <hr/> <p>Optional Exam: <b>Dates to be announced</b></p> <hr/> <p>Optional Exam: <b>Dates to be announced</b></p> |
|--|--|

- Fee:
- |   |            |
|---|------------|
| <input type="checkbox"/> Lecture Option 1 (at IKT): | 2,900 Euro |
| <input type="checkbox"/> Lecture Option 2 (online): | 2,400 Euro |
| <input type="checkbox"/> Exam (optional):           | 450 Euro   |

Interested in **Lecture Option 3 (for partners)**? Please contact: **Mirko Salomon**, T: +49 209 17806-25, E: [salomon@ikt.de](mailto:salomon@ikt.de) or **Sissis Kamarianakis**, T: +49 209 17806-42, E: [kamarianakis@ikt.de](mailto:kamarianakis@ikt.de)

Participant		
Company/Authority		
Address	City	Postcode
State	Country	
Phone	Mobile phone	
E-mail		
E-mail Participant (if different from above)		
Date	Signature	

Registrations will be processed in the order they are received. All registrations are legally binding. After your registration the invoice will be issued. The payment has to be made in advance. In case of cancellation until 14 days prior to the event a cancellation fee of 30 % of the participation fee will be charged. Thereafter, or in the case of non-attendance the full fee is to be paid. Cancellations will be accepted only in written form. A substitute participant for the booked date can be specified in writing at any time (free of charge). A transfer to another event date is possible only six weeks prior to the booked event. A rebooking fee of 250 Euro applies.

