

Imprimé à taxe réduite - Printed matter at reduced rate

PANTA RHEI

this issue

**SAST Project No. 6
Final Workshop**

FRESHWATER RESOURCES in EC

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

A QUARTERLY BULLETIN

N° 13 - SEPTEMBER - 1992

GLOSSARY

ACMOBI

ACademic MOBility information system (TECHWARE).

BEST

Building of Extension of Science and Technology network TECHWARE/WEEL in Central and Eastern Europe (COST-CEEC programme).

CALWARE

Computer-Aided-Learning in hydraulics, hydrology and WAter REsources technology, strand Cb project (TECHWARE).

CEC

Commission of the European Community.

COMETT II

COMmunity action for Education and Training for Technology, the European Community programme on cooperation between universities and industry regarding training in the field of technology (TFHR).

COMEX I

Selected experts in the field of diffusion and valorization of RTD results (DGXIII).

COST -CEEC

Cooperation in Science and Technology with Central and Eastern European Countries, programme of DGXII.

CTB

Coordinating TECHWARE Bureau in Brussels (B).

DG

Directorate-General, administrative unit of CEC (there are XXIII DGs).

EC

European Community (member states : B, D, DK, E, F, GR, I, IRL, L, NL, P, UK).

EP

European Parliament (EC).

EFTA

European Free Trade Association (member states : A, CH, FL, IS, N, S, SF).

ERASMUS

EuRopean Action Scheme for the Mobility of University Students (TFHR).

ETC

European Training Courses of TECHWARE.

FORCE

FORmation Continue en Europe - Continuing Vocational Training in Europe (TFHR).

HCM

Human Capital and Mobility, framework programme of DG XII.

ICP

Interuniversity Cooperation Programme (ERASMUS).

IP

Intensive Programme (ERASMUS).

IRDAC

Industrial Research and Development Advisory Committee of CEC.

JEP

Joint European Project (TEMPUS).

NGAA

National Grant Awarding Authority providing the grants for student mobility (ERASMUS).

PEP

Personnel Exchange Programme of TECHWARE.

RTB

Regional TECHWARE Bureau.

RTD

Research and Technological Development.

SAST

Strategic Analysis for Science and Technology (DG XII).

SME

Small- and Medium sized Enterprise.

SPES

Student and young graduate Placements for training in European industry of the water environment Sector (TECHWARE).

S&T

Science and Technology

STRANDS (COMETT)

A : Action establishing UETPs.

B : Action for transnational exchanges (students, young graduates, personnel).

C : Joint Training Actions.

D : Complementary measures.

TECHWARE

TECHnology for WAter REsources, sectoral UETP (COMETT, Strand A) and International Non-Profit-Making Association, with headquarters in Brussels (B).

TECHWARE- Italia and TECHWARE-UK are Regional TECHWARE Bureaus (RTB).

The symbol of TECHWARE is the **icosahedron**, associated with water in PLATO's philosophy.

TEMPUS

TransEuropean Mobility Scheme for University Studies, the EC-programme for education and training in CEE-countries (TFHR).

TFHR

Task Force Human Resources, Education, Training and Youth (CEC).

UETP

University Enterprise Training Partnership (COMETT, Strand A).

WEEL

Water Environment European Laboratories, pan-European scientific network of TECHWARE (HCM programme of DGXII).

Hydrology

The logos of the waters, or the science that deals with the waters of the earth, their occurrence, circulation and distribution, their chemical and physical properties, and their interaction with their environment, including their relations to living beings.

Water management

Planned development, distribution and use of water resources, in accordance with predetermined objectives and with respect to both quantity and quality of the water resources.

Water resources technology

The development and application of (new) technologies to increase and improve the supply both in quantity and quality, interpreted in terms of availability of surface and underground waters.

TECHWARE

TECHNOLOGY FOR WATER RESOURCES
INTERNATIONAL NON-PROFIT-MAKING ASSOCIATION
UETP • UNIVERSITY ENTERPRISE TRAINING
PARTNERSHIP UNDER COMETT II
the European Community programme on
cooperation between universities and industry
regarding training in the field of technology

TECHWARE c/o CIBE-BIWM
70 rue aux Laines / Wolstraat 70
B-1000 Brussels, Belgium
tel +32-2-5188893 • fax +32-2-5026735

COURSE CALENDAR
1992 : see reverse side

EUROPEAN
TRAINING
COURSES

FILL IN

Please, send me :

more information about following course : course no. code :
.....
course title & course code number : see reverse side

an application form for following course : course no. code :
.....
course title & course code number : see reverse side

a summary of all course descriptions, free of charge.

Name :

Address :

Annex PANTA RHEI No. 13

RETURN TO

- summary of course descriptions
- organisation of courses

TECHWARE c/o CIBE-BIWM
Wolstraat 70, rue aux Laines
B-1000 Brussels
Fax : +32-2-5026735

☛ **90-Cc**
Prof. P. Jacobsen
Danmarks Tekniske Højskole
Laboratoriet for Tekniske Hygiejne
Dpt. for Environmental
Engineering
Lundoftevej 100, bygning 115
Lyngby DK-2800
Fax : +45-45-932860

☛ **91-SP 2.3**
Mr. J. Millns
TECHWARE U.K.
c/o HR Wallingford
Howbery park, Wallingford
Oxfordshire OX108 BA, UK
Fax : +44-491-26703

☛ **91-SP 1.1**
Coastal Engineering
ICCE '92 Secretariat,
c/o ENDAR - Centro Congressi
Icola di S. Giorgio Maggiore
30124 Venezia, Italy
Fax : +39-41-5286846

☛ **91-SP4**
Universidad Internacional
Menéndez Pelayo
Student office :
UIMP de Valencia
Palau de Pineda
Plaça del Carmen 4
E-46003 Valencia
Fax : +34-6-3869823

☛ **91-SP 1.1**
Coastal Zone Management
IIEM secretariat
Miss Mary Greening
Adriatico Palace Hotel
Via Grignano 9
34136 Trieste, Italy
Fax : +39-40-224575

☛ **91-SP 3.3**
Mr. A. Bazzano
RTB-Italy c/o AMGA
Via S.S. Giacomo e Filippo 7
16122 Genova, Italy
Fax : +39-10-2858284

☛ **91-SP 5.5**
Dr. C.W. McLeod
Sheffield city Polytechnic
Chemical Analysis Research
Centre
Pond Street
UK-S1 1WB Sheffield
Fax : +44-742-533066

☛ **91-SP 3.4**
Dr. A. Rushton
UMIST
Department of Chemical
Engineering
c/o Colynwood
Claremont Drive
Timperley
UK-WA14 5NE Cheshire
Fax : +44-619-2004399

☛ **91-SP 3.2**
Prof. G.J. Alaerts
IHE/International Institute for
Hydraulic and Environmental
Engineering
Oude Delft, 95
P.O. Box 3015
NL-2601 DA Delft
Fax : +31-15-122921

☛ **91-SP 5.1**
Prof. J. Niemczynowicz
Lunds Universitet
Lunds Tekniska Högskola
Institutionen för Teknisk
Vattenresurslära
John Ericssons väg 1
P.O. Box 118
S-22100 Lund
Fax : +46-46-104435

☛ **91-SP 2.2**
Dr. J.W. Lyklema
TNO - Institute of Applied
Geoscience
Schoenmakerstraat 97
P.O. Box 6012
NL-2600 JA Delft
Fax : +31-15-564800

☛ **90-Cb1**
Dr. Ing. L. Fuchs
ITWH/Institut für Technisch-
Wissenschaftliche Hydrologie
Engelborster Damm, 22
D-3000 Hanover 1
Fax : +49-511-701668

for more information,
registration, etc. :
see reverse side



DATE	VENUE	COURSE TITLE	No. Code
AUGUST			
20 August -18 December 92	Lyngby (DK)	The Integrated Concept of Urban Runoff.	90-Cc
SEPTEMBER			
28 September-2 October 92	Wallingford (UK)	Short Course on Geochemical Modelling Techniques for Hydrologists.	91-SP 2.3
OCTOBER			
01-03 October 92	Venice (I)	Coastal Engineering	91-SP 1.1
19-23 October 92	Valencia (E)	Water Supply Systems. State of the Art and Future Trends.	91-SP 4
19-22 October 92	Monselice (I)	Coastal Zone Management / Coastal Environment	91-SP 1.1
23-25 October 1992	Monselice (I)	Coastal Zone Management / Land and Water.	91-SP 1.1
26-28 October 92	Monselice (I)	Coastal Zone Management / Management Tools.	91-SP 1.1
29-30 October 92	Monselice (I)	Coastal Zone Management / Impact Analysis.	91-SP 1.1
26-28 October 92	Genova (I)	Advanced Waste Water Treatment Processes and Technologies.	91-SP 3.3
NOVEMBER			
16-20 November 92	Sheffield (UK)	Environmental Trace Analysis : a State of the Art. Review of Instrumentation and Technologies.	91-SP 5.5
16-21 November 92	Wallingford (UK)	Advanced Solid Liquid Separation in Waste Water Treatment and Sludge Handling.	91-SP 3.4
30 November-4 December 92	Delft (NL)	Advanced Design Concepts for Integral Drinking Water Treatment.	91-SP 3.2
DECEMBER			
07-10 December 92	Lund (S)	Radar and Rainfall in Urban Hydrology.	91-SP 5.1
14-18 December 92	Delft (NL)	Regional Hydrological System Analysis.	91-SP 2.2
1993			
February-March 93	Lyngby (DK)	Advanced computer Techniques for the Design and Renovation of Sewer Systems.	90-Cb1
Summer 93	Valencia (E)	Advanced computer Techniques for the Design and Renovation of Sewer Systems.	90-Cb1

SPES

STUDENT AND YOUNG GRADUATE PLACEMENTS
FOR TRAINING IN EUROPEAN INDUSTRY OF
THE SECTOR WATER ENVIRONMENT

TECH WARE
TECHNOLOGY FOR WATER RESOURCES
INTERNATIONAL NON-PROFITMAKING ASSOCIATION
UETP • UNIVERSITY ENTERPRISE TRAINING PARTNERSHIP UNDER **COMETT II**
c/o CIBE-BIWM Wolstraat 7 B-1000 Brussels
Tel : +32-2-5188893 • Fax : +32-2-5026735

OFFERS & DEMANDS

OFFERS of placement by enterprises (17-08-92)

**OTHER TOPICS ARE
NEGOTIABLE**

Code	Country	Duration	Period	Topic proposed
PT91-02	B	6 m.	a.s.a.p.	Hydraulic model of sediment transport in sewers.
PT91-03	F	6m. or more	n.s.	Databases.
PT91-04	NL	3-12 m.	n.s.	Applications in water industry.
PT91-05	UK	6 m.	n.s.	Flood forecasting.
PT91-06	UK	6 m.	n.s.	Water resources modelling.
PT91-07	A	n.s.	n.s.	Water supply planning.
PT91-08	B	6-12 m.	n.s.	Management, economics, marketing.
PT91-09	UK	6-12 m.	n.s.	Management, economics, marketing.
PT91-10	I	6-12 m.	n.s.	Management, economics, marketing.
PT91-11	UK	3-12 m.	a.s.a.p.	Irrigation.
PT91-12	UK	3-12 m.	a.s.a.p.	Hydrodynamics.
PT91-13	UK	3-12 m.	a.s.a.p.	Flow measurements.
PT91-14	UK	3-12 m.	a.s.a.p.	Sediment mechanics.
PT91-15	UK	3-12 m.	a.s.a.p.	Computational methods.
PT91-16	UK	3-12 m.	a.s.a.p.	Urban drainage.
PT91-17	UK	3-12 m.	a.s.a.p.	Coastal structures and processes.
PT91-18	UK	3-12 m.	a.s.a.p.	Ports and harbours.
PT91-19	UK	3-12 m.	a.s.a.p.	Dredging and spoil deposits.
PT91-20	UK	3-12 m.	a.s.a.p.	Environmental assessment.
PT91-21	UK	3-12 m.	a.s.a.p.	Modelling river basins.
PT91-22	UK	3-12 m.	a.s.a.p.	Estuaries management.
PT91-23	UK	3-12 m.	a.s.a.p.	Groundwater.
PT92-01	UK	12 m.	1993	Coastal hydraulics.
PT92-02	B	6 or 12 m.	n.s.	Integrated river basin management.
PT92-03	B	6-12 m.	a.s.a.p.	Hydro-informatics.
PT92-04	NL	6-12 m.	n.s.	Management, economics, marketing.
PT92-05	D	6-12 m.	n.s.	Management, economics, marketing.
PT92-06	UK	6-12 m.	n.s.	Fluid mechanics.
PT92-07	B	6-12 m.	n.s.	Open channel flow.
PT92-08	E	6-12 m.	n.s.	Hydraulics of water distribution.
PT92-09	UK	6-12 m.	n.s.	Irrigation water management.
PT92-10	DK	6-12 m.	n.s.	Urban drainage.

DEMANDS for placements by students (17-08-92)

**OTHER TOPICS ARE
NEGOTIABLE**

Code	Home Country	Proposed Host Country	Duration	Period	Topic proposed
DT91-03	B	DK/IRL/UK/N/S	6 or 12 m.	n.s.	Water treatment, environmental sanitation.
DT91-12	D	n.s.	3-12 m.	n.s.	Groundwater.
DT91-13	B	S	3 m.	09/92	Radar applications.
DT91-15	B	UK/D/F/L/NL/A	3 m.	10-12/92	Chemical environmental engineering.
DT91-19	E	UK	n.s.	n.s.	Waste water treatment.
DT91-26	I	UK	6-9 m.	a.s.a.p.	Coastal hydrodynamics.
DT91-32	UK	NL/F/GR	9 m.	08/92-04/92	Hydraulics.
DT91-35	UK	E	6m.	09/92-02/93	Coastal zone management.
DT91-40	DK	UK	4-6 m.	n.s.	Hydraulics.
DT91-44	D	UK	3 m.	n.s.	Civil engineering hydraulics.
DT92-11	I	B/L/NL/D/a.o.	12 m.	02/93-01/94	Chemical engineering.
DT92-23	I	B/E/UK	12 m.	02/93-01/94	Environmental impact assessment/development.
DT92-24	I	B/E/F	12 m.	02/93-01/94	Environmental impact assessment/development.
DT92-27	B	UK/IRL/DK	6 m.	03/93-08/93	Groundwater management.
DT92-38	B	DK	6 m.	03/93-08/93	Groundwater.
DT92-41	E	IRL/UK/I/L/A/CH	12 m.	11/92	Environmental and water resources engineering.
DT92-42	E	UK/I/N/F/A	12 m.	n.s.	Environmental and water resources engineering.
DT92-45	B	UK/NL/S	6 m.	03/93	Surface water resources.
DT92-48	B	D	6 m.	03/93	Water and waste water treatment.
DT92-49	B	UK/NL/IRL	6 m.	03/93	Collection and processing hydrological data.

ABBREVIATIONS

n.s. : not specified | a.s.a.p. : as soon as possible | m. : month(s)

For more information about SPES : see reverse side

S P E S

STUDENT AND YOUNG GRADUATE PLACEMENTS FOR TRAINING IN EUROPEAN INDUSTRY OF THE SECTOR WATER ENVIRONMENT

WHAT ARE THE BENEFITS OF PLACEMENTS ?

(by courtesy of UK COMETT Liaison Office)

For the employer

- COMETT student placements are cheap and easy to manage, thanks to EC grants and the support network.
- COMETT students can contribute to productivity, a benefit to small and large companies alike.
- COMETT students can introduce new ideas into the workplace, and can tackle projects which otherwise might be difficult to resource.
- COMETT students offer a company opportunities to link with higher education and with Europe.
- COMETT student's language ability can put you in touch with new market opportunities.

For the student

- Placement in industry abroad enhances a student's degree course.
- A placement improves language skills, and offers experience of another culture.
- A placement improves future job prospects.
- A placement brings the satisfaction of contributing to the productivity of a firm.

For higher education

- More mature COMETT students are rewarding to teach.
- Staff arranging placement will make useful contact with European employers.
- Foreign interest will be aroused in an institution's Research and Development and its initial and continuing education courses.

For Europe

- COMETT fosters European awareness
- Student placements will encourage European mobility.
- A well-trained workforce will enable industry to compete better in world markets.

overview offers/demands for placements : see reverse side

T E C H W A R E

TECHNOLOGY FOR WATER RESOURCES

INTERNATIONAL NON-PROFITMAKING ASSOCIATION

UETP • UNIVERSITY ENTERPRISE TRAINING PARTNERSHIP UNDER COMETT II the European Community programme on cooperation between universities and industry regarding training in the field of technology

WHO CAN OFFER PLACEMENTS ?

All companies, enterprises, including public administration or services, professional or scientific associations, etc. . .

WHO CAN APPLY FOR A COMETT-PLACEMENT GRANT ?

- All registered students or young graduates of an institution for higher education in EC- and EFTA-member states.
- All nationalities if the above condition is fulfilled.

THE ROLE OF TECHWARE



- TECHWARE has the responsibility to award COMETT grants to eligible trainees for placements between 3 and 12 months.
- The selection for awarding the grants and the matching between offers and demands is straightforward and explained in the SPES-Vademecum.
- An agreement between TECHWARE and the grantee is signed as soon as the enterprise has accepted the trainee-candidate.
- The COMETT grant awarded by TECHWARE varies between 250 and 350 ECU per month and is supplementary to any other grant or contribution offered by the enterprise or other organisation.

Fill in the form below and send it to
TECHWARE c/o CIBE-BIWM Wolstraat 7 B-1000 Brussels
Fax : +32-2-502 6735

TECHWARE / SPES

Student and young graduate Placements for training in European industry of the Sector water environment

- Allow for a period of about 6 months between this request and the start of your training •

Name :

Enterprise :

OR University :

Address :

Tel : Fax : Telex :

please send me the SPES Vademecum including application forms and prototype agreement Date :

please send me full information about the trainee candidate Demand Code No.

is interested in Training-Offer Code No.

Signed :

Who Should attend ?

Engineers working in water supply companies and responsible for the design, planning, maintenance and operation of water distribution networks will find this course extremely beneficial to their day to day duties.

Also, technical managers and administrators and university professors working in the field of water distribution engineering, and other trainers in the water supply field, will benefit from learning these state-of-the-art computer programs.

Lecturers

- Mr. M. Andrés
Aguas de Valencia, Spain
- Mr. R. Barker
Severn Trent Water, Birmingham, UK
- Mr. I.I. Brammer
Severn Trent Water, Birmingham, UK
- Prof. Dr. E. Cabrera
Polytechnic University, Valencia, Spain
- Prof. Dr. M.H. Chaudry
Washington State University, USA
- Dr. J. Cohen
Amsterdam Municipal Water Board, the Netherlands
- Dr. V. Espert
Polytechnic University, Valencia, Spain
- Dr. J.E. Funk
University of Kentucky, USA
- Mr. J. García-Poveda
Canal de Isabel II, Madrid, Spain
- Mr. M. García-Seira
Polytechnic University, Valencia, Spain
- Mr. R. Gistau
Canal de Isabel II, Madrid, Spain
- Prof. Dr. I.C. Goulter
University of Central Queensland, Australia
- Mr. P.A. Jarrige
Safege, Paris, France
- Prof. Dr. E. Koelle
Sao Paulo University, Brazil
- Prof. Dr. J.A. Tigget
Cornell University, New York, USA
- Mr. L. Maine
British Gas Engineering Research Station, Newcastle, UK
- Dr. F. Martínez
Polytechnic University, Valencia, Spain
- Mr. F. Porta
Aguas de Barcelona, Spain
- Mr. F. Planells
Ayuntamiento de Valencia, Spain
- Dr. M. Salachoris
IIM Consultants, Athens, Greece
- Prof. Dr. G. Tsakiris
National Technical University of Athens, Greece
- Prof. Dr. J.P. Tullis
Utah State University Foundation, USA
- Dr. G.A. Walters
University of Exeter, UK
- Prof. Dr. D. Wood
University of Kentucky, USA

WATER SUPPLY SYSTEMS

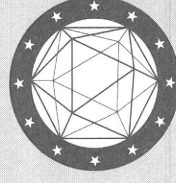
State of the Art and Future Trends

October 19th - 23th 1992
Valencia, Spain

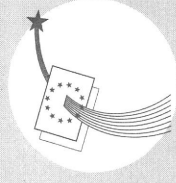
European Training Course No.91-SP4



Universidad Internacional
Menéndez Pelayo
Valencia, Spain



TECHWATER
TECHNOLOGY FOR WATER RESOURCES
University-Enterprise Training Partnership



within the framework of
COMETT

For further information, please contact :

Student Office
UIMP Valencia
Plaza del Carmen, 4
E-46003 Valencia, Spain

Tel : +34-6-386 98 02
+34-6-386 98 04
Fax : +34-6-386 98 23

REGISTRATION FORM

Family Name :

First Name :

Mailing Address :

.....
.....
.....

Phone : Fax : Date : Signature :

Please return this form as soon as possible to :

UIMP Valencia - Student Office

Plaza del Carmen, 4

E-46003 Valencia, Spain

Fax : +34-6-386 98 23

INTRODUCTION

Many new computational methods have been proposed to analyse the steady and unsteady in a drinking water distribution network. These will be presented to the course participants and compared for their practicality and ease of use.

Hydraulic transient pressure networks will be introduced. Computer aided operation and control of pressure zones of water distribution networks will be focused.

This course on automated operation and control of water distribution systems will enable the water supply engineer to maintain a physically sound system. By maintaining network integrity, the manager will also ensure that the highest quality water is delivered to the public.

TOPICS TO BE TREATED

- General overview of the different features and problems in water distribution systems. The case of Spain.
- Demand forecasting in water distribution systems.
- Hydraulic analysis of water distribution systems.
- Modern conception of a water distribution system. Policies for the improvement of networks with shortcomings.
- Optimum design of water distribution networks.
- Mathematical modelling of water distribution systems in service.
- New trends in distribution research: dynamic calculation.
- Transient behaviour of water supply networks.
- Use and selection of control devices in water distribution networks.
- Automation levels in water supply systems. Measurement and control variables.
- Optimal control of water distribution networks. Technical survey and practical applications.
- Use and benefits of water distribution models.
- GIS technology for water distribution management.
- Network monitoring and the algorithmic location of leaks under steady and unsteady conditions.
- Rehabilitation of potable water mains.
- Ratios to be considered in the management of a water distribution system.
- The cost of water. Different policies for determining the price of water.

SEMINARS

- Analysis and design of water distribution networks.
- Management of water distribution networks.

**For further information,
please contact :**

Student Office
UIMP Valencia
Plaza del Carmen, 4
E-46003 Valencia, Spain

Tel : +34-6-386 98 02
+34-6-386 98 04
Fax : +34-6-386 98 23

Course Materials

All participants will receive course materials for the lectures and the examined industrial application. The material includes the necessary bibliography.

Programme

The course lasts three days and is limited to a maximum of 30 participants ; it starts at 9.00 AM on the first day (Monday, 26th October 1992) and ends at 17.30 on the following Wednesday 28th October 1992. All those who confirm their registration will receive a detailed programme.

Some Useful Information

Each course, which will be held twice at different times and places, lasts three days. The number of participants of each course is limited at 30 in order to achieve a maximum benefit to participants.

English will be the official language of the courses. A simultaneous translation service into Italian will be available for the courses held in Italy. A certificate of attendance will be awarded to all participants.

The registration fee for each course is different for TECHWARE members and for others. It gives the right to working lunches, coffee breaks, teaching documentation and materials. The course fee is subject to VAT - which at the time of going to press is 19%. Payment of the registration fee should be as requested in the Application Form for each course.

Contents

The course illustrates the advanced technology that is available today for the management of sewerage systems and waste water treatment plants including the industrial application of the different subjects.

New sewerage design using computer applications.
Restructure and Optimization of Sewerage Systems Available methodologies for network analysis and control. Maintenance and Mains rehabilitation.

Fundamentals of gravitational sedimentation of suspended particles. Coagulation & flocculation of colloidal suspensions. Flotation Processes.

Screening, straining and equalisation. Clarification of water in pressure filters. Filter aid technology.

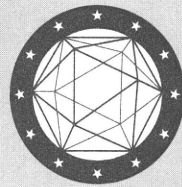
Application of membrane technology in microporous. Filtration, ultrafiltration and reverse osmosis. Adsorption of solutes by activated carbon and organo-clays. Ion exchange processes & chemical precipitation methods in water conditioning. Filtration in tertiary treatment for water reuse purposes. Technological aspects of Biofiltration.

Sludge characterization, handling and Rheology. Incineration & Landfill. Regulatory standards and specifications. Deodorization Techniques in waste water treatment plants.

ADVANCED WASTE WATER TREATMENT and TECHNOLOGIES

October 26th-28th 1992
Genova, Italy
European Training Course No.91-SP5.1

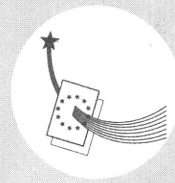
REGIONAL TECHWARE BUREAU



I T A L I A

T E C H W A R E
TECHNOLOGY FOR WATER RESOURCES

University-Enterprise Training Partnership



within the framework of
COMETT

Registration Fees

TECHWARE members 1000 ECU
Others 1500 ECU

The registration fee (plus VAT) shall be paid by bank transfer on the current account of Azienda Municipalizzata Gas e Acqua, Genova : c/c 942/90 - registered in the name of Azienda Municipalizzata Gas e Acqua at Banca CARIGE SpA - Dip. 090 - Genova, Italy

Registration Form

To confirm your participation to the course, please fill in the enclosed form and mail it as soon as possible to the course organizer : AMGA- GENOVA

Via SS. Giacomo e Filippo 7 - 16122 Genova, Italy
Tel : +39-10-28581 (Atention Mr. N. Bazzuro)
Fax : +39-10-2858284

Hotel Accommodation

Several hotels are available near the Conference Centre where the course will be held. Information about accommodation will be sent to the participants confirming their registration, so they may book their hotels.

REGISTRATION FORM

Family Name :
 First Name :
 Organization/Institution :
 Function/Responsibility :
 Field of Activity :
 Mailing Address :

 Phone : Fax : Date : Signature :

- I regist for Course SP3.3
 I wish to receive further information on the following course(s) : see list course code
 Please send me more information about TECHWARE
 I apply for TECHWARE membership
 Date Signature

Please return this form as soon as possible to :

AMGA-GENOVA
Attention Mr. N. Bazzuro
 Via SS. Giacomo e Filippo 7 - 16122 Genova, Italy
 Tel : +39-10-28581 Fax : +39-10-2858284

GENERAL INFORMATION ABOUT TECHWARE

TECHWARE Europe is a non-profit-making association of Universities, Enterprises, Applied Research Institution and Water Authorities. It was born in 1990 under the wings of COMETT, a programme set up by the European Community for spreading the technologies over the various activity sectors. TECHWARE Europe has its headquarters in Brussels.

The aims of the association are the study, the development and the diffusion of advanced technologies for the management of water resources.

TECHWARE Italia is a Regional Bureau of the European association. Its offices and organizational structure are at the Azienda Municipalizzata Gas e Acqua di Genova. The Italian Association is in charge of the organisation, management and co-ordination of European Training Courses during 1992 and 1993.

THE PHILOSOPHY OF THE COURSES

TECHWARE courses are a pan-European organisation with the aim of becoming a reference point for the management of the water sector.

The organisation offers the best update on the most advanced technologies of the sector through the contribution of more than 150 associates : Universities, Enterprises, Applied Research Centres and Water Authorities.

The presentation and comparison of scientific and industrial experiences, as well as the presence of teachers and participants from several different European countries ensure high quality and effective courses with an European dimension.

The association is aimed at a number of qualified participants able to best exploit the innovative contents of the courses.

TITLES OF THE COURSES CO-ORDINATED BY TECHWARE-ITALIA

- SP3.3 Advanced Waste Water Treatment and Technologies
 October 1992
- c1 Drinking and Waste Water : Network Analysis, Optimization and mains rehabilitation,
 May or June 1993
- c2 Flood Hazards in Mediterranean Countries
 June 1993
- c3 Advanced Management of Drinking Water Supply Systems : Water Quality and Treatment Processes
 October 1993
- c4 Reuse of Freshwater Resources in Groundwater Systems
 October 1993
- c5 Advanced Waste Water Treatment and Technologies
 December 1993

LECTURERS

The lecturers come from the foremost European Enterprises, Universities and Applied Research Institutions :

- Polytechnic of Milan - Hydraulic Institute, Italy
- University of Genova - Hydraulic Institute, Italy
- HR Wallingford, UK
- Loughborough University, UK
- UMIST - Manchester, UK
- Culligan Italiana S.p.A. - Bologna, Italy
- Memtec Europe Ltd., UK
- Chemviron Carbon, Belgium
- OTV Mediterranée - Toulon, France
- Azienda Po Sangone - Torino, Italy
- Vanpipe Ltd., UK

Objectives

- Transfer of up-to-date knowledge about modern methods of collecting the most relevant rainfall information needed in urban drainage and related topics
- Promotion of new technology - radar based rainfall data acquisition and transmission techniques
- Promotion of methods of using radars and raingauges in rainfall forecast and real-time control and operation of urban drainage systems
- Training of trainers

Course Venue

The course will be held at the Department of Water Resources Engineering, University of Lund, Box 118, S-221 00 Lund, Sweden
Phone : +46 46 108981 • Fax : +46 46 104435

Skills Needed

A background in basic urban drainage and surface water is recommended. English language skills are required.

General Information

The course will begin at 9.00 a.m. on Monday, 7th December 1992, and finish at 4.30 p.m. on Thursday, 10th December 1992. The course language will be English. A certificate of attendance and course completion will be issued to participants.

Accommodation

A block reservation for course participants will be made in one of the hotels in the city center of Lund. The cost of the single room is about 1,000 Swedish crowns (ca. 160 US\$ per night). Payment will be made by participants directly to the hotel on departure. To ensure your accommodation, please fill in the relevant fields in the enclosed registration and accommodation form, participants will be booked only after the course administration has received the payment of the course fee.

Course Organizers

TECHWARE - a well established, Europe-wide collaborative network of companies, professional associations, universities and research organizations in the water field. **TECHWARE's** main objective is the promotion and the realization of increased co-operation between universities and enterprises as far as information, instruction and continuing education is concerned.

Partner universities - the course is organized jointly by :

The Department of Water Resources Engineering,

University of Lund, Sweden.

The Department of Environmental Engineering,

Danish Technical University, Denmark.

Course Director

Assoc. Prof. Dr. Janusz Niemczynowicz
Department of Water Resources Engineering,
University of Lund, Box 118, S-221 00 Lund, Sweden.
Phone : +46 46 108981 • Fax : +46 46 104435

Participants

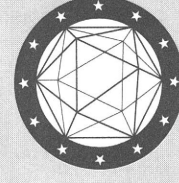
Graduate students, practising engineers, flood protection engineers, real-time control operators, consultants, researchers and specialists dealing with urban drainage and urban hydrology.

RADAR and RAINFALL in URBAN HYDROLOGY

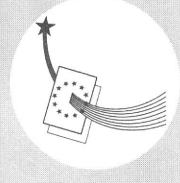
December 7th-10th 1992
European Training Course No.91-SP5.1



Department of
Water Resources Engineering
University of Lund
Lund, Sweden



T E C H W A R E
TECHNOLOGY FOR WATER RESOURCES
University-Enterprise Training Partnership



within the framework of
COMETT

INTRODUCTION

COURSE OUTLINE

The spatial variability of precipitation can never be accurately conveyed by a network of gauges. Thus, in most hydrological applications we deal with rainfall data which is inadequate for the problem in question. These difficulties are most obvious in urban hydrology - the hydrology of small "time- and space-scale".

The changing needs of society alter the goals of hydrological calculations. When the main objective was the simple design of conduits in towns or of dams and irrigation systems, it was sufficient to use simple design storm concept. The recent shift of our focus to sustainability and environmental protection requires more complex systems to be analysed in detail. For the modelling of processes such as pollution wash-off and transportation and the hydraulic and pollution effects of rainfall on treatment plants, for example, alternative rainfall data to the traditional sewer design is needed and quite a different overall approach is required.

The engineer needs rainfall data which matches the problem, and which requires a dense network of gauges and the use of radar and satellites. The number of this type application will grow very quickly in the future.

Introduction

Basic knowledge about physics of rainfall process, precipitation types, effects of urbanization, orographic effects. Point rainfall - areal rainfall.

Rainfall measurement by gauges

Types of gauges - benefits and drawbacks. Calibration and synchronization. Error sources and dissemination of data. Data processing, correction and storage.

Rainfall measurement by weather radar

Principles, types of equipment, error sources and calibration. Processing of output, application - possibilities and limitations. Merging of rainfall and radar data. Future perspectives. Case examples of applications.

Rainfall input

Requirements of rainfall data adequate for different urban applications. Basic and advanced statistics, space, time resolution. Types of rainfall input, Area reduction Factors, rainfall kinematics. Advanced processing of rainfall data

Rainfall real-time forecasting. Possibilities of fractal notion applications.

Field trip

Visit in Malmö - real time control of drainage system.

LECTURERS

(tentative)

Prof. Lars Bengtsson,

University of Lund

Ass. Prof. Janusz Niemczynowicz,

University of Lund

Dr. Thomas Einfalt,

Hydrotec GmbH, Germany

Prof. Per Jacobsen,

Technical University of Denmark

Prof. Cedo Maksimovic,

University of Belgrade

Dr. T. von Zweigbergk,

Ericsson Radar Electronics AB, Sweden

REGISTRATION FORM

To confirm my participation in the course. I am enclosing a cheque payable to : Department of Water Resources Engineering, University of Lund, Box 118, S-221 00 Lund, Sweden.

Family Name :

First Name :

Mailing Address :

Phone : Fax : Date : Signature :

ACCOMMODATION FORM

I would like to book : a single room for nights a double room for nights

I will be accompanied by

Date of arrival Date of departure

Date : Signed :

Payment for accommodation will be made directly to the hotel

Please return this form as soon as possible, it should reach course administration not later than 6th of November 1992 to :

Dr. Janusz Niemczynowicz

Department of Water Resources Engineering, University of Lund,
Box 118, S-221 00 Lund, Sweden • Fax : +46 46 104435

EDITORIAL

Tempus fugit! This is the first issue of the fourth year of publication of PANTA RHEI. Started in September 1989 as an information bulletin for ERASMUS ICP "Hydrology and Water management" and some minor projects under COMETT I, PANTA RHEI becomes in 1990 also the conveyor of the COMETT II-TECHWARE project, soon followed by the TEMPUS-JEP "EWA-Ring".

Thanks to a complementary grant for one year - all by all very modest and non renewable - from ERASMUS and TEMPUS, PANTA RHEI was able to uplift its lay-out and printing at the present level since September 1991. The blue and black colours represent the water quality extremes.

The objectives of PANTA RHEI, as listed on page 15, have not changed since the start: it is an **information** bulletin, exclusively for education and training. Hence we do not compete with any other scientific or technical journal in the water sector and we limit the information in calendar format to the specific education and training activities, such as courses and workshops or seminars or conferences on the subject of education and training. Conferences in general, advertised with a call for papers, are NOT included unless there is a pre- or post-activity related to education or training (e.g. a pre-conference short course).

Since PANTA RHEI is distributed on a free-of-charge basis, the mailing list is steadily increasing and reaches by now 4,750 copies. Among the EC-member states B, D, F, I, NL and UK receive each more than 400 copies, other EC-member states receive each between 100

and 400 copies. The EFTA and CEE-countries show an increasing interest and some reach already more than 100 copies.

This expressed interest and recognition is of course a great stimulant for the editors, but poses also a survival problem . . . which the supporting actors (i.e. the above mentioned ERASMUS-ICP, TEMPUS-JEP and COMETT-TECHWARE (the latter sharing more than half of the costs), cannot solve alone. Advertising has been very limited so far.

Conference organisers, publishing houses, manufacturers a.o. do not recognize yet the immense opportunity to advertise through PANTA RHEI at a large scale Europe-wide and beyond.

Thought should be given whether PANTA RHEI should continue on the same basis or explore other possibilities.

Research training, as introduced since the June-issue of this year, and the related EC-programmes HUMAN CAPITAL and MOBILITY and COST-CEEC with the TECHWARE proposals WEEL/BEST as Pan-European scientific network, subset of TECHWARE, may indeed offer new opportunities. We never despair.

The Editor

FRACTALS

Acque di Casarsa

Fontana d'acqua del mio paese.
Nessun'acqua è piú fresca che al mio paese.
Fontana di rustico amore.

Pier Paolo Pasolini

*in Nico Naldini: "Pasolini, una vita"
Einaudi, Torino 1989, p. 33*

- Editorial 3
- News from ERASMUS 4
- News from TEMPUS 5
- News from
COMETT/TECHWARE 6
- Forthcoming
TECHWARE activities 8
- SAST Project No. 6 10
- RESEARCH TRAINING 11
- CALENDAR 12
- JOB VACANCIES 14

CONTENTS

Enclosures : PLEASE POST LEAFLETS !

- TECHWARE-SPES
- TECHWARE-ETC/General
- Radar & Rainfall in Urban Hydrology
- Advanced Waste Water Treatment Processes & Technologies
- Water Supply Systems. State of the Art and Future Trends.

NEWS from ERASMUS

ICP : Interuniversity Cooperation Programme "Hydrology and Water Management"
Coordinator : Prof. A. Van der Beken (see address Editor)



Besides the ICP-activities, only accessible for recognized partners, **ERASMUS OFFERS Study visit grants** for individual or group visits of professors or academic responsables who want to study academic matters and/or prepare interuniversity cooperation within EC- or EFTA-countries.

Application is always open but selections are made 5 times a year. Therefore, if you are interested, submit your applications before :

1 October 1992

for a decision in December 1992.

1 January 1993

For a decision in March 1993.

1 April 1993

for a decision in June 1993.

Request application forms from :

ERASMUS Bureau

70, rue Montoyer straat 70
B-1040 Brussels

tel +32-2-2330111
fax +32-2-2330150
telex 63528

ERASMUS AND LINGUA Guidelines for Applicants Academic year 1993/94

This publication of May 1992 describes the financial support for activities under ERASMUS and action II of LINGUA.

Deadlines for ICP's : 31 October 1992.

Deadline for "free movers" : 1 January 1993

MULTILINGUAL TERMINOLOGY RESOURCES FOR TEACHING AND LEARNING ENVIRONMENTS

The Artificial Intelligence Group Department of Linguistic and International Studies and Department of

Mathematical and Computing Sciences
University of Surrey, Guildford, Surrey
GU2-5XH, UK

is preparing a project proposal under Action III of the LINGUA Programme.

The proposal is entitled "Multilingual terminology resources for teaching and learning environments"

Interested readers should contact K. Ahmad or H. Fulford on the above address.

THE ATLANTIC LINK

The EC prepares an agreement with the USA including the field of education and training. By the end of 1992 a pilot-project on academic exchange and a project on skill needs should be defined and adopted by both parties. News which will be welcome to our American colleagues who showed interest in the information published in PANTA RHEI from the start in September 1989.

ERASMUS ICP

"Hydrology and Water Management"

Name :

Address :

.....
requests a copy of the INFORMATION BROCHURE and the POSTER

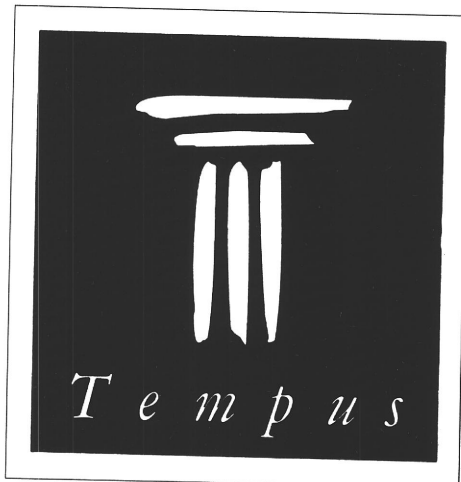
Date : Signature :

Return to the Editor of PANTA RHEI

NEWS from TEMPUS

JEP : Joint European Project

"Interuniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils" (EWA-Ring)



INFO

ESTONIAN TEMPUS OFFICE

New Address :
Valli 4
EE0100 Tallinn
Estonia
Tel +0143-660809
NMT +45-30846089
Fax +45+30248083

GENERAL ASSEMBLY

EWA-Ring will held its Annual General Assembly on **19-20 October 1992** in Brussels, Fondation Universitaire Stichting, rue Egmontstraat 5, B-1050 Brussels
For further information : please contact EWA-Ring.

COORDINATOR OF EWA-RING :
Prof. J. Bogardi, Department of Hydrology,
Soil Physics and Hydraulics.
Nieuwe Kanaal 11
NL-6709 PA Wageningen
tel : +31-83-7082778 / 7082293
fax : +31-837084885 / telex : 45015

EC TEMPUS Office

Montoyerstraat 14, B-1040 Brussels

tel +32-2-50407
fax +32-2-5040700

ON YOUR DESK

DIRECTORY OF HIGHER INSTITUTIONS IN CENTRAL AND EASTERN EUROPE

ISBN 92-826-3898-7
Office for Official Publications of the European Communities
L - 2985 Luxembourg

PHARE Assistance for economic restructuring in the countries of Central and Eastern Europe

An operational guide
Office for Official Publications of EC.
L-2985 Luxembourg, 1992, 33pp.
ISBN 92-826-4205-4

Contents

Introduction-General outline-How does Phare work ? Programme definition. Programme implementation-Questions and answers-Basic texts.
Annex I : Council Regulation (EEC) No 3906/89 establishing the Phare programme.

Annex II : Council Regulation (EEC) No 2698/90 extending the Phare programme.
Annex III : Council Regulation (EEC) No 3800/91 further extending the Phare programme.
Annex IV : Special provisions applicable to external aid-(extract from EC Financial Regulation May 1990).
Annex V : EC contact addresses.

Commission Delegations in the Phare beneficiary countries POLAND

Aleje Ujazdowskie 14
Warsaw
Tel. (48-2)6250770
Satellite line : (48)39120721
Telex 813802COMEUP
Telefax (48-2)6250430
Satellite fax : (48)39120731

HUNGARY

Bérc utca 23
1016 Budapest
Abbreviated No: 8388
Tel. (36-1)1664487/1664587
Telex (061)225984
Telefax (36-1)1664221
CSFR Hotel Diplomat
Evropska 15
16000 Praha 6
Tel. (42-2)3314332/3314334/
331/4194
Telefax (42-2)3314365

Info : Phare Operational Service

CEC-DG I - External Relations
rue de la Loi, 200, Wetstraat
B-1049 Brussels
Tel +32-2-2350026
Fax +32-2-2355387

Cooperation between industry and educational institutions EDUCATION IN EAST AND CENTRAL EUROPEAN COUNTRIES

Synopsis of a BP Information Seminar
Strasbourg, 12-13 December 1991
26 pp. April 1992.

Contents

Outcome-Recent developments in the labour market in Central and Eastern Europe-Education Programmes of the Commission of the EC-The education system in the former G.D.R.-a process of change towards new structures-Changes in School Systems. What independent schools can do-Education in East and Central European countries-Educational systems and management training in Czechoslovakia-The Hungarian Education system-The Education System in Poland-Education in Russia on the eve of market economy-Management training in the . . . (USSR...?)-Experience with training managers from Eastern Europe in Germany-Relationship between industry and education in East European countries-COMETT and enterprises. Opportunity knocks.

NEWS from COMETT

UETP : University Enterprise Training Partnership

TECHWARE - TECHNOLOGY for WATER RESOURCES

Coordinator : A. Van der Beken c/o CIBE-BIWM, Wolstraat 70, B-1000 Brussel

TECHWARE : A SUCCESS STORY ?

The COMETT Call 1992 offered TECHWARE new contracts with starting date 1 July 1992 as follows :

Strand Ba (Ref. No. 6619) : Placements in Industry of Students and Young Graduates (TECHWARE SPES)

Duration of contract : 25 months.
45 students and 270 student-months.

Strand Bc (Ref. No. 6620) : Personnel Exchange (TECHWARE PEP)

A three-month exchange between B and UK.
Strand Ca (Ref. No. 6621) : Short courses (TECHWARE ETC).

Duration of contract : 18 months.
13 courses and 17 sessions.

Strand Cb (Ref. No. 6622) : CALWARE - Computer-Aided-Learning in WATER RESOURCES Technology.

Duration of contract : 36 months.

TECHWARE selected for COMEX 1

TECHWARE has been included in the select list of experts and consultants to which the European Commission will apply for the provision of services in the field of diffusion and valorization of the results of Community RTD, i.e. COMEX 1 programme of DGXIII.

(Official Reference about COMEX 1 : Journal No. 91/C32/22 and No. 91/S238-38553 of 17 December 1991).

COMETT Beyond 1993 !

The Evaluation Report of COMETT (see PANTA RHEI No. 10, December 1991, p. 6) clearly indicated how resources available to sectoral UETPs are often low relative to the objectives and expectations.

Hence, the long-term viability of sectoral UETPs is on stake because the Strand A support for the networking itself is ending 31 August 1993. COMETT realizing this problem has created ACCOMPANYING MEASURES FOR UETPs aimed at strengthening the UETP network between September 1993 and the end of the COMETT programme.

TECHWARE 4th Meeting of the GENERAL ASSEMBLY

Lisboa, 12th June 1992

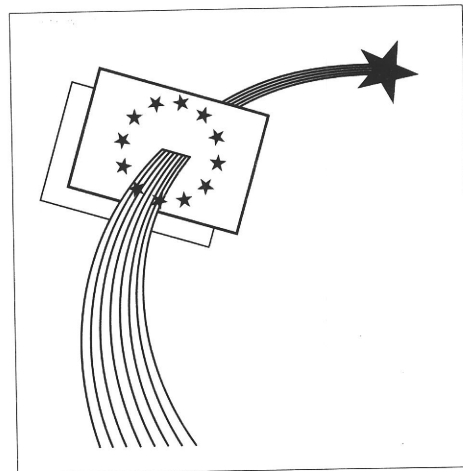
Election of mandates 1992-1994

• **President** : J. Dirickx, representative of IWUSA Foundation (UK)

• **Elected members of the Board of Management**

Coordinators G. Alaerts (NL); G. Baldi (I); R. Bazzano (I); E. Cabrera (E); J.B. Engelen (NL); L. Fuchs (D); P. Jacobsen (DK); J.W. Lyklema (NL); J.J. Peters (B); A. Rushton (UK); R. Sellin (UK); F. Siccardi (I); G. Tsakiris (GR); A. Van der Beken (B).

Supporters W. Bauwens (B); M-C Chapalan (F); S. Dautrebande (B); W. De Breuck (B); F. De



Troch (B); E. Doda (I); C.B. George (UK); W. Lapère (B); L. Lojelo (I); C.W. McLeod (UK); G. Pedrini (B); R. Petiau (B); T.G. Potma (NL); H. Romaen (B); R. Suerickx-Demarbaix (B); E. Todini (I); B. Van De Steene (B).

Other persons, representatives of countries

J. Kindler (PL); J.P. Lobo-Ferreira (P); C. Maksimovic (YU); A. Musy (CH); J. Niemczynowicz (S); S. Pöyry (SF); Ö. Starosolszky (H).

• Auditors

J. Wessel (NL) and J. Smits (B)

Membership dues 1993 (see elsewhere)

The dues are increased according to the average annual inflation rate in the EC-countries, i.e. 4,8%.

The General Assembly meeting was attended by official representatives of member-organizations, other representatives and guests, totalling 65 persons.

7th Meeting of the BOARD OF MANAGEMENT

Lisboa, 13th June 1992

Main decisions

• Officers

Vice-presidents : R. Bazzano (I), P. Jacobsen (DK).

Treasurer : R. Petiau (B).

UETP-coordinator : A. Van der Beken (B).

• Executive Committee

The President, the Vice-presidents, the Treasurer, the UETP-coordinator and another BM-member : J.W. Lyklema (NL).

Co-opted : R. Sellin, chairman of the Regional TECHWARE Bureau UK.

• Co-opted members of the BM

V. De Kosinsky (B); A. Garito (I); W. Govaert (B); M. Leemans (B); G. Meuret (B); A. Szöllösi-Nagy (F).

Task Forces

The following existing Task Forces were confirmed till the next BM meeting :

1. Computer Conferencing, chairman P. Jacobsen (DK)

2. WEEL-Water Environment European Laboratories, chairman : F. Siccardi (I)

The following new Task Forces were created. The Executive Committee will confirm the chairpersons and terms of reference of each Task Force.

3. CALWARE - Computer-Aided-Learning for WATER RESources technology
4. Members Directory
5. Water Environment/Reuse/Water Technologies
6. Engineering, Computer Applications and Modelling
7. Socio-Economic aspects.

Coordinating Committee (CC)

The BM agreed with the proposal of the former Task Force "The Future of TECHWARE" to install a Coordination Committee, composed of the UETP-coordinator (chairman), the chairmen of the RTBs and the Secretary-General. The CC will prepare a blueprint of the new structure and management of TECHWARE including the role of the RTBs and the financing beyond 31 August 1993. This blueprint will be discussed at the next meeting of the BM on 20-21 November 1992 at Copenhagen, DK.

Acknowledgements

LNEC-Laboratorio Nacional de Engenharia Civil in Lisboa was hosting the above meetings in a most pleasant way, thanks to the efforts of BM-member J.P. Lobo-Ferreira.

All speakers of the Opening and Technical Sessions are gratefully acknowledged as well as EPAL for organizing the visit to the most interesting WATER Museum of Lisboa and for offering the refreshing reception.

TECHWARE-MEMBER HONOURED

The 1992 Stockholm Water prize was awarded to : **The Department of Environmental Engineering at the Technical University of Denmark under the leadership of Professor Poul Harremoës.**

The Department of Environmental Engineering wins the Stockholm Water Prize for its research and development programme, for its scientific approach and for its international collaboration with the water industry to reach practical application. The research and development of the department has contributed substantially to water pollution abatement in Denmark, in Scandinavia and internationally.

The achievements have been made in several different fields of water treatment. What distinguishes the Department of Environmental Engineering is the depth of the research in all the different fields. Mathematical models have been developed and used all over the world. In addition to that, considerable effort has been made to teach and train a new generation of experts.

The department has within the last years contributed significantly to our understanding of pollutants in groundwater and to the development of tools for protection of this vital water resource.

Fundamental theories for nitrogen removal processes in activated sludge have been developed. The results have lead to technologies that are being applied all over the world.

Abatement of pollution from urban storm drainage and combined sewer overflows has been high on the priority list of the Department. During the last few years the Department has contributed in the forefront to the understanding of the need for an integrated approach to the total system : sewerage, wastewater treatment and receiving waters.

The research in metals in sewerage sludge has shown that sludge is a relatively minor contributor of metals to agricultural land, compared to the much larger inputs with fertilizers and from the atmosphere.

The Department has renewed the concepts of water pollution abatement in teaching. Recently, the Department has developed a new concept of international courses, "the international classroom", based on telecommunication via computers between teachers and pupils, distributed over Europe.

TECHWARE is proud to have the 1992 Stockholm Water Prize winner among its membership and congratulates sincerely Prof. P. Harremoës and his collaborators, especially Prof. Per Jacobsen, Vice-President of TECHWARE and coordinator of "the international classroom", a TECHWARE-product.

RECIPROCAL MEMBERSHIP

The sectoral UETP EEE-Environmental Engineering Education is a very active one hosted by the Engineering Society of Finland STS. EEE is strongly represented in the Scandinavian countries as well as in GR and UK. Its sectoral activity domain is broader than TECHWARE's sectoral domain and it is agreed between EEE and TECHWARE that a cooperation should be developed.

TECHWARE's coordinator attended tEE General Assembly in Helsinki on June 2, 1992 and EEE's coordinator Mrs. Sirka Pöyry has been elected member of the Board of Management of TECHWARE. She is also member of one of the Task Forces planning and coordinating TECHWARE ETC.

TECHWARE AND IACEE

TECHWARE became member No. 545 of the International Association for Continuing Engineering Education IACEE.

IACEE is a world-wide well recognized association established in May 1989 at the 4th World Conference on Continuing Engineering Education in Beijing, China.

Membership of IACEE is over 550 from 67 countries. The IACEE Council counts the following countries : USA (presidency), China (vice-presidency), West Indies, Iraq, Russia, Belgium, UK, New Zealand, The Netherlands, Japan, Kenya, Mexico, Finland, India and Brazil.

Headquarters of IACEE are at

Helsinki University of Technology, TKK
Innopoli, SF-02150 ESPOO, Finland
Tel +358-0-4514028
Fax +358-0-4514068

TECHWARE was represented at the 5th World Congress on CEE by its coordinator Prof. A. Van der Beken who presented a paper, co-authored by Prof. F. Siccardi on : "Engineering Education in the field of Water Environment"

"CONTINUING ENGINEERING EDUCATION"

Proceedings 5th World Conference on CEE.
Vol. 1 : 581-588.
(Proceedings available at the prize of 99 US\$ for TECHWARE members).



TECHWARE EUROPEAN TRAINING COURSES - Edition June 1992

A summary of all courses is now available and can be ordered free of charge from the Secretariat. Please fill in and return :

I request the summary of all course descriptions, free of charge.

Name :

.....

Address :

.....

.....

Return to the Editor of PANTA RHEI

FORTHCOMING TECHWARE ACTIVITIES

EUROPEAN TRAINING COURSES

SP 2.3

GEOCHEMICAL MODELLING TECHNIQUES FOR HYDROGEOLOGISTS

Wallingford - United Kingdom
28 September - 2 October, 1992

The fundamentals of chemical reactions, activity calculations, speciation, saturation state and chemical equilibrium processes will be discussed. This is followed by a step-by-step presentation of the theory and application of hydrogeochemical models.

SP 1.1

COASTAL ENGINEERING

Venice - Italy
01-03 October, 1992

The aim of this course is to give the fundamentals of risk evaluation of coastal structures and to illustrate some practical applications, with special emphasis on Mediterranean conditions (low tide and short waves).

SP 4

WATER SUPPLY SYSTEMS State of the Art and Future Trends

Valencia - Spain
19-23 October, 1992

Many new computational methods have been proposed to analyze the steady and unsteady flow in a drinking water distribution network. These will be presented to the course attendees and compared for their practicality and ease of use. Hydraulic transient pressure networks will be introduced. Computer aided operation and control of pressure zones of water distribution networks will be focused. This course on automated operation and control of water distribution systems will enable the water supply engineer to maintain a physically sound system.

SP 1.1

COASTAL ZONE MANAGEMENT COASTAL ENVIRONMENT

Monselice - Italy
19-22 October, 1992

Water movement in the sea and in inlets - Salinity and sedimentation - Coastal morphology and dynamics - Coastal protection - Ecology of coastal waters - Sea-level variations.

COASTAL ZONE MANAGEMENT LAND AND WATER USES

Monselice - Italy
23-25 October, 1992

Industry and urbanisation - Agriculture - Fisheries and aquaculture - Recreation - Navigation - Dredging and disposal of dredged material.

COASTAL ZONE MANAGEMENT MANAGEMENT TOOLS

Monselice - Italy
26-28 October, 1992

Off-shore survey techniques - GIS and integration in coastal management - Principles of international maritime law - National legislation and its enforcement - Public finance and coastal zone management - Economic analysis of projects.

COASTAL ZONE MANAGEMENT IMPACT ANALYSIS

Monselice - Italy
29-30 October, 1992

Various procedures for drafting an environmental impact statement - Study of social impact of a coastal zone project.

SP 3.3

ADVANCED WASTE WATER TREATMENT PROCESSES & TECHNOLOGIES

Genova - Italy
26-28 October, 1992

The course illustrates the advanced technologies that are available today for the management of sewerage systems and waste water treatment plants including industrial application of the different subjects.

SP 5.5

ENVIRONMENTAL TRACE ANALYSIS : a State of Art Review of Instrumentation and Technologies

Sheffield - United Kingdom
16-20 November, 1992

The present course focuses on trace inorganic and organic determination and the analytical capabilities of ICP emission spectrometry, ICP mass spectrometry, GC-mass spectrometry and LC-mass spectrometry.

SP 3.4

ADVANCED SOLID LIQUID SEPARATION IN WASTE WATER TREATMENT AND SLUDGE HANDLING

Wallingford - United Kingdom
16-21 November, 1992

Subjects covered in this short course include : gravitational sedimentation, membrane separation technologies and biological processes; activated charcoal, clay absorption and ion exchange; solids handling and dewatering technologies; and ozonation and UV oxidation processes.

SP 3.2

ADVANCED DESIGN CONCEPTS FOR INTEGRAL DRINKING WATER TREATMENT

Delft - the Netherlands
30 November - 4 December, 1992

Recent developments in standards and public health policies - New insights in toxicology - Water resources and their quality management - Best available technologies, integral quality management and insurance - Desinfection - Pesticides and other organic micropollutants - Other emerging new problems and technologies.

SP 5.1

RADAR AND RAINFALL IN URBAN HYDROLOGY

Lund - Sweden
07-10 December, 1992

The purpose of the course is to promote modern methods of collection and applications of rainfall data, and the use of radar-based technology for rainfall measurement in order to meet the needs of engineers involved in urban drainage and related topics. The rainfall input is the most important aspect of many hydrological and environmentally-based calculations, modelling and real-time control operations.

SP 2.2

REGIONAL HYDROLOGICAL SYSTEM ANALYSIS

Delft - the Netherlands
14-18 December, 1992

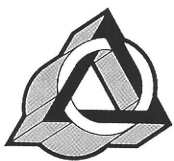
Regional hydrological systems analysis will be explored as a tool for integrated water resource management. The course will cover the following topics : conceptual modelling of flow systems involving hydrochemistry, land use and topography; remote sensing; isotope hydrology and geophysical methods; mathematical modelling involving 3D stationary flow; 3D transient flow, finite difference methods, and physical transport phenomena.



services

- water services
- environmental monitoring
- energy services and natural gas distribution

advanced technology training



STAGE
SVILUPPO TECNOLOGIE
ACQUA GAS EUROPA

training centre

Training at HR Wallingford

HR Wallingford is a high technology research, consultancy and training organisation specialising in civil engineering hydraulics and management of the water environment.

Training activities include transfer of key technologies and skills through:

- study programmes
- fellowships and research placements
- courses, seminars and conferences
- publications
- software and equipment sales and training

To find out more, contact:

John Millns
Head of Training and Technology,
HR Wallingford Ltd, Wallingford,
Oxfordshire OX10 8BA. UK
Tel. + 44 491 35381 Fax. + 44 491 26703



HR Wallingford

International Water Supply Association
Association Internationale des Distributions d'Eau

UNITING THE WORLD OF WATER
LE MONDE DE L'EAU S'UNIT



I W S A

A I D E

The "MAARTEN SCHALEKAMP AWARD"
is to be awarded in Budapest, October 1993
Le "PRIX MAARTEN SCHALEKAMP"
sera attribué à Budapest en octobre 1993

includes two prizes, intended to motivate young engineers and scientists, both for scientific research and innovation oriented work in water supply, one to be awarded to entrants employed full-time in practice of water supply, the other to a full-time student in a water-related field

comprend deux prix, visant à motiver de jeunes ingénieurs et chercheurs, pour des travaux de recherche scientifique ou d'innovation dans le domaine de la distribution d'eau; l'un sera remis à un candidat engagé à plein temps dans un domaine lié à la distribution d'eau, l'autre à un étudiant à plein temps engagé dans des études se rapportant à la distribution d'eau.

Information :
International Water Supply Association (IWSA)
Association Internationale des Distributions d'Eau (AIDE)
1 Queen Anne's Gate
London, SW1H 9BT, Great Britain



**TECHWARE
Membership Dues
1992 and 1993**

Decisions of the General Assembly
of Genova, 20 April 1991
and Lisboa, 12 June 1992

- Individual Consultant 200 ECU/210 ECU
- University, Research Institute (Lab or Dept.), School/Non-commercial 220 ECU/230 ECU
- Enterprise/Undertaking/Authority (less than 200 employees) COMETT Size codes S1-S2-S3 300 ECU/315 ECU
- Professional and Scientific Association, UETP'S, Federation of Enterprises 400 ECU/420 ECU
- Enterprise/Undertaking Authority (more than 200 employees) COMETT Size codes S4-S5-S6-S7 500 ECU/525 ECU

**FOR ALL
FURTHER
INFORMATION,
please contact :**

• **CTB-Coordinating TECHWARE Bureau**
c/o CIBE-BIWM
Wolstraat 70, rue aux Laines
B-1000 Brussels, Belgium
tel +32-2-5188893
NEW FAX : +32-2-5026735
Bank Accountnumber :
ASLK-CGER BANK
P.O. 1436-Brussels 1
B-1000 Brussels
telex 26860 - fax +32-2-2139117
For easy and quick money transfer,
use code :
61189 SWIFT CGAK BE BB

• **RTB-I: Regional TECHWARE Bureau**
c/o AMGA,
Via SS. Giacomo e Filippo 7
I-16122 Genova, Italy
tel +39-10-28581
fax +39-10-2858284

• **RTB-UK : Regional TECHWARE Bureau**
c/o HR Wallingford
Wallingford
UK-OX 10 8BA Oxfordshire
Great Britain
tel +44-491-3538
fax +44-491-32233

SAST Project No.6

RTD for Freshwater Resources Management in the Community

Outcome of the European Workshop

Lisboa, 11-13 May 1992

TECHWARE participated actively in this Workshop which was the last stage of the Project No. 6 "RTD for the Supply and Use of Freshwater Resources" undertaken for the SAST (Strategic Analysis in Science and Technology) Unit of the Directorate-General DG XII for Science, Research and Development of the CEC.

SAST activities are part of the MONITOR Programme which aims to identify new directions and priorities for EC-RTD policy and to help show more clearly the relationship between RTD policy and other EC policies.

The Workshop had 60 participants from all EC Member States as well as from EC-DG's and international organizations. These participants were selected according to their expertise as related to freshwater management and have discussed the reports presented by the contractors, i.e.

1. Regional integration for RTD in freshwater resources management by TECHWARE (Editor : B. Engelen)*
2. Demand and use of freshwater resources by TECHWARE (Editor : F. Siccardi)*
3. New sources and better use of existing sources by TECHWARE (Editor : J.J. Peters)*
4. Data needs and modelling by Krüger Consultants (DK)
5. Storage and distribution by Water Research Center (UK)
6. Overview Report by ECOTEC (UK)
7. Strategic Dossier by ECOTEC (UK)

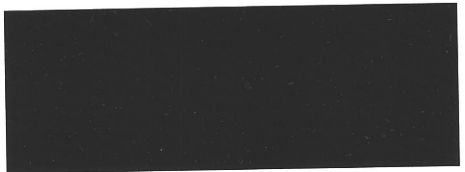
* The TECHWARE reports have been prepared by ca. 50 TECHWARE-members representing 11 European countries. The report on Regional Integration had not been foreseen in the original planning but has been proposed by TECHWARE in the mid of the project-period and was very well regarded. The project lasted for about 18 months.

Discussions were organized in three groups :

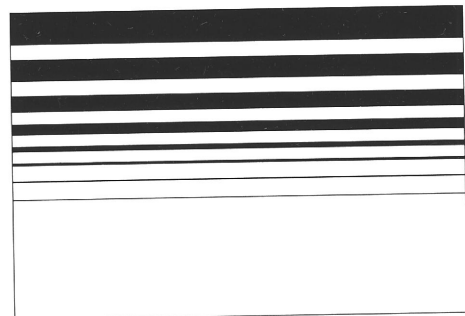
- A Science and Technology
- B & C Economics and Actors
- D Policy

The rapporteurs of each group presented their reports in a joint session followed by a plenary discussion. The workshop ended with a round table discussion.

Among the questions discussed, we highlight a few issues :



SAST



Should a new specific EC Water Resources Programme be created ? Items considered important for this programme are :

- Integrated research at the different space and time scales
- Economic and social sciences researched from the water resources point of view. This research should be concentrated largely on a limited number of "Pilot areas", i.e. watersheds and international river basins.

Broad fields of RTD considered as most important in the B+C group were :

- Information technology and other tools for integrated water management
- Cost-related water management
- Integration of environmental aspects - priorities and environmental accounting. Here again, Pilot Projects in selected international river basins were advocated.

With regard to policy, conclusions a.o. were:

- "Source-oriented" research comes first, "end of the pipe" solutions, i.e. cleaning water comes next.
- R&D should be performed for its own sake but R&D should also be reformed as a support to other EC policies and for the preparation of regulatory instruments (e.g. EC-directives).
- Establishment of networks to exchange experience and multidisciplinary and transboundary training activities to develop a set of common practices (cfr. HUMAN CAPITAL and MOBILITY Programme - this issue of PANTA RHEI).

During the Round Table discussion it was stressed that the Strategic Dossier should not restrict itself to the EC-boundaries. Central and Eastern Europe issues should be included (cfr. the COST-CEEC programme - this issue of PANTA RHEI). Besides, the EC has a moral obligation to share knowledge with developing countries (see issue No. 12 of PANTA RHEI).

Finally, following the request of the Portuguese Minister of the Environment who opened the Workshop, a statement was compiled.

The Workshop has :

Recognised that

- the European RTD efforts in relation to freshwater suffer from dispersion and fragmentation, and are not evenly spread across the Community;
- RTD policy is to be considered in accordance - but not confused - with other policies in this sector, each having their own motivations and dynamics;
- in general terms, the RTD agenda for this sector should consider the needs of a whole range of economic actors, encompassing the management, treatment and use of this resource, and thus consider both preservation (including clean technologies) and clean-up methods and tools (the latter with particular regard to the problem of diffuse sources of pollution);
- in many circumstances, there is a need to improve communication and dialogue between all economic actors concerned, particularly when the resource is shared between different countries, as in the case of international river basins.

Recommended to

- strengthen research at Community level in relation to freshwater - involving scientific and technological, as well as social and economic disciplines - with particular attention to the areas of standard setting and observance, data collection and processing, demand and use, and actors' behaviour;
- reinforce, Community-wide, the mobility and training of water-experts from universities and other organizations;
- set up a concertation structure for improving the links between research programmes on water-related aspects, and between research and other water-related initiatives.

Availability of SAST Project No.6 documents

- the Executive Summaries and Tables of Contents of all TECHWARE reports (see above) are available, free of charge for members, at the Coordinating TECHWARE Bureau, Brussels.
- the Memorandum on the Outcome of the European Workshop on RTD for Freshwater Resources Management in the Community (June 1992) is available from Mr. E. Forti, SAST, EC-DG XII, rue Montoyerstraat 75, B-1040 Brussels.
- all reports mentioned above will become available in extenso through the Office for Official Publications of the EC, Luxembourg, in the fall of 1992. PANTA RHEI will inform as soon as possible.

WEEL-BEST

TECHWARE has submitted proposals to both new DGXII programmes called "HUMAN CAPITAL and MOBILITY (HCM)" and COOPERATION in S&T with Central and Eastern European Countries (COST-CEEC).

The HCM-proposal submitted on 3 July 1992, under Area 2 : networks among research teams and laboratories, is entitled :

WEEL - Water Environment European Laboratories
Pan-European scientific network for integrating the disciplinary components of the water sciences and technologies : RTD for regional integrated water management.

Coordinator of WEEL is Prof. F. Siccardi (University of Genoa, Italy).

The proposal number is 2/ERB 4050 PL 921686.

WEEL-partners form a sub-set of TECHWARE-members specifically interested in research.

For the time being WEEL comprises 30 participants from A, B, F, GR, I, P and UK who signed the official proposal forms before the deadline.

However, many more research organisations have sent letters of intent and WEEL, if accepted by HCM, will expand and include the new partners in the second call for HCM-networks which is expected in November 1992.

Within the COST-CEEC programme, TECHWARE has applied for :

Action B1 : SCIENTIFIC NETWORKS

BEST - Building of Extension of S&T network TECHWARE/WEEL in Central and Eastern Europe.
Ref. No. 33614

Action B2 : EUROPEAN CONFERENCES, WORKSHOPS AND TRAINING SEMINARS

Series of three Workshops with the RTD networks BEST and WEEL of TECHWARE.
Ref. No. 33612

These workshops cover the theme
WATER ENVIRONMENT TECHNOLOGY FOR SUSTAINABLE SUPPLY AND USE OF WATER RESOURCES

- Modern Philosophies and New Concepts for Integral Water Treatment.
- Impact of Natural Organic Matter on Water Treatment.
- Prevention of the Effects of Eutrophication on Water Resources Quality and Use.

Action D : DECLARATION OF EXPRESSION OF INTEREST FOR PARTICIPATION IN EUROPEAN COMMUNITY RTD PROGRAMMES

Participation of BEST/WEEL in Central and Eastern Europe
Ref. No. 33613

General coordinator of BEST is Prof. J. NEMEC.

INFO

Programme of Research Fellowships in Toxicology (PFT) - Toxicology and Environmental Toxicology

short-term visiting fellowships (up to 2 months) : application minimum 3 months before starting

research fellowships (3 to 12 months)

application deadline : 15 October 1992

INFO : ESF - European Science Foundation

Quai Lezay-Marnésia 1, F-67000 Strasbourg

Fax : +33-88370532

ESF organizes a European Research Conference on "Natural Waters and Water Technology : Organic Matter" Espinho, Portugal, 4-8 October 1992

EC-DGXII

Expressions Of Interest (E.O.I) are invited for new research themes in the COST-actions for the general Chemistry field. Among the themes is :

D1 Coordination chemistry in the context of biological and environmental studies.

INFO : EC-DGXII-COST

rue de la Loi, 200, Wetstraat, B-1049 Brussels

Tel +32-2-2351111

FURTHER INFORMATION

75 Rue Montoyer, B - 1040 Brussels

For COST-CEEC

Commission of the European Communities
Scientific and Technical Cooperation
with Central and Eastern European Countries
Fax +32-2-2363308

For HCM

CEC-DGXII-H-1
Fax +32-2-2363307

International Scientific Cooperation with the EC is possible for many Asiatic and Latin-American (ALA) countries and Mediterranean (MED) countries.

Support for Joint Research Projects (JRP), Post-doctoral Fellowships and Workshops is possible, but all proposals must be introduced through the national authorities of the countries. For the MED-countries specific interuniversity cooperation is possible within the MED-CAMPUS programme.

AVICENNE is a S&T programme for the MED-countries geared towards the environment and health protection. Action 4 concerns the development of water resources and desalination. Deadline for AVICENNE-proposals is 30 September 1992.

INFO : EC-DG XII, International Scientific Cooperation
rue de la Loi, 200, Wetstraat, B-1049 Brussels
Tel +32-2-2351111

NATO has an International Scientific Exchange Programme. This programme supports :

Advanced Study institutes (ASIs) : courses of 14 days duration about important new scientific topics.

Advanced Research Workshops (ARWs) : workshops of 4-5 days on the state-of-the art and for recommendation for further research.

Collaborative Research Grants, also open to CEEC.
INFO : NATO Scientific Affairs Division, B-1110 Brussels.

RESEARCH TRAINING

NOTE : In view of PANTA RHEI's objectives, this calendar includes only educational and training or related activities in the field of water and ERASMUS-ICP, TEMPUS-JEP, COMETT and HCM or COST-CEEC meetings.

SEPTEMBER 1992

20-24/9 **30**
Portsmouth (UK)
1992 World Conference on engineering education

21-25/9 **14**
Varese (I)
EUROCOURSES
Technologies for Environmental Cleanup : Soil and Groundwater

22-25/9 **3**
Santiago de Compostela (E)
Annual Conference 1992
Influences in the Development of Peripheral Regions : New Technologies and Higher Education

22,23,29/9 **4**
Delft (NL)
Course
Sturing van de Drinkwaterproductie

26-28/9 **15**
Poitiers (F)
9ième Colloque : Journées Information Eaux

28/9-2/10 **42**
Wallingford (UK)
TECHWARE ETC SP2.3/Short Course
Geochemical Modelling Techniques for Hydrogeologists

28/9-2/10 **9**
Trondheim (N)
UETP-EEE/Short Modular Course
Environmental Safety Education
Reliability Engineering

28/9-10/12/93 **31**
Lausanne, Neuchâtel (CH)
Interuniversity Postgraduate Training Course in Hydrology and Hydrogeology
Cycle postgrade interuniversitaire hydrologie et hydrogeologie

28/9-16/10 **34**
Southampton (UK)
Institute of Irrigation Studies
Short course
Effective Irrigation Management

OCTOBER 1992

Delft (NL) **5**
IHE Delft/Short course - 1 week
Applied Modelling of Ground Water Pollution

10/92-9/93 **5**
Delft (NL)
Post-graduate Diploma courses (11 months) & MSc-courses (6-8 months)
Hydraulic Engineering-Hydrology, Sanitary Engineering, Environmental Science & Technology-Water Quality Management-Advanced Environmental Sanitation

1/10 **23**
Gent (B)
State University of Ghent
Msc in 2 academic years
Interuniversity Postgraduate Training in Aquaculture

1/10 **24**
Gent (B)
State University of Ghent
Centre for Environmental Sanitation
Msc in 2 academic years
Interuniversity Postgraduate Training in Environmental Sanitation

1/10 **25**
Gent (B)
State University of Ghent
Msc in 2 academic years
Interdisciplinary Postgraduate Programme in Desert Science (Eremology)

1/10/92-9/93 **35**
Galway (IRL)
University College Galway
International Hydrological Post-graduate Programme

1-2/10 **6**
Brussels (B)
TEMPUS Conference
Role of Higher Education in the reform Process of Central and Eastern Europe

1-3/10 **7**
Venice (I)
TECHWARE ETC SP1.1/Short Course
Coastal Engineering

4-16/10 **36**
Graz (D)
Intensive German Courses

5-9/10 **10**
Berlin, Warsaw, Prague, Budapest & Wien
4th European Congress on continuing Education & Training "Eurotrain for Training"

10-10/10 **11**
Paris (F)
Colloquium
Multimedia, Research and Scientific Education in Europe

12/10 **13**
Plymouth (UK)
Workshop
Higher education, training and the EC. Towards a regional response

12-13/10 **16**
York (UK)
Training Course & Workshop
Site investigation practice for contaminated land & groundwater

12-13/10 **2**
Wallingford (UK)
HR Wallingford/Course
Timeseries Rainfall for Urban Drainage Models

14-15/10 **2**
Wallingford (UK)
HR Wallingford/Seminar
Harbour and Approach Channel Sedimentation and Navigation

15-16/10 **16**
Northampton (UK)
Training Course & Workshop
Site investigation practice for contaminated land & groundwater

16-17/10 **17**
Thessaloniki (GR)
3rd COMNET European Forum
"The Human Capital and Mobility Programme & Effective Management in UETPs"

19-22/10 **19**
Monselice (I)
TECHWARE ETC SP1.1
Coastal Zone Management Coastal Environment

19-23/10 **8**
Valencia (E)
TECHWARE ETC SP4
Water Supply Systems : State of the Art and Future Trends

19-23/10 **9**
Trondheim (N)
UETP-EEE/Short Modular Course
Environmental Safety Education
Reliability Engineering

20-22/10 **2**
Wallingford (UK)
HR Wallingford/Course
Instrumentation and Measurement Techniques

22/10 **2**
Harrogate (UK)
HR Wallingford/Seminar
Design of Soakaways

23-25/10 **19**
Monselice (I)
TECHWARE ETC SP1.1
Coastal Zone Management Land and Water

26/10 **13**
Bristol (UK)
Workshop
Higher education, training and the EC. Towards a regional response.

26-28/10 **18**
Genova (I)
TECHWARE ETC SP3.3
Waste Water Treatment Processes and Technologies

26-28/10 **19**
Monselice (I)
TECHWARE ETC SP1.1
Coastal Zone Management Management Tools

26-30/10 **2**
Wallingford (UK)
HR Wallingford/Modular Course
Computational hydraulics

28-29/10 **20**
Diegem (B)
Seminar
Eco-Audits and Environmental Assessment in the European Community

28-30/10 **37**
Genova (I)
Seminar
Sistemi di telemisura per il controllo e la gestione dell'ambiente. Applicazione all'acqua intesa come risorsa

29-30/10 **19**
Monselice (I)
TECHWARE ETC SP1.1
Coastal zone Management Impact Analysis

NOVEMBER 1992

Delft (NL) **5**
IHE Delft/Short Course
Applied Modelling of Ground Water Chemistry

2-6/11 **9**
Trondheim, (N)
UETP-EEE/Short Modular Course
Environmental Safety Education
Risk analysis

2-11/11 **39**
Corrientes (ARGENTINA)
Regional Short Training Course on Practical Control of Lake and Reservoir Eutrophication.

2-27/11 **5**
Delft (NL)
IHE Delft/3rd Senior Advanced Course
Appropriate Modernization and Management of Irrigation Systems

3-5/11 **28**
Berlin (D)
Conference
Initiatives for a changing world : Perspectives and Strategies for International Educational Exchange in Europe and the World

3-15/11 **26**
Erice, Sicily (I)
International School of Water Resources Management-13th Course
Coping with floods

8-14/11 **32**
Manchester (UK)
International Seminar
Science and technology policy : key issues and strategies

9-13/11 **40**
Karlsruhe (D)
UETP-EEE/Conference
A development conference on Environmental Training in Engineering Education

10-12/11 **33**
Karlsruhe (D)
LearnTec/Conference
1st European Conference and Trade Show on Educational Technology

11-12/11 **2**
Wallingford (UK)
HR Wallingford/Seminar
Environmental aspects of estuary and coastal water management

16-20/11 **1**
Sheffield (UK)
TECHWARE ETC SP 5.5/Course
Environmental Trace Analysis : A State of the Art. Review of Instrumentation and Technologies

16-21/11 **48**
Wallingford (UK)
TECHWARE ETC SP 3.4/Course
Advanced Solid Liquid Separation in Waste Water Treatment and Sludge Handling

23/11-18/12
Moscow (RUSSIA)
Training Course

38

New methods for the Processing, Analysis and Quality Control of Hydrometeorological Data

23-27/11
Trondheim (N)
UETP-EEE/Short Modular Course
Environmental Safety Education
Risk analysis

9

30/11-4/12
Delft (NL)
TECHWARE ETC SP3.2/Short Course
Advanced Design Concepts for Integral Drinking Water Treatment

12

30/11-4/12
Hofors (S)
UETP-EEE/Short Modular Course
Emission and Dispersion Modelling

21

DECEMBER 1992

7-10/12
Lund (S)
TECHWARE ETC SP 5.1/Course
Radars and Rainfall in Urban Hydrology

29

8/12
Wallingford (UK)
HR Wallingford/Seminar
Computers in irrigation

2

10/12
Wallingford (UK)
HR Wallingford/Seminar
Recent developments in sea wall design

2

14-18/12
Delft (NL)
TECHWARE ETC SP 2.2/Course
Regional Hydrological System Analysis

43

1993

21-24/3-Cambridge, Massachusetts (USA)
The Tenth International Conference on Technology and Education

41

22-26/3 & 3-7/5 - Trondheim (N)
UETP-EEE /Short Modular Course
**Environmental Safety Education
Safety Management**

9

4-6/5 - London (UK)
Conference
International Training Equipment Conference-Incorporating Simulation in Concurrent Engineering

44

23-28/5 - Washington, DC (USA)
**Several Short Courses
1993 International Conference on Hydro-Science & Engineering**

45

16/8-26/11 - Wageningen (NL)
32nd International Post-Graduate Course on Land Drainage

46

30/8-3/9 - Dublin (IRL)
8th World Conference on Co-Operative Education

47

6-11/9 - The Hague (NL)
**15th International Congress on Irrigation and Drainage
Research and training programs and their influence on institutional management performance**

22

A D D R E S S E S

- 1 DR. C.W. McLeod
Sheffield city Polytechnic
Chemical Analysis
Research Centre
Pond Street
UK-S1 1WB Sheffield
Fax : +44-742-533066
- 2 HR Wallingford
Wallingford, Oxfordshire
OX10 8BA, UK
Tel : +44-491-35381
Fax : +44-491-26703
- 3 Fundacion Empresa
Universidad Gallega
(FEUGA)
Tel : +34-81-572655
Fax : +34-81-570848
- 4 Stichting Postacademisch
Onderwijs
Gezondheidstechniek en
Milieutechnologie
PB 5048, 2600GA Delft
Tel : +31-15-784618
Fax : +31-15-784619
- 5 IHE Registrar
P.O. Box 3015
NL-2601 DA Delft
Tel : +31-15-783404
Fax : +31-15122921
- 6 TFHR/TEMPUS
Tel : +32-2-5040711
- 7 ICCE '92 Secretariat
c/o ENDAR, Centro Congressi
Icola di S. Giorgio Maggiore
30124 Venezia, Italy
Fax : +39-41-5286846
- 8 Dr. A. Rushton
UMIST
Department of Chemical Engineering
c/o Colynwood,
Claremont Drive, Timperley
UK-WA14 5NE Cheshire
Fax : +44-619-2004399
- 9 SINTEF
Safety and Reliability
Mr. Stian Lyndersen
N-7034 Trondheim
Tel : +47-7-597053
Fax : +47-7-592896
- 10 BBJ Services GmbH
Berlin
Tel : +49-30-3908050
- 11 Mr. Quiniou
17, rue de Lancry
F-75010 Paris
Tel : +33-1-46341885
Fax : +33-1-43292041
- 12 Prof. G.J. Alaerts
IHE/International Institute for
Hydraulic and Environmental
Engineering
Oude Delft 95, PO Box 3015
NL-2601 DA Delft
Fax : +31-15-122921
- 13 Continuing Education
University of Plymouth
Plymouth, PL48AA, UK
Tel : +44-752-232374
- 14 EUROCOURSES Secretariat
Joint Research Centre
I-21020 Ispra (Varese)
Tel : +39-332-789819
Fax : +39-332-789839
- 15 Monsieur J. De Laat
Association des Anciens Elèves
Traitement des Eaux et des
Nuisances
40, avenue du Recteur Pineau
86022 F-Poitiers Cedex
Tel : +33-49466761
Fax : +33-49453768
- 16 Aspinwall & Company Ltd.
Mr. Alex Steele
Walford manor, Baschurch
Shrewsbury, SY42HH
Tel : +44-939-261144
Fax : +44-939-261146
- 17 COMNET
General Secretariat
6, Quai Banning
B-4000 Liège, Belgium
Tel : +32-41-528085
Fax : +32-41-534097
- 18 TECHWARE - RTB Italia
c/o AMGA,
Via S.S.Giacomo e Filippo 7
I-16122 Genova, Italy
Tel +39-10-28581
Fax +39-10-2858284
- 19 ILEM Secretariat
Miss Mary Greening
Adriatico Palace Hotel
Via Grignano 9
34136 Trieste, Italy
Fax : 39-40-224575
- 20 Belgium : Mrs. H. Delembre
Tel : +32-53-779099
USA : Mr. D.I. Brandwein
Tel : +1-203-242-9933
- 21 UETP-EEE Headquarters
Mrs. Marja Juvonen-Ervasti
The Engineering Society in
Finland STS
Ratavartijankaty 2
SF-00520 Helsinki, Finland
Tel : +358- 0 159 0573
Fax : +358 0 159 0306
- 22 Interuniversity Postgraduate
Programme in Hydrology
(IUPHY)
Vrije Universiteit Brussel
Prof. A. Van der Beken
Pleinlaan 2, B-1050 Brussels
Tel : +32/2/641302
Fax : +32/2/6413022
- 23 State University of Ghent
Dr. P. Lavens
Rozier 44, B-9000 Gent
Tel : +32-91-643754
Fax : +32-91-644193
- 24 State University of Ghent
Centre for Environmental
Sanitation
J. Plateaustraat 22
B-9000 Gent
Tel : +32-91-257571
Fax : +32-91-235400
- 25 State University of Ghent
Prof. M.F. De Boodt
Coupure Links 653
B-9000 Gent
Tel : +32-91-646036
Fax : +32-91-6462
- 26 Università di Catania
Prof. G. Rossi
Viale Andrea Doria 6
I - 95125 Catania
Tel : +39-95-256424
Fax : +39-95-339225
- 28 CIEE
Thomas Mann Str. 33
D-5300 Bonn 1
Tel : +49-228-659746-7
Fax : +49-228-659564
- 29 Prof. J. Niemczynowicz
Lunds Universitet
Lunds Tekniska Högskola
Institutionen för Teknisk
Vattenresurslära
John Ericssons väg 1
P.O. Box 118, S-22100 Lund
Fax : +46-46-104435
- 30 Portsmouth Polytechnic
Faculty of Engineering
Anglesea Road
UK-P01 3DJ Portsmouth
Tel : +44-705-842012
Fax : +44-705-842584
- 31 EPFL
CH-1015 Lausanne
Tel : +21-6933735
Fax : +21-6932727
- 32 The British Council
10 Spring Gardens
London SW1A2BN -UK
Tel : +44-71-3894406
- 33 Karlsruhe Kongress-
und Ausstellungs-GmbH
Herr Schaug
Festplatz, 7500 Karlsruhe
Tel : +49-721-3720-113
Fax : +49-721-3720-124
- 34 Mrs. J. Morris
Institute of Irrigation Studies
University of Southampton
Highfield
Southampton SO9 5NH UK
Tel : +44-703-593728
Fax : +44-703-677519
- 35 University College Galway
Prof. J.E. Nash
Department of Engineering
Hydrology
Galway, Ireland
Tel : +353-91-24411
Fax : +44-353-9124913
- 36 APS COMETT
Regional COMETT UETP
for Southern Austria
Technikerstrasse 4/11
A-8010 Graz
Tel : +43-316-8737195
Fax : +43-316-816340
- 37 ORSTOM
Monsieur Alain Gioda
Centre de Montpellier
911, avenue Agropolis
BP 5045
Tel : +33-67617400
Fax : +33-67547800
- 38 The Institute for Advanced
Training
Gidrogorodok 3A
Zheleznodorozhnyi 2
143980 Moscow Region
Russian Federation
Tel : +70-95-2520808
Fax : +70-95-2539484
- 39 UNESCO
Division of Ecological
Sciences
John Celecia, F. Fournier
1, rue Miollis
75015 F- Paris
Tel : +33-1-45684070
Fax : +33-1-40659897
- 40 TVV
ir. H. Romaen
Desguinlei 214
B-2018 Antwerpen
Tel : +32-3-2160996
Fax : +32-3-2160689
- 41 JAMIE ALEXANDER
Radio Shack Education
Division
1600 One Tandy Center
Fort Worth, Texas 76102 USA
Tel : +1-817-3903053
Fax : +1-817-3903933
- 42 Mr. J. Mills
TECHWARE - RTB UK
c/o HR Wallingford
Howbery Park, Wallingford
Oxfordshire OX108BA, UK
Fax : +44-491-26703
- 43 Dr. J.W. Lyklema
TNO - Institute of Applied
Geoscience
Schoenmakerstraat 97
P.O. Box 6012
NL-2600JA Delft
Fax : +31-15-564800
- 44 Mr. Philippe Geril
The Society for Computer
Simulation, European Office
University of Ghent
Coupure Links 653
B-9000 Gent, Belgium
Tel/Fax : +32-91-234941
- 45 ICHE Secretary
CCHE, School of Engineering
The University of Mississippi
University, MS 38677, USA
Tel : +1-601-232-7788
Fax : +1-601-232-7796
- 46 International Agricultural
Centre (IAC), P.O. Box 88
NL-6700 AB Wageningen
Tel : +31-8370-90111
Fax : +31-8370-18552
- 47 Dublin City University
Tel : +353-1-7045424
- 48 Universidad Internacional
Menéndez Pelayo
Student Office : UMP de Va-
lencia
Palau de Pineda
Plaça del Carmen 4
E-46003 Valencia
Fax : +34-6-3869823

CALENDAR

PRESS RELEASE

IAWQ Replaces IAWPRC

International Association on Water Quality (IAWQ) is the new name chosen by IAWPRC - International Association on Water Pollution Research and Control.

Behind the change lies IAWQ's recognition of the need to expand on its traditional strengths in wastewater treatment technologies. The increasingly diffuse nature of water pollution has emphasised the need for different control strategies and a more holistic approach.

The Association has responded by introducing a range of new topics over the past 3 years - diffuse pollution sources and their control; air/water and soil/water interactions; hazardous waste management; specific industrial focus groups; environmental restoration; integrated management of sewerage, treatment plants and receiving waters; management and institutional matters, and others.

The effect of this has been to broaden the Association's interests to cover overall water quality issues worldwide - hence the new name :

INTERNATIONAL ASSOCIATION ON WATER QUALITY (IAWQ)

Tel : +44-71-2223848
Fax : +44-71-2331197

JOB VACANCIES

1 UNCUEA

Co-ordinator Information Unit on Climate Change (IUCC) and United Nations Centre for Urgent Environmental Assistance

Send applications to :

The Chief, Recruitment Unit
UNEP, P.O. Box 30552, Nairobi, Kenya
Fax Nos : UNEP (2542)226890 or 215787
Personnel section : (2542)217839

Vacancy No. NA-92-22
Duty Station : Geneva (CH)
Entry on duty : December 1992
Duration : initially 2 years

2 TECHWARE - TECHnology for Water Resources

COMPUTER ASSISTED LEARNING An Instructional Designer or Educational Technologist is required for a new EC funded CAL project. The person appointed will have a major role in developing multi-media courseware for the European Water Industry. He or she will be working with acknowledged water experts from at least eight European countries, hence a willingness to travel and work away from the home country for extended periods is vital. The appointment is for three years, starting as soon as possible. The base of operations will be the University of Bristol in the UK.

Skills in the fields of instructional design and multi-media technology are required for this post. The person appointed will be responsible for:

- developing courseware educational philosophy and design methodology in consultation with the Technical Director
- maintaining regular communications between partners on technical issues
- training partners in design methodology and use of authoring systems
- assisting title leaders to follow quality procedures
- assisting partners in production of courseware
- designing field trials
- assisting in the preparation of master material.

The closing date for applications is 30 September 1992. Enquiries and applications should be addressed to :

Dr. John P. Davis
Department of Civil Engineering
University of Bristol
Queens Building, University Walk
Bristol BS8 1TR, United Kingdom
Tel : +44-272-303288

To advertise your vacancies
contact the Editor : Fax +32-2-6413022
NEXT COPY DEADLINE : 1 November 1992

SCOLAQUA

Un cycle de formation continue de haut niveau destiné aux responsables de projets d'aménagement ou de gestion des ressources en eau dans le cadre du programme européen COMETT.

module 1	gestion quantitative de la ressource en eau
module 2	l'eau et l'animation scientifique et technique
module 3	activité biologique dans les sols et qualité de l'eau
module 4	dynamique de l'eau et télédétection
module 5	la gestion de l'eau et le droit
module 6	gestion multicritère de l'eau : méthodes et stratégies
module 7	traitement de l'eau

Pour toute information :

UNIVERSITE
DE RENNES 1
Education Permanente
4, rue Kléber
35000 RENNES
Tel +33-99631377
Fax +33-99363103

ADVERTISING RATES

(in ECU)

Advertisements must be informative and related to the objectives of PANTA RHEI or the activities of partners. They are subject to cancellation at the discretion of the Editor.

Free of charge

- Student opportunities
- Courses, workshops, meetings (in calendar format)

At cost per line in a column in ECU
classified

- positions wanted 4
- positions available 6
- courses, workshops, meetings, conferences 8
- services, supply 10

At cost per page or part of it : display advertising

- full page 1000
- half page 500
- quarto page 250
- octavo page 125

Special placements or enclosures : give details and ask for rates

COPY DATE FOR THE NEXT ISSUE IS 1 November

PANTA RHEI is published on DIN A4 format

- TECHWARE members are entitled to receive a 50% discount or two insertions for the price of one.
- Invoices are expressed in ECU and must be paid with all banking costs charged to the payer.

Please note

You may receive more than one copy of this information bulletin due to

- your membership in one of the partner-organizations
- your partnership in one of the water related ERASMUS, COMETT, TEMPUS, HCM or COST-CEEC projects.

Please pass extra bulletins on to your colleagues who may be interested in PANTA RHEI.

- Please add my name to your mailing list
- Change address as shown
- Please publish the enclosed training informations (calendar format, free of charge) in the next issue
- Please publish the enclosed information as classified and send me the invoice
- Please send me an Advertising Agreement

Name :

Affiliation :

Address :

Tel :

Fax :

Telex :

E-mail :

PANTA RHEI

A quarterly information bulletin edited on behalf of the partners in the field of hydrology, water management and water resources technology. It is published with the financial support of the European Community within the framework of the ERASMUS, COMETT and TEMPUS programmes and distributed free of charge. The present distribution is 4,750 copies. Issues are published in September, December, March and June.

OBJECTIVES OF PANTA RHEI

An efficient and continuous way of communication among all ERASMUS, COMETT, TEMPUS, HCM and COST-CEEC partners, both active and prospective, and among students and training participants with interest in water related fields.

Service to the

- ICP-Interuniversity Cooperation Programme "Hydrology and Water Management"
- JEP-Joint European Project : "Interuniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils (EWA-Ring)"
- UETP-University Enterprise Training Partnership : TECHWARE-TECHnology for WAtER REsources.
- TECHWARE-WEEL-BEST pan European scientific network "Water Environment European Laboratories"

Dissemination of activities or proposals of partners, in particular,

- transnational exchanges of students, young graduates and staff
- joint development of full curricula or specific training tools
- crash or intensive courses
- analysis of training needs

Information about other water related training activities.

Promotion of a European dimension in the field of water-related education and training.

"panta rhei"

all things are in constant flux.

It is an axioma of Heraclitus (c. 540 - c. 480 BC), Greek philosopher of Ephesus, quoted by Plato. Heraclitus is also known for illustrating the persistence of unity through change by the analogy of the river : "Upon those who step into the same river different and ever different waters flow down".

EDITOR

A. Van der Beken

IUPHY - Interuniversity Postgraduate Programme in Hydrology
Laboratory of Hydrology,
Faculty of Applied Sciences,
Vrije Universiteit Brussel
Pleinlaan 2, B-1050 Brussels, Belgium
Tel +32/2/6413021
Fax +32/2/6413022
E-mail : EARN Z16014 at BBRBFUO1

EDITORIAL ASSISTANT A.S. Wart

CO-EDITORS

J.J. Bogardi

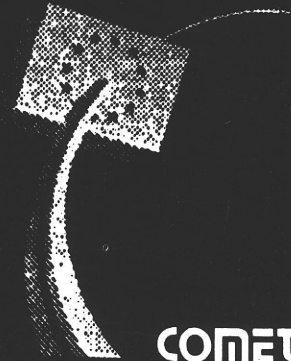
Wageningen,
The Netherlands
E. Cabrera
Valencia,
Spain
P. Jacobsen
Lyngby,
Denmark

J. Kindler

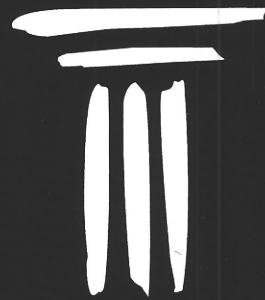
Warszawa,
Poland
P.E. O'Connell
Newcastle upon Tyne,
United Kingdom
F. Siccardi
Genova,
Italy



ERASMUS



COMETT



Tempus

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

Informatie Bulletin voor 'Onderwijs in hydrologie en waterbeheer' en 'Opleiding voor technologie van de watervoorraden'

Bulletin d'Information pour l'Education en hydrologie et la gestion de l'eau' et la 'Formation pour la technologie des ressources en eau'

Informationsblad om 'Uddannelse og efteruddannelse i tekniske emner knyttet til vand'

Boletín Informativo sobre la 'Educación en el campo de la hidrología y la gestión del agua' y 'Entrenamiento en tecnología de los recursos hídricos'

Bollettino di Informazione per 'Educazione in idrologia e gestione delle acque' e 'Formazione alla tecnologia delle risorse idriche'

Biuletyn Informacyjny dot. 'Nauczania w zakresie hydrologii i gospodarki wodnej' oraz 'Szkolenia w zakresie technologii wykorzystania i ochrony zasobów wodnych'