

# PANTA RHEI

**this issue**  
**EURO - WORKSHOPS**  
**Water Resources Management**  
Preparing for the 4th Framework  
Programme in Lisboa, Brussels,  
Potenza and Wallingford

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° 15 - MARCH - 1993

# GLOSSARY

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).

## **CC**

Coordinating Committee of TECHWARE.

## **CEC**

Commission of the European Community.

## **CEEC**

Central and Eastern European Countries.

## **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 1**

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).

## **EC**

Executive Committee of TECHWARE.

## **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, sub-programme for Science, Research and Development (DGXII).

## **ICP**

Interuniversity Cooperation Programme (ERASMUS).

## **IP**

Intensive Programme (ERASMUS).

## **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.

Research, Technological Development and Demonstration.

## **SAST**

Strategic Analysis for Science and Technology (DG XII).

## **SG**

Specialist Group for preparing a future TECHWARE activity.

## **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 Coordinating Bureau 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 Cooperation Scheme for Higher Education, the EC-programme for education and training in CEE-countries (TFHR).

## **TF**

Task Force for a given activity of TECHWARE.

## **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 logics 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.





## 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 260 and 350 ECU per month and is supplementary to any other grant or contribution offered by the enterprise or other organisation.

## DEMANDS

see reverse side

## ABBREVIATIONS

n.s. : not specified

a.s.a.p. :

as soon as

possible

m. : month(s)

Code	Country	Duration	Period	Topic proposed
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## OFFERS

of placement by enterprises

12 - 02 - 93

OTHER TOPICS ARE NEGOTIABLE

PT91-02	B	6 m.	a.s.a.p.	Hydraulic model of sediment transport in sewers.
PT91-03	F	6m. or +	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.
PT91-11	UK	3-12 m.	n.s.	Irrigation.
PT91-12	UK	3-12 m.	n.s.	Hydrodynamics.
PT91-13	UK	3-12 m.	n.s.	Flow measurements.
PT91-14	UK	3-12 m.	n.s.	Sediment mechanics.
PT91-15	UK	3-12 m.	n.s.	Computational methods.
PT91-16	UK	3-12 m.	n.s.	Urban drainage.
PT91-17	UK	3-12 m.	n.s.	Coastal structures and processes.
PT91-18	UK	3-12 m.	n.s.	Ports and harbours.
PT91-19	UK	3-12 m.	n.s.	Dredging and spoil deposits.
PT91-20	UK	3-12 m.	n.s.	Environmental assessment.
PT91-21	UK	3-12 m.	n.s.	Modelling river basins.
PT91-22	UK	3-12 m.	n.s.	Estuaries management.
PT91-23	UK	3-12 m.	n.s.	Groundwater.
PT92-01	UK	12 m.	1993	Coastal hydraulics.
PT92-02	B	6 or 12 m.	n.s.	Integrated river basin management.
PT92-04	NL	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.
PT92-11	B	12 m.	n.s.	Environmental planning.
PT92-12	B	12 m.	n.s.	Laboratory activities related to water problems.
PT92-13	D	n.s.	n.s.	Water management planning.
PT92-14	F	8 m.	09/93	Design for urban drainage constructions.
PT92-16	NL	n.s.	n.s.	Chemical engineering water analysis.
PT92-17	I	6-12 m.	9/93	Hydraulic engineering, hydrology, meteorology.
PT92-18	I	6-12 m.	9/93	Chemical environmental engineering, biology.
PT92-24	B	12 m.	08/94	Assessment of radioactive water disposal.
PT92-25	B	12 m.	08/94	Modelling & GIS of pollution control.
PT92-26	B	n.s.	02/93	Hydrology, Earth sciences, Agricultural engineering.
PT92-27	F	5m.	09/94	Biology, Aquaculture.
PT92-30	NL	n.s.	n.s.	Sanitary engineering, Process engineering.

## TECHWARE

c/o CIBE - BIWM  
Wolstraat 70  
B-1000 Brussels  
Belgium

Tel

+32-2-5188893

Fax

+32-2-5026736

Code	Home Country	Proposed Host Country	Duration	Period	Topic proposed
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**DEMANDS**  
for placement by students  
12 - 02 - 93  
OTHER TOPICS ARE NEGOTIABLE

DT91-12	D	n.s.	3-12 m.	n.s.	Groundwater.
DT91-13	B	S	3 m.	9/92	Radar applications.
DT91-15	B	UK-D-F-L-NL-A	3 m.	10-12/92	Chemical environmental engineering.
DT91-35	UK	E	6m.	9/92-2/93	Coastal zone management.
DT91-44	D	UK	3 m.	3/93-5/93	Civil engineering hydraulics.
DT91-55	B	UK	6 m.	a.s.a.p.	Civil engineering (marin).
DT92-11	I	B-L-NL-D-a.o.	12 m.	5/93	Chemical engineering.
DT92-27	B	UK-IRL-DK	6 m.	3/93-8/93	Groundwater management.
DT92-45	B	UK-NL-S	6M.	3/93	Surface water resources.
DT92-50	UK	I-F-GR	6-10 m.	9/92	Civil water engineering.
DT92-53	B	UK-IRL-NL	6 m.	3/93	Surface water measurements.
DT92-60	UK	CH-D-A	4 m.	05/93-8/93	Hydraulics.
DT92-61	UK	F-B-CH	4 m.	05/93-8/93	Hydraulic engineering.
DT92-64	SF	UK-F	6-12m.	3/93-6/94	Biology, Chemistry (research work).
DT92-65	SF	UK-D-A-B	12m.	a.s.a.p.	Biotechnology or environmental engineering.
DT92-66	SF	any	6 or +	a.s.a.p.	Environmental engineering.
DT92-67	SF	UK	12 m.	a.s.a.p.	Environmental engineering.
DT92-70	UK	F-NL-I	n.s.	n.s.	Civil engineering (waste water treatment).
DT92-71	UK	F-B	3m.	7/93-9/93	Civil engineering.
DT92-72	UK	F-E-P	12 m.	9/93-8/93	Civil engineering (construction sector).
DT92-74	E	UK-B-NL	3m.	7/93-10/93	Biology.
DT92-75	F	NL-IRL-E	6m. or +	1/4/93-30/9/93	Civil engineering.
DT92-76	B	N-S-UK	6-12m.	1/10/93	Environmental sanitation and Biotechnology.
DT92-78	IRL	F-P-UK	3-4m.	10/6/93-1/10/93	Industrial microbiology.
DT92-79	F	UK-IRL	6m.	1/9/93-31/4/94	Pollution, Waste & water treatment.
DT92-80	F	any	3m.	7/93-9/93	Marketing, Economics, Management.
DT92-81	I	UK-B-DK	6m.	6/93-11/93	Civil engineering, Hydraulics, Design analysis.
DT92-82	B	GR-UK-P	12m.	1/4/93-1/4/94	Chemical engineering.
DT92-83	UK	NL-DK-B	6m.	1/4/93-30/8/93	Environmental monitoring.
DT92-84	UK	B-NL-DK	6m.	4/93-9/93	Environmental monitoring.
DT92-85	UK	NL-B-DK	6m.	1/4/93-1/9/93	Environmental monitoring.
DT92-86	UK	NL-B-DK	6m.	1/4/93-1/9/93	Environmental monitoring.
DT92-88	UK	F-B	12m.	1/7/93-30/6/94	Design, Laboratory work, Computing, Water engineering management.
DT92-89	UK	F-I	12m.	1/7/93-1/7/94	Mathematics, Computer science.
DT92-90	UK	F-B	12 m.	7/93-7/94	Marketing, Economics, Management.
DT92-91	UK	NL	12m.	7/93-7/94	Marketing, Economics, Management.
DT92-92	UK	NL-B	12m.	1/9/93-1/9/94	Marketing, Economics, Management.
DT92-93	UK	B-NL	12m.	7/93-7/94	Marketing, Economics, Management.
DT92-94	B	DK-IRL-UK-NL-E	3-12m.	8-11/93	Agricultural engineering.
DT92-95	NL	UK-F-A-B	12m.	1/8/93	(Geo)hydrology, Soil physics.
DT92-96	UK	DK-NL-N	12m.	1/8/93	Water engin., Geology, Soil mechanics.
DT92-97	UK	DK-D-NL	12m.	15/7/93	Surveying, Geology, Water laboratory.
DT92-98	UK	E-F-B	12m.	15/7/93	Computing maths, Surveying engineering
DT92-99	I	UK-B-D	3m.	1/5/93	Hydraulic engineering, Civil engineering.
DT92-100	E	B-F-L-NL	12m.	9/93	Biotechnology.
DT92-101	E	DK-GT-IRL-NL	6-12m.	n.s.	Chemical engineering.
DT92-102	E	B-F-L-NL-IRL-UK	12m.	n.s.	Biology Ecology.
DT92-103	E	D-A-CH	12m.	93/94	Microbiology, Genetic.
DT92-104	UK	NL-D-S	12m.	1/9/93	Water resource & Flood control, Water engineering.

Annex Panta Rhei No 15

Please fill in the form and return to :  
**TECHWARE**  
c/o cibe-biwm  
Wolstraat 70  
B-1000 Brussels  
Belgium

**TECHWARE • SPES**

Name : .....  
 Enterprise : .....  
 OR University : .....  
 Address : .....  
 Tel : ..... Fax : .....  
 Telex : ..... Date : ..... Signed : .....

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

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

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

is interested in Training-Offer Code No....

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



# Registration Fee

## APRH and TECHWARE Members

<input type="checkbox"/>	250 ECU	No of persons	X .....	= .....	ECU
<input type="checkbox"/>	or		X .....	= .....	esc
<input type="checkbox"/>	44250 escudos		X .....	= .....	esc

## Other Participants

<input type="checkbox"/>	500 ECU	X .....	= .....	ECU	
<input type="checkbox"/>	or		X .....	= .....	esc
<input type="checkbox"/>	88550 escudos		X .....	= .....	esc

TOTAL AMOUNT = ..... ECU  
or  
= ..... escudos

WORKSHOP fee include documentation, two lunches at LNEC guest-house, coffees and dinner at Castelo S. Jorge.

Return by mail or by fax to :

**Associação Portuguesa dos Recursos Hídricos - APRH**  
c/o LNEC  
Av. do Brasil 101  
P - 1799 Lisboa Codex, Portugal  
Fax : +351-1-8474726

## ORGANIZERS



**TECHWARE**  
Technology  
for Water  
Resources,  
is an

international non-profit making association, founded in 1990 and supported by COMETT as a University Enterprise Training Partnership (UETP).

TECHWARE was in 1991 - 1992 one of the contractors for SAST Project No. 6 and is presently contractor for the HUMAN CAPITAL and MOBILITY Programme.



**APRH**  
Associação  
Portuguesa dos  
Recursos  
Hídricos,

Portuguese Water Resources Association



**LNEC**  
Laboratório  
Nacional de  
Engenharia  
Civil, the

Portuguese Civil Engineering Laboratory

### SPONSORED BY

#### COMETT

European Community Programme on Cooperation between universities and industry regarding training in the field of technology.

### within the framework of

ETC - European Training Courses  
in Advanced Water Technology funded by COMETT

MONITOR-SAST (Strategic Analysis in Science and Technology)  
Unit of CEC-Directorate General DG XII for Science, Research and Development

WEEL - Water Environment European Laboratories,  
Pan-European Scientific Network funded by  
HUMAN CAPITAL and MOBILITY, programme of CEC-DG XII

## EURO - WORKSHOP

**Scientific background and trends in research and technological development for the supply and use of freshwater resources**

Preparing for the 4th Framework Programme 1994 - 1998

**5 - 6 April 1993**  
**Lisboa, Portugal**

### OBJECTIVES

To give the participants an understanding of the scientific background and the trends expected on RTD for freshwater resources management in the Community, supporting the co-operation between EC member-states. Special emphasis will be placed on the issues related to freshwater demand and use, better use of existing freshwater resources, regionalization and International transboundary water resources management problems.

### TARGET GROUP

Water and environment decision makers, senior policy advisers and analysts, water resources university professors and researchers, and technical experts with different backgrounds (environment, agriculture, regional policy, industry).

### PLACE

The EURO-WORKSHOP will be held at :  
Laboratório Nacional de Engenharia Civil (LNEC)  
Av. do Brasil 101  
P - 1799 Lisboa, Portugal

### TIME TABLE

The documentation, including SAST No. 6 reports, will be distributed to participants at 9.00h, 5 April 1993.  
Sessions will start at 9.30h and 14.00h.  
A lunch break will take place from 12.30h to 14.00h.  
Afternoon sessions will end at 18.00h.

## PRELIMINARY PROGRAMME

Tuesday 8 June 1993

9.00 Registration

10.00 - 11.00 SESSION 1 : Opening

Welcoming addresses by :

J. Dirckx, president of TECHWARE  
E. Stroobants, President of WEL  
W. Govaerts, Head of COMETT Information Centre Flanders  
Key - Note Address  
by Representative of the Flemish Regional government

### SESSION 2 : Why this EURO-WORKSHOP ?

11.00 - 12.00

- Strategic Analysis in Science and Technology (SAST) by B. Schmitz, head of MONITOR-SAST Unit, CEC-DG XII
- Future actions within the fourth framework programme for research, technological development and demonstration (RTD + D) by a representative of CEC-DG XII
- Method of work for the EURO-WORKSHOP by A. Van der Beken, Coordinator of TECHWARE

14.00-16.00

### SESSION 3 : Presentation and discussion of results of SAST Project No. 6 "Research and Technological Development for the Supply and Use of Freshwater Resources"

- Regional dimension of water RTD by TECHWARE (NL)
- Freshwater demand and use by TECHWARE (I)
- New sources and better use of existing sources by TECHWARE (B)
- Introductory discussion by nominated discussers
- Discussion in plenary
- 16.30 - 18.00
- Monitoring and modelling by Krueger Consult (DK)
- Treatment, storage and distribution by Water Research center (UK)
- Strategic dossier by ECOTEC (UK)
- Introduction discussion by nominated discussers
- Discussion in plenary

Wednesday 9 June 1993

9.00 - 11.00 SESSION 4 : Methodologies and Recommendations  
by nominated discussers

- On fundamental research
- On applied research and technological development
- On demonstration, valorization and dissemination
- On generic technologies in the water sector
- Discussion in plenary

11.30 - 12.00

Final Conclusions and Recommendations  
by A. Van der Beken, TECHWARE (B)

14.30

Technical visit to ANTWERP WATERWORKS

18.00

Visit to Antwerp, Cultural Capital of Europe 1993

## Payment

By cheque

Please find enclosed cheque No. ....  
of the Bank .....  
for ECU .....made out to TECHWARE

By Bank Transfer

Please make sure that the bank transfer  
gives full reference of the name of the  
participant of the EURO-WORKSHOP.

Made out to :  
Bank ASLK / CGER  
P.O. 1436 Brussel 1  
B - 1000 Brussels, Belgium  
Account No. 005-4323374-76 of TECHWARE

Please indicate the name and address of the person/company to whom the  
invoice/receipt should be sent if different from the participant :

Name : .....

Address : .....

## Registration Form

EURO - WORKSHOP "Water Management"  
Brussels, 8-9 June 1993

## Participant

Name : .....

Title and Position : .....

Institution : .....

Address : .....

Zip Code : ..... City : .....

Country : .....

Phone : ..... Fax : .....

To be mailed before May 1, 1993 to :  
Coordinating TECHWARE Bureau  
c/o CIBE - BIWM  
70, rue aux Laines - Wolstraat 70  
B - 1000 Brussels, Belgium  
Tel : +32-2-5188893 or 5122137  
Fax : +32-2-5026735

## REGISTRATION

The registration fee, payable before  
May 1993, is :

- 300 ECU for TECHWARE members  
and WEL - "WATER" subscribers.
- 500 ECU for other participants.

Registration fees, paid after 1 May  
1993, will be 350 ECU and 550 ECU  
respectively.

If the registration is cancelled before  
1 June, 75% refunding may be  
requested. No refunding will be  
made after 1 June 1993.

### The fee includes :

1. The SAST Strategic Dossier, the  
three SAST TECHWARE reports and  
one other SAST report at choice.
2. Post Workshop proceedings with  
discussions, final conclusions and  
recommendations.
3. Reception and lunch on Tuesday  
8 June.
4. Lunch on Wednesday 9 June.
5. Free entrance to EXPOTECH (AQUA  
EXPO).

An additional fee of 20 ecu per  
person is requested for :

6. Transport, technical visit and visit  
to Antwerp, Cultural Capital of  
Europe 1993 with dinner in  
Antwerp on Wednesday evening  
9 June. Accompanying persons  
are welcome.

To confirm your participation to  
the EURO-WORKSHOP in Brussels,  
please fill in the form  
and mail it to :

Coordinating TECHWARE Bureau  
c/o CIBE-BIWM  
70, rue aux Laines - Wolstraat 70  
B - 1000 Brussels, Belgium  
Tel : +32-2-5188893 or 5122137  
Fax : +32-2-5026735



# EDITORIAL

Perhaps the most striking news is the appointment in January 1993 of the new Commissioners of the Commission of the European Communities (CEC). Within the framework of the objectives of this information bulletin it is the responsibility of Professor **Antonio RUBERTI** (University Sapienza, Roma and former Italian Minister for universities, science and technology) which interests us : the new Commissioner is the political responsible for CEC-DG XII for Science, Research and Development AND for the Task Force for Human Resources, Education, Training and Youth (TFHR). This joint responsibility is of utmost importance because everybody understands the link between programmes like ERASMUS, COMETT, TEMPUS (TFHR) and the programmes of DG XII such as HUMAN CAPITAL and MOBILITY.

Moreover, the Fourth Framework Programme (1994-1998) for RTD stresses the role of sectoral networks. Those networks which successfully operate within the TFHR-programmes should be supported by the other Directorate-Generals, a.o. DG XII and DG XIII. A network is not an end in itself, but a **means** allowing specific **objectives** to be achieved.

A **means** needs financial support and the Commission should NOT create a plethora of weak networks with the limited financial resources available, but build upon the existing networks where applicable.

After the MEMORANDUM ON HIGHER EDUCATION IN THE EUROPEAN COMMUNITY (see PANTA RHEI No. 12, June 1992), an important new COMMUNICATION from the Commission is published through TFHR-COMETT. It is entitled : **"European Higher Education-Industry Cooperation : Advanced Training for Competitive Advantage"** \* . From the Press release "Partners in Building the Europe of tomorrow", we quote : ". . . higher education and enterprises are finding that increased cooperation : allows a mutual exchange of experience and expertise beneficial to everyone ; accelerates the mechanisms through which

*R&D findings are translated into practical applications ; promotes the adaptation and provision of training corresponding to the real needs of businesses."* and ". . . Europe has become aware of the importance of this cooperation. However, the mechanisms set up should increase their impact so that the Community can indeed reap all the potential benefits. These benefits may be summarised as follows : accelerating the application of basic research findings in industry ; improving the provision of technical skills ; increasing technology transfer across sectors and regions."

The document offers several key messages for those wishing to set up partnerships : ". . . to be effective, the cooperation must rest on an unequivocal understanding of and respect for the nature of both higher education and industry ; cooperation between higher education and industry is not an end in itself, but a means allowing specific objectives to be achieved ; higher education institutions and enterprises must integrate a university-industry cooperation strategy into their tasks and institutional plans ; the university-industry partnerships such as those created by COMETT are genuine interfaces, offering a framework for dialogue which ideally complements the measures organised by the universities and enterprises."

The press release states that, to bring Europe successfully into the 21st century, it is necessary that higher education and industry should develop good cooperative relations. This suggests the need for a cultural transformation.

Our sector WATER is altogether a relative weak one, nevertheless very VITAL : PANTA RHEI is a communication means between higher education and industry along the key messages of the above document.

The Editor

\* For full reference : see NEWS from COMETT, this issue, page 8.

## 22 March 1993 : World Day for Water

The General Assembly of the United Nations has declared 22 March of each year as the World Day for Water. This event should assist in drawing public attention to global water resource problems and become a rallying point for IEC : Information, Education and Communication. IEC is the follow up of Chapter 36, entitled "Promoting Education, Public Awareness and Training" of **Agenda 21**, the UNCED report.

The full text of Agenda 21 has been published under the title "The Earth Summit" by Kluwer Academic Publishers, ISBN 1-85333-784-6, 1993, 576 pp., \$ 140,00.

## FRACTALS

"Clear and bright it should be ever,  
Flowing like a crystal river"

Alfred, Lord Tennyson 1809 - 1892

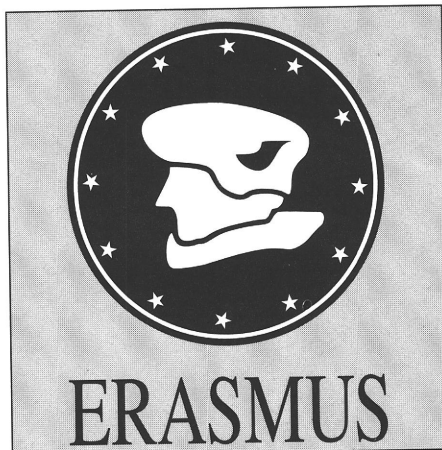
Ref. : Proceedings Conference  
"River Water Quality Ecological Assessment  
and Control",  
Brussels, December 1991

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# NEWS from ERASMUS

ICP : Interniversity Cooperation Programme "Hydrology and Water Management"  
Coordinator : Prof. A. Van der Beken  
Address : see Editor



## Interuniversity Cooperation Programme "Hydrology and Water Management"

ICP-92-B-1138/06

Next Plenary Meeting  
LAUSANNE (CH)  
27 - 28 august 1993

### Participating Universities 1992-93 and 1993-94 (1)

#### A AUSTRIA

A WIEN03 Universität für Bodenkultur  
Wien  
BOKU - Institut für Hydraulik und  
landeskulturelle Wasserwirtschaft  
Contact : Dipl. Ing. W. Loiskandl

#### B BELGIUM

B BRUSSELO1 Vrije Universiteit Brussel,  
Faculteit Toegepaste Wetenschappen,  
Dienst Hydrologie  
Contact : Prof. A. Van der Beken  
B BRUXELO4 Université Libre de Bruxelles  
(ULB)  
Département des Sciences de la Terre et de  
l'Environnement  
Contact : Prof. J. Michot  
B GEMBLOU01 Faculté des Sciences  
Agronomiques de l'Etat, Génie Rural  
Contact : Prof. S. Dautrebande  
B GENT01 Université Gent (UG)  
Centre for Environmental Sanitation (CES)  
Contact : Prof. W. Verstraete  
B GENT01 Université Gent (UG)  
Laboratorium voor Hydraulica  
Contact : Prof. R. Verhoeven  
B GENT01 Université Gent (UG)  
Laboratorium voor Hydrologie  
Contact : Prof. De Troch  
B LIEGEO1 Université de l'Etat à Liège  
Diplôme Spécial Interuniversitaire en  
Hydrologie  
Contact : Prof. A. Monjoie  
B LOUVAINO1 Université Catholique de  
Louvain, (UCL) Génie Rural  
Contact : Prof. L. De Backer

#### CH SWITZERLAND

CH LAUSANNO6 Ecole Polytechnique  
Fédérale de Lausanne (EPFL),  
Dépt. de Génie Rural, Institut  
d'aménagement des terres et des eaux  
Contact : Prof. A. Musy  
CH NEUCHATO1 Université de Neuchatel,  
Centre d'Hydrogéologie  
Contact : Prof. F. Zwahlen

#### D FEDERAL REPUBLIC OF GERMANY

D BOCHUM01 Ruhr Universität Bochum,  
Lehrstuhl für Hydrologie, Wasserwirtschaft  
und Umwelttechnik  
Contact : Prof. G.A. Schultz  
D BOCHUM01 Ruhr Universität Bochum,  
Lehrstuhl für Siedungswasserwirtschaft und  
Umwelttechnik  
Contact : Prof H. Orth

#### DK DENMARK

DK ALBORG01 Alborg Universitetscenter  
(1)  
Dept. Civil Engineering  
Contact : Prof. T. Larsen  
DK LYNGBY01 Danmarks Tekniske  
Højskole,  
International Office, DTH  
Contact : M. Gundstrup

#### E SPAIN

E BARCELO3 Universitat Politecnica de  
Catalunya (UPC),  
Escuela Tecnica Superior de Ingenieros de  
Caminos, Canales y Puertos  
Contact : Prof. L. Candela  
E VALENCIA2 Universitat Politecnica de  
Valencia (UPV)  
Hydraulic and Environmental Engineering  
Contact : Prof. E. Cabrera

#### F FRANCE

F GRENOBL22 Institut National  
Polytechnique de Grenoble (INPG)  
Ecole Nationale Supérieure d'Hydraulique  
et de Mécanique de Grenoble  
Contact : Prof. Ch. Obled  
F MONTEPELO2 Université des Sciences et  
Techniques du Languedoc (ESTL)  
Institut des Sciences de l'Ingénieur  
Contact : Prof. M. Desbordes  
F PARIS006 Université Pierre et Marie  
Curie Paris VI,  
Géologie appliquée  
Contact : Prof. G. de Marsily  
F PARIS011 Université de Paris-Sud Orsay  
Laboratoire d'Hydrologie et de Géochimie  
Isotopique  
Contact : Prof. J. Ch. Fontes  
F PARIS 081 Ecole Nationale Supérieure  
des Mines de Paris (1)  
Centre d'Informatique Géologique  
Contact : Dr. P. Hubert  
F TOULOUSE12 Institut National  
Polytechnique de Toulouse  
Ecole Nationale Supérieure  
d'Electrotechnique, d'Electronique,  
d'Informatique et d'Hydraulique de  
Toulouse (ENSEEIH)  
Contact : Prof. D. Amoros



## ITALY

*I BOLOGNA01 Università degli Studi di Bologna*  
Istituto di Costruzioni Idrauliche, Facoltà di Ingegneria

Contact : Prof. E. Todini

*I FIRENZE01 Università degli Studi de Firenze*

Dipartimento di Ingegneria Civile

Contact : Prof. G. Federici

*I GENOVA01 Università degli Studi di Genova*

Facoltà di Ingegneria, Istituto di Idraulica

Contact : Prof. F. Siccardi

*I MILANO02 Politecnico di Milano*

Istituto di Idraulica

Contact : Prof. R. Rosso

*I PADOVA01 Università degli Studi Padova*

Istituto di Idraulica "Giovanni Poleni"

Contact : Prof. G. Di Silvio

*I PAVIA01 Università degli Studi di Pavia*

Dipartimento di Ingegneria, Idraulica e Ambientale

Contact : Prof. L. Natale

*I PERUGIA01 Università degli Studi di Perugia*

Istituto de Idraulica Agraria

Contact : Prof. L. Ubertini, Prof. F. Mannoichi

*I TORINO01 Università degli Studi di Torino*

Istituto di Idraulica Agraria

Contact : Prof. V. Anselmo

## IRL IRELAND

*IRL CORK01 University College Cork*

Dept. Civil Engineering

Contact : Prof. J. P. O'Kane

## NL THE NETHERLANDS

*NL DELFT01 Technische Universiteit Delft (TUD)*

Philosophy and Technical Social Sciences

Contact : Prof. J. Wessel

*NL WAGENING01 Landbouwniversiteit (LUW)*

Wageningen Vakgroep Waterhuishouding

Contact : Prof. J. Bogardi

## P PORTUGAL

*P COIMBRA01 Universidade de Coimbra*

Geologia - Faculdade de Ciencias e Tecnologia

Contact : Prof. M. Lobo-Ferreira

*P LISBOA01 Universidade Technica de Lisboa*

Instituto Superior Tecnico, Dep. Engenharia Civil

Contact : Prof. A. De Carvalho Quintela

## UK UNITED KINGDOM

*UK BRISTOL01 University of Bristol*

Department of Civil Engineering

Contact : Prof. R.H. Sellin

*UK NEWCAST01 University of Newcastle upon Tyne*

Department of Civil Engineering

Water Resources Engineering

Contact : Prof. E. O'Connell

# INFO

## EUCEN

The European Universities Continuing Education Network (EUCEN) is an emerging organization which links university continuing education activities throughout Europe. 21 Universities from thirteen EC and EFTA countries have so far been represented in the first three meetings. EUCEN has two overall aims :

- to enable its members to serve most efficiently the people of Europe, particularly in their own regions, through the provision of high quality continuing education;
- to influence the development of university continuing education policy throughout Europe.

Further objectives : harmonization of quality, development of a credit transfer system.

*For further information contact :*  
Professor E.J. Thomas  
Department for Continuing Education  
The University  
UK-Bristol BS8 1HR  
Tel +44-272-303627  
Fax +44-272-254975

## EUROPEAN REPERTORY OF THE UNIVERSITY SUMMER COURSES

The Office for Educative and Scientific Cooperation with the EC prepares a new "European Repertory of the University Summer Courses".

*Contact : Generalitat de Catalunya*  
Departament d'Endenyament  
Gabinet del Conseller  
Oficina de Cooperació Educativa i Científica amb la Comunitat Europea  
Josep M. Vilarnau  
Area d'Informació  
Urgell, 240, 7è  
E-08036 Barcelona  
Tel +34-93-4193803  
Fax +34-93-3218117

## ERASMUS Bureau

70, rue Montoyerstraat 70  
B-1040 Brussels

tel +32-2-2330111  
fax +32-2-2330150  
telex 63508

## ERASMUS ICP

### "Hydrology and Water Management"

New Edition \*

Name : .....

Address : .....

requests a copy of the INFORMATION BROCHURE and the POSTER

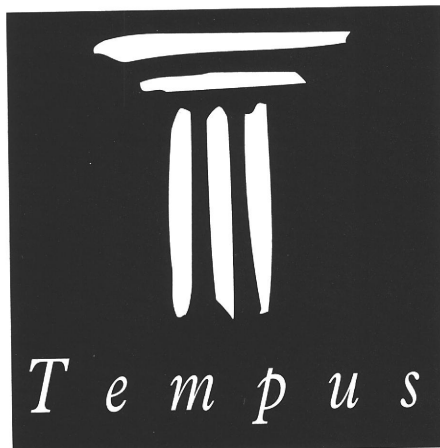
Date : .....Signature : .....

\* available in May 1993

Return to the Editor of PANTA RHEI

# NEWS from TEMPUS

JEP : Joint European Project  
Interniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils" (EWA-Ring)  
Coordinator : Prof. J. Bogardi  
Wageningen Agricultural University • Department of Water Resources • Nieuwe Kanaal 11, NL-6709 PA Wageningen  
tel +31-83-7084829 • fax +31-83-7084885 • telex 45015



**Tempus Joint European Project  
Number 2150-92  
Interniversity Coordinating Forum for  
East-West Cooperation in the Area of  
Environment, Water and Agricultural Soils  
(EWA-Ring)**

announces short intensive course on :

## **AGROECOLOGICAL ASPECTS OF WATER MANAGEMENT AND LAND RECLAMATION**

hosted by the University of Agricultural  
Sciences of Gödöllő

**19-23 April 1993, Gödöllő, Hungary**

### **INTRODUCTION**

The agricultural land use is closely related to agroecological factors as climate, water and soil. Historical evidence and theoretical considerations clearly demonstrate that sustainable agricultural land use requires general understanding and locally validated quantitative knowledge on equilibrium and extreme constellations of all ecological factors. The integrated index of the agroecological factors indicates the agroecological potential, that is the possible maximum crop yield. On its turn this is usually taken as an objective for the planning of rational agricultural land use and development of crop management strategies. Agricultural land use and the water management are closely related. Agricultural practices can affect the water resources, especially the water quality. On the other hand water management systems and structures can affect the ecological factors influencing the agricultural land use. Local experience proves that these effects are frequently negative. The undesirable effects can be avoided or mitigated only by close cooperation between water and agricultural management. Strategies and policy framework for sustainable agricultural land use should explicitly consider the ecological indicators and the interrelationship between land use and water management.

## **EC TEMPUS Office**

70, rue Montoyerstraat 70  
B-1040 Brussels

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

### **COURSE OBJECTIVES**

The main objectives of the course is to present and to enhance the participants' knowledge in principles used in the development of sustainable agricultural land use and water management with emphasis on ecological factors.

### **COURSE PROGRAMME**

**Monday 19 April 1993**

#### **Session I : Ecological factors of agricultural use.**

Hydrological factors of equilibrium of regional and local water balances.  
Risk analysis for agricultural water management of Hungary.  
Calculation of evapotranspiration of major crop groups.  
Dr. K. Szesztay  
Management of soil animals of sustainable agrosystems.  
Prof. G. Bakonyi

**Tuesday 20 April 1993**

Agroecological information, agroecological potential.  
Planning methodology of the rational use of agroecological endowments.  
Results and unsolved problems.  
Prof. Zs. Harnos

#### **Session II. Planning and technical options for the sustainable accommodation of agricultural land use, ecology and environment.**

Analysis of the agroecological factors of the crop production.  
Management strategies of agricultural land use, accommodation to the regional conditions.  
Management strategies of agricultural land use, accommodation to the regional conditions.  
Prof. J. Angyán - Prof. F. Szakal.

**Wednesday, 21 April 1993**

Systems analysis in protecting the aquatic environment.  
Introduction to water quality modelling.  
Modelling of the aquatic ecosystems eutrophication.  
Modelling of land runoff induced non point source pollution.  
Dr G. Jolánkai.



#### Thursday, 22 April 1993

Hydrophysical properties and moisture regime of soils.

Soil moisture control as the main element for sustainable land use.

Soil data-base, GIS-application and environmental monitoring for soil moisture control.

Possibilities and limitation of soil and water conservation practices.

*Prof. Gy. Várallyay.*

Changes in objectives of land reallocation projects challenges and applicability.

*Prof. H. van Lier*

#### **Session III. Effects of water management system and structures on the ecological factors of the agricultural land use.**

Case study on the land use and agroecological impact of a flatland water reservoir "Kisköre barrage system".

*Dr. A. Tarnoy.*

#### Friday, 23 April 1993

#### **Session IV. Strategy and policy framework.**

General strategic physical concepts and their application in land reallocation programmes

*Prof. H. van Lier*

Land use optimization in EC Community.

*Drs. H.C. van Latesteijn.*

Open forum discussion.

Strategies and concepts : Experiences and transferability.

*Moderator : Prof.J.J. Bogardi.*

#### **PARTICIPANTS**

This short intensive course is aimed for last year undergraduate students, graduate students working for their Msc or PhD degrees and young staff members of the participating university departments of the TEMPUS EWA-Ring. The participants are supposed to be interested in the field of planning, development and operation of sustainable agricultural land use, and/or water management. The maximum number of participants is 20. The expenses of board and lodging will be covered by the TEMPUS budget. Eventual subsidy from EWA-Ring funds to travel expenses is possible only in special cases. In case of supernumerary the principle of "first come first served" will be followed.

#### **CONTACT PERSON (GÖDÖLLÖ)**

*Dr. Szalai György, Dept. of Water Management, University of Agricultural Sciences.*

*Gödöllő, Pater Karoly u 1, Hungary.*

*Fax +36.28.10804*

#### **COORDINATOR (WAGENINGEN)**

*Prof. Dr.-ing. J.J. Bogardi, Dept. of Water Resources, Wageningen Agricultural University.*

*Nieuwe Kanaal 11*

*6709 PA Wageningen, The Netherlands*

*Fax +31.8370.84885*

#### **TEMPUS (EWA-RING) Short Intensive Course**

## **WATER RESOURCE CONSERVATION AND POLLUTION SPREAD CONTROL WITHIN RURAL AREAS**

**Zielonka Poznań, Poland**

**21-26 June 1993**

#### **Hosts**

Agricultural University of Poznań, Research Centre of Agricultural and Forest Environment Studies, Polish Academy of Sciences, Poznań.

#### **Organizing and Programme Committee**

- Professor J.J. Bogardi, Wageningen Agricultural University - Chairman.
- Professor A. Kedziora, Agricultural University of Poznań.
- Dr. Z.W. Kundzewicz, Research Centre of Agricultural and Forest Environment Studies, Polish Academy of Sciences, Poznań.

#### **Contact Person**

*Dr. Zbigniew W. Kundzewicz  
Research Centre of Agricultural and Forest Environment Studies  
Polish Academy of Sciences  
Bukowska 19, 60-809 Poznań, Poland  
Tel +48-61-456001  
Fax +48-61-43668*

#### **Aim**

Exchange of expertise and experience in management of water resources and control of pollution spread in rural areas in broad, interdisciplinary context. Course of lectures delivered by an international team of specialists representing the theory and practice, universities and doctoral students and academic staff of partners of TEMPUS EWA-RING (22 European universities and one non-university research institute).

#### **Structure of the Programme**

Part One : Water problems of rural areas - assessment and analysis.

Part Two : Strategies for water resource conservation and pollution spread control in rural areas.

#### **List of lecturers**

- Dr. R. Anlauf  
Stadtwerke Hannover AG, Germany.
- Dr. R. Blazejewski  
Poznan Agricultural University, Poland.
- Or. J.C. van Dam  
Wageningen Agricultural University, The Netherlands.
- Prof. L. Gottschalk  
University of Oslo, Norway.
- Prof. A. Kedziora  
Agricultural University of Poznań, Poland.
- Dr. Z.W. Kundzewicz  
Research Centre of Agricultural and Forest

Environment, Polish Academy of Sciences, Poland.

- Prof. H.P. Nachtebel  
Vienna Agricultural University, Austria.
- Prof. J. Marcinek  
Agricultural University of Poznań, Poland.
- Dr. J. Niemczynowicz  
Lund University of Technology, Sweden.
- Prof. L. Ryszkowski  
Research Centre of Agricultural and Forest Environment, Polish Academy of Sciences, Poland.
- Prof. F. de Smedt  
Free University, Brussels.
- Prof. L. Somlyódy  
IIASA, Austria.
- Dr. B. Szpakowska  
Research Centre of Agricultural and Forest Environment, Polish Academy of Sciences, Poland.

#### **Programme of the courses**

#### **Monday, 21 June**

- Strategy for increasing countryside resistance to environmental threats.
- Cost-effective water quality management strategies in Central and Eastern Europe.
- Conflicts between environmental, social, and economical criteria related to rural areas.

#### **Tuesday, 22 June**

- Groundwater protection policy of the Hannover public water works.
- Estimating regional nitrate and pesticide leaching.
- Strategies for water conservation and pollution - a Swedish perspective.
- Measurement and modelling of water and solute transport in rural areas.

#### **Wednesday, 23 June**

- Energy and water fluxes in an agricultural landscape.
- Climatic change and sustainable development of rural areas.
- Pollution spread control within rural areas of Poznan Province : surface waters and groundwater.

#### **Thursday, 24 June**

- Notion of ecohydrology in the context of rural areas.
- What has happened to the oaks - a case of study.
- Onsite wastewater disposal systems and their effects on groundwater quality.
- Geographical Information Systems for groundwater quality.
- Matter cycling in agricultural landscape - conceptual modelling.
- Living with droughts.

#### **Friday, 25 June**

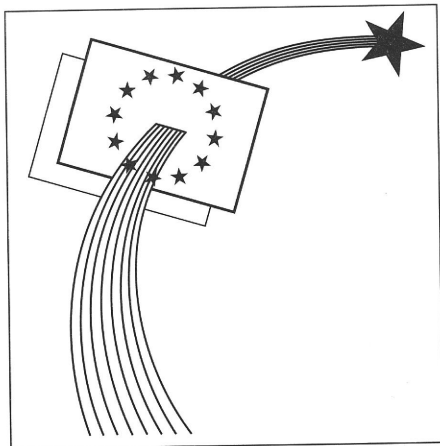
- Hydrological drought analysis.
- Soil as a barrier in pollution control.
- Cycling of elements in agricultural areas.

# NEWS from COMETT

UETP : University Enterprise Training Partnership  
TECHWARE - TECHNOLOGY for WATER RESOURCES

Coordinator : A. Van der Beken

c/o CIBE-BIWM • 70, rue aux Laines/Wolstraat 70, B-1000 Brussels  
Tel +32-2-5188893 • Fax +32-2-5026735



## COMETT - TAO Technical Assistance Office

14, rue Montoyerstraat 14  
B-1040 Brussels

tel +32-2-5138959  
fax +32-2-5139346

### TFHR

**The Task Force for Human Resources,  
Education, Training and Youth**  
released recently :

COMMUNICATION FROM THE COMMISSION TO  
THE COUNCIL AND THE EUROPEAN PARLIAMENT

concerning

European Higher Education-Industry  
Cooperation

### Advanced Training for Competitive Advantage

Ref. : COM (92)457 final, Brussels,  
9 December 1992  
ISBN 92-77-48792-5  
CB-CO-92-478-ENC

Available from L-2985 Luxemburg, Office  
for Official Publications of EC  
or from  
Daniel Guyader, TFHR  
Tel +32-2-2966322 • Fax +32-22957295

See : Press release quoted in the Editorial.

### REPORTS and APPLICATIONS of TECHWARE

The month of January 1993 was a very  
busy one for the Coordinating TECHWARE  
Bureau (CTB). Not less than 3 full  
documents had to be submitted on time to  
COMETT-TAO :

- **On 15 January** : the interim-report for  
contract Ca-92, i.e. the short courses  
ETC "Advanced Water Technology" till  
the end of 1993.: 65 course-days are  
planned.
- **On 25 January** : the Application  
Package for the Call 93 under Strands  
Ba (SPES - Student Placements), Bc (PEP -  
Personnel Exchange Programme), Ca  
(ETC - Advanced Water Technology)

and D (TECHWARE - Meta  
Organization).

### TECHWARE applied for :

- Ba : 60 student placements grants for a  
total of 360 months ( which will be  
subcontracted among CTB and RTBs).
- Bc : 6 personnel exchanges for a total of  
31 months. B,I,NL and UK are  
involved.
- Ca : 29 short courses ETC and 35 course  
sessions to be held in 9 countries.
- D : the objective is to develop the  
Regional TECHWARE Bureau scheme  
also in B, D, E and F.

- **On 31 January** : the final report for the  
Contract 91/1/5520 Ca-91 (July 1991-  
December 1992) . This final report  
shows the following :

number of courses held : 12  
number of sessions held : 21  
number of participants : 481  
total number of teaching hours : 720

The overall expenditure for organizing  
these courses was estimated at 456.143  
ECU. COMETT supported only one fourth  
of it.

Congratulations to all TECHWARE  
members who participated in one or  
another way to these short courses ETC !

### All members are kindly invited to the 5th General Assembly of TECHWARE

Brussels, 7 June 1993

### Draft Agenda

- Approval of the minutes of the 4th  
General Assembly
- Activity Report May 1992 - May 1993
- Financial Accounts 1992 and Financial  
Balance per 31st December 1992
- Report of the Auditors
- The new structure and management of  
TECHWARE
- Budget 1993
- Membership dues 1994 and  
provisional budget 1994
- Appointment of Auditors for 1993.

**This General Assembly is  
followed by the  
EURO-WORKSHOP \*  
8-9 June in Brussels  
including a visit to ANTWERP,  
Cultural Capital Europe 1993.**

**Don't miss the opportunity!**

\* see leaflet enclosure

**Flash - Flow** is the information newsletter for TECHWARE-Members-Only and published irregularly since the end of 1990. From next issue of PANTA RHEI onwards, TECHWARE-Members may find it as an enclosure in a double A4-leaflet format. However, occasionally this FLASH FLOW leaflet may still be sent separately to the members for reasons of mailing rate/weight of PANTA RHEI.

The European Single Market is not yet effective everywhere : mailing abroad in Belgium costs 2,3 times the rate for inland mailing while the weight is limited to 100 gr. instead of 125 gr !

**CONTENTS of Flash-Flow Vol. 3 No. 1 :** Meetings of the Coordinating and Executive Committees ; TASK FORCES (TFs) at work with addresses of TF - leaders ; Terms of Reference of SPECIALIST GROUPS (SG1) ; CALL TO MEMBERS to join a new SG entitled LIFE proposed by member "Ecole des Etablières"(F) ; NEW MEMBERS ; PRESENTING A MEMBER : WASY from Berlin(D).

## CALWARE

**Computer-Aided-Learning in hydraulics, hydrology and WATER Resources technology**

**A major COMETT - strand Cb project of TECHWARE (1992-1995)**

Some twenty active partners from 8 European countries are working together for developing high quality multimedia tools for continuing education.

Titles to be developed during the contract period are :

- Fluid Mechanics
- Open Channel Flow
- Hydraulics of Water Distribution
- Irrigation Water Management
- Urban Drainage

The products will be especially geared towards end-users in enterprises.

### Latest CALWARE News

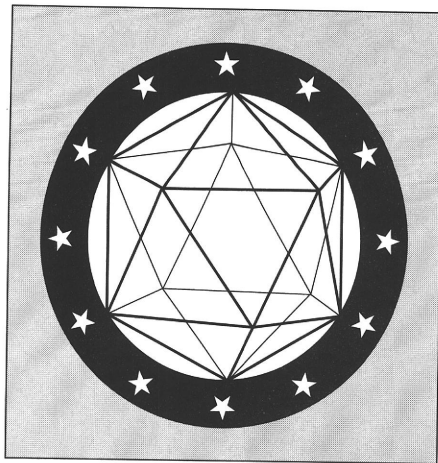
CALWARE goes well :

- The Management Structure is in place (see PANTA RHEI No. 14, p. 10).
- The Project Plan and the Development Strategy have been produced.

By the end of March 1993 all the objectives, the pre-requisite knowledge lists and contents of titles should have been confirmed by the title partners. Also Quality Assurance procedures and the House Style are being discussed.

The first title "Fluid Mechanics" is expected to be authored for about one third by the end of July 1993.

A meeting of all title leaders is scheduled in Brussels, 26 - 27 March 1993.



## The Commission for Hydrology (CHY) of World Meteorological Organization (WMO)

hold its ninth session in Geneva, 5 - 15 January 1993.

A Working Party "Education and Training" proposed a report which was amended and adopted by the Commission for Hydrology.

Out of 12 recommendations, the following is especially interesting : Pedagogical and hardware transportability problems arising from the use of **Advanced Learning Technologies (ALT)** were discussed and the Commission recommended that ALT should be carefully studied, developed and implemented ensuring their adaptability to local conditions. For example, **Computer-Aided-Learning (CAL)** being costly, quality control and standardization of modules was considered essential.

For this purpose an international framework similar to, or as a part of, HOMS could be organized with the support and participation of such organizations as WMO (HWRP), UNESCO (IHP), **TECHWARE (TECHnology for WATER Resources and its project CALWARE funded by the European Community).**

The Commission requested the Advisory Working Group to consider this idea and to develop it, if appropriate, with the assistance of the rapporteurs concerned.

**For all further information, please contact :**

**Ms. Jacqueline Binney**  
University of Bristol  
Dept. of Civil Engineering  
Fax +44-272-251154

## INFO

### CEC-DGXIII DELTA Programme

DELTA (Telematic Systems for Flexible Distance Learning) aims at applications of telecommunication and information technology to education and training. COMNET, the Community Network for European Education and Training, with headquarters at the University of Liège and Prof. Victor de Kosinsky, TECHWARE founding member, as Secretary-General, received funding for two DELTA-projects :

#### BEACON

Field and desk research on the development of the open learning market.

#### TRIBUNE

- Animation of national networks of experts in learning technology.
  - Participation in editorial activities (e.g. FAX & E-Mail Bulletin).
  - Analysis of cases of application of Advanced Learning Technologies (ALT).
- Contact : COMNET, attn. Eva Johnen  
Fax +32-41-534097

From the TRIBUNE-Bulletin, the DELTA Communication Platform / Fortnightly, No. 13

### CAMILLE

CAMILLE (Computer-Aided- Multimedia Interactive Language Learning Environment) is the result of a two year research and development programme at the University of Teesside funded by the British government. This programme has developed a PC-based stand-alone system for computer-based language learning, a software template for the development of interactive multimedia language courses, and an ab initio in French, France Inter-Active. CAMILLE exploits the latest optical-disc technology to deliver full-motion video and digital sound, and by providing immediate record and play-back facilities, it enables the user to see and listen to native speakers of the foreign language and to practise what he or she has learned in a genuinely interactive fashion. Designed for adult-users (aged 16 and up), emphasis is placed on learner autonomy and maximising the potential for self-study. CAMILLE combines this highly interactive language learning environment with a "communicative competence" approach to language acquisition delivered within a hypermedia framework for video, audio and text storage and retrieval. Digitised interactive video simulates the second-language environment by allowing the learner to observe and be taught by native speakers filmed on location. Interactive audio allows for oral responses which can be monitored and compared instantaneously with "model" responses by native speakers. Hypermedia gives the learner instant access to glossaries, grammar, and interactive exercises as well as the facility to replay any of the video or audio material needed for revision.

For further information contact :  
Dr. C.R. Emery or Mr. B.D. Ingraham  
Tel : +44-642-342550  
E-mail : HUT009@UK.ASC.TP.PA



## FORTHCOMING TECHWARE ACTIVITIES

# EUROPEAN TRAINING COURSES

### ADVANCED WATER TECHNOLOGY

92-SP 1.2

#### WATER AND ENVIRONMENTAL MANAGEMENT

##### River Pollution

Bristol - United Kingdom  
29 March-02 April, 1993  
This course will focus on the assessment and control of river pollution. Topics to be covered include political and economic issues of river pollution and legal aspects of pollution control. EC and international water quality standards and methods of pollution control. The course is intended for managers, engineers, trainers and scientists.

Contact : RTB-UK

92-SP 9.2

#### NETWORK SIMULATION USING THE MUSS MODEL

Pavia - Italy  
May 1993  
This course will provide up-to-date training in the design of open channel networks. The simulation of flow irrigation and

drainage networks and sewer systems is considered, in steady conditions or during transients. Catchment characterisation and rainfall runoff simulation are also considered for drainage networks and sewer systems. Participants will learn how to use the MUSS System through practical application to some case studies.

Contact : RTB-I

92-SP 10.2

#### URBAN DRAINAGE MODELLING IN EUROPE

Brussels - Belgium  
May 1993

This course will assess the suitability of existing engineering procedures in urban drainage modelling. The course will include lectures on : flow survey and verification, the drainage area plan and EC legislation regarding the wastewater directive.

Contact : RTB-UK

92-SP 2.1

#### DRINKING AND WASTEWATER : NETWORK ANALYSIS

Genova - Italy  
21-23 June, 1993

This course will introduce several innovative technologies and methods available to cost effectively manage existing distribution and collection networks that are not fully exploited. The course covers three topics : Network analysis, Optimisation and Main Rehabilitation.

Contact : RTB-I

92-SP 2.4

#### WATER AND ENVIRONMENTAL MANAGEMENT Flood Mitigation & Pollution

Bristol - United Kingdom  
21-25 June, 1993

The content of this course focuses on flood warning, flood forecasting, models and

river flood modelling as well as on the rainfall and runoff data used in these computer applications. Data collection, analysis and prediction will be stressed. Special attention is to be given to the hydraulics of river floods, hydraulic structures, and their impact on flooding, stability maintenance and protection of flood banks (with cost/benefit analysis), and the impact of sediment transport on flooding.

Contact : RTB-UK

92-SP 1.5

#### FLOOD HAZARDS IN THE MEDITERRANEAN COUNTRIES :

##### Monitoring Forecasting and Management

Genova - Italy  
June 1993

The main topics covered by this course include: Flood hazards in small catchment basins, technological developments in cloud monitoring and real-time quantitative precipitation estimation.

##### First Day

Introduction and Course presentation  
Prof. F. Siccardi - Prof. L. Ubertini  
Meteorological forecasting in the  
Mediterranean ambient

Dr. Maria Del Carmen Llasat

Dr. S. Palmieri

GIS Application in natural hazard  
assessment and mitigation

Prof. G.A. Schultz

##### Second Day

Remote sensing of natural hazard and  
precipitation by satellites

Dr. E. Barrett

Passive and active microwave sounding of  
cloud systems (Polar Satellite and Radar)

Dr. J.W.F. Goddard

##### Third Day

Coherence assessment of multisensor  
observations

Prof. A. Mugnani - Dr. Levizzani

## TECHWARE EUROPEAN TRAINING COURSES

Edition March 1993

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

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

Name : .....

Address : .....

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

Risk perception and distributed warnings  
 Dr. L. Lanza  
 Civil protection and non-structural measures  
 for hazard mitigation  
 Dr. M. Conti  
 AQUATER ISMES-ALENIA Presentation  
 Master plan : Hydrological Risk  
 Prof. G. Roth  
 Contact : RTB-I

92-SP 10.1

**WATER AND ENVIRONMENTAL MANAGEMENT**

**Industrial Piping and Pumping Systems**

Limerick - Ireland  
 14 - 16 June 1993  
 This course aims to examine the use of computer aided learning techniques in the field of advanced water technology. The course is designed for engineers playing a key industrial role in engineering project system design/evaluation/detail economic analysis/commission of the project.  
 Contact : RTB-UK

92-SP 10.3

**COMBINED SEWER OVERFLOWS**

Delft - the Netherlands  
 16 June 1993  
 The course will include lectures on : consent standards for storm sewage overflows, design and practise, and storage tanks in sewerage systems.  
 Contact : RTB-UK

92-SP 1.1

**REAL TIME CONTROL IN URBAN DRAINAGE**

Wallingford - United Kingdom  
 13 - 16 July 1993  
 This course aims to provide an introduction to the principles of RTC in Urban Drainage. It will include lectures on telemetry systems, simulation models, real time control, operation optimisation and pollution control.  
 Contact : RTB-UK

92-SP 2.3

**WATER AND ENVIRONMENTAL MANAGEMENT**

**Coastal Defence**

Bristol - United Kingdom  
 13-17 September, 1993  
 This course examines the sea and coastal structures. Computer modelling for the prediction of waves are studied as well as the design of coastal defence structures, such as sea walls. Environmental, geological, legal and economic aspects are also examined.  
 Contact : RTB-UK

**EURO-WORKSHOPS**

on RTD & D for Water Resources Management

*see enclosures in this issue*

Lisbon - Portugal, 5-6 April 1993

Brussels - Belgium, 8-9 June 1993

Potenza - Italy, 28-29 June 1993

Wallingford - United Kingdom, 15-16 September 1993

Each workshop will explain the basics, the methodology, and the advanced reasoning applied in the SAST project No. 6 "RTD for the Supply and Use of Freshwater Resources". The various project reports will also be discussed (see list reports, this issue p. 14). The course will also focus on existing and future RTD&D programmes. Finally, the discussions and recommendations of the workshops are also intended to finalise a suitable regional policy for the Regional TECHWARE Bureaux (RTBs), and to provide training in the preparation of projects for submission in the Fourth Framework Programme of the EC.

**TECHWARE**

**Membership Dues 1993**

Decision of the General Assembly of Lisboa, 12 June 1992

- Individual Consultant.....210 ECU
- University, Laboratory or Department of School or non-profit Research Institute .....230 ECU
- Enterprise/Undertaking/Authority (less than 200 employees) .....315 ECU
- Professional or Scientific Association, UETP's, Federation of enterprises .....420 ECU
- Enterprise/Undertaking/Authority (more than 200 employees) .....525 ECU

*Apply for membership at one of the TECHWARE Bureaux CTB or RTB.*

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

**CTB - Coordinating TECHWARE Bureau**

c/o CIBE-BIWM  
 Wolstraat 7, rue aux Laines, B - 1000 Brussels, Belgium  
 tel +32-5188893 • fax +32-25026735  
 Bank Accountnumber : ASLK-CGER BANK 005-4323374-76  
 P.O. 1436 - Brussels 1, B - 1000 Brussels  
 telex 26860 • fax +32-2-139117  
 For easy and quick money transfer, use code : 61189SWIFT 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

# NEWS from HUMAN CAPITAL AND MOBILITY

Pan-European Scientific Network : WEEL - Water Environment European Laboratories  
(subnetwork of TECHWARE)

Coordinator : Prof. F. Siccardi  
Università di Genova, Istituto di Idraulica - Via Montallegro 1, I - 16100 Genova, Italy  
tel +39-10-3532496 • fax +39-10-3532481



## HUMAN CAPITAL and MOBILITY CEC - DG XII

75, rue Montoyerstraat 75  
B-1040 Brussels

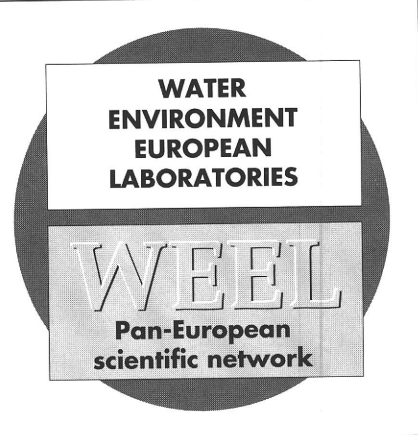
tel +32-2-2955369  
fax +32-2-2963307

### HUMAN CAPITAL and MOBILITY (HCM) praised !

The Belgian Delegation on the HCM Committee views the programme as particularly important for the entire scientific community. *"It will foster aspects such as collaboration between disciplines and free choice more than do training activities concentrated solely within the scope of specific RTD programmes" . . . "Networks constitute an excellent instrument for development collaboration, hence mobility, between different laboratories. Under the 4th framework programme a sufficient level of funding should be allocated for this activity . . ."*

The Belgian Delegation also comments as follows : *" . . . it is advisable to develop simple, quick and effective procedures, covering all steps from application/ submission to the signing of contracts, including the evaluation and decision stages. This is the only way to ensure efficient management of this important programme".*

Let's hope that the new Commissioner will take advantage of the successful implementation of TFHR-programmes such as ERASMUS and COMETT for strengthening the managerial aspects of the HUMAN CAPITAL and MOBILITY Programme.



Sofar, TECHWARE-WEEL is waiting for its contract within HUMAN CAPITAL and MOBILITY (480.000 ECU/2 years). Meanwhile, the coordinator of WEEL, Prof. F. Siccardi has received definite proposals from the WEEL participants for sending or receiving nominated young researchers. Hence, WEEL is ready to start immediately the implementation of the project in 1993/94. The starting date is expected to be 1st July 1993.

Many new partners, members of TECHWARE are looking forward to join WEEL : a new proposal for 1994/1995 will be prepared in May 1993. WEEL will also apply for a series of EURO-CONFERENCES entitled **"Fractals in Hydrology"** a proposal of Politecnico di Milano.

A Scottish member of TECHWARE has drawn the Editor's attention to the Scottish meaning of the word WEEL. The Oxford English Dictionary, 2nd Ed. Clarendon Press, Oxford, 1989 tells us :

**weel** (Scottish and northern, with many forms e.g. *wel, wiel, weil, weal, wheel*) :

*A deep pool; a deep place in a river or the sea; a whirlpool or eddy. Weel means also : 1. A wicker trap for catching fish, esp. eels; 2. A basket, esp. one in which fish are kept. The form wiel is well-known in Flemish, e.g. in the very common family name "Vandewiele".*

Obviously, the coordinator Prof. F. Siccardi has chosen the appropriate acronym for TECHWARE's pan-European scientific network! Let WEEL be the whirlpool wherein new ideas for the water sciences are swallowed at high turbulence and let it be at the same time the basket for keeping the brightest young researchers active in the Water Environment European Laboratories !



# NEW ORGANISATION OF CEC - DG XII for Science, Research and Development

	A	B	C	D	E	F	G	H
<b>OLD</b>	Scientific and technological policy	Means of action	Technological research	Nuclear safety research	Environment and non-nuclear energy sources	Biology	Scientific and technical cooperation with non-member countries	Science and technology policy support; Fusion programme
<b>NEW</b>	R & TD Actions: Strategy and accompanying measures	R&TD Actions: Cooperation with third countries and interantional organisations	R&TD Actions: Cooperation with third countries and interantional organisations	R&TD Actions: Environment	R&TD Actions: Life sciences and technologies	R&TD Actions: Energy; fusion programme; JET; ITER	R&TD Actions: Human resources and mobility	

With 4 units : European Economic Area, Eureka, International organisations and with a sector dealing with COST, Central and Eastern Europe (PECO); non-European industrialised countries; developing countries.

## EURO ABSTRACTS

All scientific and technical reports published by the Commission of the European Communities are announced in the monthly periodical 'euro abstracts'. For subscription (1 year : ECU 110) please write to the address below. :

Office for official Publications of the European Communities of the European Communities, L-2985 Luxembourg.

## EC RESEARCH FUNDING : A GUIDE FOR APPLICANTS

DG XII, 172 pp., ECO 10, ISBN 92-826-3640-2, EUR 14122EN

This revised and useful edition of the Guide explains the third Framework Programme, specific programmes adopted under it and related programmes. R&TD cooperation activities with third countries are also covered.

The Guide gives procedural details as to who may participate in the various programmes, how to prepare a proposal and how Commission contracts are drafted and implemented. Useful hints are given as to where to seek further information, including contact points within the Commission and other sources of help.

Available from : Office for Official Publications of the European Community  
2 Rue Mercier, L-2985 Luxembourg.

## INTERNATIONAL SCIENTIFIC COOPERATION

### Cooperation with the ALA (Asia, Latin-America) and MED (Mediterranean) countries.

#### General Principles

The scientific objectives and the sectors of activity for cooperation are established by mutual agreement between the European Community and the national authorities of the Third Countries involved.

All proposals are submitted to the national authorities in the Third Countries for endorsement before transmission to the Commission of the European Communities for evaluation.

Scientists from research centres both in the public and in the private sectors, universities, industry, national research institutes, etc., are eligible to participate.

#### Sectors of interest :

- Physical, mathematical and engineering sciences
- Materials sciences
- Chemical sciences
- Environmental sciences
- Earth sciences
- Health and biomedical sciences
- Biological sciences
- Agricultural sciences

#### Actions :

- Post-doctoral Fellowships
- Joint Research Proposals
- Training and exchange of specialists
- Information exchange

Further information may be obtained by contacting :

Commission of the European Communities  
Directorate-General XII G 3

B-1049 Brussels

Telex : 21877 comeu b

Fax : +32-2-2363308/+32-2-2366252

or

The EC-Delegation in the Third Country.

#### The framework

International Scientific Cooperation takes place within the framework of bilateral agreements between the European Community and the following countries :  
**ASIA** : Bahrain, Bangladesh, Brunei, China, India, Indonesia, Iraq (subject to resumption with this country), Kuwait, Malaysia, Mongolia, Nepal, Oman, Pakistan, The Philippines, Qatar, Saudi Arabia, Singapore, Sri Lanka, Thailand, Yemen Arab Republic.

**LATIN AMERICA** : Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela.

**MEDITERRANEAN** : Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia and Turkey.

**AVICENNE** is the pilot action for these MED-countries.

*Negotiations to conclude bilateral agreements with other ALA countries are in progress. This will bring the number of third Countries involved to over forty.*

## COOPERATION WITH DEVELOPING COUNTRIES

Life Sciences and Technologies for Developing Countries : STD3

Further information : Mr. Tim Hall - tropical sub-tropical area.  
Tel +32-2-2952808

Source : Innovation + Technology Transfer.  
Vol. 13/2. Publication of DG XIII-D-2.

## SAST

### RTD for Freshwater Resources Management in the Community

With reference to PANTA RHEI No.13, September 1992 where SAST project No.6 "Research and technological development for the supply and use of freshwater resources" was discussed, the following final list of reports is given.

These reports can be ordered either at :

- Office of Publications of EC  
L-2935 Luxembourg
- or through  
- Mr. E. Forti, CEC-DGXII-H-2-SAST  
200, rue de la Loi, B-1049 Brussels  
Fax +32-2-2956995

**Attention :** participants of TECHWARE's EURO-WORKSHOPS receive reports free of charge (see enclosures).

#### SAST Project No. 6 Reports

##### Strategic Dossier

by H. Williams and D. Musco, ECOTEC  
September 1992  
Catalogue No. CD-NA-14723-EN-C (138  
pages - 21.00 ECU)

##### Overview Report

by H. Williams and D. Musco, ECOTEC  
October 1992  
Catalogue No. CD-NA-14724-EN-C

##### CASE STUDIES

###### Report on monitoring and modelling

by I. Krüger Consult AS and Danish  
Hydraulic Institute  
July 1992  
Catalogue No. CD-NA-14725-EN-C (98  
pages - 15.00 ECU)

###### Report on regional dimension of water RTD

by G.B. Engelen, TECHWARE  
July 1992  
Catalogue No. CD-NA-14726-EN-C (43  
pages - 7.50 ECU)

###### Report on new sources and better use of existing sources

by J.J. Peters, TECHWARE  
July 1992  
Catalogue No. CD-NA-14727-EN-C (91  
pages - 15.00 ECU)

###### Report on freshwater demand and use

by F. Siccardi, TECHWARE  
Catalogue No. CD-NA-14728-EN-C (61  
pages - 10.50 ECU)

###### Report on treatment, storage and distribution

by M. Farley, T. Hall and C. Evins, WRc  
October 1992  
Catalogue No. CD-NA-14729-EN-C (96  
pages - 15.00 ECU)

##### Memorandum on the outcome of the european workshop on RTD for freshwater resources management in the Community

by M. Mendes de Carvalho, LNEC  
September 1992  
Catalogue No. CD-NA-14730-EN-C (32  
pages - 6.00 ECU)



### CEC - DG XIII- D : Dissemination and Exploitation of RTD- Results, Technology Transfer and Innovation

VALUE II - Centralised Action Work  
programme

#### More VALUE II : Relay Centres

About 30% of VALUE II resources will be devoted to a network of Relay Centres which will strengthen national and regional roles in technology transfer.

By making use of national and regional organisations, future dissemination and exploitation activities under VALUE II will be more in tune with local needs and traditions. At the same time, the central position of VALUE II will be used to encourage networking among the relay centres, in order to introduce a European dimension to local activities.

TECHWARE has been selected for COMEX 1, a sub-programme of VALUE for valorization of RTD-results, and hence, could play a role as a sectoral subnetwork of the Relay Centres.

### INNOVATION + TECHNOLOGY TRANSFER

Published by the Commission off the European Communities, DG XIII.

The Innovation and Technology Transfer newsletter brings you the latest information about Research and Technological Development in the European Community. Subscribe to a free copy to receive the latest information on :

- Framework Programme specific programmes
- Annual work plans
- Calls for Proposals
- VALUE actions
- Ongoing developments
- SPRINT initiatives
- Publications and Conferences

Contact : Mr. E. Philips  
CEC, DG XIII/D—2, JMO B4/082  
L-2920 Luxembourg.  
Fax +352-430132084

## RESEARCH TRAINING

### Research Fellowships 1993 of NATO Committee on the Challenges of Modern Society

Several fellowships are available for research projects in :

*Portugal :* desertification in developed areas.

*Italy :* - integrated systems for agrometeorological support  
- sea-lagoon interaction

*Germany - The Netherlands - USA :*  
evaluation of demonstrated and emerging remedial action technologies for the treatment of contaminated land and groundwater.

Contact : NATO Scientific Affairs Division,  
Fellowships Programme  
B-1110 Brussels, Belgium

#### Research fellowships in Norway duration : 9 months

Contact : Norwegian Research Council for Science and the Humanities, Secretariat for Cultural Exchange Programmes,  
Sandakerveien 99  
N-0483 Oslo 4, Norway  
Tel : +47-2-157012

#### Natural Sciences and Engineering Research Council of Canada - International Fellowships -

Contact before November 1993 :  
International Fellowships, Scholarships and International Programs Directorate,  
Natural Sciences and Engineering Research Council of Canada  
200 Kent Street  
Ottawa, Ontario, Canada K1A 1H5

## INFO

### BLUE EUROPE BLEUE of the Council of Europe

#### Final Conference

Köln (D) : 30-31 March 1993  
Results of the action programme 1992-93 will be presented.

#### Council of Europe

Strasbourg (F) : 10-14 May 1993  
The rapporteur, Mr. C. Pistre, will present the proposals of the action programme for a pan-European policy for water resources management.

BP 431 R 6  
F-67006 Strasbourg Cedex  
Tel +33-88412000  
Fax +33-88412781  
Telex EUR 870 9443 F

# CALENDAR

RN →

See reference number for corresponding addresses - page 17

## ▼ MARCH 1993

**8** 21-24 MARCH  
Cambridge,  
Massachusetts (USA)  
International Conference  
on Technology and  
Education.

**9** 22-26 MARCH  
Trondheim (N)  
UETP-EEE /Short  
Modular Course  
Environmental Safety  
Education

**10** 22-27 MARCH  
Paris (F)  
International Conference  
on Hydrology.  
Towards the 21st  
Century - Research and  
operational needs.  
Theme : Capacity  
Building, Training and  
Education.

**12** 29 MARCH - 02 APRIL  
Bristol (UK)  
**TECHWARE ETCourse**  
**SP1.2**  
River Pollution.

**45** 29-30 MARCH  
Liège (B)  
CESAER Workshop on  
Engineering Education  
in Developing  
Countries.

**1** 29 MARCH - 02 APRIL  
Davis, California (USA)  
Water Surface Profile  
Computation : HEC-2  
Microcomputer  
Applications.

**4** 29 MARCH - 03 APRIL  
Nice (F)  
COMETT Advanced  
Education Course  
Evaluation of impacts  
and priority settings in  
environmental  
management.

## APRIL 1993

**5** APRIL annually  
Silsoe Bedford (UK)  
Agricultural Water  
Management.  
3 Month Post-  
experience Programme

**21** 05-06 APRIL  
Lisbon (P)  
**TECHWARE**  
**EURO-WORKSHOP**  
92-SE1

RTD & D for water  
management.

**2** 05-09 APRIL  
Cagliari (I)  
HYDROCONTROL Courses  
Strumenti di misura, di  
regolazione e di  
controllo.

**1** 19-21 APRIL  
Davis, California (USA)  
Sediment Transport  
Calculations:  
HEC-6 Microcomputer  
Applications.

**14** 19-23 APRIL  
Gödöllő (H)  
Short intensive course  
EWA-Ring  
Agroecological aspects  
of water management  
and land reclamation.

**6** 19-22 APRIL  
Birmingham (UK)  
Short Course  
Organic Pollution of  
Groundwater.

**7** 20-23 APRIL  
La Rochelle (F)  
Short Course.  
Estuarine ecology and  
coastal management.

**16** 27 APRIL  
Berlin (D)  
BWK-Symposium on  
training engineers in  
water and wastewater

## MAY 1993

**44** MAY - JUNE  
Cairo (Egypt)  
International Post  
Graduate Training  
Course on  
Environmental  
Hydrology for Arid and  
Semi-Arid Regions.

**11** MAY 1993  
Pavia (I)  
**TECHWARE ETCourse**  
**SP9.2**  
Network Simulation  
using the MUSS Model.

**12** MAY 1993  
Brussels (B)  
**TECHWARE ETCourse**  
**SP10.2**  
Urban Drainage  
Modelling in Europe.

**9** 03-07 MAY  
Trondheim (N)

UETP-EEE /Short  
Modular Course  
Environmental Safety  
Education.

**17** 04-06 MAY  
London (UK)  
International Training  
Equipment Conference

**1** 10-12 MAY  
Davis, California (USA)  
Courses HEC  
Hydraulic Analysis of  
Dam Failure : DAMBRK

**31** 10-14 MAY  
Charlottesville (USA)  
Short course on  
Hierarchical-  
Multiobjective Approach  
in Water Resources  
Planning and  
Management.  
Theme : Risk Assessment  
and Management.

**13** 10-12 MAY  
Berlin (D)  
Conference  
Quality and Technology  
in distance education :  
the East-West dialogue.

**2** 10-14 MAY  
Cagliari (I)  
HYDROCONTROL Courses  
Sistemi di automazione  
e di teleoperazione.

**15** 17-19 MAY  
Delft (NL)  
Course : Moderne  
Drinkwaterzuiverings-  
technieken.

**19** 17-28 MAY  
Wien (A)  
Post-Graduate Course  
Geographic Information  
Systems.

**28** 19-18 MAY  
Bet Dagan (Israël)  
International Course on  
Hydrometeorology.

**18** 23-28 MAY  
Washington, DC (USA)  
Several Short Courses  
1993 International  
Conference on Hydro-  
Science & Engineering.

**2** 24-28 MAY  
Cagliari (I)  
HYDROCONTROL Courses  
Monitoraggio delle  
acque sotteranee,  
modelli di flusso e di

transporto.

**33** 24 MAY-4 JUNE  
Deauville (F)  
Engineering Risk and  
Reliability in a changing  
physical environment -  
with special reference to  
climatic uncertainty.

**30** 24-28 MAY  
Rueil-Malmaison (F)  
Short course on Basic  
and Advanced  
Principles.  
Physical Modelling of  
Gas-Liquid Flows.

**5** 24-28 MAY  
Silsoe Bedford (UK)  
Course  
Water Well Drilling

**4** 24-29 MAY  
Urbino (I)  
COMETT Advanced  
Education Course  
Evaluation of impacts  
and priority settings in  
environmental  
management.

## JUNE 1993

**11** JUNE 1993  
Genova (I)  
**TECHWARE ETCourse**  
**92-SP1.5**  
Flood hazards in the  
Mediterranean  
countries: Monitoring  
and forecasting  
management.

**12** JUNE 1993  
Delft (NL)  
**TECHWARE ETCourse**  
**SP10.3**  
Combined Sewer  
overflows.

**2** 07-11 JUNE  
Cagliari (I)  
HYDROCONTROL Courses  
Telerilevamento,  
elaborazione di  
immagini e sistemi  
informativi territoriali.

**20** 07-12 JUNE  
Leuven (B)  
International Post-  
graduate Course  
Soil Pollution and Soil  
Protection.

**34** 07 JUNE-24 JULY  
Southampton (UK)  
Short Course  
Rehabilitation and  
Management of

**Note :** In view of PANTA RHEI's objectives, this calendar includes only educational and training or related activities in the field of water and HUMAN RESOURCES and MOBILITY meetings. These announcements are made free of charge. Advertising of other activities such as Conferences, are welcome. See rates on page 19. Please contact the Editor.



Irrigation Projects.

**29** 07 JUNE-02 JULY  
Ankara (Turkey)  
Course in Sediment  
Transport Technology.

**21** 08-09 JUNE  
Brussels (B)  
**TECHWARE EURO-WORKSHOP  
92-SE1**  
RTD & D for water  
management.

**32** 10 JUNE-09 JULY  
Moscow (Russia)  
International Higher  
Hydrological Course. The  
hydrological background  
of the rational use of  
water resources.

**12** 14-16 JUNE  
Limerick (IRL)  
**TECHWARE ETCourse  
SP10.1**  
Computer Aided  
Learning. Industrial Piping  
and Pumping Systems.

**1** 14-18 JUNE  
Davis, California (USA)  
Flood Plain Hydrology :  
HEC-1 Microcomputer  
Applications.

**12** 16 JUNE  
Delft (NL)  
**TECHWARE ETCourse  
SP10.3**  
Combined sewer  
overflows.

**43** 18 JUNE  
Marseille (F)  
Les Nouveaux Outils  
Pédagogiques pour  
l'Enseignement Supérieur.

**1** 21 JUNE  
Davis, California (USA)  
Courses on HEC water  
engineering simulation  
models. Floodplain :  
How is it defined ?

**11** 21-23 JUNE  
Genoa (I)  
**TECHWARE ETCourse  
SP2.1**  
Drinking and  
Wastewater : Network  
analysis.

**12** 21-25 JUNE  
Bristol (UK)  
**TECHWARE ETCourse  
92-SP2.4**  
Flood Mitigation.

**2** 21-25 JUNE  
Cagliari (I)  
HYDROCONTROL Courses  
Sprechi, perdite e metodi  
do contenimento.

**14** 21-26 JUNE  
Poznan (PL)  
Training Seminar EWA-  
Ring.  
Water resources  
conservation and  
pollution spread control  
within rural areas.

**35** 24-30 JUNE  
Maastricht (NL)  
Course  
An introduction to the  
administration of  
international education.

**11** 28-29 JUNE  
Potenza (I)  
**TECHWARE EURO-WORKSHOP  
92-SE1**  
RTD & D for water  
management.

**35** 24 JUNE-03 JULY  
Maastricht (NL)  
Course  
Administration and policy  
development in  
international education.

**35** 29 JUNE-03 JULY  
Maastricht (NL)  
Course  
Policy development in  
international education.

### JULY 1993

**36** 02-17 JULY  
Flagstaff (USA)  
Course  
Introduction to higher  
education in the U.S.

**2** 05-09 JULY  
Cagliari (I)  
HYDROCONTROL Courses  
Gestione delle  
emergenze :  
manutenzione e scorte.

**37** 05 JULY-24 SEPT  
Leuven (B)  
Training course in  
computer application for  
irrigation.

**12** 13-16 JULY  
Wallingford (UK)  
**TECHWARE ETCourse  
SP1.1**  
Real time Control in  
Urban Drainage.

**2** 19-23 JULY  
Cagliari (I)  
HYDROCONTROL Courses  
Normativa e tecnologie  
di trattamento per il  
reimpiego e lo  
smaltimento delle acque  
reflue.

### AUGUST 1993

**37** 02 AUG-24 SEP  
Leuven (B)  
Training course.  
Computer application in  
irrigation and drainage  
design.

**37** 02 AUG-24 SEP  
Leuven (B)  
Training course.  
Application of remote  
sensing and GIS in land  
and water management.

**20** 16 AUG-26 NOV  
Wageningen (NL)  
32nd International Post-  
Graduate Course on  
Land Drainage

**23** 30 AUG-03 SEP  
Dublin (IRL)  
8th World Conference  
on Co-Operative  
Education.

**19** 30 AUG-10 SEP  
Wien (A)  
Post-Graduate Course  
Geographic Information  
Systems

**38** 31 AUG  
Tokyo (Japan)  
Seminar on continuing  
education for capacity  
building in hydraulic and  
water resources  
engineering.

**34** 31 AUG-17 SEP  
Southampton (UK)  
Short Course  
Development and the  
Environment.

### SEPTEMBER 1993

**23** SEP annually  
Edinburgh (UK)  
Glasgow, Scotland (UK)  
Msc Course for Water  
Engineers  
Water Resources.  
Management &  
Engineering.

**4** 06-11 SEPTEMBER  
Portugal  
COMETT Advanced  
Education Course  
Evaluation of impacts  
and priority settings in  
environmental  
management.

**25** 06-11 SEPTEMBER  
The Hague (NL)  
15th International  
Congress on Irrigation  
and Drainage : Research  
and training programs  
and their influence on

institutional management  
performance.

**12** 13-17 SEPTEMBER  
Bristol (UK)  
**TECHWARE ETCourse  
92-SP2.3**  
Coastal Defence.

**2** 13-17 SEPTEMBER  
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HYDROCONTROL Courses  
Strumenti di misura, di  
regolazione e di  
controllo.

**12** 15-16 SEPTEMBER  
Wallingford (UK)  
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92-SE1**  
RTD & D for water  
management.

**24** 20-24 SEPTEMBER  
Lodz (PL)  
2nd East-West Congress  
on Engineering  
Education  
Enhancing Engineering  
Education Research.

**34** 27 SEPT-15 OCT  
Southampton (UK)  
Short Course  
Effective Irrigation  
management

### OCTOBER 1993

**5** OCTOBER annually  
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MSc courses in Water  
Irrigation Engineering.  
Soil and Water  
Engineering  
Irrigation Water  
Management  
Environmental Water  
Management  
Community Water  
Supplies.

**39** OCTOBER annually  
Coimbra (P)  
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Hydraulics and Water  
Resources.

**11** OCTOBER 1993  
Genova (I)  
**TECHWARE ETCourse  
SP1.4**  
Reuse of freshwaters.

**11** OCTOBER 1993  
Pavia (I)  
**TECHWARE ETCourse  
SP9.1**  
Surface Water Pollution.

**25** 06 OCTOBER  
Budapest (H)  
Seminar of the IWSA  
Foundation for the  
Transfer of Knowledge

Continuing education  
needs for Integrated  
Water Resources, World-  
Wide.

**2** 11-15 OCTOBER  
Cagliari (I)  
HYDROCONTROL Courses  
Sistemi di automazione e  
di teleoperazione.

**11** 27-29 OCTOBER  
Genova (I)  
**TECHWARE ETCourse  
SP3.3**  
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of Drinking Water  
Supply.

### NOVEMBER 1993

**26** NOVEMBER '92  
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Pre-conference short  
course : Environmentally  
Sound Water Resources  
utilization.

**3** 10-12 NOVEMBER  
Singapore  
International Conference  
on Engineering  
Education '93

**2** 15-19 NOVEMBER  
Cagliari (I)  
HYDROCONTROL Courses  
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elaborazione di  
immagini e sistemi  
informativi territoriali.

### DECEMBER 1992

**2** 13-17 DECEMBER  
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**11** 15-17 DECEMBER  
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**TECHWARE ETCourse  
SP3.4**  
Advanced Waste Water  
Treatment and  
Technologies.

### 1994

**19** 24 JAN-04 FEB  
Wien (A)  
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Systems.

**40** FEBRUARY annually  
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MAppSc Courses  
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#### Quality Assurance in Higher Education

1992, 258 pp., 0 75070 X - cloth - £30.00.

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UNESCO, Paris 1992, IHP-IV Projects M-2-1 and M-2-2

*Contents* : Difficulties related to information, in developing countries ; Short history of computerised databases ; Online access host systems ; Computer networks ; Gateways and intelligent interfaces ; The databases : Water-databases, Water-related databases and mega-databases ; CD-ROM versus online ; Directory of databases related to water and the environment.

*Contact* : UNESCO, Division of Water Sciences

Place de Fontenoy, F-75700 Paris  
Fax : +33-454671690

### RIVER QUALITY - ECOLOGICAL ASSESSMENT AND CONTROL

Edited by : P.J. Newman, WRc, Medmenham, United Kingdom, M. A. Piavaux, Commission of the European Communities, Brussels, Belgium and R.A. Sweeting, National Rivers Authority (Thames Region), Reading, United Kingdom.

Proceedings of the International

Conference on River Quality - Ecological Assessment and Control held at Brussels from 16-18 December 1991.

*Available at* : Office for Official Publications of the European Communities L-2935 Luxembourg  
1992 - III, 751 pp.  
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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 its HUMAN RESOURCES and MOBILITY programmes and distributed free of charge. The present distribution is 5,000 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-WHEEL-BEST pan European scientific network "Water Environment European Laboratories"

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- analysis of training needs

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all things are in constant flux

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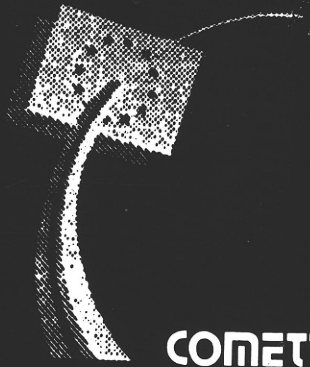
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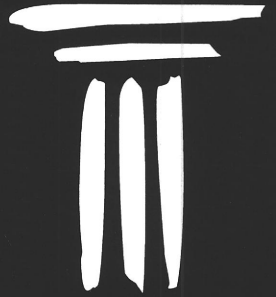
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