

# PANTA RHEI

628.1

this issue  
Guidelines for Community Action  
in the field of  
Education and Training

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the HUMAN RESOURCES and MOBILITY Programmes of the European Community (EC)

A QUARTERLY BULLETIN

N° 17 - SEPTEMBER- 1993

**BEST**

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

**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 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).

**EC**

Executive Committee of TECHWARE.

**ECTS**

European Community Course Credit Transfer System (ERASMUS)

**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.

**EWA Ring**

JEP (TEMPUS) in the field of Environment, Water and Agricultural soils.

**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.

**RTD & D**

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 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.

**UNICA**

Network of Universities from the Capitals of Europe

**PRESS RELEASE**

Three years ago, some twenty universities located in European capitals made the joint resolution of establishing the UNICA network, in

order to achieve a more tolerant and democratic Europe through various programmes such as the exchange of professors and students. Recently assembled in Lisbon, these universities express

their deep concern about the rising of xenophobia, and ultranationalist and fundamentalist extremisms of all kinds. It is not surprising that these old demons should rear their ugly heads in a Europe that seems to be preoccupied mainly with financial success and neglects education and culture.

These universities therefore urge political leaders to remember that democracy is a system requiring that power be both shared and controlled and that an appropriate cultural level is the essential condition to exercise this challenge. The time has come for them to spread again the values of the very democracy which they claim is their primary concern.

SHORT COURSE NO. 1

## *Civil Engineering Hydraulics*

**Monday, Tuesday & Wednesday**  
**13th, 14th and 15th December 1993**



SHORT COURSE NO. 2

## *Hydraulics of Civil Engineering Structures*

**Wednesday, Thursday & Friday**  
**15th, 16th and 17th December 1993**

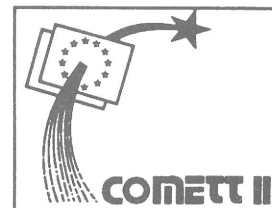
Short courses for Practising Engineers

Courses SP NO. 10 · 8 Supported by



TECHWARE B & I

ANNEX TO PANTA RHEI NO. 17



# **Department of Civil Engineering**

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## **Short Course No. 1**

### **CIVIL ENGINEERING HYDRAULICS**

#### **Aims**

This three day course is designed to give practising engineers in the Water Industry a review of the hydraulic aspects of flow in pipes and open channels.

The applied aspects include design of piping systems and stable channels, hydraulic modelling and associated software package demonstrations. These are covered by specialists from industry.

#### **Course Content**

##### **Basic principles of Hydraulics:**

- \* Fundamental concepts of ideal fluid motion.
- \* Energy, Momentum and Continuity concepts.
- \* Real fluid motion around bodies.

##### **Hydraulics of Flow in Conduits:**

- \* Principles of steady flow in pipes.
- \* Characteristics of flow.
- \* Flow resistance in pipes.
- \* Principles of pipe networks.
- \* Hydraulic design concepts of pipeline systems.
- \* Unsteady flow in conduits.

##### **Flow in Open Channels:**

- \* Characteristics of free surface flows.
- \* Application of Energy, Momentum and Continuity principles.
- \* Flow resistance in open channels.
- \* Basic concepts of secondary currents.
- \* Open channel transitions, controls and appurtenances.
- \* Design concepts of stable channels.
- \* Unsteady flow in open channels.

##### **Hydraulic Modelling:**

- \* Dimensional considerations and similarity laws.
- \* Design, construction and study of hydraulic models.
- \* Computational Modelling.
- \* Case studies of physical models.
- \* Software demonstrations and visit to Hydraulics laboratory.

## GENERAL INFORMATION

### Course Team

Professor John R. Chaplin (*City University*)  
K Venkat Rao (*City University*)  
Professor Jack Lewin (*Consultant*)  
Michael Prosser (*Water Resources Enterprises*)  
Charles Reeve (*HR Wallingford Ltd.*)  
Roger Bettess (*HR Wallingford Ltd.*)  
David Hardwick (*Imperial College*)  
Mark W Morris (*HR Wallingford Ltd.*)  
William J Morris (*City University*)  
*European Speaker*

### Venue

The courses will be held in the Civil Engineering Department at City University, situated close to the City of London and easily accessible from Angel, Farringdon and Barbican Underground stations.

### Accommodation

Limited overnight accommodation will be available in the University of Halls of Residence at £26 per single room.

Accommodation is also available with discounted rates at the Holiday Inn near Kings Cross (4 star); at the rate of £65 per night (including VAT) for a single, double or twin room. The Hotel Reservation will be made by the course organiser at the request of the participant and the charges can be paid at the Hotel Reception.

### Further information

For further details on the courses' content and accommodation, please contact **Christine Harris** on 071-477 8151, or **Venkat Rao** (*Course Director*) on 071-477 8148.

### Course Registration

09.00 – 09.30      Coffee and Registration on Monday 13th and Wednesday 15th December 1993  
09.30 – 18.00      Course Sessions  
19.00 for 19.30      Course Dinner on Wednesday 15th December 1993.

*Tuesday 14th, Thursday 16th and Friday 17th December 1993.*

09.00              Course Session Commences  
18.00              Course Session Ends

### Booking and Course Fee

The fee for each course is £425 and the combined fee for two courses is £800, including lunches, coffee and tea on each day and the course dinner on Wednesday evening.

There will be a reduction of 25% in the course fee for members of TECHWARE.

TECHWARE – B & I is the Regional Bureau of TECHWARE which is a non-profit making association supported by the European Community COMETT programme for co-operation between industry and Universities.

## **Short Course No. 2**

### **HYDRAULICS OF CIVIL ENGINEERING STRUCTURES**

#### **Aims**

This three day course is designed to give practising engineers in the Water Industry a review of theory and design of hydraulic structures.

The applied aspects include design, construction and study of physical models, principles involved in computational modelling, case studies and demonstration of software packages. These are covered by specialists from industry.

#### **Course Content**

##### **Hydraulic Modelling:**

- \* Dimensional considerations and similarity laws.
- \* Design, construction and study of hydraulic models.
- \* Computational modelling.
- \* Case studies of physical models.
- \* Software demonstrations and visit to Hydraulics laboratory.

##### **Principles and design of Hydraulic Structures:**

- \* Functions of Hydraulic Structures.
- \* Weirs and Spillways.
- \* Stilling Basins.
- \* Intakes and Culverts.
- \* Drop Structures.
- \* Scour and scour protection.

##### **Mechanical Aspects, Maintenance and Case Studies of Hydraulic Structures:**

- \* Gated Structures.
- \* Vibration of Gates.
- \* Cavitation in hydraulic structures.
- \* Methods of Construction.
- \* Maintenance of Hydraulic Structures.
- \* Case studies of Hydraulic Structures.

# CITY UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

\* SHORT COURSE NO. 1:

## CIVIL ENGINEERING HYDRAULICS

**13th – 15th December 1993**

\* SHORT COURSE NO. 2:

## HYDRAULICS OF CIVIL ENGINEERING STRUCTURES

**15th – 17th December 1993**

### COURSE APPLICATION FORM

Name in full (Dr/Mr/Mrs/Miss/Ms): .....

Organisation or Company: .....

Position: .....

Address for correspondence: .....

.....

.....

.....

Tel No: ..... Fax No:.....

COURSE FEE PER PERSON: \*~~£425~~ / ~~£800~~

COURSE FEE PER PERSON FOR TECHWARE MEMBERS: \*~~£325~~ / ~~£600~~

Please state TECHWARE Membership No:.....

\*Accommodation in Halls of Residence: ..... days at **£26** per night for a single room  
(charges to be remitted together with the course fees to City University).

\*Holiday Inn: ..... days at **£65** (charges to be paid at the hotel reception)

Total Remittance        £ .....

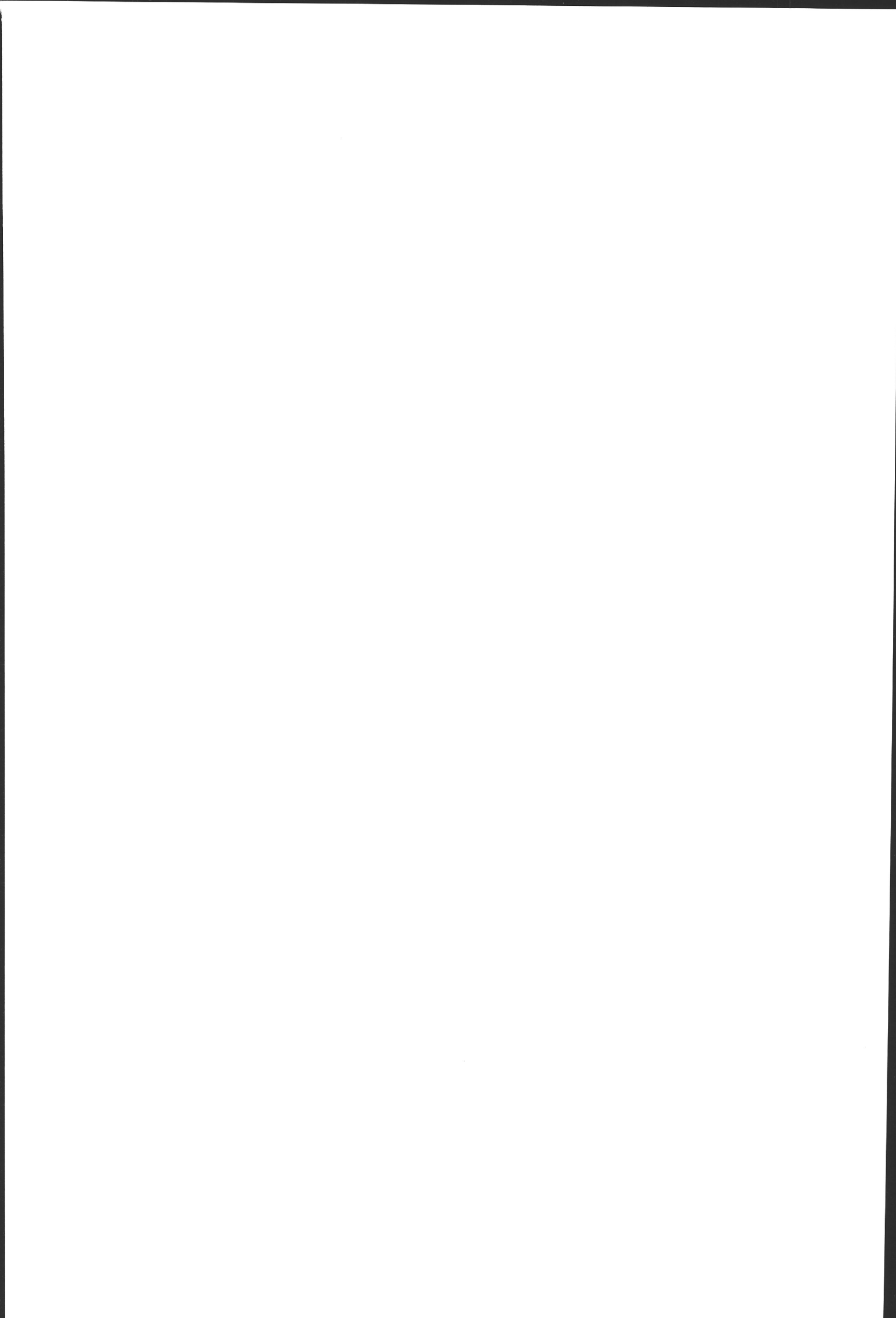
Cheques or Bankers draft in Sterling made payable to **CITY UNIVERSITY.**

Signed: ..... Date:.....

\* Please delete as appropriate

Please return to: Christine Harris, Department of Civil Engineering,  
City University, Northampton Square, London EC1V OHB

Tel: 071-477 8151 Fax: 071-477 8570







## WHAT ARE THE BENEFITS OF STUDENTS PLACEMENTS ?

### 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 placements 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.

### DEMANDS from STUDENTS : See reverse side

### 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 200 and 300 ECU per month and is supplementary to any other grant or contribution offered by the enterprise or other organisation.

CTB  
Coordinating  
TECHWARE  
Bureau  
c/o CIBE - BIWM  
Wolstraat 70  
B-1000 Brussels  
Belgium

TEL  
+32-2-5188893  
FAX  
+32-2-5026735

RTB-I  
Regional  
TECHWARE  
Bureau Italy  
c/o AMGA  
Via SS. Giacomo  
e Fillipo  
I-16122 Genoa  
Italy

TEL  
+39-10-83431  
FAX  
+39-10-8343284

RTB-UK  
Regional  
TECHWARE  
Bureau U.K.  
c/o HR WALLINGFORD LTD.  
UK-OX10 8BA  
Oxfordshire  
United Kingdom

TEL  
+44-491-835381  
FAX  
44-491-826703

Code

Home Country

Proposed Host Country

Duration (months)

Period

Topic proposed

## DEMANDS FROM STUDENTS

25 - 08 - 93

OTHER TOPICS ARE NEGOTIABLE

DT92-011	UK	F-B-UK	12m	06/93	Business and Management.
DT92-064	SF	UK-NL-F	6-12m	01/94	Biology, chemistry (research work).
DT92-066	SF	any	6-12m	as soon as possible	Environmental engineering.
DT92-067	SF	UK	12m	as soon as possible	Environmental engineering.
DT92-070	UK	F-NL-I	not specified	1/10/93	Civil engin. (wastewater treatment).
DT92-072	UK	F-E-P	12m	9/93-8/93	Civil eng. (construction sector).
DT92-074	E	UK-B-NL	3m	7/93-10/93	Biology.
DT92-081	I	UK-B-DK	6m	6/93-11/93	Civil eng. hydraulics, Design analysis.
DT92-090	UK	F-B	12m	7/93-7/94	MK, EC, MN.
DT92-091	UK	NL	12m	7/93-7/94	MK, EC, MN.
DT92-093	UK	B-NNL	12m	7/93-7/94	MK, EC, MN.
DT92-094	B	DK-IRL-UK-NLE	3-12m	8-11/93	Agric. engineering.
DT92-099	I	UK-B-D	3m	1/5/93	Hydraulic engin., Civil engin.
DT92-101	E	DK-GR-IRL-NL	6-12m	not specified	Chemical engineering.
DT92-102	E	B-F-L-NL-IRL-UK	12m	1/12/93	Biology, Ecology.
DT92-104	UK	NL/D/S	12m	1/9/93	Water res. & Flood control, water eng.
DT92-108	B	UK/S/I	12m	1/10/93-30/9/94	Communication, management.
DT92-109	UK	E	10m	1/9/93-30/6/94	EC, MK, MN.
DT92-110	F	E-IRL-UK-F	3m	1/7/93-30/9/93	Control pollution, hydraulics.
DT92-111	B	UK-GR	Mm	1/7/93-30/9/93	Chemical engin., Environ. Sanitation.
DT92-112	F	IRL-UK-DK-IS	6-12m	1/10/93-30/9/94	Water Res. & Manag., Environment.
DT92-113	F	IRL/UK/E	3m	1/7/93-30/9/93	Water management.
DT92-116	F	IRL-UK-E-NL	3m	21/6/93-20/9/93	Water treatment.
DT92-117	F	IRL-UK	3m	1/7/93-30/9/93	Environment, Water management.
DT92-118	B	UK-NL	6-12m	3/94	Water environment.
DT92-120	UK	B-F	12m	1/7/93	Electronics.
DT92-123	E	IRL-UK-F-P-I-B	12m	1/10/93-30/9/94	Hydrogeol., flow meas., Water & waste treatm.
DT92-124	I	R-F-B	12m	1/5/93	Hydrological investigations in Sea & Coast.
DT92-125	I	B-F-CH	6m	1/1/94-30/6/94	Geology, Minery, Oceanography, Ecology.
DT92-127	UK	GR	10m	1/10/93-30/7/94	Water quality, Comput. hydraulics, River Pollution.
DT92-128	SF	UK-I-E-NL	5-10m	1/8/93-28/5/94	Environm. technology, Water engin.
DT92-139	E	UK-I	3-6m	1/1/94-30/6/94	Irrig., Hyd. Eng., Envir. Monit., Water & Wastewater treatment.
DT92-140	B	UK-NLD	3m	15/10/93	Irrigation, Water & Environm. engineering, Water Resources.
DT92-142	GR	F-I-E	6m	1/10/93	Irrigation systems, Green houses gardens.
DT92-143	GR	F-I-E	6m	1/010/93	Irrigation systems, Green houses gardens.
DT92-144	GR	UK-NLD	6m	1/6/93	Animals (Research and Development).
DT92-145	GR	UK-D-E	6m	1/11/93	Management in a technology sector.
DT92-146	F	UK-IRL	3m or +	21/6/93	Environment, quality and water management.
DT92-147	B	IRL-UK-DK	5m	2/1/94	Research in pollution, Ecology of waters.
DT92-148	E	I-UK-IS-IRL	6m	1/11/93	Water and Environment, Geology.
DT92-149	E	I-F-IS-B-UK	6m	1/11/93	Water and Environment, Hydrology.
DT92-150	GR	I	6m	15/6/93	Management & Marketing on Agricult. proc.
DT92-154	E	F-B-CH-L	12	1/10/93-30/9/94	Economic environment, marketing.
DT92-155	F	UK-IRL	3-6m	1/9/93	Environment, Water treatment, Waste water.
DT92-156	UK	E-I-CH	9m	1/10/93	Hydraulics, Geology, Mechanics.
DT92-157	UK	E-GR-I-UK	9m	1/9/93-30/6/94	Electronic engineering.
DT93-159	UK	E	6m	1/9/93	Computer Science.
DT93-163	UK	DK-E-F	11m	1/9/93	Civil engineering.
DT93-164	UK	F-I	9m	1/7/93	Civil engineering.
DT93-165	UK	F-GR-IRL	12m	1/8/93	Construction industry.
DT93-166	UK	D-F-I	12m	1/8/93	Civil engineering.
DT93-167	UK	D-F	9m	1/8/93	Civil engineering.
DT93-168	F	IRL	10m	25/9/93	Water and Filtration.
DT93-169	F	IRL	10m	20/9/93	Water Resources and treatment.
DT93-170	GR	UK-IRL-B	9m	1/10/93	Environmental & Water Resources management.
DT93-171	UK	E-I-GR	3m	3/1/94	Urban and river hydraulics.
DT93-172	I	UK-NL-DK-IRL-N	6m	1/10/94	Leakage treat. & supplying water treatment.
DT93-173	B	F-I-UK	6m	1/1/94	Environmental planning.
DT93-174	B	UK-F-E-L	6m	15/9/93	Irrigation Water Management.
DT93-175	UK	F-D-NL	6m	12/10/93	Water Res., Coastal Eng. & Hydrology.
DT93-176	E	F-UK-L	6-9m	1/1/94	MK, EM, Management.

Fill in the form below and return to : • RTB -I if your first choice is Italy • RTB-UK if your first choice is UK or IRL • CTB in any other case

TECHWARE • SPES

Please type or use block letters

Name : .....

Enterprise : .....

OR University : .....

Address : .....

Tel : ..... Fax : .....

Please send me  the SPES Vademecum including application forms and prototype agreement  
 full information about the STUDENT Code No. ...

Date : ..... Signed : ..... M. ....


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

**ATTENTION** : Only registered students or young graduates of an institution of higher education within the EC and EFTA countries can apply for a COMETT-placement grant.

**FURTHERMORE . . .**

TECHWARE develops long-term joint-training projects and pilot projects, incorporating expert systems, computer-aided learnin and distance learning technology (electronic classroom, satellite communication)

- Advanced computer techniques for the design and renovation of sewer systems.
- TRITON : Training on the technology for environmental protection within water resource management - in cooperation with UETP ACTIONLINK, Heraklion, Greece.
- CALWARE : Computer Aided Learning in Hydraulics, Hydrology and Water Resources Technology - in cooperation with HR Wallingford.

	<b>E</b>	<b>European</b>
	<b>T</b>	<b>Training</b>
	<b>C</b>	<b>Courses</b>

- TECHWARE was also actively involved in the EC-SAST project No. 6 (Strategic Analysis in Science and Technology) RTD for the Supply and Use of Freshwater Resources.

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 "Research and Technological Development", i.e. COMEX 1 programme of DGXIII.

**TECHWARE**

**also runs a number of other projects :**

- SPES - Student and young graduate Placements for training in European industry of the water-environment Sector.
- ATP - Advanced Training Programmes.
- PEP - Personnel Exchange Programme.
- WEEL - Water-Environment European Laboratories, a Pan-European Scientific network supported by the HUMAN CAPITAL and MOBILITY programme of CEC-DGXII : Science, Research and Development.

**GENERAL INFORMATION**

**OBJECTIVES**

The European Training Courses (ETCs) of TECHWARE provide up-to-date training at advanced levels for all professionals in the broad field of quality and quantity management of water. Special attention is given towards the needs of small and medium sized enterprises.

**TECHWARE's ETCs are unique :**

- Sponsored by the European Community programme COMETT II.
- Always with a European dimension with regard to staff, participants and location.
- Guarantee of the best transfer of experience, and research results thanks to the pooling of expertise by TECHWARE.
- Providing excellent opportunities to adapt systematically to the expected changes of the Single Market in 1993.

**FOLLOW-UP**

TECHWARE is an international non-profit-making association founded in 1990 by 35 leading European Universities and Enterprises in the water-related sectors. TECHWARE at the present time has 175 members across Europe.

TECHWARE was selected by the European Community to develop a strategy for cooperation and partnership. Analysis of training requirements, evaluation and follow-up of courses are central to TECHWARE.

Why not join and share your experience on a truly European level.

***If you would like to know more, do not hesitate to contact :***

- CTB : Coordinating TECHWARE Bureau**  
c/o CIBE-BIWM  
Wolstraat 70, rue aux Laines  
B-1000 Brussels, Belgium  
tel +32-2-5188893 • fax +32-2-5026735
- RTB-I : Regional TECHWARE Bureau Italy**  
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 U.K.**  
c/o HR Wallingford Ltd.  
Wallingford  
UK-OX10 BBA Oxfordshire, United Kingdom  
tel +44-491-835381 • fax +44-491-832233

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



**ADVANCED TECHNOLOGIES**

for

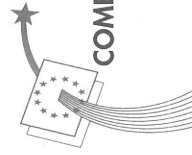
**WATER ENVIRONMENT MANAGEMENT,**

**WATER TREATMENT PROCESSES**

and

**COMPUTER APPLICATIONS**

within the framework of



**COMETT II**

## PRE-REGISTRATION FORM

Surname .....

First Name .....

Function/Responsibility .....

Organisation/Institution .....

Full address .....

Country .....

Tel ..... Fax .....

I wish to receive further information on the following course(s) : *list course code, title & location*

.....

Please send me more information about TECHWARE

I would like to apply for TECHWARE membership

My training requirements are : *give short description*

.....

Please also send this information to :

.....

Date ..... Signed .....

Please return to the Coordinating TECHWARE Bureau

### Coordinating TECHWARE Bureau

c/o CIBE-BIWM  
 Wolstraat 70, rue aux Laines  
 B - 1000 Brussels, Belgium

## COURSE CALENDAR

Date	Course No. Code	Course Title	Target Audience	Venue
<b>1994</b>				
13 - 17 September	SP 2.3	Coastal Defence.	trainers, engineers, managers, technicians	Bristol (UK)
27/09 - 1/10	SP 10.4	Groundwater Modelling.	engineers	Wallingford (UK)
23/10 - 25/11	SP 1.1	Introduction to River Hydraulics and Hydrology.	managers, scientists	Wallingford (UK)
25 - 28 October	SP 1.4	Parameters Estimation in Groundwater Flow and Pollution Modelling.	engineers, scientists	Cosenza (I)
27 - 29 October	SP 3.3	Advanced Management of Drinking Water Supply Systems.	engineers, managers	Genoa (I)
10 - 12 November	SP 10.5	New Technologies in Port Management.	engineers, managers	Venice (I)
18 - 19 November	SP 10.6	Wastewater Treatment for Marketing Personnel.	managers	Stafford (UK)
30/11 - 02/12	SP 10.2	The HYDRONAUT Procedure.	trainers, engineers	Antwerp (B)
13 - 15 December	SP 10.7a	Civil Engineering Hydraulics	managers, scientists	London (UK)
13 - 17 December	SP 10.7b	Hydraulics of Civil Engineering Structures.	managers, scientists	London (UK)
1994	SP 3.4	Advanced Waste Water Treatment and Technologies.	engineers, managers	Genoa (I)
			<b>Special rate for TECHWARE Members</b>	



*HR Wallingford*

## EURO-WORKSHOP

### ON WATER MANAGEMENT AND R&D Water Policy Driving Future EC R&D Issues

**11 - 12 October 1993**

at HR Wallingford Ltd, Wallingford, England

#### Introduction

The workshop will be of interest to all active in the field of water management and related R&D. In particular, policy makers and those responsible for regulating the water environment across Europe will be able to put forward their views as customers.

Water scientists and specialists will also benefit from being able to hear the customer's requirements and by outlining how the science available or being developed could be best used to fulfil these needs.

Staff from the EC will benefit as will all socio-economic actors from being able to hear an informed debate on the future of water management.

**The programme will include the latest news on the CEC FOURTH FRAMEWORK PROGRAMME following an important CEC Research Council Meeting.**

#### Workshop Aims

- to identify the important issues for the future management of the water environment;
- to discuss the basis of, and results from, the CEC SAST project no.6;
- to discuss the proposed Fourth Framework Programme for EC RTD;
- to identify where policy needs will be supported by EC RTD;
- to identify where policy needs will require RTD not identified in the Fourth Framework Programme;
- to set out, from the policy makers and scientists, the future RTD requirements; and
- to establish contact between the policy makers, scientists, water specialists and CEC officials active in the field of water.

#### Venue

The workshop will be held at HR Wallingford in Oxfordshire which benefits from good access to Heathrow Airport. Detailed information about how to get to Wallingford will be mailed to all participants when their booking is confirmed.

#### Language

All presentations and discussion will be in English and no translation facilities will be supplied.



EURO-WORKSHOP

## TECHWARE UK

This course is funded by COMETT through TECHWARE UK which is a Regional Bureau within TECHWARE EUROPE, a non-profit making association based in Brussels. TECHWARE is involved in developing training and education in water resources and related fields. Their courses are pan-European events designed with the aim of encouraging European training for the water sector.

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

The Supervising Civil Engineer of HR Wallingford considers the course to merit 3 day of Continuing Professional Development (CPD). A form will be available at registration.

Fee £600.00 (+ £105.00 VAT) per participant, or £400.00 (+ £70.00 VAT) with an Associate Membership voucher. TECHWARE members are also eligible for the Associate Members' rate.

The course fee includes morning coffee, lunch and afternoon tea each day, and a Course Dinner. It does not include accommodation or travel expenses.

All course materials are provided, including comprehensive course notes. Some of the techniques are covered by good quality text books which, where appropriate, are also provided.

Course places may be booked by returning a completed registration form to:

Mrs Hazel Dandridge  
HR Wallingford  
Howbery Park  
Wallingford  
Oxfordshire  
OX10 8BA

'phone 0491-835381  
fax 0491-826703

*Bookings should be made as soon as possible and no later than one week before the start of the course. An administrative charge of £80.00 + VAT will be made for all cancellations. Accommodation is available in local hotels; details will be sent with the programme when the bookings are confirmed. A VAT receipt will be issued on payment of the fee: VAT No. 570 0397 52.*

### River Hydraulics and Hydrology

TO: Hazel Dandridge HR Wallingford, Howbery Park, Wallingford, Oxfordshire, OX10 8BA, UK.

I enclose a cheque in £ sterling and payable to HR Wallingford for £

(£705.00 including VAT per participant) VAT No: 570 0397 52

or (£470.00 including VAT plus an Associate Membership Voucher per participant)

or (£470.00 including VAT per participant for registered TECHWARE members

Delegate Name(s) \_\_\_\_\_

Position \_\_\_\_\_

Organisation \_\_\_\_\_

Address \_\_\_\_\_

Telephone No: \_\_\_\_\_

Fax: \_\_\_\_\_

Signature: \_\_\_\_\_

Date \_\_\_\_\_

Ref No:0070/03



*HR Training*

An overview of the Commission Working Paper entitled "**Guidelines for Community Action in the field of Education and Training**" (final version, May 1983) is given elsewhere in this issue. It was already announced in the Editorial of PANTA RHEI No. 16 but arrived too late on the Editor's desk for a full discussion.

These "**Guidelines**" are of course not decisive but they contain nevertheless important elements and the European Parliament will probably not alter the mainstream ideas expressed in the Working Paper. Moreover, the practical implementation of the "action lines A and B" proposed in the Working Paper is yet not known. Indeed, much depends upon the operational structure and management with its call for applications, selection criteria, decision procedures, and, most important, the funding procedures and budget allocations.

Let's be realistic : it is unlikely that the future ERASMUS-, COMETT- or FORCE-like programmes, whatever will be their new acronyms, or the Task Force for Human Resources, Education, Training and Youth (TFHR) as a whole, will receive a budget comparable to some RTD-programmes, e.g. Information and Communication Technology (ICT) or Energy (3.9 and 2.3 billion ECU respectively in the 4th Framework Programme).

We should not forget that it is the Parliament which decides, after Maastricht more than ever, and that Member States are reluctant with respect to strong EC-involvement in educational matters. The "**Guidelines**" clearly apply the so-called subsidiarity principle, especially where Action Line B is concerned. Let us hope that the European dimension will not decrease by applying

the **subsidiarity** principle in a too strict way. The "European Educational Union" which has been slowly built-up during the past 6 years should not follow the example of the ERM-catastrophe at beginning of last August or drown in a "subsidiarity" marsh. Successful networks supported presently by ERASMUS and COMETT should be maintained in the next programmes. What could be the purpose to discontinue them and to build up new ones from scratch ? It would be a tremendous loss of voluntariness, effort, time and money.

We are especially concerned about the practical implementation of Action Line A "university networks" where this action line includes student placements for training in industry. The University Enterprise Training Partnership (UETPs) under COMETT have made in many sectors an important and successful effort in exploring and managing these placements. Future networks under Action Line A, for universities only, unlikely will be able to maintain the right links with industry as is the case in the present COMETT-configuration. The UETP philosophy is based on a chain-linked strategy where actions such as student and young graduate placements, personnel exchange, short courses and joint training or pilot projects are equally important. Each action cross-fertilizes the other actions. The "**Guidelines**" do not clearly show this cross-fertilization, but of course the future implementation may allow for it. As important is the implementation of the so-called **synergy Research/Training**, a guiding principle of the 4th Framework Programme for Research and Technological Development.

Only strong sectoral networks which englobe the whole training field as well as the research field are able to fulfil this synergy.

The Editor

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**Please post Enclosures :**

- SPES
- ETC
- EURO-WORKSHOP
- HR-Wallingford
- CITY-UNIVERSITY

... Water equals time and provides beauty its double.  
Part water, we serve beauty in the same fashion ...

Joseph Brodsky  
in WATERMARK  
Hamish Hamilton, London, 1992, p.134.

# GUIDELINES for COMMUNITY ACTION i

## COMMISSION WORKING PAPER

COM (93) 183 final  
Brussels, 5 May 1993  
ISBN 92-77-55710-9

This Working Paper will be the basis for the Council's and Parliament's decisions about the next phase of the TFHR-programmes, e.g. ERASMUS-COMETT (see Editorials in this issue and the last issue of PANTA RHEI). The Table of Contents lists an Introduction (§4), Part I Situation and Challenges (§5-19), Part II The Contribution of the EC (§20-44), Part III Proposed Action Lines (§45-70) conclusion (§71) and Annexes 1. Action Programmes in the Education and Training Field, 2. Treaty on European Union (Chapter 3 : Education, Vocational Training and Youth, Articles 126 and 127).

The proposed Action Lines are intended to be the basis for specific programme proposals to be tabled later this year.

### ACTION LINE A

#### Actions relating to universities/higher education and schools.

The aim is to regrouping some of the current activities in existing action programmes (i.e. ERASMUS and COMETT) in a single coherent framework, with the following components :

- the ERASMUS ICPs
- the ERASMUS course credit transfer system (ECTS)
- the LINGUA actions
- student placement in industry (COMETT)
- teacher training

- open and distance learning
- European "chairs"
- mobility of researchers (HCM)

### ACTION LINE B

#### Actions relating to training and qualifications.

The aim is to design :

1. a common framework of objectives, closely aligned with two other Community instruments :
  - the Structural Funds (synergy with the policy of cohesion)
  - the Research and Development Framework Programme (synergy training/research).
2. supporting Community measures which would comprise three complementary and integrated parts, based on achievements of the current programmes (e.g. COMETT) :

#### Strand A : Networks of Resource Centres at national, regional and sectoral level.

*"... The regional and sectoral consortia could also be usefully involved in assisting the implementation of the other Community policies through developing appropriate training measures..."*

*The Community-wide coverage of the existing COMETT University enterprise Training Partnerships constitutes a rich asset and should be consolidated in this perspective" (from §61 of the Guidelines).*

#### Strand B : Transnational projects and joint products.

This Strand would draw on a pool of Community expertise to help training

providers and companies to set up and run transnational partnerships and to develop training projects.

#### Strand C : Analysis-Research in the field of training systems and mechanisms.

A periodic European Report on the vocational training situation is a possible outcome, a complement to the Commission's regular Employment Report.

### COMMENTS

The Guidelines offer a well-balanced summary of what has been published in the past year (e.g. the Memorandum on Higher Education), of the responses so far and corresponds closely to the spirit and terms of Articles 126 and 127 of the new Treaty on European Union (Maastricht). The almost exclusive stress on economic principles and market oriented competitiveness in earlier documents has been relaxed and cultural values of education, training and science in European society are better recognized.

The programme proposals and their practical implementation have yet not been released. Obviously, Action A will build upon the existing ERASMUS ICPs, but it is not clear how the student placements in industry can be implemented if the future Action A-networks involve exclusively universities. The success of these placements under COMETT II are largely a result of the University Enterprise Training Partnerships (UETPs). Those UETPs are indeed addressed in Action B, but will there be a link with Action A ? (for further comments, see the section COMETT-TECHWARE in this issue).

## EC EDUCATION AND TRAINING PROGRAMMES

Short title	Full title	Duration	Budget execution up to 1992 (MECU)
COMETT	Programme on cooperation between universities and industry regarding training in the field of technology	1986-94	206,60
ERASMUS	EuRopean Community Action Scheme for the Mobility of university-Students	1987-	307,50
PETRA	Action Programme for the vocational training of young people and their preparation for adult and working life.	1988-94	79,70
YOUTH FOR EUROPE	Action programme for the promotion of youth exchanges in the Community - "Youth for Europe" programme	1988-94	32,20
IRIS	European Network of Vocational Training Projects for Women	1988-93	00,75
EUROTECNET	Action programme to promote innovation in the field of vocational training resulting from technological change in the European Community	1990-94	68,80
LINGUA	Action Programme to promote foreign language competence in the European Community	1190-94	68,80
TEMPUS	TranS-European Mobility Scheme for University Studies	1990-94	194
FORCE	Action Programme for the development of continuing vocational training in the European community	1991-94	31,30



# the FIELD of EDUCATION and TRAINING

## OVERVIEW OF ACTION PROGRAMMES IN THE EDUCATION AND TRAINING FIELD

A range of specific action programmes have been launched at Community level by TFHR from 1987 onwards :

**COMETT**, launched in 1986, was conceived as an education and training counterpart to the ESPRIT R&D programme and aimed to create greater synergy between university and industry to improve the quality of training for technological change.

The **ERASMUS** programme, set up in 1987, aimed at promoting cooperation between universities in order to bring about greater mutual recognition of qualifications as well as to encourage much greater mobility of students and staff between institutions throughout the Community. The Commission set a target of 10% for mobility of students within the EC.

**EUROTECNET** had its origins in the 1983 Council Resolution setting training policies for the 1980s and, building on a 3-year preparatory phase, became formalised from 1990 as a programme addressing the impact of technological change on qualification systems and on training methodologies.

From 1988, **PETRA** grew directly out of the previous community Action Programme on the transition of young people from school to adult and working life, and was designed to take account in particular of concerns arising from high young unemployment by setting new standards for initial vocational training in the Community.

**Youth for Europe** was formalised in 1988 as a focus for a range of initiatives designed to give an impulse for out-of-school exchanges of young people and had its origins in the Andonino Report on a People's Europe adopted by the European Council in 1985.

**IRIS**, launched in 1988, grew out of the 1987 Council Recommendation on access by women to vocational training by creating a European network to support innovation in vocational training directed at the more effective participation of women.

**LINGUA**, launched in 1990, focused on the growing concern about the Achilles heel of so many Community efforts, namely the need for more citizens to be able to communicate through at least two languages other than their own.

In 1990, the Community also launched the **TEMPUS** scheme designed to support the transformation of the higher education systems in Central and Eastern European countries. This scheme is an integral part of the PHARE Programme set up by the Community to provide assistance in the economic and social restructuring of Central and Eastern European countries.

In 1991, **FORCE** was launched, focusing on policy development, innovation and exchange of experience regarding continuing vocational training.

A comparatively recent development has been the opening of COMETT (since 1990) and ERASMUS (since 1992) to the participation of the EFTA countries, thereby enhancing the truly trans-European nature of these programmes. The European Economic Area agreement, once it has entered into force, will entail opening all EC education and training programmes to EFTA participation from 1 January 1995.

## TREATY ON EUROPEAN UNION

(Treaty of Maastricht)

### Chapter 3 : Education, vocational training and youth

#### Article 126

1. The Community shall contribute to the development of quality education by encouraging cooperation between member states and, if necessary, by supporting and supplementing their action, while fully respecting the responsibility of the Member States for the content of teaching and the organization of education systems and their cultural and linguistic diversity.

2. Community action, shall be aimed at

- developing the European dimension in education, particularly through the teaching and dissemination of the languages of the Member States;
- encouraging mobility of students and teachers, inter alia by encouraging the academic recognition of diplomas and periods of study;
- promoting cooperation between educational establishments;
- developing exchanges of information and experience on issues common to the education systems of the Member States;
- encouraging the development of youth exchanges and of exchanges of socio-educational instructors;
- encouraging the development of distance education.

3. The Community and the Member States shall foster cooperation with third countries and the competent international organizations in the field of education, in particular the Council of Europe.

4. In order to contribute to the achievement of the objectives referred to in this Article, the Council :

- acting in accordance with the procedure referred to in Article 189b, after consulting the Economic and Social Committee and the Committee of the Regions, shall adopt incentive measures, excluding any harmonization of the laws and regulations of the Member States;
- acting by a qualified majority on a proposal from the Commission, shall adopt recommendations.

#### Article 127

1. The Community shall implement a vocational training policy which shall support and supplement the action of the Member States, while fully respecting the responsibility of the Member States for the content and organization of vocational training.

2. Community action shall aim to :

- facilitate adaptation to industrial changes, in particular through vocational training and retraining;
- improve initial and continuing vocational training in order to facilitate vocational integration and reintegration into the labour market;
- facilitate access to vocational training and encourage mobility of instructors and trainees and particularly young people;
- stimulate cooperation on training between educational or training establishments and firms;
- develop exchanges of information and experience on issues common to the training systems of the member States.

3. The Community and the Member States shall foster cooperation with third countries and the competent international organizations in the sphere of vocational training.

4. The Council, acting in accordance with the procedure referred to in Article 189c and after consulting the Economic and Social Committee, shall adopt measures to contribute to the achievement of the objectives referred to in this Article, excluding any harmonization of the laws and regulations of the Member States.

*Published in the Official Journal of the European  
Commission 8 July 1993 No. C186/1 and 3*

#### COUNCIL

*Conclusions of the council and of the ministers for  
education meeting with the council  
of 11 June 1993*

*on furthering an open European space for  
cooperation within higher education  
(93/C 186/01)*

*Resolution of the council  
of 11 June 1993  
on vocational education and training in the 1990s  
(93/C 186/02)*

*Three principal methods to enhance  
competitiveness, greater cohesion as  
well as solidarity and mutual trust :*

- **networking**
- **mobility and exchange**
- **joint transnational projects**

*(from §40 of the Guidelines)*



# 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-93-B-1138/06

continues during the academic year 1993-94 with a grant of 50,000 ECU for financial support of student and teaching staff mobility and for the joint development of new curricula. Students can only apply if they are registered in the partner institutions.

### The ICP-partners :

- A-OESTERREICH (AUSTRIA)**  
 A WIEN03 Universität für Bodenkultur BOKU
- B-BELGIE-BELGIQUE (BELGIUM)**  
 B BRUSSELO1 Brussel, Vrije Universiteit Brussel (VUB)  
 B BRUXELO4 Bruxelles, Université Libre de Bruxelles (ULB)  
 B GEMBLOU01 Gembloux, Faculté des Sciences Agronomiques de Gembloux (FGx)  
 B GENT01 Gent, Université Gent (3 departments/laboratories)(RUG)  
 B IIEGEO1 Liège, Université de Liège (ULg)  
 B LOUVAINO1 Louvain-la-Neuve, Université Catholique de Louvain (UCL)
- CH-SWITZERLAND**  
 CH LAUSANNO6 Lausanne, Ecole Polytechnique Fédérale de Lausanne (EPFL)  
 CH NEUCHATO1 Neuchâtel, Université de Neuchâtel
- D-DEUTSCHLAND (GERMANY)**  
 D BOCHUM01 Bochum, Ruhr Universität Bochum
- DK-DANMARK (DENMARK)**  
 DK ALBORG01 Aalborg, Aalborg Universitetscenter  
 DK LYNGBY01 Lyngby, Danmarks Tekniske Højskole (DTH)
- E-ESPANA (SPAIN)**  
 E BARCELO3 Barcelona, Universidad Politecnica de Catalunya (UPC)  
 E VALENCIA2 Valencia, Universidad Politecnica de Valencia (UPV)
- F-FRANCE**  
 F GRENOBL22 Grenoble, Institut National Polytechnique de Grenoble (INPG)  
 F MONTEPELO2 Montpellier, Université de Montpellier II, Sciences et Techniques du Languedoc  
 F PARIS006 Paris, Université Pierre et Marie Curie (Paris VI)  
 F PARIS 081 Paris, Ecole Nationale Supérieure des Mines de Paris  
 F TOULOUSE12 Toulouse, Institut National Polytechnique (INP)
- I-ITALIA (ITALY)**  
 I BOLOGNA01 Bologna, Università degli Studi di Bologna  
 I FIRENZO1 Firenze, Università degli Studi di Firenze  
 I GENOVA01 Genova, Università degli Studi di Genova  
 I MILANO02 Milano, Politecnico di Milano  
 I PADOVA01 Padova, Università degli Studi di Padova  
 I PAVIA01 Pavia, Università degli Studi di Pavia  
 I PERUGIA01 Perugia, Università degli Studi di Perugia  
 I TORINO01 Torino, Università degli Studi di Torino
- IRL-IRELAND**  
 IRL CORK01 Cork, University College, Cork
- NL-NEDERLAND (THE NETHERLANDS)**  
 NL DELFT01 Delft, Technische Universiteit Delft (TUD)  
 NL WAGENINO1 Wageningen, Landbouwniversiteit Wageningen (LUW)
- P-PORTUGAL**  
 P COIMBRA01 Coimbra, Universidade de Coimbra (UC)  
 P LISBOA01 Lisboa, Universidade Technica de Lisboa
- UK-UNITED KINGDOM**  
 UK BRISTOLO1 Bristol, University of Bristol  
 UK NEWCASTO1 Newcastle-Upon-Tyne, University of Newcastle upon Tyne

## GUIDELINES FOR APPLICANTS Academic year 1994/95 ERASMUS & LINGUA (ACTION II)

Grants to higher education institutions to support interuniversity cooperation :

- Mobility grants for students
- Grants for visits for higher education staff
- Other forms of financial support available from :

**ERASMUS Bureau**

70, rue Montoyerstraat 70  
 B-1040 Brussels

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

### IMPORTANT

Deadlines for the mailing of applications or update forms :

- application forms and update forms for Inter-university Cooperation Programme (ICPs) which cover the period 1 July 1994 to 30 September 1995 : 31 October 1993 (as per postmark);
- applications for grants in the 1994/95 academic year to students not participating in an ICP ("free movers") : 1 January 1994 (as per postmark) (NB : Free movers grants are not available in all eligible States).
- applications for grants for visits by staff and other financial support : five months before the visit/project is due to take place.. Applications may be sent at any time but the closing dates for the next four selection rounds are :
  - 1 October 1993 for a decision by December 1993
  - 1 January 1994 for a decision by March 1994
  - 1 April 1994 for a decision by June 1994.
  - 1 July 1994 for a decision by September 1994

The ICP-93-B-1138 "Hydrology and Water Management" will submit a special reapplication form because its multi-annual funding cycle ends in 1993/94.

103886 European university students registered in EC- or EFTA-countries will study at another university for a period between 3 and 12 months during the academic year 1993-94. Some 8000 staff will teach in another university during at least one week.

### ERASMUS ICP "Hydrology and Water Management" • New Edition

Name : .....

Address : .....

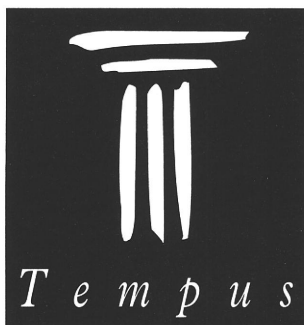
requests a copy of the INFORMATION BROCHURE (second edition) and the POSTER

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

Return to the Editor of PANTA RHEI

Young people especially hold the key to the future of Europe. They need to be equipped to play their part in building **their** Europe. Many young people already have an international and European outlook as well as a commitment to their own local, regional and national identity. The demand from young people to be involved in joint European projects on a practical basis is massive - an unexpectedly significant source of pressure on systems to become more Europeanised, and thus to make greater commitment to the internationalisation of studies.

[§ 16 of the Guidelines]



JEP : Joint European Project  
Interuniversity 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

## NEWS from EWA-Ring

Tempus Joint European Project JEP No. 2150  
**Interuniversity Coordinating Forum for East-West Cooperation in the Area of Environment, Water and Agricultural Soils (EWA-Ring)** announces :

### WORKSHOP

**EDUCATION OF  
HYDROLOGY AND  
WATER RESOURCES MANAGEMENT  
FOR IMPROVED ENVIRONMENT AND  
SUSTAINABLE AGRICULTURE, AN  
OVERVIEW OF TEMPUS I AND  
OUTLOOK FOR TEMPUS II**

University of Coimbra, Portugal  
25 October 1993

#### Venue :

Department of Civil Engineering,  
University of Coimbra  
3049 Coimbra Codex, Portugal  
Tel +351-39-20042 • Fax : +351-39-22833

#### Tentative list of speakers and topics to be presented :

- Introduction  
Prof. J.J. Bogardi,  
Wageningen Agricultural University
- European Interuniversity programmes, their possible interaction and future dissemination of information.  
Prof. A. Van der Beken, Free University Brussels
- Coimbra and Europe  
Prof. J. Veiga, University of Coimbra
- Model curricula and syllabi in hydrology and environment (UNESCO published); their role in West-East cooperation.  
Prof. U. Maniak, Technical university of Braunschweig
- TEMPUS ECEE teaching material development.  
TEMPUS JEP No. 4988  
Prof. D. Huska, Agricultural University of Nitra
- Transfer of continuing educational system to Central Europe - TEMPUS JEP No. 122  
Prof. J. Kowalski, Agricultural University of Wroclaw
- Delft TEMPUS and its relation to EWA-Ring.  
Final conclusions of Environmentally sound river basin development - TEMPUS JEP No. 266  
Prof. J. Wessel, Technical University Delft
- TEMPUS EWA-ring : results, managing and continuation - TEMPUS JEP No. 2150  
National coordinator of CS : Prof. P. Kovar,  
Agricultural University of Prague
- TEMPUS EWA-Ring : results, managing and continuation.  
National coordinator of Hungary : Prof. I. Ijjas,  
Technical University of Budapest

- TEMPUS EWA-Ring : results, managing and continuation.  
National coordinator of Poland : Prof. A. Byczkowski, Agricultural University of Warsaw
- EC TEMPUS Office 'Vision of EC, the evaluation of TEMPUS I from policy makers point of view'  
n.n. TEMPUS Office Brussels
- Brainstorming for TEMPUS II  
Moderators : n.n. TEMPUS Office Brussels,  
Prof J.J. Bogardi

#### Further information :

Ewa Wietsma  
Assistant Coordinator of the TEMPUS EWA-Ring  
Department of Water Resources  
Nieuwe Kanaal 11, NL-6709 PA Wageningen  
Tel : +31-8370-84829 • Fax : +31-8370-84885

**This Workshop is followed by the Annual General Assembly of TEMPUS EWA-Ring and ECEE including a visit to the Department of Civil Engineering of the University of Coimbra.**

## TEMPUS II 1994-98 TEMPUS PHARE and TEMPUS TACIS

has been approved by the Council of the EC on 29 April 1993. TEMPUS II includes from

1994 onwards also some countries of the former Soviet Union (FSU), i.e. the Russian Federation, Belarus, Ukraine. The subprogramme for these FSU-countries is called TEMPUS-TACIS. The deadline for TACIS proposals is 20 September 1993. However, these proposals are restricted to pre-Joint European Projects during the year 1994, i.e. for preparations of JEPs in a later stage.

**THE TEMPUS PHARE Guide for applicants for projects** starting in the academic year 1994/95 will be available in September 1993. The eligible countries falling within the TEMPUS PHARE Scheme are : Albania, Bulgaria, The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.  
The deadlines for applications are : 15 December 1993 and 15 June 1994 for Individual Mobility Grants and Complementary Measures, and 31 January 1994 for Joint European Projects.

**For further information,** contact :

### EC TEMPUS Office

14, rue Montoyerstraat 14  
B-1040 Brussels

tel +32-2-5040711  
fax +32-2-5040700

It is understood that TEMPUS PHARE, will be different from TEMPUS-TACIS, i.e. there is no merging of projects possible !

# More TEMPUS JEPs

## TEMPUS JEP 266

### ENVIRONMENTALLY SOUND RIVER BASIN DEVELOPMENT

The background of the project is to solve one of the major problems in the Danubian countries, the assessment of the interactions between the environment and water management of the Danube. These problems are covered by the topic "Environmentally sound River Basin Development". Within the programme a.o. new curriculum and education programme is under development.

The targets of the project can be summarized as follows :

- Long term, large scale objectives : reviewing, overhauling and restricting the water resources and hydraulic engineering curricula to introduce a European dimension to environmental and water resources engineering education.
- Short term objectives : a new curriculum will be developed on environmentally sound integrated river basin development.

The contract of the project lists the following cooperating partners for the academic year 1992-93 : Delft University of Technology; University of Karlsruhe; Technical University of Budapest; Wageningen Agricultural University, Eotvos Lóránd University, Budapest; Pollach Mihály Technical College, Baja - Hungary; University of Sarajevo; Technical University of Timisoara, Technical University of Vienna.

#### Coordinator of JEP 266 is

Prof. Mr. J. Wessel  
Centre for Comparative Studies on River Basin Administration  
Delft University of Technology (TUD),  
Kanaalweg 2b, NL-2628 EB Delft  
the Netherlands.  
Tel : +31-15-783565/78798  
Fax : +31-15-787105  
Telex : 38151 butud al

## TEMPUS JEP 3801

### POST GRADUATE DIPLOMA HIGH LEVEL COURSES WATER RESOURCES ENGINEERING

Starting with the university class 1992/93, within the TEMPUS Programme, at the Bucharest Institute of Civil Engineering Faculty of Hydrotechnical Structures, post-graduate high educational courses have been organised for the speciality : Engineering of the water resources.

These courses are open to all university graduates interested in the domain and are organized together with the Faculty of Hydrotechnical Structures and the Faculty of Geology and Geography of the Bucharest University and benefits within the TEMPUS programme of the scientific assistance of DEA - Sciences de l'eau et Environnements (University "Pierre et Marie Curie" of Paris, and the High School of Mines of Paris) the University of Liège (Belgium) and the University of Genova (Italy).

The purpose of the course is to offer the possibility to carry out in Romania a training stage of the MASTER type for about 20-25 students annually at a scientific level that should be comparable to that ensured by universities of tradition of Western Europe. The Western partners ensure a competence transfer in domains of great interest such as protection of the environment, pollutant dispersion and diffusion, modern measurement and processing methods in hydrology and hydrogeology, surface and ground water management.

Annually, there are 10 missions (of one week each) of the teachers from the above mentioned Western countries. In 1992-1993, they taught courses on : ecological models of rivers and lakes, hydrobiology, the use of isotopes in hydrology and hydrogeology, mass and energy transfer in porous media, geostatistics, etc. A significant number of Romanian specialists also play a role in the achievement of the

objectives of the courses as teachers in the Faculty of Hydrotechnical Structures and Geology, at the Institute of Meteorology and Hydrology, the Research Institute for Environmental Engineering, the Autonomous Water Authority "Romanian Waters", AQUAPROJECT of Bucharest.

The courses include three parts. The first part consists of a common body of 17 study disciplines with periodical verifications of the knowledge and examinations during the winter session. The second part includes two types of specialisations : surface and ground waters with 10 specialization courses each. The third part is meant for the preparation of the diploma paper. The students have periodical meetings with the scientific project leaders and the project presentation is done between 1 and 10 February, the following year. Four of the best students perform a 4 month training in France and Belgium, during the period of preparation of the diploma. In the university class 1993/94 the courses will be resumed.

**Contact** : Prof. Dr. V. Al. Stanescu  
National Institute of Meteorology and Hydrology  
Sos. Bucuresti - Ploiesti 97  
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Telex 11514/10460

... the quality and standards of the education and training systems in Europe, and the importance of building much closer relations between them, are ... widely recognised as an important priority for the Community, a key to enhanced competitiveness but also to **greater cohesion, solidarity and mutual trust within the Community.**

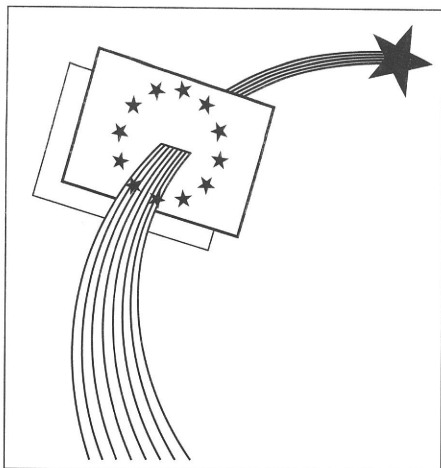
*(from § 14 of the guidelines)*

# 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



## The GUIDELINES in a TECHWARE perspective

The Executive Committee of TECHWARE has examined in its meeting of 6 June 1993 the Guidelines and, upon approval by the General Assembly, has decided to respond as an interested party and "to present (its) views and to be associated closely with the forthcoming stages of preparation of the proposals" (§ 4 of the Guidelines). A letter has been sent to Prof. Ruberti, Commissioner responsible for TFHR, and an answer by its Director-General T. O'Dwyer was received.

TECHWARE  
70, rue aux laines/wolstraat 70  
B-1000 Brussels

Prof Dr. A. Ruberti  
Commissaire CE  
200, rue de la Loi  
1049 Bruxelles

Bruxelles, le 10 juin 1993

Monsieur le Commissaire,

Votre souhait d'organiser une large discussion entre tous les membres actifs en rapport avec les Actions Communautaires dans les domaines de l'Education, de la Formation ainsi que de l'RTD est une opportunité pour attirer votre attention sur tout ce qui nous concerne aux Actions A et B du rapport mentionné ci-dessus.

Les AUEF de COMETT, et plus particulièrement les sectorielles - unanimement reconnues dans tous les rapports d'évaluation comme un atout majeur pour une politique industrielle de la Commission et une coopération transnationale - ne sont pas clairement abordées dans le rapport. Par exemple, l'Action A n'inclut pas l'association Universités-Entreprises, bien qu'il soit prouvé que l'application du schéma "Placement d'étudiants dans l'Industrie" ne soit pas concevable sans le support actif de l'industrie elle-même.

Bien entendu, le même raisonnement vaut également pour CAPITAL HUMAIN et MOBILITE, où ont été établis des réseaux entre les Universités et les Instituts Industriels de Recherches.

L'Action B propose des actions au niveau sectoriel mais il n'apparaît pas clairement si le STRAND A "Réseaux des Centres de Ressources", va oui ou non inclure des réseaux sectoriels. Quel est le lien avec les projets du STRAND B ? Il semblerait que ces projets soient susceptibles d'intéresser les consortiums sectoriels.

Nous espérons, Monsieur le Commissaire, que ces quelques questions et commentaires pourront vous aider à favoriser la discussion sur ce sujet d'une extrême complexité mais également d'une importance capitale pour l'intégration européenne.

Nous vous prions, Monsieur le Commissaire, d'agréer l'expression de nos meilleurs sentiments.

COMMISSION DES COMMUNAUTES EUROPEENNES  
TASK FORCE RESSOURCES HUMAINES, EDUCATION, FORMATION EN JEUNESSE  
Unité 2

Bruxelles, le 14.07.93

Mr A. Van der Beken  
Mr J. Dirickx  
TECHWARE  
70, rue aux Laines  
1000 Bruxelles

Messieurs,

Vous avez bien voulu attirer l'attention de M. le Professeur Ruberti sur le rôle que les AUEF Comett, et plus particulièrement les sectorielles, pourraient jouer dans le futur. Le commissaire est parfaitement au courant de l'action que mènent les AUEF et il apprécie le travail réalisé par ces AUEF tant individuellement qu'au sein du réseau.

Lors de son intervention à la conférence Comett tenue à Aalborg il y a quelques semaines, il a rappelé que les évaluations présentaient l'action de ces AUEF de manière positive. La Commission a élaboré le 5 mai dernier, le document de travail sur les "lignes directrices de l'action communautaire dans les domaines de l'éducation et de la formation" dans lequel à l'intérieur de la ligne d'action B, le volet A précise qu'il sera créé des réseaux de centres de ressources au niveau national, régional et sectoriel.

Compte tenu du jugement porté par les évaluations, la commission veillera à proposer aux Etats Membres des actions permettant de capitaliser l'acquis de ces AUEF pour les insérer dans les futurs programmes communautaires.

Vous remerciant de l'intérêt que vous portez au travail en cours, je vous prie de croire, Messieurs, à l'assurance de ma considération la meilleure.



# STUDENT PLACEMENTS

## SPES

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

The Contract 1991 (Ba 5518) included 44 placements for a total of 210 student-months. Savings have allowed to place 44 students for 217.5 months. All but two placements have been very successful and contributed to the European dimension of the training of students and young graduates in a sector which is traditionally less internationally oriented. The experience under this contract 91 offered TECHWARE the possibility to expand and organise better the placements. Moreover, TECHWARE was helpful in offering placements from grantees from other UETPs. Direct collaboration was thus established with UETPs. Euskal Herria (E) Sintesi (I) and Wallonie-Bruxelles (B).

SPES aims at an operational and flexible implementation of integrated placements of students and young graduates in European enterprises of the water sector as a part of the global strategy of TECHWARE through decentralised actions by the Regional TECHWARE Bureaux. The existing bureaux in Genova (I) and Wallingford (UK) were very expedient in helping to find the best match between offers and demands.

A SPES-Vademecum has been disseminated. It contains a.o. Student application form for a training placement, Enterprise form for a training placement proposal, Training grant agreement (see enclosure SPES).

## ANSE

### Agence Nationale pour les Stages à l'Etranger European Association for Student Professional Mobility

This association organized a colloquium in Brussels on 22-23 June 1993. Miss Covadonga Aldamiz-echevarria, trainee from Bilbao (E) at the Coordinating TECHWARE Bureau was present.

Extraits du Communiqué de Presse : " ... Il a paru souhaitable de définir plus clairement, notamment à travers l'élaboration d'une charte de stage transnational professionnalisant, les règles du jeu permettant le développement de telles initiatives. L'importance des obstacles de caractère juridique a paru justifier l'adoption de mesures qui faciliteraient la mobilité des jeunes désireux de profiter pleinement du marché unique par le moyen de stages de longue durée dans les Etats membres de la Communauté. Répondant à l'appel de plusieurs personnalités venues témoigner leur confiance au travail de l'ANSE et, tout particulièrement, à l'appel de Nicole Fontaine, Vice-Présidente du Parlement européen, les participants ont émis le voeu que le Parlement européen mette à l'étude dès sa prochaine session cette importante question de manière à ce que ses conclusions soient présentées à la Commission, au Conseil des ministres de même qu'au CES.

Les actes du colloque sont disponibles auprès de l'ANSE au prix de 400,-FF.

Pour plus d'informations : ANSE  
35 Avenue de Ségur, F-75007 Paris  
Tel +33-40569659 • Fax +33-40659739

## TECHWARE MEETINGS OF THE BOARD OF MANAGEMENT AND THE GENERAL ASSEMBLY

Tailfer, (B), 7 June 1993

These meetings were attended by 27 members from 8 countries. Among the agenda-items discussed and/or approved were :

- The new structure and management of TECHWARE as implemented from 1 January 1993 onwards. The role of the Coordinating Committee, consisting of the Regional TECHWARE Bureaux (RTBs) and the Coordinating TECHWARE Bureau (CTB), and of the different Task Forces was highlighted.

- Membership, accounts and finances. On August 31, 1993 ended the three-year COMETT-contract (165.000 ECU) for building-up and running the network. This support will drop in 1993-1995 to ca. 20.000 ECU per annum. The experience sofar shows that overall management expenditures amounts to ca. 100.000 ECU per annum. Hence, the need for the membership dues which still remain low in comparison to the benefits member-bodies may obtain. The Board of Management urged the President of TECHWARE to send a special letter to members in arrear with their dues.

- Present membership is as follows :

TOTAL NUMBER	192
IN	28 COUNTRIES
SUBDIVIDED IN :	
ENTERPRISES	89
OTHER ORGANIZATIONS	20
UETPs	6
UNIVERSITIES	77

24 members are supporting members (with an interest free loan of 1.000 ECU) and there is sofar one life-member (7500 ECU).

- The **Members Directory** has successfully started. It is a confidential document listing the expertise of the memberbody as well as the expertise of the individual experts, employees of the memberbody. It is an important and major instrument for TECHWARE to fulfil its bridging function between the members at the micro-scale and the EC and other international agencies at the macro-scale.

- The "Revised Guidelines for establishing RTBs" were approved by the Board of Management. The revised Bye-Laws to the constitution were approved by the General Assembly.

- The President expressed TECHWARE's gratitude to mr. J. G. Janssens, Secretary-General of TECHWARE from the start on 6 July 1990 till 28 February 1993. Mr. J.G. Janssens was seconded by his employer, the Antwerp Water Works (AWW) to IWSA-Foundation for the Transfer of Knowledge - where he was Technical Director and combined this task with the TECHWARE-appointment. Mr. Janssens resumes his function at AWW as deputy manager for water production. He will remain active in TECHWARE, firstly as BM-representative of member Technologische Vorming Vlaanderen (B) and secondly as chairman of Task Force 1 "Membership and Finances".

## ACKNOWLEDGEMENTS

A special acknowledgement to Mr. J. Smets and Mr. J. Wessel who, for the third time, were the Auditors. Each time they spent a whole day at TECHWARE's office to check the accounts and draw the Auditor's Report for approval by the General Assembly.

Acknowledgment also to TECHWARE's host CIBE/BIWM for organizing the meetings at Tailfer.

## TECHWARE collaboration with EWRA EUROPEAN WATER RESOURCES ASSOCIATION (formerly ECOWARM)

### MEMORANDUM

Recognising the fact that EWRA, which is a scientific organisation, and TECHWARE, which is a collaborative network, are both covering the water resources sector in Europe, it would be of mutual benefit to both parties if co-operation was enhanced between them. With this objective, both organizations agree on the following co-operative measures :

1. Reciprocal institutional membership
  2. Nomination of a representative by both parties to the Board of Management of the other organization.
  3. Inclusion of announcements of the co-operating institutions in their own media on a comparable space basis, free of charge (for EWRA : 'European Water ' newsletter).
  4. Co-operating in the planning and implementing of courses, workshops, conferences and similar events.
  5. Collaboration in presenting proposals for funding to EC and similar bodies.
  6. Evaluation of the effects of the cooperation after a period of two years.
- Prof. V. de Kosinsky, President of EWRA and Prof. G. Tsakiris, Secretary-general of EWRA are both founding members of TECHWARE.*

## RESULTS OF COMETT CALL 1993

The following grants are awarded to TECHWARE :

- for Student Placements within the period 1.7.93 - 31.7.95 = 77.600 ECU
- for Personnel Exchange within the period 1.7.93 - 31.7.95 = 30.740 ECU
- for Short Courses (ETC) within the period 1.7.93 - 31.12.94 = 84.000 ECU
- for the network within the period 31.8.94 = 25.000 ECU

Out of the total of 217.340 ECU granted, 168.298 ECU (77.4%) will be spent to support members own activities !

Thus, a potential direct return of 962 ECU to each TECHWARE-member eligible for this COMETT-support.

The actual return will be many times larger for the active members !

Then, why still hesitating to pay the membership dues ?

### TECHWARE is a BRIDGE

Personnel Exchange may help you !

### TECHWARE can help you for a COMETT-grant of ca. 1500 ECU/month

#### Examples :

- a University laboratory in Belgium wants to train a researcher in the use of the SHE-model developed by the Danish Hydraulic Institute. A grant of 6400 ECU was offered for a period of 3 months.
- a University lecturer from UK has interest in computer-aided-learning development and wishes to explore the water industries needs. A grant of 10.000 ECU for a 6-month stay in Italy was awarded.
- a Belgian waste water treatment agency wants to train a young employee in the design of advanced waste water treatment techniques and send him to a specialized University laboratory in UK for three months with a grant of 5000 ECU.
- a specialist in advanced groundwater modelling from a Dutch applied research institute got a grant of 9000 ECU for a 5-month teaching assignment at a Belgian University.

Apply today for TECHWARE membership and request the guidelines Strand Bc for personnel exchange.

(Only EC- and EFTA-Member States are eligible countries for these COMETT-grants).

Deadline : 15 November 1993 !

## TECHWARE Membership Dues\* 1994

Decision of the General Assembly of Tailfer (B), 7 June 1993

- Individual Consultant.....285 ECU
- University, Laboratory or Department of University, School or non-profit Research Institute .....310 ECU
- Enterprise, Authority - COMETT size code S1, S2, S3 (less than 200 employees) .....425 ECU
- Professional or Scientific Association, UETP's, Federation of Enterprises.....565 ECU
- Enterprise, Authority - COMETT size code S4, S5, S6, S7 (more than 200 employees) .....710 ECU
- Life Membership .....7500 ECU

\* Not including 2.5% allowance for banking costs

Apply now for membership at one of the TECHWARE Bureaux and you will be registered for 1993 and 1994.

### TECHWARE : BENEFITS AND RIGHTS OF MEMBERSHIP

- to propose projects within the objectives of TECHWARE for further discussion and to claim support from TECHWARE for their realisation, subject to approval by the Board of Management.
- to benefit from a members' discount on registration fees for all TECHWARE events. In the case of Professional and Scientific Associations and UETPs, this benefit is limited to four nominated representatives.
- to participate at reduced rates in courses organised under the umbrella of TECHWARE. In the case of Professional and Scientific Associations and UETPs, this benefit is limited to four nominated representatives.
- to receive the TECHWARE List of Members
- to have entry into the relevant section of the Directory of Members with sections ...
- to receive all general communications issued by TECHWARE, e.g. Flash Flow.

### TECHWARE SUPPORTING MEMBERSHIP

Members who assign to the association a supporting contribution of 1.000 ecu as an interest-free loan are recorded in the minutes as supporting members and are entitled to a position on the Board of Management.

### FOR ALL FURTHER INFORMATION, please contact :

#### CTB - Coordinating TECHWARE Bureau

c/o CIBE-BIWM

Wolstraat 7, rue aux Laines, B - 1000 Brussels, Belgium

tel +32-2-5188893 • fax +32-2-5026735

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 +39-10-83431 • fax +39-10-8343284

#### RTB-UK - Regional TECHWARE Bureau

c/o HR Wallingford

Wallingford, UK - OX 10 8BA Oxfordshire, Great Britain

tel +44-491-835381 • fax +44-491-826703

## EUROPEAN TRAINING COURSES

92-SP 2.3

### Coastal Defence

Bristol - United Kingdom  
13-17 September, 1993

This course is intended for engineers, scientists and managers who wish to be informed about the latest developments in the field of Coastal Defence. It will include lectures and practical experience on a wide variety of topics including: wave generation and prediction; sea defence embankments; off shore breakwaters and the legal, planning and consultation aspects of coastal defence.

Contact: RTB-UK

92-SP.10.4

### Groundwater Modelling

Wallingford - United Kingdom  
27 September - 1 October 1993

The course gives a practical introduction to mathematical and computational modelling of groundwater problems. With the help of examples and "hands-on" computer experiences, the participants will gain an understanding of groundwater modelling. The course will illustrate the possibilities and limitations of groundwater modelling. There will be practical work with computers, both under guidance and independently. The structures and function of the finite element method will be discussed in the course; the necessary theoretical background will be provided in the form of lectures which will be supported by discussions and a tour of the research facilities at HR Wallingford. Participants will receive a demonstration copy of HPP-GMS.

Contact: RTB-UK

92-SP9.1

### Surface Water Pollution

Pavia - Italy  
October 1993

This course will focus on the analysis and simulation of transport and transformation of contaminants in rivers, lakes and estuaries. Participants will also learn the basic use of the WASP4 (Water analysis simulation Programme) Model. Both theoretical and practical aspects of the model will be considered for Drainage networks and sewer systems. Participants will learn how to use the MUSS Model through practical applications with some case studies.

Contact: RTB-I

92-SP 1.1

### Introduction to River Hydraulics and Hydrology

Wallingford - United Kingdom  
23 October - 25 November 1993

Understanding river hydraulics is an important pre-requisite to undertaking any river engineering design study. This course will provide a basic appreciation of the topic and guidance on current design methods.

The course will also give an introduction to the use of numerical models and physical models as design aids.

HR Wallingford has been involved in project studies, training and research into these areas in the UK and overseas for over 40 years. The course therefore combines scientific understanding with experience of practical application.

Examples will be provided in the form of case studies. Lectures will be supported by discussions and a site tour.

The course will be of particular value to engineers involved in river hydraulics and hydrology and also non-specialists from colleges, consulting firms, industry and Government.

Contact: RTB-UK

92-SP 1.4

### Parameters Estimation in Groundwater Flow and Pollution Modeling

Cosenza, Italy  
25-28 October, 1993

The National Research Group for Prevention from Hydrogeological Disasters of the National Research Council (Italy) sponsor this advanced training course.

Contact: RTB-I

SP3.3

### Advanced Management of Drinking Water Supply Systems: Water Quality and Treatment Processes

Genoa - Italy  
27 - 29 October 1993

This course has been successfully run for two years running (1991 & 1992). The course lasts for 3 days, providing the participants with a detailed overview of up-to-date advanced technologies for the management of drinking water supply, intake, transportation and treatment.

The course consists of two components: Water quality (including requirements and treatment processes) & Water supply Management from an operative viewpoint (including multi-source supply, management of a distribution network in emergency conditions, network analysis, leakage search technology, and network rehabilitation).

Contact: RTB-I

SP10.5

### New Technologies in Port Management

Venice - Italy  
10-12 November, 1993

This four-day course is designed as an introduction to the state-of-the-art technologies used in port management. The course includes lectures and practical exercises about: Port management systems, Ship simulation, Crane simulators, Software technology & Vessel ground risk assessment.

Contact: RTB-UK

92-SP 10.6

### Wastewater Treatment for Marketing Personnel

Stafford - United Kingdom  
18-19 November, 1993

This course is designed for sales and marketing personnel working for companies who supply equipments and services to Water Companies.

The objective of this course is to ensure that the participants will be able to understand and explain the overall sewage treatment process and the function of the various process elements.

Contact: RTB-UK

92-SP 10.2

### The HYDRONAUT Procedure

Antwerp - Belgium  
30 November - 02 December, 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

92SP-10.7a

### Civil Engineering Hydraulics

London, United Kingdom  
13-15 December, 1993

This three day course is designed to give practising engineers in the Water Industry a review of the hydraulic aspects of flows in pipes and open channels.

The applied aspects include design of piping systems and stable channels, hydraulic modelling and associated software package demonstrations. These are covered by specialists from industry.

Contact: RTB-UK

92-SP10.7b

### Hydraulics of Civil Engineering Structures

London, United Kingdom  
13-15 December, 1993

This three day course is designed to give practising engineers in the Water Industry a review of theory and design of hydraulic structures.

The applied aspects include design, construction and study of physical models, principles involved in computational modelling, case studies and demonstration of software packages. These are covered by specialists from industry.

Contact: RTB-UK

92-SP3.4

### Advanced Waste Water Treatment and Technologies

Genoa - Italy  
15-17 December 1993

This course is designed as an introduction to waste water treatment processes. The main topics covered in the course are: Characterisation of waste water (organic and inorganic compounds, solid and microbial contents, etc). The application of advanced filtration technology to waste water treatment (removal of colloidal, dissolved and suspended matter)., Biological methods for BOC/COD reduction using aerobic and anaerobic processes & Environmental impact reducing air treatment processes and sludge-handling.

Contact: RTB-I



# COURSE EVALUATION

## EUROPEAN TRAINING COURSE SP2.1

### "Drinking and Waste Water : Network analysis, Optimisation and Mains Rehabilitation"

The TECHWARE European Training Course SP2.1 on "Drinking and Waste Water : network analysis, Optimisation and Mains Rehabilitation" has been organized by AMGA of Genoa at its headoffice and has been successfully held from June 21st to June 23rd in Genoa, Italy.

The aim of the course was to provide the participants with a detailed overview on the advanced technologies that are available today for the analysis, optimisation and rehabilitation of pressure networks and sewerage systems including a European overview on most technologies and methods usually applied in EC countries.

The teaching schedule dealt with the following subjects :

- Theory of water distribution systems for pressure networks, channels and sewerage systems.
- An introduction to Geographical Information systems for Aqueducts and Sewerage Systems including presentations and applications of most GIS packages allowing network analysis and simulations.
- The use of water mains information systems for the planning and execution of rehabilitation procedures in water distribution facilities including information analysis on damage frequency, expenses for repair, frequency of customer's complaints, etc.
- European interviews on applied

technologies and methods currently used for pressure network and sewerage rehabilitation including experiences from Italy, Germany, France and United Kingdom.

The lecturers came from the foremost European Universities, Water Authorities, Enterprises and Applied Research Institutions.

The course was attended by thirty participants coming from Municipal

Enterprises and Applied Research Institutions involved in the field of drinking water pressure networks and sewerage systems management : twentyfour from Italy, one from France, one from Spain, one from Bulgaria and two from the United Kingdom have received the Certificate of Attendance signed by the President of TECHWARE Italia, Ing. R. Bazzano and by the Course Director, Prof. R. Rosso.

## EUROPEAN TRAINING COURSE SP2.1

### "Drinking and Waste Water : Network analysis, Optimisation and Mains Rehabilitation"

A course book containing all lectures is in preparation. Interested readers should return this form if they would like to order a copy.

Name : .....

Address : .....

Tel : ..... Fax : .....

would like to receive further details about the course-book on "Drinking and Waste Water : Network analysis, Optimisation and Mains Rehabilitation"

Date : ..... Signed : .....

**Return to :** TECHWARE Italia c/o AMGA GENOVA

Via SS. Giacomo e Filippo 7, I-Genova

Tel : +39-10-83431 • Fax : +39-10-8343284 • Telex : GASACQUA

## TECHWARE EUROPEAN TRAINING COURSES

Edition March 1993

A summary of all courses is available and can be ordered free of charge from the Bureaux. 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

## Preliminary Reports on the TECHWARE EURO-WORKSHOPS WATER MANAGEMENT

### Preparing for the 4th Framework Programme on Research, Technological Development and Demonstration

**TECHWARE organizes a series of four EURO-WORKSHOPS with the above general title under the umbrella of its projects within the COMETT, SAST and HUMAN CAPITAL and MOBILITY programmes of EC.**

#### 1st WORKSHOP

Lissabon, Portugal • 5-6 April 1993

##### Scientific background and trends in RTD for the supply and use of freshwater resources

The main presentations and the discussions held during this Euro-workshop were reviewed during its final session, aiming to give the Portuguese/Mediterranean point of view in relation to the issues raised during the SAST 6 Project, soundly documented in the five Tematic Reports, in final Strategic Dossier and in the Memorandum of SAST 6 1992 Lisbon workshop. The following are the main conclusions of the Lisbon Euro-workshop :

1. Participants concluded that SAST 6 Project was a successful one, having the different expert teams, namely ECOTEC, TECHWARE, KRÜGER, and WRc, done a very good research job.
2. Freshwater was considered a key factor towards sustainable development.
3. The basic principles of sustainable development, subsidiarity, and precautionarity, should be applied throughout the EC.
4. Integrated water planning at international level, for quantity/quality and for surface/groundwater resources, in international watersheds/aquifers should be of EC utmost concern.
5. Water management should be based on water basin/aquifer regions, and not on administrative boundaries.
6. There should be international scientific cooperation and coordination for research in the water field, including for the 4th framework programme.
7. There should be established networks to exchange experience and multidisciplinary and transboundary training activities and to develop a set of common practices. Network activities are a solid tool for an effective coordination.
8. Member-states research institutions (universities, state labs, etc.) should be involved with their national general-directorates as partners of EC assessment studies on their countries.
9. Training for best practice and for improving results of investment is a must in the EC, especially in its "Lagging Regions" (Greece, Southern Italy, Spain, Portugal and Ireland) where strong investments in the Environment will be carried out during the decade. Management and operational maintenance training of staff on water supply and waste water treatment is a way for cost reduction and better customers service.
10. The polluter-pays (and the users-pays) principles should be applied throughout the Community, including in its "Lagging Regions".
11. Interaction of monitoring techniques and mathematical modelling of surface and groundwater resources is essential for a better understanding of the EC-environment.
12. Water reuse, demand forecast and environment accounting are relevant topics that deserve further research.
13. There should be further research on frameworks on how to efficiently implement water policies.

14. Economical and social sciences should also be 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.
15. Industry should be an effective actor in the process of economical and environmental development. There should be integrated research at different space and time scales.

#### 2nd WORKSHOP

Brussels, Belgium • 8-9 June 1993

##### Session 1 : Opening

###### Welcomin addresses by :

J. Dirickx, President of TECHWARE  
H. Raedschelders, Director of WEL  
W. Govaerts, head of COMETT Information Centre Flanders.

###### Key-Note Address :

by L. De Canniere, Head of Cabinet of the Minister-President of the Flemish Regional Government

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

Chairman : V. Ronsmans (B)

- Strategic analysis in science and technology (SAST) by B. Schmitz, Head of MONITOR-SAST Unit, CEC-DGXII
- Future actions within the Fourth Framework Programme for Research, Technological Development and Demonstration (RTD & D) by A. Diamantopoulos, Advisor Scientific and Technical Information (CEC-DG XII)
- Method of work for the EURO-WORKSHOP by A. Van der Beken, Coordinator of TECHWARE

##### Session 3 : Presentation and discussion of results of SAST Project No. 6 "Research and technological development for the supply and use of freshwater resources"

Chairman : J. De Greef (B)

- Regional dimension of water RTD by B. Engelen, TECHWARE (NL)
- Freshwater demand and use by F. Siccardi, TECHWARE (I)
- New sources and better use of existing sources by J.J. Peters, TECHWARE (B)
- Introductory discussion by nominated discussers J.L. Bersillon (F), W. Merkel (D), J. Cunge (F)
- Monitoring and modelling by C. Hagebro, Krüger Consult (DK)
- Treatment, storage and distribution by M. Slipper, Water Research Center (UK)
- Strategic dossier by D.W. Musco, ECOTEC (UK)
- Introductory discussion by nominated discussers W. Van Craenenbroeck (B), R. Heck (D), W. Kuhn (D)

##### Session 4 : Methodologies and recommendations

Chairman : J.W. Lyklema (NL)

- On fundamental research by J. Dooge (IRL)
- On applied research and technological development by M.M. Bourbigot (F)
- On demonstration, valorization and dissemination by G. Llewellyn (UK)
- On generic technologies in the water sector by C. Van der Veen (NL)

#### Final conclusions and recommendations

by A. Van der Beken, TECHWARE (B)

Of special interest was the presentation of Prof. J. Dooge : a European strategy for water research should be holistic in its approach and should include programme coherence, new partnerships, assessment techniques, capacity building, public awareness and evaluation methodology.

A major outcome of this EURO-WORKSHOP is the establishment of a TECHWARE Specialist Group under chairmanship of Mr. C. Van der Veen, former General Manager of the Amsterdam Water Supply Agency and Past-President of the International Water Supply Association. This Specialist Group will draft a "chain-linked model" for multisectoral water research within the 4th Framework Programme and beyond.

#### 3rd WORKSHOP

Potenza, Italy • 28-29 June 1993

##### The SAST Research Aims and Technologies for Supply and Use of Water Resources in the European Mediterranean Countries

The workshop was introduced by presentations and short lectures by senior scientists and senior policy advisers. Among others took part in the workshop : A. Zauboulis (Aristotelian University), J. Andreu (University of Valencia), R. Bazzano (president of TECHWARE-Italia), G. Boari (DIFA), V. Cuomo (CNR), G. De Bernardinis (DIFA), F. Siccardi (Editor of SAST Project No. 6), A. Van der Beken (coordinator of TECHWARE UETP), D. W. Musco of ECOTEC (UK), P. Reiniger (CEC-DG XII Environment) and public and private enterprises. Discussions open to the contributions of the audience were very lively.

#### 4th TECHWARE EURO-WORKSHOP ON WATER MANAGEMENT and R&D Water Policy Driving Future EC R&D Issues

Wallingford - United Kingdom,  
11-12 October 1993

Within the framework of the Commission of the European Communities MONITOR-SAST programme the National Rivers Authority, TECHWARE and HR Wallingford will be sponsoring a major European workshop to assess the issues of water management and related R&D requirements. The workshop is designed to outline the policy issues currently being faced by European Water regulators, to disseminate the results of the SAST-6 project of DG XII (R&TD needs of the supply and use of freshwater resources) and to provide an opportunity for R&D needs to be discussed.

**Further information :** see enclosure in this issue.

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

Coordinator : Prof. F. Siccardi

Università di Genova, Istituto di Idraulica - Via Montalegno 1, I - 16100 Genova, Italy

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**WATER  
ENVIRONMENT  
EUROPEAN  
LABORATORIES**

**WEEL**  
Pan-European  
scientific network

## Project No. ERB4050 PL 621686

has finally reached its contract-stage and should be operational from September 1st 1993 onwards till August 31, 1995.

Sixteen laboratories, among the 30 official partners of WEEL, will exchange 11 young post-docs who will perform during 12 months research activities within teams of the receiving laboratories. They will implement some of the original proposals of WEEL and present the results of their research to international refereed journals and/or at European Conferences.

They form the first group of the Pan-European Scientific Network WEEL for integrating the multidisciplinary components of the water sciences and technologies for regional integrated water management.

TECHWARE's Task Force WEEL strives towards a transparent policy and a quality image. **New proposals** by TECHWARE members are expected in October 1993 for submission in November 1993.

Proposals should indicate on-going research project, existing partnership and publications. **ONLY LABORATORIES** of EC-countries are directly eligible for support. EFTA-countries are eligible under agreement.

## Postdoctoral Fellowships within the framework of the EC-International Scientific Cooperation

In many countries worldwide the EC has a Delegation with officials who keep in contact with the EC Headquarters in Brussels and who can assist applicants in all their dealings with the EC activities.

however, the application should be prepared according to the guidelines and submitted to the EC via National Authority of the participating Third Country.

## NEW ACRONYM : COPERNICUS

The 1992 initiative of Cooperation in Science and Technology with Central and Eastern European Countries (labelled COST-CEEC in past issues of PANTA RHEI) got finally a name : COPERNICUS.

The initial call for proposals for pilot and preparatory actions covering six actions lines, including scientific and technical mobility, Pan-European scientific networks, conferences and seminars, joint research projects and participation in the Community's specific research programmes, gave rise to 11750 proposals. Only 3000 projects were accepted.

TECHWARE submitted proposals for extending the pan-European Scientific Network WEEL, called BEST (Building of Extension of Science and Technology) - WEEL network.

At a later stage, the Commission invited the coordinators of successful projects in other programmes, such as HUMAN CAPITAL and MOBILITY, to prepare proposals for extending their project towards CEEC (Albania, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia). For contact points, see PANTA RHEI No. 16, p. 12.

TECHWARE's coordinator for HCM-WEEL, Prof. F. Siccardi, has submitted on July 2, 1993 a proposal which would include post-doctoral researchers from the following laboratories :

1. Water Research Institute T.G.M., Praha (Czech Republic).
2. Dept. of Water and Environmental Engineering, Prague Agricultural University (Czech Republic).
3. Institute of Environmental Engineering of the Warsaw University of Technology (Poland).
4. National Institute of Meteorology and Hydrology, Bucharest (Romania).

If the proposal is successful, WEEL will be a truly **Pan-European Scientific Network**.

If you want to hear more about the WEEL-networking philosophy, come to HYDROTOP 94 in Marseille (F) on

Wednesday 13 April 1994 :

## FIRST EURO-WORKSHOP WEEL RESEARCH/TRAINING SYNERGY

### A TECHWARE contribution :

*"to making good use, for the benefit of the Community, of the scientific and technological potential of the less-favoured regions by networking them with centres of excellence in the most advanced regions" ...*

(from §11 of the Explanatory Memorandum of the Proposal for COUNCIL DECISION concerning the 4th Framework Programme - see this issue)

The purpose of this first EURO-WORKSHOP WEEL is to disseminate the networking philosophy and to present the preliminary results of this challenging project, based on a strategic analysis of RTD-needs for water resources management. It is organized within the framework of HYDROTOP 94 in Marseille (F), the major Water Exhibition and Conference Event of the Mediterranean.

## **A research policy for a frontier-free Europe** by Antonio Ruberti, Member of the European Commission

*(Excerpts from Newsletter 6, June 1993 - Frontier-Free Europe)*

... During 10 years, the Community's activity in the scientific and technological field has helped bring about substantial changes in European research. Networks which bring together university laboratories, public research institutes and large and small companies have been set up. Cooperation between them has developed to the point where it now seems irreversible. ...

**... Programmes with a greater impact ...** the effort will be concentrated, within each major field, on a certain number of generic technologies, susceptible of giving rise to multiple applications. ...

... activities undertaken to encourage the dissemination and utilization by companies of the results of Community research projects will be strengthened by the development of a network of relay centres and, more generally, by the introduction of a European infrastructure for the dissemination and enhancement of these results. ...

... an effort will be made to exploit better the possible synergies between research policy and the actions undertaken within the framework of the EC's Structural Funds. ...

**Technology evaluation and links with training ...** to help raise the level of qualifications in Europe, research into European educational and training methods and systems will have to be undertaken. ...

**A clear framework for international cooperation.** With the fourth framework programme, all the activities undertaken by the Community as regards international scientific cooperation will be reorganized. Some of these had been hitherto carried out outside the framework programme. Hereafter all activities will be grouped together, to include cooperation with other European countries, including the countries of Central and Eastern Europe, the republics making up the former Soviet Union, the United States and Japan, the Mediterranean countries, the developing countries and international organizations.

**A better integration of European research**

... the fourth framework programme should be an occasion to coordinate to a greater extent and integrate better the totality of the research being conducted in Europe in the framework of national programmes, Community programmes and Eureka, as well as by the various European bodies for scientific cooperation ...

The second Working Document of the Fourth Framework programme, discussed in PANTA RHEI No. 16, June 1993, p. 13, has been followed by :

### **Proposal for a COUNCIL DECISION\* concerning the fourth framework programme of European Economic Community activities in the field of Research, Technological Development and Demonstration (1994-1998) COM(93)276 final, Brussels 16 June 1993.**

**\*Note :** after the entry into force of the Treaty on European Union, replace "COUNCIL" by "EUROPEAN PARLIAMENT AND COUNCIL".

We extract :

#### **• from the Explanatory Memorandum § 12**

#### **Synergy between research and training**

In order to promote growth and reinvigorate economic and social development a combination of labour and capital is not enough; a third factor is needed - a combination of knowledge, know-how and dissemination of know-how using the latest technologies, particularly information and communications technologies. Knowledge must be acquired with the aid of research; know-how must be built up with the aid of research and training; and scientific knowledge must be disseminated with the aid of information systems and media. One of the greatest spin-offs of Community activities in recent years has been the establishment and expansion of **Europe-wide research networks.**

Activities aimed at promoting the mobility of researchers and stimulating the creation of networks must constitute an important aspect of each of the topics within the first activity of the fourth framework programme, as well as in the extension of the current "Human Capital and Mobility"

programme, where they are the object of a cross disciplinary activity (the fourth activity) for the development of the human resources necessary to exploit new fields or research subjects.

The role of training activities, which seek to raise the general level of scientific and technical competence, is likewise of strategic importance. This calls for action to build on the foundations laid by the ERASMUS and COMETT programmes by promoting training at European level and mobility as well as promoting scientific information and culture in Europe alongside the implementation of the Fourth framework programme, in particular in the activities related to the development of generic technologies.

#### **• from Annex to the Explanatory Memorandum.**

#### **"Subsidiarity of the proposal for the 4th Framework Programme"**

... the following questions are pertinent :

- What are the objectives of the proposed action in relation to the Community obligations ?
- Does competence for the planned activity lie solely with the Community or is it shared with the Member States ?
- What is the Community dimension of the problem (for example how many Member States are involved and what solution has been used up until now) ?
- What is the most effective solution taking into account the means available to the Community and those of the Member States ?
- What real added value will the activity proposed by the Community provide and what would be the cost of inaction ?
- What forms of action are available to the Community (recommendations, financial support, regulation, mutual recognition,...)?
- Is it necessary to have uniform regulation or is a directive setting out the general objectives sufficient, leaving implementation at the level of the Member States ?

#### **• from Annex II of the Proposal for Council Decision.**

#### **Selection criteria for Community Activities**

The following criteria which guide the selection of scientific and technical objectives of the framework programme should also be applied in the definition of specific programmes :

1. Community research, technological

development and demonstration (RTD) activities must focus on clearly defined objectives which will contribute towards :

- strengthening the technological base of Community industry and providing it with the knowledge and know-how (skills) required to make it more competitive at international level;

- defining and implementing Community policies;
- meeting the needs of society and promoting a sustainable development.

This approach will also yield short-term, medium-term or long-term economic benefits and should contribute to the strengthening of economic and social cohesion in the Community, while being consistent with the pursuit of scientific and technical quality.

2. the Community's RTD activities must observe the principle of subsidiarity, whereby the Community takes action if, and only if, the objectives cannot be fully achieved by the Member States and can be better achieved by the Community.

3. On this basis, the following types of action could warrant Community activities :

- action on a very large scale for which Member States could not provide the necessary facilities, finance and personnel, or could only do so with difficulty ("critical mass");

- **activities tackling ambitious themes, addressing large-scale problems or of long-term scientific benefit. Activities of this type require specific research at Community level and can thus often enhance the Community's overall contribution to the solution of international problems;**

- activities producing obvious financial benefits which justify joint action even allowing for the extra costs inherent in all international cooperation;

- activities which are complementary to those being carried out nationally and which aim at strengthening the scientific and technological base of the Community as a whole and where there is a better chance of applying the results at Community level;

- activities contributing to the achievement of a common policy, such as the completion of the Single Market or of a common objective such as the unification of the European scientific and technical area, where the need is felt, to the establishment

of common rules and standards.

4. The Community's RTD activities must be implemented through projects which are to be assessed on the basis of their scientific and technical excellence.

In this process of selecting the projects to be carried out in the specific programmes, priority will be given to projects :

- allowing closer coordination of the research being conducted in the Member States, at Community level and within other European and international cooperation forums;

- making it possible to respond as effectively as possible to the Community's objectives regarding economic and overall industrial competitiveness.

- **from Annex III of the Proposal for Council Decision**

- Scientific and Technological Objectives**

... particular attention will be paid to the research, development and innovation capacities of small and medium sized businesses, of institutes of higher education and of research centres. **Partnerships** between them will be encouraged. ...

... Closer consultations will be held with bodies representing scientific, technical and industrial circles in the Community, particularly to define the science and technology policy options at European level. ...

... Scientific and technological cooperation with third countries and international organizations on subjects of mutual interest will be organized partly on a centralized basis (as the second activity) and partly under the individual themes in the first activity, in so far as they help to attain the relevant objectives of these themes.

**International scientific and technological cooperation** is one factor determining the economic efficiency of the Community's RTD activities. Consistency must be ensured in this area between national and Community policies. In this way, cooperation with third countries and international organizations will provide added impetus for the Community's investments in R&D. ...

... the European dimension must also be used for more general measures to develop the human resources which make it possible to react in real time to scientific and technological developments in emerging areas. The fourth activity, addressing advanced training in centres of

excellence throughout the Community, will therefore be open-ended and will also focus on **partnerships between universities and industry**. ...

... for the implementation of research supported by the Community : ... cooperation can be achieved by means such as :

- Thematic networks of excellence ...
- Concertation networks ...
- Consortia for integrated projects ...

## C O S T COoperation in the field of Science and Technology

is another non-EC research programme addressed in the 4th Framework Programme. In fact, COST was the first instrument of European science cooperation. It officially came into force on 22-23 November 1971 with 19 countries concerned. COST now involves 25 countries (EC- and EFTA-countries, Croatia, Czech Republic, Hungary, Poland, Turkey, Slovakia, Slovenia).

COST is a framework for R&D cooperation, allowing for both the coordination of national research projects and/or the participation of third countries in Community programmes. Both precompetitive or basic research is addressed. The cooperation takes the form of "concerted action projects", administered by management committees, but all projects are funded nationally. In a given project, only interested countries are associated by a Memorandum of Understanding.

The number of COST-projects is presently 160.

Only three of these projects are directly related to water :

COST 65 : Hydrological aspects of groundwater protection in karstic areas.  
COST 67 : Chemodynamics of and water quality protection in natural porous media.  
COST 682 : Optimizing the design and operation of biological wastewater treatment plants through the use of computer programmes based on a dynamic modeling of the process.



## EUREKA

The proposal Council Decision discusses at length the links with EUREKA :

*... the Community should bring forward*

*proposals to improve the synergy between the Community's research activities and EUREKA (§2 of the Explanatory memorandum).*

### What is EUREKA ?

EUREKA, launched in 1985, helps companies and research institutes in member countries, who pool their resources in the development of leading edge technology.

EUREKA's members are : Austria, Belgium, the Commission of the European Communities, Denmark, Germany, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom.

EUREKA aims to improve Europe's competitive position through the development of new high technology products and services, and focuses on the application of existing technologies and scientific know-how. The projects are market oriented, whether the market be private or public.

### EUREKA's links with WATER

EUREKA counts presently 32 projects in the area of freshwater and wastewater. Most of these projects are grouped under the common acronym EUROENVIRON. Only two have the project status F : finished.

#### They are :

No. 5 : Membrane for ultra micro filtration  
No. 577 : Development of a knowledge-based system to support operators of waste water treatment plants.

Twenty projects have the status A :  
Announced by the Ministerial Conference for implementation.

Four projects have status E : Endorsed by the EUREKA High Level Group.

three projects have status C : Circulating for 45 days before endorsement.

And three projects have the status P : Proposal.

### For further information, contact :

Markku Warras  
CEC-DG XII/B/1  
Wetstraat 200, B-1049 Brussels

# WORLD NEWS

## Information Meeting between International Hydrological Programme (IHP)-UNESCO Operational Hydrological Programme (OHP)-WMO and Commission of the European Communities (CEC)

Brussels, 10 June 1993

The Belgian National Committee of IHP took the initiative of this meeting. The meeting, prepared at the UNESCO/WMO/ICSU fourth Joint International Conference on Hydrology in Paris, 22-27 March 1993 (see PANTA RHEI No. 14, December 1992, p. 14), was attended by 33 representatives of IHP, OHP of the EC and EFTA-member countries and by representatives of CEC-DG VIII (Development), DG XI (Environment) and DG XII (Research). The aim of the meeting was an exploration of possible areas of cooperation of CEC in IHP/OHP.

*... it is equally important to take into account the growing opening of the Community towards the outside world in particular through the development of cooperation with and assistance to third countries. ...*

*(from §19 of the Guidelines)*

*... Cooperation with ... international organizations will provide added impetus for the Community's investments in R&D ...*

*(from Annex III of the Proposal for Council Decision 4th Framework Programme)*

### TASK FORCE UNESCO/WMO

The Task Force will consider with ICSU (International Council of Scientific Unions) how closer cooperation should be effected at the national and international levels between the programmes IHP (International Hydrological programme) of UNESCO and OHP (Operational Hydrological Programme) of WMO and with the water-related programmes of other UN-agencies and non-governmental organizations.

The Task Force has at its disposal a Working Document "Comments on UNESCO and WMO Water-related Activities", prepared by the IHP/OHP National Committees of France and Germany and the IHP National Committee of The Netherlands. The Task Force will have a meeting in late 1993 and should come rapidly to decisions on concrete proposals for closer liaison between the IHP of UNESCO and the OHP of WMO.

### EDI ENVIRONMENTAL TRAINING STRATEGY

A revised Environmental Training Strategy of the Economic Development Institute (EDI) of the World Bank, produced as a follow-up to the June 1992 UNCED Conference in Rio, has recently been issued to strengthen the managerial capacity of borrowing countries for integrating environmental concerns with economic development for sustainable futures, at the project, program and policy levels.

#### Training roles and materials

..., **networks of training institutions** will be established to reinforce their training roles and capabilities in integrating environmental consideration with development policies and programs. At the same time, training materials will be designed and produced for use by trainers and their institutions in environmental training. In view of its scope and magnitude, most training will be regional or inter-country.

**For more information**, contact Jose I. dos R. Furtado, Environmental Specialist, EDI, the World Bank, 1818H Street, N.W., Washington, D.C. 20433

**SEPTEMBER 1993**

**22** SEPT ANNUALLY  
Brussels (B)  
Interuniversity Postgraduate  
Programme in Hydrology.

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

**57** 01-03 SEPTEMBER  
Reykjavik (ISL)  
Conference  
Quality and Productivity in  
Software Development.

**47** 02 SEPT-20 DEC  
Computer Conference  
TECHWARE-TRITON Course  
Integrated urban runoff  
Distance Education.

**46** 06-07 SEPTEMBER  
La Seu d'Urgell (E)  
Crues torrentielles et  
inondations : montagne et  
régions méditerranéennes.

**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.

**42** 06-16 SEPTEMBER  
Oxford (UK)  
Science, technology and  
society, appropriate science  
education for the 21st century

**43** 09-11 SEPTEMBER  
La Hulpe (B)  
Conference. Technologies &  
Language Learning.

**38** 10-15 SEPTEMBER  
Kozani (GR)  
Course. Measurements in  
environmental protection (air-  
water).

**18** 13-14 SEPTEMBER  
Sheffield (UK)  
Workshop. Technology transfer -  
a role for women in the new  
Europe.

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

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

**13** 13-17 SEPTEMBER  
Manchester (UK)  
International training course.  
Remediation of contaminated  
groundwater and soils.

**15** 13-17 SEPTEMBER  
Ispra (I)  
Course. Technologies for  
environmental cleanup: toxic  
and hazardous waste  
management.

**61** 15 & 29 SEPTEMBER  
Antwerpen (B)  
Course. Bodemverontreiniging  
door koolwaterstoffen.

**37** 16 SEPTEMBER  
Wallingford (UK)  
Seminar. Problems and solutions  
for Coastal and Estuarine  
Pollution.

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

**37** 20-24 SEPTEMBER  
Wallingford (UK)  
Short course on Hydrometry.

**28** 20-25 SEPTEMBER  
Lyngby (DK)  
COMETT course. Design analysis  
in geotechnical engineering.

**6** 22-24 SEPTEMBER  
Bucharest, Romania  
CAEE '93 - Conference on  
Computer-Aided Engineering  
Education.

**55** 22-25 SEPTEMBER  
Berlin (D)  
Conference. Access to higher  
education. The economic and  
social implications. A European  
East-West convention.

**12** 27 SEP - 01 OCT  
Wallingford (UK)  
TECHWARE ETCourse 92-SP10.4  
Groundwater Modelling.

**15** 27 SEP - 01 OCT  
Ispra (I)  
Course. Chemistry of aquatic  
systems: local and global  
perspectives.

**53** 27 SEP - 08 OCT  
Arles (F)  
Stage Comett. Analyse  
industrielle et environnement.

**34** 27 SEP - 15 OCT  
Southampton (UK)  
Short Course  
Effective Irrigation Management

**37** 28-29 SEPTEMBER  
Wallingford (UK)  
Short Course. Timeseries Rainfall  
for Urban Drainage Models.

**OCTOBER 1993**

**5** OCTOBER ANNUALLY  
Silsoe Bedford (UK)  
MSc courses in Water  
Irrigation Engineering.  
• Soil and Water Engineering.  
• Irrigation Water  
Management.  
• Environmental Water  
Management.  
• Community Water Supplies.

**39** OCTOBER ANNUALLY  
Coimbra (P)  
Msc Course  
Hydraulics and Water  
Resources.

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

**51** 04-05 OCTOBER  
Valencia (E)  
Seminar. New models and  
training strategies for the SMEs  
in Europe.

**14** 04-06 OCTOBER  
Barcelona (E)  
EERO symposium. European  
coastal seas: from science to  
management.

**62** 5, 6, 7 OCTOBER  
Delft (NL)  
Course. Modelling van het  
transport van stoffen en water in  
de verzadigde zone van het  
grondwater.

**30** 07-09 OCTOBER  
Venice (I)  
5th COMNET European forum.  
European Dimension in  
Education, Training and  
Research.

**25** 06 OCTOBER  
Budapest (H)  
Seminar of the IWSA  
Foundation for the Transfer of  
Knowledge  
Continuing education needs for  
Integrated Water Resources,  
World-Wide.

**31** 12 OCT - 17 DEC  
Stockholm (S)  
Methodology of open learning  
& distance education in  
technology & engineering. Five  
modules.

**12** 11-12 OCTOBER  
Wallingford (UK)  
TECHWARE EURO-WORKSHOP 92-SE1  
European research and  
development in water resources.

**33** 11-15 OCTOBER  
Delft (NL)  
Short course. Applied modelling  
of groundwater Pollution.

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

**53** 11-22 OCTOBER  
Liège (B)  
Stage COMETT. Analyse  
industrielle et environnement.

**64** 13-15 OCTOBER  
Canberra, Australia  
Conference. Images of quality.  
perceptions and best practice in  
international education.

**36** 18-22 OCTOBER  
Wien (A)  
Hochschulkurs. Einführung in  
die Grundwassermodellierung.

**37** 21 OCTOBER  
Harrogate (UK)  
Seminar. Road drainage.

**12** 23 OCT -25 NOV  
Wallingford (UK)  
TECHWARE ETCourse SP1.1  
Introduction to River Hydraulics  
and Hydrology.

**14** 24-27 OCTOBER  
Cremona (I)  
EERO Course. Environmental  
chemistry of organic pollutants.

**29** 25 OCTOBER  
Coimbra (P)  
Workshop EWA-Ring. Education  
of hydrology and water  
resources management for  
improved environment and  
sustainable agriculture, an  
overview of TEMPUS I and  
outlook for TEMPUS II.

**11** 25-28 OCTOBER  
Cosenza, (I)  
TECHWARE ETCourse SP1.4  
Parameters Estimation in  
groundwater Flow and Pollution  
Modelling

**11** 27-29 OCTOBER  
Genoa (I)  
TECHWARE ETCourse SP3.3  
Advanced Management of  
Drinking Water Supply: Water  
Quality and Treatment  
Processes.

**NOVEMBER 1993**

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

**16** 02-04 NOVEMBER  
Washington D.C. (USA)  
International Conference.  
Educational exchange and  
global competence.

**9** 03-05 NOVEMBER  
La Hulpe (B)  
Workshop. Learning  
organisations practices.

**53** 08-19 NOVEMBER  
Barcelona (E)  
Stage COMETT. Analyse  
industrielle et environnement.

**36** 08-12 NOVEMBER  
Bonn (D)  
Course. Introduction to  
Groundwater-Modelling.

**12** 10-12 NOVEMBER  
Venice (I)  
TECHWARE ETCourse SP10.5  
New Technologies in Port  
Management.

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

**37** 11 NOVEMBER  
Wallingford (UK)  
Seminar. Computer aided  
learning for the water industry.

**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. These announcements are made free of charge. Advertising of other activities such as Conferences, are welcome.

See rates on page 23.  
Please contact the Editor.

**37** 11 NOVEMBER  
Wallingford (UK)  
Seminar. Hydroinformatics.

**14** 14-17 NOVEMBER  
Lübeck (D)  
EERO course. Soil pollution and risk assessment.

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

**48** 15-19 NOVEMBER  
Delft (NL)  
Environmental Training in Engineering Education.

**12** 18-19 NOVEMBER  
Stafford, (UK)  
**TECHWARE ETCourse SP10.6**  
Wastewater Treatment for Marketing Personnel.

**58** 20-25 NOVEMBER  
Acquatreda di Maratea (I)  
European Research Conference. Natural waters and water technology: rates in natural waters and water technology.

**14** 21-25 NOVEMBER  
Mol (B)  
EERO course. Environmental technology - Applied technology for remediation and purification.

**50** 22-24 NOVEMBER  
Paris (F)  
International Workshop Bromate and Water Treatment.

**15** 22-26 NOVEMBER  
Ispra (I)  
Course. Advances in the use of AVHRR data for land applications.

**37** 23-25 NOVEMBER  
Wallingford (UK)  
Introductory Course  
River hydraulics and hydrology.

**54** 29 NOVEMBER  
London (UK)  
Seminar. Managing your Project Managers.

**59** 29 NOV - 1 DEC  
Wien (A)  
COMETT hochschulkurs.  
Betriebliches Umweltmanagement und Ökodesign.

**53** 29 NOV - 10 DEC  
Le Havre (F)  
Stage COMETT. Analyse industrielle et environnement.

**20** 29 NOV - 17 DEC  
Wageningen (NL)  
International Course  
Microcomputer Applications in Land Drainage.

**12** 30 NOV - 2 DEC  
Antwerpen (B)  
**TECHWARE ETCourse SP10.2**  
The HYDRONAUT Procedure

#### DECEMBER 1993

**14** 01-04 DECEMBER  
Lindau (D)  
EERO course. General toxicology.

**35** 02-04 DECEMBER  
The Hague (NL)  
5th Annual Conference EIAE.

Europe and beyond.

**37** 9 DECEMBER  
Wallingford (UK)  
Seminar. Validation of technical software for the water industry.

**65** 9-10 DECEMBER  
Madrid (E)  
First encounter of Euro-Latinamerican organizations for the development of university-Enterprise relations.

**11** 13-15 DECEMBER  
London (UK)  
**TECHWARE ETCourse SP10.7a**  
Civil Engineering Hydraulics.  
**TECHWARE ETCourse SP10.7b**  
Hydraulics of Civil Engineering Structures.

**2** 13-17 DECEMBER  
Cagliari (I)  
HYDROCONTROL Courses  
Gestione delle emergenze : manutenzione e scorte.

**8** 14-17 DECEMBER  
Vienna (A)  
International conference on computer-based learning in Science CBLIS 93.

**11** 15-17 DECEMBER  
Genova (I)  
**TECHWARE ETCourse SP3.4**  
Advanced Waste Water Treatment and Technologies.

**10** 15-17 DECEMBER  
Paris (F)  
Conference. Building alliances for learning.

#### 1994

**17** JAN - FEB  
Lausanne (CH)  
Cours postgrade. Fiabilité et sécurité des systèmes techniques.

**52** 10-12 JAN  
Orlando, FL, USA  
Workshop. Water Distribution Modeling.

**49** 10 JAN - 10 FEB  
Southampton (UK)  
Wageningen (NL)  
International Course  
Computer Applications in Irrigation.

**19** 24 JAN - 04 FEB  
Wien (A)  
Post-Graduate Course  
Geographic Information Systems.

**40** FEBRUARY ANNUALLY  
Adelaide (Australia)  
MSc, MengSc, MEng, MAppSc  
Courses  
Joint Universities' Masters Program in Hydrology and Water Resources.

**63** FEB-APR-SEP  
Pisa (I)  
COMETT international post-graduate courses on geographic information systems.

**41** 01-04 FEBRUARY  
Khartoum (Sudan)  
International Conference on Efficient utilization & Management of Water Resources in Africa. Education and Training of Water Users.

**7** 16-18 FEBRUARY  
San Diego, California (USA)  
Conference. Lifelong learning - Re-educating America: Technology and higher education.

**1** 28 FEB - 10 JUNE  
Sydney, Australia  
Graduate course in hydrology.

**59** FRÜHJAHR 1994  
Wien (A)  
Hochschulkurs. Finite elemente - berechnungen:  
Problemaufbereitung und modelbildung.

**32** 27-30 MARCH  
London (UK)  
11th International Conference on Technology and Education.

**21** 13 APRIL  
Marseille (F)  
**TECHWARE EURO-WORKSHOP WEEL**  
Research/Training Synergy  
HYDROTOP 94.

**27** 29 AUG - 02 SEPT  
Prague (PL)  
International Workshop  
Post-graduate hydrology education.

**42** 12-16 SEPTEMBER  
Birmingham (UK)  
Remote Sensing and GIS in Urban Waters (UDT '94).  
Education and Training Tools.

**59** 19 SEPTEMBER  
Wien (A)  
Hochschullehrgang [4 Semester].  
Geoinformationswesen.

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## ON YOUR DESK

### JOURNAL

The recently distributed issue (Volume 2, numbers 2/3/4) of the **International Journal of Continuing Engineering Education**, is a special issue on new Technologies for Continuing Engineering Education.

Guest edited by Ari-Matti Auvinen, Thomas W. Smith and Glyn Martin this special issue examines, among others, the following topics :

- audiographics in continuing engineering education
- multimedia communication and training applications in computer-integrated manufacturing
- the conditions for successful technology training via interactive satellite television
- the National Technological University's compressed video network
- ISDN, videoconferencing, and two-way compressed digital TV
- networks such as PRISM, PACECOM/EuroPACE, and EuCEENet.

### ARTICLE

#### **Distance learning for Industry in Japan : Implementation of a Tele-learning System in Industry and Higher Education**

by Takashi Sakamoto, Shigeru Segi and Yoshio Miura

(UK), Vol 6 No 4, December 1992, p. 219-224.

The authors describe the implementation of a tele-learning system by the Japan Management Association. Their discussions examines course content and student evaluations, as well as the advantages of the tele-learning system against other distance learning options in Japan, such as correspondence courses and the University of the air. The authors also describe the recent movement toward satellite transmission of courses.

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#### **For information about date, venue and further details, contact :**

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**COPY DATE FOR THE NEXT ISSUE IS 1 NOVEMBER 1993**

PANTA RHEI is published on DIN A4 format

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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 2,000 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-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, including research training.

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 axiom 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".

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HCM

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the HUMAN RESOURCES and MOBILITY Programmes of the European Community (EC)

Bulletin d'information pour 'l'Enseignement de l'hydrologie et de la gestion de l'eau' et la 'Formation aux technologies des ressources en eau' dans le cadre des programmes Ressources Humaines et Mobilité de la Communauté Européenne.

Informationsblad om 'Uddannelse og efteruddannelse i tekniske emner knyttet til vand' indenfor EF's rammeprogrammer om Menneskelige Ressourcer og Mobilitet.

Boletín de información sobre 'Educación en hidrología y gestión de agua' y 'Formación práctica en tecnologías de recursos de agua' en el marco de los programas de la Comunidad Europea de Recursos Humanos y Movilidad.

Informatie bulletin voor 'Onderwijs en waterbeheer' en 'Opleiding voor technologie van de watervoorraden' in het raam van de programma's Menselijk Potentieel en Mobiliteit van de Europese Gemeenschap.

Bolletino informativo riguardante: 'Studio dell'Idrologia e Gestione delle Risorse Idriche' e 'Corsi di formazione sulle tecnologie delle Risorse Idriche', nell'ambito dei Programmi della Comunità Europea sulle Risorse Umane e la Mobilità

Informationsbulletin für 'Unterricht in der Hydrologie und Wasserverwaltung' und 'Ausbildung für die Technologie des Wasservorrates' im Rahmen der Programme Menschliches Potential und Mobilität der Europäischen Gemeinschaft.

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