

**FÉDÉRATION MONDIALE
DES
ORGANISATIONS D'INGÉNIEURS**

**RAPPORT BIENNAL
1997-1999**



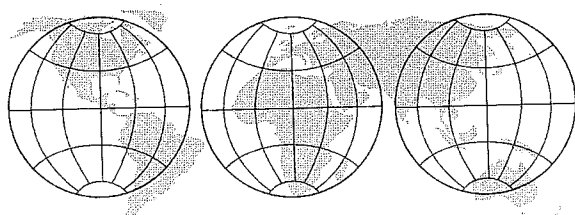
***WORLD FEDERATION
OF
ENGINEERING ORGANIZATIONS***

**BIENNIAL REPORT
1997-1999**



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STRATEGIC PLAN 1998-1999

LE PLAN STRATÉGIQUE 1998-1999

VISION

WFEO is the world wide leader of the engineering profession and co-operates with national and other international professional institutions in developing and applying engineering to the benefit of humanity.

MISSION

- To provide information and leadership to the engineering profession on issues of concern to the public or the profession.
- To serve society and to be recognised, by national and international organisations and the public, as a respected and valuable source of advice and guidance on the policies, interests and concerns that relate engineering and technology to the human and natural environment.
- To make information on engineering available to the countries of the world and to facilitate communication between its member nations.
- To foster peace, socio-economic security and sustainable development among all countries of the world, through the proper application of technology.
- To facilitate relationships between governments, business and people by contributing an engineering dimension to discussions on policies and investment.

LONG TERM OBJECTIVES

- Develop through appropriate engineering activities and education, a world-wide understanding and commitment to sustainable development.

- Pursue those programs and activities within Agenda 21 of the UNCED World Summit that are applicable to engineering.
- Foster and encourage the formation and strengthening of national and international associations of engineers.
- Promote societal benefits through co-operation among engineering organisations around the world, and with institutions of science and industry, universities, and other organizations.
- Disseminate engineering information and promote global access to this information.
- Foster the transfer, sharing and assessment of technology.
- Discuss and propose programmes to improve the quality of engineering education and training, and provide assistance for the establishment in all member nations of procedures for the accreditation of engineering courses.
- Develop guidelines to facilitate free trade in engineering services, and regional and international recognition of engineering qualifications.
- Provide for the protection, security and health of the public by the assessment and dissemination of technologies for the control of risk and the prevention and reduction of damages due to man-made and natural disasters.
- Sponsor congresses and other technical meetings of significance to the profession, and disseminate their conclusions and recommendations.
- Provide equal opportunity for all to enter the engineering profession, and to pursue their engineering activities freely throughout the world.

WFEO, FROM HONG KONG TO MADRID GENERAL ASSEMBLIES (1997/1999)

By President Conrado E. Bauer

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1. Introduction

Dear WFEO Friends,

I am going to finish next November my four-year period as WFEO President. From 1995 to 1999 many exciting technological, social and institutional innovations have had their impact on the international scene. We are actors and recipients of a globalization process that affects all kind of human activities from information and transport systems to political, financial and trade modalities.

Engineers are authors or drivers of projects and productive activities and services that generate goods, jobs and wealth, impacting the environment and the life of people. So we are assuming a high ethical and practical responsibility for the human development, its equity and sustainability.

Consequently, our Federation must strengthen its structure and functioning in order to adapt them to the new responsibilities ever-emerging in this rapidly changing world. We, engineers, must continuously update our knowledge and review our ideas to look for and apply better answers to the problems generated by the general transformation and to improve our positive contribution to the evolving situation. In this sense, we, in WFEO, are stimulating the internal discussions and debate with open minds and respectful attitudes among us and to the other sectors of society searching the reinforcement of constructive cooperation to accomplish our goals.

Engineers need a stronger WFEO and a stronger WFEO needs the active participation of its members to join and better express the voice of engineers, supporting their credibility and more dynamic interaction in the international dialogue, stressing their contribution and adaptation to the global change. As the next General Assembly approaches, I would like to transmit to all of you some reflections and

comments about WFEO development and my hopeful feelings in this respect.

2. Guiding Goals

As an extreme synthesis, we may say that the World Federation of Engineering Organizations has two main aims: to contribute to the progress and improvement of engineers' activities and their national and international institutions, and to represent engineering in the world scene, spreading out ideas and possibilities and co-operating with other governmental and non-governmental institutions.

These aims are inherent to WFEO which, in search of achieving a proper balance, carries out "internal activities" to benefit directly the member associations and engineers, and "external activities" to support the international development and to promote engineering as a profession.

These guiding goals of our Federation are set out in its Constitution and specified by the Vision, Mission and Long Term Objectives which compose WFEO "Strategic Plan", whose practical expressions are the "Action Plans" approved every two years in the General Assemblies by our member organizations. WFEO is trying to have the biennial Action Plans evolve to include more practical programs selected to better contribute to and stimulate the sustainable development and engineering progress, ideally with more facts than words.

As WFEO President, I kept trying to follow these guidelines established by the whole membership, thus supporting the actions of those who are devoting their time and work to serve our organization. I am particularly moved recognizing how many talented engineers of many countries from all over the world are co-operating generously with WFEO staff and committees. This leading group deserves all our gratitude.

I would like to start this second biennial report as WFEO President by thanking all of them for their inspiration and efforts. I will try to interpret them with the following descriptions of general ideas, making some considerations resulting from the whole period and, particularly, from the last two years.

3. Driving Ideas

3.1 One of the "driving ideas" that WFEO is encouraging internally and in international forums is the

differentiation between engineering, technology and science. Although we could set engineering within the bounds of the scientific domain, considering its fundamentals and its rigorous working methods, as well as the significant research activities developed in the fields of engineering and technology, we should differentiate it by its objectives and results: **the main function of engineering is to do things or to make things be done** in a way that they should be useful to the users and to those who entrust them.

While science researches in order to develop abstract systems (mathematics, logic) or to understand and predict the functioning of reality, and technology applies intuition and scientific and experimental concepts to make up new treatments (i.e. for health care), processes and products (research and creation of prototypes), **engineering with its practical realizations transforms human customs and possibilities and the physical environment, by means of concrete applications of its own creativity and art, supported by scientific, technological and traditional knowledge and by their proper assessment, taking into account technical, economic, social, political and environmental considerations. We, then, can say that engineering is not just science.** In a figurative sense, we may say that **engineering is the bridge between science and society.**

Consequently, our aim is to reaffirm the autonomy and the creative nature of engineering so that it can be recognized by the public opinion, international organizations and governments as well as by scientists and all engineers to better move the possibilities of its progress and its more efficient co-operation with the other sectors. Professional engineering, close to technology and different from science, is a practical activity to solve problems set out by a client whose objectives should be analyzed and adjusted, and then accomplished optimizing the use of available means and the compliance with regulations and constraints that influence the execution and utilization of the so agreed objectives.

These ideas have already been discussed in meetings organized by WFEO and its STCs. WFEO members have also stated them in international meetings such as those organized by UNESCO (Australia 1998 and Budapest 1999), by the World Bank (Toronto 1997), by the Earth Council (Rio de Janeiro 1997), etc. The President of the Commonwealth Engineers' Council (C.E.C.), Dato Lee Yee Cheong, has summarized them

with the abbreviation S.E.T. (Science, Engineering, Technology) proposing its use to be a factor of recognition of the proper association and differentiation we are looking for and pushing its conceptual interpretation to be considered when organizing and celebrating related international meetings. The use of S.E.T. involves and promotes the idea of the real differentiation and the permanent linkage and interaction between Science, Engineering and Technology: each one isolated loses a considerable part of its strength and significance; with their respectful association, each one reinforces the others and is being supported by them complementing its potentiality.

- 3.2. Another "driving idea" on which WFEO is working is the recognition of **the commitment and responsibility of engineering with respect to the effective realization of sustainable development.** And this development, according to the Declaration unanimously approved in Rio de Janeiro (UNCED, 1992), should be taken as a process of equitable and continued betterment of human life conditions pushing to reduce the disparities and eradicate poverty all over the world. The "Sustainable Development" is thus a process that should grant the privilege to the respect of all human beings. Its continuity requires an effective environmental protection and harmonization between the changes caused by the development (the concrete engineering works) and the assimilation capacity of the biophysical and social environment. Knowing that the development process is an integration of actions of the entire population and that it is multidisciplinary in its aspects of planning and managing, we may emphasize the active participation of engineering in its physical execution with the expression **"the engineer is the craftsman of sustainable development"**. Consequently, every engineer should be an active and conscious agent of its fulfillment.

This "driving idea" and its implicit commitment with the international betterment and equity and consequently with the sustainability of production and consumption everywhere, require that engineers of developing countries contribute consciously to accelerate the pace of development of their own regions. Thus, this ethical and practical mandate, involves, among other consequences for engineering practice, a strong impulse of cooperation from WFEO, its member organizations and engineers from the most developed countries to the engineers of developing countries, with the objective to expand and improve

their professional activities and their leadership to working for sustainable development in their own countries. In this respect, there are proposals of Vice-Presidents W. Rourke, D. Thom and J. Poirot, and national WFEO members such as Nigeria and Australia, which will be discussed in Madrid.

4. Internal Organization

During the period 1995-1999 in which I have had the responsibility and honor of being the President of WFEO, the biennial meetings of the General Assembly, the yearly meetings of the Executive Council and the biannual ones of the Executive Board have been regularly held. **A most significant accomplishment was the transformation of our management system: our Secretariat was transferred to UNESCO headquarters (Miollis Building) in Paris and its organization has been consolidated with the assumption in the new position of Executive Director of Pierre Edouard de Boigne** after he left a similar position in FEANI. The action of Mr. de Boigne and his assistant, Madame Tahani Lefébure, is being really encouraging for the whole WFEO.

According to WFEO internal Rules of Procedure, ten members of the Executive Council and the chairman of one of the Standing Technical Committees were renewed in 1997 in Hong Kong (Professor J. Ginsztler replaced Professor M.A. Yadarola in the chair of the Committee on Education and Training - CET), and more changes are to be considered in Madrid).

Some of our members have left us, and more others are joining or rejoining. All this will also be the object of information and analysis in Madrid with the goal of striving to expand WFEO membership and the more dynamic participation of members.

Each new member brings new energies and ideas to WFEO and reinforces its global balance and representation; each resignation (fortunately very few) involves a frustration for WFEO, and a sign of misunderstanding of the responsibility of all engineers to interact and cooperate for better accomplishment of their international role; we, in WFEO are permanently analyzing our performance and how to improve our plans and the dissemination of our ideas and activities to better satisfy both our members' expectations and needs, attracting all engineering organizations to obtain their most active and constructive participation.

For the last years, we have concentrated our efforts to improve WFEO's income (WFEO's weakest point) and to

intensify the efficiency and effectiveness of the budget management and of overall actions of our Federation in order to better comply with its objectives and working plans.

We have made a significant progress in the administration and in the tasks carried out by our technical commissions, all of them directed by outstanding engineers. However, we feel and understand that we should double our efforts to stress this policy and obtain a greater mobilization and a better use of our resources, particularly of human resources, whose potentiality is enormous. To analyze these situations, two working groups have been created: 1) The "High Level Task-Force on the Management and Future Direction of the WFEO" designated in 1997 in Hong Kong by the initiative of the President and whose report ("Proposal for the Reengineering of WFEO") has been adjusted after being discussed by the Executive Council (Paris, 1998) and being consulted with member organizations; the analysis carried out and its conclusion, have been coordinated by WFEO President-elect José Medem; and 2) the "Financial Planning Group" which was designated during the aforementioned meeting in Paris. Both reports, together with the proposals to modify some aspects of WFEO Constitution (Australia) and to explore alternative sources of resources (Treasurer J.C. McKenzie and others), will be studied to come to a decision in Madrid.

I think that we all agree that the greatest efforts of our Federation should be made in search of the priority elaboration and realization of our Action Plans, encouraging the participation of member organizations and attracting the interest and co-operation of young engineers and students; but we also agree that on the occasion of the biennial meetings of the General Assembly, all WFEO members should have the opportunity of revising and discussing the functional structure and the finances that our Federation needs to support these plans and the accomplishment of its strategy and more general policies. This permanent updating adjustment is part of the dynamics of our Federation and shows a plausible commitment of continuous betterment. I hope to obtain new and satisfactory advances at the Madrid meetings.

5. Technical Activities

It is already proverbial the high level of recognition the members of our Technical Committees and other WFEO representatives receive when they attend meetings organized by our STCs, by our members or by other international organizations. These circumstances, the

corresponding details of meetings organized by the STCs, their engineers' participation -including the attention paid to stimulate the presence of less developed countries- and the production and dissemination of publications, will be commented in the respective written reports.

Just to give a few examples, I will mention some technical events held during the last years with the organization or participation of WFEO. The information on most of them is available through Internet or in printed documents.

UNESCO/UNIDO/UATI/WFEO World Congress of Engineering Educators and Industry Leaders (Paris, 1996).

WFEO/CAST (China) Conference on Engineering and Environment (Beijing – China 1996).

UNEP/UNIDO Cleaner Production (Warsaw 1997).

WB-Canada/NRC (USA) Conference on “Global Knowledge” and Panel on “Global Co-operation for Knowledge Dissemination” (Toronto, Canada 1997).

WFEO/WBCSD/UNEP/ENPC International Seminar on Engineering Education for Sustainable Development (Paris 1997).

HKIE Sustainability in the XXI Century (Hong Kong 1997).

WFEO/IE (India) Habitat - (New Dehli 1997).

HELECO (Thessalonika, Greece 1997 and 1999).

UN Commission on Sustainable Development Annual meetings (New York 1998-1999). (J. Poirot).

UNESCO/ICSU World Science Conference (Budapest, 1999)

WFEO representatives have already committed to participating next year 2000 in relevant activities such as the World Congress on Sustainable Development (Calcutta, January 2000) organized by The Institution of Engineers (India) and sponsored by WFEO; and the “World Engineering Convention” to be held in Hanover (Germany, June 2000) organized by V.D.I. (our German National Member) and whose Advisory Board is chaired by José Medem.

Some special technical projects are specified in point 6 below. Besides them, other significant initiatives, which require detailed analysis and consultations to decide whether to approve or reject them, are worth mentioning. Among them: to continue every 4/5 years with the World Engineering Convention, after Hanover 2000; to foster the organization of a “World Register of Professional

Engineers”; to sponsor the preparation every 2/4 years of a World Technology Report (or “World Engineering and Technology Report”), similar to the World Science Report prepared traditionally by UNESCO/ICSU.

6. International relations

Besides the relations and visits to the headquarters of WFEO member organizations in several countries and regions, the main officers of WFEO, members of its Executive Council and of the STCs, have had closer contacts with many governmental and non-governmental international organizations and have organized formal meetings with their authorities at their respective headquarters. Among them: UNESCO, UNEP/IEO, ICSU and UATI in Paris ; GEF (Global Environment Facility) and the World Bank in Washington ; UNDP and United Nations Commission for Sustainable Development (New York) ; UNIDO (Vienna) ; WBCSD (World Business Council for Sustainable Development) in Geneva, etc. With some of them and with engineering universities and schools, we have co-organized or sponsored several technical meetings.

With respect to the most significant international organizations mainly made up of engineers (besides our Federation, whose members are the most representative national and regional multidisciplinary engineering organizations), we can mention :

- UATI (Union of International Technical Associations) which represents international organizations dealing with specialized sectors of engineering ; our relations and collaboration with them have been strengthened by the joint creation of the International Council for Engineering and Technology (ICET) which, as one of the twelve “associated” non-governmental organizations recognized by UNESCO, conducts through this UN organization the unique representation of international engineering. WFEO and UATI Secretariats have adjacent rooms in the UNESCO headquarters in Paris; this fact enables a close and every-day co-operation between both organizations constituent of ICET.
- FIDIC (International Federation of Consulting Engineers) with whom our relations are also excellent but could be intensified with more frequent interchanges and joint projects. We are associated with FIDIC and UATI through WEPSPD (World Engineering Partnership for Sustainable Development), an organization that has not worked for the last year and whose objectives have been mainly and individually followed by its founder members.

– CAETS (Council of Academies of Engineering and Technological Sciences). Our Executive Director attended their last international meeting held in Sophia Antipolis (France) last May.

Regarding international entities of the United Nations Organization System, our most active co-operation has been established with UNESCO through ICET, whose Presidency has been assumed by the WFEO President this year. Last March, a Framework Agreement was signed stating the intention of developing joint UNESCO-ICET projects, three of which have already been selected for further development: 1) to resume the periodic publication, started by UNESCO some years ago, of an international register of engineering schools; it may include their admission requirements, curricula and diplomas, and information on the accreditation systems of teaching standards; it may also have references to the national regulations of the professional practice of engineering; 2) to begin the organization of a “Virtual Engineering Library on Sustainable Development” (VELSD), gathering together references and texts which can be accessed to by Internet; 3) to continue the activities which began within the International Decade on Natural –and Technological– Disasters Reduction (IDNDR).

With UNEP, we are performing an active collaboration, particularly through WFEO/CEE with the Industry and Environment Office in Paris; with UNIDO, we have agreed to strengthen our relations, updating the representation of WFEO as “Observer” and organizing joint activities regarding technology development, quality of products and processes, and international trade; with GEF, we have had meetings to deal with issues of future co-operation.

Among non-governmental entities, we have frequent interchanges of ideas and proposals with ICSU (Science) and WBCSD (Business).

7. Information and Communication

Besides good ideas and programs, a good system of information and communication is essential to accomplish the aims of WFEO and to obtain an effective presence, usefulness and marketing all over the world.

For the last two years, our Organization has made good progress towards the gathering and transmission of news, opinions and information. In this respect, two circumstances are worth mentioning: 1) the regularization of the six-monthly publication (March and September) of

our “WFEO Newsletter”, whose editor Roger Duffell, UK national member of the Executive Council, deserves our recognition for his tireless and efficient job; 2) the preparation and presentation of our Web-site (<http://www.unesco.org/ngo/fmoi>) thanks to the advice and co-operation of Jean Michel, Chairman of STC on Information and Communication (WFEO/CIC), and the activity of the Executive Director and WFEO Secretariat.

Consequently, the two supporting pillars of the system : information printed on paper and information by Internet, have already been placed. There is obviously a wide range of possibilities to improve these means depending on the available human and financial resources that could accelerate their development.

As it is well-known, each of these graphic and electronic means have possibilities that cannot be substituted. Both are necessary for WFEO to comply with its missions of disseminating ideas and information, of promoting the presence of engineering in different settings outside WFEO, of establishing a systematic way of communication and internal interaction among all member organizations and the individuals who want to say something and to be informed.

The **printed word** has the advantage of being proactive in the sense that goes straight towards its target, carries the presence of WFEO, transmits its message and remains visible in a direct way. As WFEO Newsletter aims at disseminating and attracting people's attention, it should be brief and dynamic so that many people, who sometimes do not have a lot of time but are really interested in receiving some information about engineering and WFEO, can obtain and read it. To get more detailed information, the Newsletter may offer references to the Web-site or other sources. This system of communication meets the problems of the cost of printing and distribution but, on the other hand, it has the already mentioned convenience of its accessibility to the necessary or useful target.

The Web-site has huge advantages to store and maintain, with a low cost, an enormous range of information which is permanently available to the reader through Internet. The system is passive: it requires a recipient interested in, and with the capacity of being informed by the use of a computer, a condition which is not accomplished yet everywhere but it is being generalized while the number of those who use computers is steadily increasing all over the world. The information in WFEO Web-site should be up-dated periodically; we could add the transcription of the six-monthly Newsletter as well as a briefer and more frequent “bulletin”. The electronic system also enables the

systematic use of sending urgent institutional news by e-mail.

To sum up, we consider it essential for our Federation to consolidate the developing policy of expanding our information and communications system. Our suggestion is to assign a larger proportion of our budget to it, to set its co-ordination within the bounds of the Executive Direction, to promote a more active interchange of information with our national and international members and especially appointed correspondents, and to select and periodically up-date the mailing lists for the distribution of our Newsletter and e-mails. In this respect, we have received several proposals which will be analyzed and discussed in Madrid.

8. Homage, Acknowledgements and Welcome

After being shocked in 1996 by the passing away of our beloved Treasurer Hamed Kaddah, last March our Federation was deeply moved by the death of Vice-President Donald Laplante, who chaired during the last years the powerful "Finance and Administration Committee". Through the history of WFEO, few people have been so unanimously respected and admired as Don Laplante. He was nominated on different occasions to be part of the Executive Council as Vice-President, proposed by the Canadian Council of Professional Engineers and was always elected and reelected by the WFEO General Assembly with the maximum number of votes. He always worked with the greatest responsibility and good judgement. Talented, tidy and affable, he was recognized and appreciated for his constructive and conciliatory sense, for his wise assessment of the problems and his capacity to look for and find harmonious solutions to the most difficult situations. Those who participated in the last WFEO General Assembly in Hong Kong could see him managing part of some sessions and appreciated once again his calmness, understanding and equanimity. Before he died, the WFEO Board had decided to give him a medal of recognition for his "Distinguished Services to WFEO"; we have invited his beloved wife Cecile to join us in Madrid to receive it during the meeting to be held in the framework of the General Assembly.

Some other distinguished members of our Federation will also be recognized there for the completion of long periods of outstanding services, working in key positions of WFEO management. Besides, the biennial "Gold Medal Award for Engineering Excellence" will be given for the

fourth time and a medal to honor an international personality in the field of engineering education will be granted for the first time. The Awards Committee, chaired by Fumio Nishino, is developing a difficult task to assign the awards due to the large number and quality of the nominations received.

After these remarks, in the last part of this report, and having previously described some of the main ideas and activities developed during the last Presidential period, I would like to thank warmly all the staff members and officers whose generous and profitable dedication has contributed to the functioning of WFEO for the last four years. Among them, I vividly acknowledge: the permanent cooperation of our Past-President William Carroll, who fortunately maintains his very active and outstanding contribution to WFEO; the positive motivation and dynamic interventions of the President-Elect José Medem, and the always appreciated advice and dedicated work of our present Treasurer (and former Secretary General) John McKenzie, the Deputy Treasurer Jean Roret and the former Acting Treasurer Jose R. Irisarri. I am also deeply grateful to Vice-President William Rourke, Chairman of the Engineering Affairs Committee, and to the Chairmen and members of the STCs, whose dynamic and excellent work has enabled the realization of important technical contributions to the development and progress of the world engineering; to all the Vice Presidents and all the other members of our Executive Council who have held long and fruitful working meetings; and to the international, regional, affiliated and national organizations which constitute the Membership, guide and motivation of WFEO, and particularly to those national members which, with the sponsorship of WFEO, have organized and financed technical or institutional meetings, and those which shelter the headquarters of our STCs and bear the cost of the management of their secretariats and publications.

I owe a special debt of gratitude to the trust and contributions to WFEO of our Associates and, particularly, to our Patron Associate, YPF Corporation. From its main office in Argentina, and together with the Argentine Government, it has significantly helped WFEO and my Presidency.

Thanks also to the international governmental and non-governmental organizations which have co-operated and are currently co-operating with WFEO, and, especially, to the contribution of UNESCO whose respected Director General Dr. Federico Mayor invited us to create ICET as an "associate" NGO representing world engineering and technology. UNESCO generously shelters our Secretariat, lends us its offices to hold institutional meetings of our

Federation and interacts with ICET through high level and cooperative officers like Dr. M. Iaccarino, Assistant Director General of the Natural Sciences Sector, Dr. B. Berkovski, Director of the Engineering and Technology Division and Programme Specialist T Marjoram.

I would like to thank again all the sectors of our Federation for having given me the honor of presiding over its activities and for having permanently supported its managing and decision making system with their participation and opinions, contributing to enlarge and analyze proposals and suggestions in search of the best options for the accomplishment of WFEO duties. This continuous interest and active participation of many persons and member organizations have also included the presence of the President-Elect or other officers to represent WFEO on behalf of the President on special occasions. All these co-operative attitudes have pushed me as WFEO President to eagerly work, striving as much as possible with the aim of being helpful to the Federation.

Now, finishing my four-year period as President, I am proud of the many attainments WFEO is obtaining but I am concerned by some difficulties we are facing, specially of financial origin. As a promising sign for the future, I am very hopeful by the number and quality of the proposals received by our Nominations Committee chaired by Gabor Naray-Szabo. This circumstance expresses an encouraging interest to serve and empower our Federation and speaks for a renewed prestige of WFEO mission: so we should be optimistic noting that

more and more high level engineers are sharing the constructive action of our Federation. With this spirit of solidarity, hope and gratitude, I would like to thank again those who are finishing their terms in office in November 1999 and welcome those who will be elected. I also would like to invite those finishing and those who may not be elected to maintain their interest and close cooperation with WFEO working in future in the STC on special projects or as senior advisors accomplishing honorary missions. So our Federation will be strengthened and more and more useful for the engineers and for their contributions to a better future for every country and every person all over the world.

Finally, I would like to congratulate and heartily welcome the new President, Engineer José Medem, whose outstanding background and personality will enable him to be the leader of our World Federation of Engineering Organization for the next four years.

I also express WFEO gratitude for the generous cooperation of the "Instituto de la Ingeniería" of Spain, its officers and members who have offered their headquarters and hospitality to host the XVII WFEO General Assembly, for the support they have given to the President-Elect during the last two years and for the committed continuation of this support to President José Medem for the next four years.

To José and to all WFEO I express my best wishes for the future, invoking the protection of God to accomplish their goals.

REPORT FROM THE PRESIDENT ELECT

by José Medem

1. FOREWORD

When I took office as President-Elect in the Executive Council after the General Assembly held in Hong Kong I tried to be helpful to the Presidency of WFEO in the following areas of activity:

- Reengineering of WFEO
- Membership
- Support to the Standing Technical Committees
- Contacts with National Members
- Contacts with International Members
- Relations with the Associates
- Relations with the International Organizations
- World Engineers' Convention

2. REENGINEERING OF WFEO

The High Level Task-Force (HLTF) on the management and future direction of WFEO met several times under my chairmanship and with the participation of outstanding engineers, to propose to the next General Assembly in Madrid a set of measures regarding the subscriptions, the structure, the role of International Members, the functioning, the communication and the budget together with the corresponding amendments to the Constitution and Rules of Procedure. We trust these measures will improve the effectiveness and efficiency of WFEO if they are approved by the General Assembly and applied properly.

3. MEMBERSHIP

Through personal contacts and thanks to the involvement of WFEO in the activities of certain National Members we were able to recover the membership of Ireland, and Germany.

We hope to accept the applications of Costa Rica, Algeria and Puerto Rico as new members in our next G.A. in Madrid. Relations with Egypt, through their Syndicate of Engineers have recently been re-established.

The withdrawal of the CCPE (Canada) is an important loss for WFEO. In Madrid we will try to rectify this situation. Before the announced withdrawal of the Engineering Council of U.K. we have tried very hard (several meetings in London) to convince them not to do it. Right now we have initiated an alternative to get

another British Engineering Organization taking over the British representation in WFEO.

4. SUPPORT TO THE Standing Technical Committees (STC)

The success of our STCs is vital for WFEO. That is the main reason why we have to demonstrate our support to their activities, and try to co-operate in their seminars.

The **Committee on Information and Communication** organised a very successful seminar "The New Information and Communication Technologies and their Impact on Engineers Activities" in Tunis, 30.11.98, with a very large audience and with the support of the Tunisian Government.

The same Committee, in collaboration with the **Committee on Education and Training** (CET), held another very important Symposium "La Formation de l'Ingénieur du XXI^e Siècle et les Défis de la Mondialisation", also in Tunis, 26.05.99. In both events I had the opportunity to participate at the opening ceremony and deliver a key address.

The chairman of CET is the director of the Institute of Continuing Engineering Education in Budapest, which I visited in 05.11.98.

The **Engineering and the Environment Committee** (EEC), invited by the Technical Chamber of Greece (TCG), participated in an active way in the 3rd International Exhibition and Conference "Environmental Technology for the 21st Century" HELECO'99 in Thessaloniki, 03.06.99. It held a meeting and a very interesting workshop about the environmental problems in the developing countries. Delegates from China, Taiwan, India, Bangladesh, Malaysia, Turkey and Nigeria were able to participate thanks to the generosity of the TCG.

In order to acknowledge and to ensure in the future the important support of **ComTech** by the different North American organizations I attended, accompanied by VP J. Poirot, the 1999 Government Affairs Conference, held jointly by the Professional Engineering Societies and the National Academy of Engineering in Washington, 03.05.99.

Besides the American Association of Engineering Societies (AASE), the American Member of WFEO, we also had the opportunity to visit the following organizations:

- American Consulting Engineers Council (ACEC), the American Member of FIDIC;

- American Society of Civil Engineers (ASCE) and its affiliated Civil Engineering Research Foundation (CERF);
- American Society of Mechanical Engineers (ASME) and American Institute of Mechanical Engineers (AIME).

5. CONTACTS WITH NATIONAL MEMBERS

It is important to reinforce the relations between the Presidency and the different National Members (NM) in order to facilitate the mutual understanding and stimulate the active collaboration with our Federation. This is the main reason why I have accepted almost all invitations to attend the NM meetings, congresses and conventions. I had contacts with the following NM:

- **Austria**, Österreichischer Ingenieur-und Architektenverein (ÖIAV), on the occasion of a visit to UNIDO in Vienna with the President.
- **China**, China Association for Science & Technology (CAST), on the occasion of the celebration of its 40th anniversary in Beijing, 19.09.98, giving a lecture on the "Current Development of Engineering and New Challenges Facing Engineers in the 21st Century".
- **France**, Conseil National des Ingénieurs et des Scientifiques de France (CNISF), Paris, 24.03.99 at the invitation of the new President Mr. X. Karcher.
- **Germany**, Verein Deutscher Ingenieure (VDI), Frankfurt, 27.04.98, Düsseldorf, 05.06.98 and Hannover, 25.02.99, on the occasion of the Advisory Board of WEC.
- **Greece**, Technical Chamber of Greece (TCG), Thessaloniki, 03.06.99, on the occasion of HELECO'99 with a key address at the opening ceremony.
- **Hungary**, Federation of Technical and Scientific Societies of Hungary (MTESZ), Budapest, 05.11.99, on the occasion of the 50th anniversary of its foundation, with a key address to the memorial congress.
- **Nigeria**, Nigerian Society of Engineers (NSE), Ikeja, 08.12.97, on the occasion of its Annual Conference and International Engineering Conference «Industrial Development, Strategies for Developing Countries», with the presentation of two papers.
- **Peru**, Sociedad de Ingenieros de Perú, (SIP), Lima, 23-11-98, on the occasion of the UPADI General Assembly.

- **Portugal**, Ordem dos Engenheiros, (ODE), Lisbon, 22.06.98, and Funchal, 20.05.99, on the occasion of the 28th Congress of ODE and of the 2nd Insular Engineers' Convention.
- **Russia**, Union of Scientific & Engineering Associations (USEA), Blanes, 24.05.99, on the occasion of the Seminar on Technology.
- **United Kingdom**, Engineering Council (EC), London, 12.03.98 and 07.07.99, trying to convince them to stay in WFEO.
- **Spain**, Instituto de la Ingeniería de España (IIE), on the occasion of the organization of the General Assembly of WFEO and the Convention on Engineering and International Co-operation (IIE), in Madrid.
- **Switzerland**, Schweizerischer Ingenieur und Architektenverband (SIA), Gsteig, 08.02.99 and Bern, 13.04.99.
- **Tunisia**, Conseil de l'Ordre des Ingénieurs (COD), Tunis, 02.12.98 and 25.05.99, on the occasion of the two seminars held in Tunis.
- **USA**, American Association of Engineering Societies (AAES), Washington, 03.05.99, on the occasion of the 1999 Government Affairs Conference, with a key address.

6. CONTACTS WITH INTERNATIONAL MEMBERS

The International Members, as umbrella of the different engineering organizations of a Region or Continent, are essential members for WFEO because they represent the engineering profession in these areas. Regrettably we received only the invitation of two of our nine International Members, FEANI and UPADI.

- **FEANI**, General Assembly, Lisbon, Sept. 1998 and Crete, Sept. 1999.
- **UPADI**, General Assembly, Lima, 23.11.98

7. RELATIONS WITH ASSOCIATES

During my period as President Elect we got the following new Associates through bilateral agreements:

- **ECCE** - European Council of Civil Engineers, on the occasion of the General Assembly in Munich, 05.10.98.

- **IGIP** - Internationale Gesellschaft für Ingenieur-Paedagogik, on the occasion of the “28th Engineering Education Symposium”, Istanbul 20.09.99.
- **SEFI** - Société Européenne pour la Formation des Ingénieurs, on the occasion of the 26th Annual Conference (25th Anniversary), Helsinki, 02.09.98.

8. RELATIONS WITH INTERNATIONAL ORGANIZATIONS

We try to strengthen our relations with other similar or complementary International Organizations in order to co-ordinate our activities and to get a synergetic effect. In this respect I had the following contacts :

- **GEF/STAP** - Global Environment Facility - Scientific and Technical Advisory Panel. WFEO asked for accreditation with the GEF (Agency of the World Bank) in order to receive Council Papers, Information Papers on all projects, have access to the NGO newsletter and attend the NGO consultation meetings. There is no cost for WFEO. GEF is interested in working with the engineering community, through WFEO or FIDIC at appropriate meetings and conferences to identify and develop viable projects. GEF is involved and participates in many important issues and projects related to sustainable development like the Earth Council, EXPO 2000 in Hannover, UNEP Cleaner Production Technologies Clearinghouse, International Decade for Natural Disasters Reduction (IDNDR), RIGA Project, Transportation Systems, STAP/UNEP Partnership etc., which are of utmost interest to WFEO. A close collaboration with GEF is a must for WFEO.
- **ICSU** - International Council of Scientific Unions. Bilateral agreement to collaborate in issues of sustainable development. Thanks to President Arber, WFEO was able to participate in the World Conference on Science, held in Budapest, 26.06-01.07.99. Our address was the only message of the engineering

profession in the scientific world, except for the intervention of the Japanese engineer Prof. Hiroyuki Yoshikawa, President of the Science Council of Japan (a member of WFEO) and future President of ICSU.

- **IEEE** - Institute of Electrical and Electronics Engineers. Courtesy visit to their headquarters in Piscataway, NJ, USA and mutual willingness to collaborate, starting with the interchange of messages through our publications.
- **WBCSD** - World Business Council for Sustainable Development. Courtesy visit to their headquarters in Geneva and mutual willingness to collaborate closer in the future in issues regarding Sustainable Development.

9. WORLD ENGINEERS' CONVENTION (WEC)

The VDI, the German Member of WFEO, is organizing the World Engineers' Convention, to be held on the occasion of the next World Exhibition EXPO 2000 in Hannover, 19-21.06.2000. As President Elect I have the honour to chair the Advisory Board, formed by Presidents of leading international and national engineering associations from all over the world.

WEC will gather some 3000 engineers and leading experts in five professional congresses focussing on the following issues : mobility (transport), energy, information and communication, environment-climate-health and future of work.

We are convinced that WEC will be a unique opportunity for the engineering community to show for the first time at an international level the real important role engineers are playing for the benefit of humankind.

After this first WEC there is possibility to institutionalise the periodical celebration of this type of engineering summit. This proposal will be submitted to the next G.A. in Madrid for approval.

REPORT OF THE EXECUTIVE DIRECTOR

by Pierre-Edouard de Boigne

RAPPORT DU DÉLÉGUÉ GÉNÉRAL

par Pierre-Edouard de BOIGNE

Staff

The Executive Board in April 1997 decided the transfer of the Secretariat to Paris and in the same time the recruitment of the Executive Director, who was later confirmed by the General Assembly in Hong Kong in November 1997. He settled in the offices offered by UNESCO in July 1997, paid several visits to the London team before taking over the responsibility of the Secretariat in Hong Kong, but did not really start operations before the files and equipment were received in Paris early January 1998.

The Assistant to the Executive Director, Mrs Lefebure, joined immediately prior to the General Assembly in Hong Kong.

Practically all costs incurred during this transition period (July/December 1997) were covered by the subventions received from the French Administration (Ministry of Foreign Affairs and Township of Paris), thus leaving the full amount of the 1997 resources to cope with the 1997 operating expenses in London.

A trainee in information management was hired from February to July 1998 to assist in the setting up of the WFEO Web site. Apart from this, the secretariat staff has been kept to two people, which is sufficient in normal periods but proves to be somewhat inadequate when special events have to be organised (meeting of the Executive Council, October 1998) or prepared (General Assembly).

Accommodation

After an initial settlement in inadequately sized rooms, UNESCO could allocate two standard (15m²) office rooms at no cost to WFEO. They are situated in the immediate vicinity of UATI, whose goodwill and friendly attitude in offering to share secretarial facilities (Xerox, meeting room...) helped solve many daily life problems.

It has however been necessary to rent a storeroom for the bulky archives of the Federation, but this costly situation is about to be settled by the offer of a suitable basement storeroom in one of the UNESCO buildings.

Permanent link to UNESCO computer system allows considerable possibilities, in particular for hosting the Web site, which are gradually being made use of.

Personnel

Le Bureau Exécutif réuni à Londres en avril 1997 a décidé le transfert du Secrétariat à Paris et en même temps le recrutement du Délégué Général, qui a ensuite été confirmé par l'Assemblée Générale à Hong Kong en novembre 1997. Il s'est installé dans les bureaux offerts par l'UNESCO en juillet 1997, a effectué plusieurs missions auprès du Secrétariat à Londres avant d'en assumer la responsabilité à Hong Kong, mais n'a vraiment été opérationnel que début janvier 1998, après que les dossiers et l'équipement soient arrivés à Paris.

L'Assistante du Délégué Général, Mme Lefebure, a été engagée juste avant l'Assemblée Générale à Hong Kong.

Pratiquement tous les coûts exposés en France au cours de cette période de transition (juillet/décembre 1997) ont été couverts par les subventions reçues de l'Administration française (Ministère des Affaires Etrangères et Ville de Paris), laissant ainsi intactes la totalité des ressources 1997 pour faire face aux dépenses de cette année.

Une stagiaire en traitement de l'information a été engagée de février à juillet 1998 pour aider à la mise en place du site Web de la FMOI. A ceci près, l'effectif du Secrétariat a été maintenu à deux personnes ce qui est suffisant en période normale mais très juste lors d'événements particuliers qu'il faut organiser (réunion du Conseil d'Administration, octobre 1998) ou préparer (Assemblée Générale)

Installations matérielles

Après une première installation dans des locaux insuffisants, l'UNESCO a été en mesure de nous accorder gracieusement deux bureaux standard (15 m²). Ils sont à proximité immédiate de ceux de l'UATI, dont l'esprit de coopération et l'attitude amicale nous ont permis de partager certaines installations (Xerox, salle de réunion...) et aidés à résoudre bien des problèmes de la vie quotidienne.

Il a toutefois été nécessaire de louer un local à l'extérieur pour stocker les volumineuses archives de la Fédération, mais cette situation coûteuse est en passe d'être résolue grâce à la prochaine mise à notre disposition d'un local adapté dans les sous-sols de l'UNESCO.

Une liaison permanente avec le système informatique de l'UNESCO nous offre des possibilités considérables, en particulier pour l'hébergement de notre site Web, et nous en faisons progressivement usage.

Financial situation

The physical conditions of the Secretariat in its new Paris location are certainly not luxurious but can be considered as acceptable and give all possibilities to fulfil its liaison/co-ordination role. The availability of the Executive Director to comply with this essential task is however hampered by the permanent concern for the financial situation : the very low level of the reserves (less than 3 months operating costs) and the uncertainty on the calendar for the incoming resources make it compulsory to keep a watchful eye on the cash situation and to try to maximise the yield of the meagre investments (without taking any undue risk, of course !). No long term planning is possible in these conditions, and considerable time and energy are spent on sending reminders and obtaining the payment of outstanding amounts!

The situation in this respect has however improved in 1999, and by mid year the amount and number of subscriptions received showed a significant increase compared with 1998.

It is worth noting that very limited use has been made by the members of the possibility offered to settle the subscriptions in two instalments (January and July). Instead, transfers or checks are received at random all year round, which gives very little «visibility» on the cash management. Limited use also has been made of the proposal made to late payers to revise the amount of their subscriptions : members who do not settle their fees seem to be more indifferent to WFEO than really in a harsh situation.

Budgets for 2000 and 2001 have been prepared on a very conservative basis, with the assumption that the Administration costs will be maintained at their present minimum (with allowance for a reduced inflation) and the sums allocated to the Committees' programmes will steadily increase by a symbolic if not significant amount. This essential effort will be possible only if the resources are kept at their present level or increased, and a renewed commitment is requested from all members to convince more organisations to join WFEO, to recruit more Associates or obtain subventions. A slight increase (5%) of the subscription for 2001 will be necessary to start rebuilding the reserves, the present amount of which should normally double to reach one year staff costs, or ideally triple to reach one year operating expenses.

Situation financière

L'implantation pratique du Secrétariat dans sa nouvelle installation parisienne n'est certes pas luxueuse mais peut être considérée comme acceptable et lui donne toute possibilité d'exercer son rôle de liaison et de coordination. La disponibilité du Délégué Général pour assumer cette tâche essentielle est cependant compromise par son souci permanent de la situation financière : le niveau excessivement réduit des réserves (moins de 3 mois de coûts opératoires) et l'irrégularité des rentrées l'obligent à garder un œil vigilant sur la trésorerie et à s'efforcer de maximiser les revenus des maigres placements (sans pour autant prendre de risque injustifié, bien sûr !). Aucune planification à long terme n'est possible dans ces conditions, et il faut dépenser un temps et une énergie considérables pour envoyer des rappels et obtenir les paiements en retard !

La situation à cet égard s'est cependant sensiblement améliorée cette année, et à la mi 1999 le montant et le nombre des cotisations reçues était en nette augmentation sur l'année précédente.

Il est intéressant de noter que très peu de membres ont utilisé la possibilité qui leur était offerte de régler les cotisations en deux versements (janvier et juillet). En fait, chèques et virements arrivent irrégulièrement tout au long de l'année, ce qui complique sérieusement la gestion de trésorerie. La proposition faite aux retardataires de revoir le montant de leur cotisation a également été peu utilisée : c'est plus par indifférence que par difficulté financière que les membres ne payent pas leurs cotisations.

Les Budgets de 2000 et de 2001 ont été préparés de manière très prudente, en estimant que les coûts de l'administration seront contenus dans leur limite minimum actuelle (en tenant compte d'une inflation réduite) et que les sommes allouées aux Commissions pour leurs programmes propres augmenteraient régulièrement d'un montant plus symbolique que vraiment significatif. Cet effort pourtant essentiel ne sera possible que si les ressources sont maintenues à leur niveau actuel ou augmentées, et il est demandé aux membres de redoubler d'efforts pour convaincre de nouvelles organisations de rejoindre la FMOI, pour recruter de nouveaux Associés ou pour obtenir des subventions. Une légère augmentation des cotisations (5 %) sera nécessaire en 2001 pour commencer à rétablir les réserves, dont la valeur actuelle devrait normalement être doublée pour atteindre un an de coûts de personnel ou, mieux, triplée pour atteindre un an de coûts de fonctionnement.

Contacts with the members

The remark above on the indifference of some engineering organisation to the activity of WFEO gives an interesting clue related to the future of the Federation: only by better communication with the engineering organisations, making sure that their real needs are taken into account in the Action Plan, and by better informing the engineering community on its achievements, will the Federation rally many organisations which are not members or are dormant members. The sending out of a questionnaire to the membership early 1999 is a first step in this direction. All opportunities of personal contacts and meetings have been taken advantage of to deepen this interrelation, and this policy is to be continued but here again the budgetary limitations severely restrict the possibilities.

Co-operation with UNESCO and other organisations

The main objective of transferring the Secretariat to Paris was to increase the relations with UNESCO. The physical presence in the same buildings is of great assistance in this respect and allows for frequent formal visits or informal encounters. Though UNESCO is a world in itself, where the rules and pathways are not always evident, it can be said that the presence of WFEO and its activity are now widely acknowledged within the Science sector, and become gradually familiar in other sectors. This culminated with the signature, in March 1999, of a framework Agreement between UNESCO and ICET (UATI and WFEO); several concrete programmes are now being studied in implementation of this agreement, and are reported in details further down.

ICET had long been an empty shell, but the close co-operation between UATI and WFEO is now giving it an existence in itself : joint work on the Framework Agreement and its related programmes brought a better interrelation between the teams, and the editing of a common Bulletin is envisaged. The most efficient field of joint activity remains that of the Natural Disaster Reduction, and common plans are being prepared for the follow-up of the International Decade (IDNDR) with the appreciated assistance of the National Research Council of the USA.

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It is a pleasant duty to thank all members of WFEO for their confidence in and assistance to the new Secretariat team, and to express gratitude to John McKenzie for his extreme goodwill during the hand-over phase and the endless patience with which he provided information and guidance to the new team.

Contacts avec les membres

La remarque ci-dessus sur l'indifférence de certaines organisations d'ingénieurs à l'égard des activités de la FMOI est significative pour le futur de la Fédération : ce n'est que par une meilleure communication avec les associations d'ingénieurs, pour mieux adapter son Plan d'Action à leurs besoins réels, et en faisant mieux connaître ses résultats au monde des ingénieurs que la Fédération pourra rallier de nombreuses organisations qui n'en font pas partie ou sont des membres en sommeil. L'envoi d'un questionnaire aux membres au début de 1999 est un premier pas dans cette direction. Toutes les occasions de contacts et de réunions ont été saisies pour approfondir ces relations, et cette politique doit continuer ; mais là encore les strictes limitations budgétaires restreignent sévèrement les possibilités.

Coopération avec l'UNESCO et d'autres organisations

L'objectif premier du transfert du Secrétariat à Paris était de resserrer les relations avec l'UNESCO. La présence physique dans le même bâtiment est une grande aide à cet égard et facilite les visites officielles comme les rencontres fortuites. L'UNESCO est un monde en soi, dont les règles et les circuits ne sont pas toujours évidents, mais on peut dire que la présence de la FMOI et son activité sont très largement reconnues maintenant dans le secteur des Sciences, et sont de plus en plus familières dans d'autres secteurs. Ceci s'est manifesté avec la signature en mars 1999 d'un Accord-Cadre entre l'UNESCO et l'ICET (UATI et FMOI) ; plusieurs programmes concrets sont en cours d'étude pour mettre en œuvre cet Accord, et sont détaillés ci-dessous.

L'ICET a été longtemps une coquille vide, mais l'étroite coopération entre l'UATI et la FMOI lui donne maintenant une existence propre : les travaux en commun sur l'Accord-Cadre et les programmes qui s'y rattachent ont permis une meilleure relation entre les équipes, et la publication d'un Bulletin commun est envisagée. Le domaine d'activités communes le plus efficace reste celui de la Réduction des Désastres Naturels, et la suite à donner à la Décennie Internationale (IDNDR) fait l'objet d'une préparation conjointe avec l'assistance très appréciée du Conseil National de la Recherche (NRC) américain.

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Nous avons, pour terminer, le devoir agréable de remercier tous les membres de la FMOI pour la confiance qu'ils ont montrée à la nouvelle équipe du Secrétariat et pour l'aide qu'ils lui ont apportée. Nous exprimons aussi notre gratitude à John McKenzie pour son extrême bonne volonté pendant la phase de transition et pour l'inlassable patience avec laquelle il nous a apporté informations et avis depuis lors.

ENGINEERING AFFAIRS COMMITTEE

1997-1999 ACHIEVEMENTS

by Vice President William Rourke

The Engineering Affairs of WFEO are largely conducted through four standing committees. These are the Committees on Education and Training, chaired by Prof. Janos Gintszler of Hungary, on Communication and Information chaired by Prof. Jean Michel of France, on Engineering and the Environment chaired by David Thom of New Zealand, and the Committee on Technology (ComTech) chaired by Mr James Poirot of the USA. There is also a Committee on Food Engineering chaired by Dr Nolasco of Spain, and a Renewable Energy Task Force chaired by Prof Gulyaev of Russia that are both linked to the overall activities of ComTech. Prof. Jean Michel and David Thom have led their committees for the past eight years, and plan to hand over their responsibilities to successors to be endorsed by the General Assembly in Madrid.

Each of these standing committees is responsible for endorsing major conferences in their fields of responsibility and for lending support to all national and international members, including particularly support to the less developed countries. Their ability to do this is often dependent upon their success in attracting external sources of funds. A matter to be addressed in Madrid is whether or not it might be better to establish a committee expressly concerned with support to national and international members, and particularly support to national members representing developing countries. One aim that might be pursued is to see whether partnerships might be established between members representing developed and developing countries.

A further issue to be addressed in Madrid is whether or not we can encourage national members to take the lead responsibility for various activities. The principal source of contributions to WFEO is that of the volunteered services of its membership, and the national members are usually best situated to encourage this support.

During the years ahead WFEO will be setting out to consolidate a productive partnership with UNESCO, and the selection of suitable activities that we might undertake in conjunction with UNESCO. Some programs under consideration are the establishment of a Virtual Engineering Library for Sustainable Development, and lending support to the publication by UNESCO of a biennial World Technology Report to complement the biennial World Science Report published in 1998 and at two-yearly intervals.

Committee on Education and Training

by Chairman Janos Gintszler

To improve engineering education and training at all levels, and to ensure the quality of graduates all over the world, the members of the Committee on Education and Training accomplished an enormous amount of work. This was accomplished through participating and lecturing at different national and international conferences all over the world, and by the preparation of professional reports for their engineering federations and for their governments.

Issue Number 5 of our annual journal "IDEAS" was published in September 1998 with the main theme of "Continuing Professional Development". Issue Number 6 of this journal will be published in 1999 on "The impact of globalisation on engineering education and practice".

Links were strengthened successfully with UNESCO, ICSU, and other international professional organisations including FEISEAP, UPADI, UATI, FEANI, SEFI, and others. Links with other WFEO Standing Technical Committees, especially in the field of information technology and of sustainable development were strengthened.

Rules were established for the inaugural WFEO award for Excellence in Engineering Education

Preparatory work has begun for the next World Congress on Engineering Education and Training for 21st Century Requirements. (Poland, September 2000).

The central theme of the official satellite conference of the World Science Conference (26 June – 2 July, Budapest) was the globalisation and its impact on engineering education and practice. Distinguished International and Hungarian experts active in the field of engineering education, including experts from the developing countries, who could participate in this important international event thanks to WFEO and to UNESCO support, discussed the problems arising from globalisation. These included problems of mutual recognition of accreditation systems, the necessity of teaching sustainable development in engineering education, the challenge of knowledge based societies to the permanent updating of engineering teachers, the quality control at engineering education institutions, and the wide differences between educational systems.

There was discussion as to how the difficulties could be resolved. Consideration was given to the problems of continuous professional development of graduate engineers, and of their continuing engineering education.

A joint statement was sent to the Secretariat of the World Science Conference in Budapest, underlining that the

Committee on Information and Communication

by Chairman Jean Michel

engineering profession represents an important "bridge" between science and society. President-Elect Jose Medem underlined this fact at the WSC in his lecture, he had a great success.

A successful joint meeting of our CET and the ICEE of the UNESCO was held in Hungary on 25 June, 1999. This meeting can serve for our Committee as a start of a future active co-operation with UNESCO. All participants in the joint meeting expressed their views on the most important tasks of engineering education in the next decade.

These tasks and needs are – among others:

- Consciousness of the needs of sustainable development
- Transfer of information to the developing countries
- Students' ability for lifelong learning
- Communication and management skills and familiarity with the new information and communication technologies
- Foreign languages
- Interdisciplinary knowledge and teamwork

The participants of the joint meeting agreed, that short courses in actual problems are most important as a part of postgraduate studies because, through continuing engineering education, the engineers are able to follow the quick development of engineering sciences.

The activity of our CET was continuously supported by the leaders of the Hungarian Engineering Federation (MTESZ: Mr. Miklós Havass, Prof. Pál Michelberger, Prof. Gábor Náray-Szabó, Mr. László Halmai) and of WFEO.

The Committee on Information and Communication developed activities on three main issues within the WFEO action plan:

- development of the use of Internet and new information and communication tools by engineers and engineering organizations ;
- development of the use of these communication techniques within and by WFEO and setting-up of WFEO's Web site ;
- exploration of new approaches for the transfer of information and knowledge through virtual libraries and virtual universities.

Regional seminars and conferences were organised to develop an awareness among engineers and engineering organizations towards an integrated and efficient use of Internet and new information and communication technologies (Rio de Janeiro, Montevideo, Belgrade, Hong-Kong).

An important conference was successfully organized in Tunisia (November 30, 1999), with the contribution of the Council of the Tunisian Engineers Order ("Impact of New Information and Communication Technologies on the Engineering Activity and Profession").

Other seminars planned for 1999 had to be cancelled or postponed due to local difficulties, but contacts are maintained with Nigeria, Yugoslavia and Indonesia for further events in the year 2000.

These seminars or conferences not only address technical aspects but also contribute to changes in the way to work and to communicate.

In co-operation with the Executive Director the new Web site of the Federation was set up, trying to improve the integration of the new tools in the normal secretariat activities. A new procedure for the dissemination of information through electronic mail and through an electronic Newsletter is being prepared.

Under the Framework agreement with UNESCO, new possibilities for the dissemination of information and knowledge are being studied, including a Virtual Library devoted to Sustainable Development. The emerging concept of Virtual Universities, working at a world-wide level and allowing engineers to improve their knowledge in some fields (sustainable development, for instance) is another possibility to be developed.

The WFEO-CIC Committee needs to reinforce its links with the other Committees for such projects, and its

chairman took part in the CET meeting in June 1999, presenting a lecture on «Towards virtual universities: how engineers can benefit from such new possibilities?».

WFEO-CIC was also invited by the Council of Engineers Order of Tunisia which organized a similar Conference on "Engineering Education for the 21st Century", mid May 1999, and sponsors the international conference CAEE'99 (Computer Aided Engineering Education) organized in Bulgaria, end of September; many contributions are proposed under the theme "Virtual Universities". This could certainly be a general orientation for future activities to be explored and supported by the Committee.

WFEO-CIC represents the Federation in the programme committee of the Information and Communication Congress organized by the German Institution of Engineers VDI in the frame of the World Engineers Convention (WEC 2000).

Committee on Engineering and Environment

by Chairman David Thom

The Standing Technical Committee on Engineering and Environment (CEE) has noted that the productive capacity of Earth's ecosystems continues to decline. However this is the first reporting period when it is possible to say that there is clear progress with the understanding, commitment, education for, and practice of Sustainable Development within WFEO. Nonetheless, rate of progress still needs to be increased.

There has been substantial progress with, or completion of, all CEE projects in the WFEO Strategic Plan, and some additional projects have also been carried out. CEE projects have included the establishment of Engineering and Environment Committees by national members, the encouragement of regional conferences on sustainable development (SD), updating the WFEO Model Code of Ethics to include appropriate reference to SD (a project in association with ComTech), supporting the establishment of Regional and National centres for SD, promoting and facilitating guidelines for SD in engineering practice,

publishing a Newsletter (three languages) in hard copy and on Internet, publishing a report on the WFEO/UNEP/WBCSD/ENPC Working Conference on SD in Engineering Education and Training, Liaison with UNESCO, and presenting the Executive Council with candidates for onwards hosting of the CEE. Other projects have been assistance to IET on their World Congress, and advice and support for a Nigerian initiative for a working conference on SD in Engineering Education. Individual members of the Committee have engaged in advocacy of SD in Engineering.

The Committee has been in association with ComTech in assembling further information for assessment of progress with sustainable development within engineering, and in relation to the updating of the WFEO Model Code of Ethics. CEE has consulted with the WFEO Committee on Engineering Education and training in relation to a recommendation for adoption of the Paris Conference Report as WFEO Policy.

The Chairman of the Committee attended the UNEP Fifth International Seminar on Cleaner Production and signed the UNEP International Declaration on Cleaner production on behalf of WFEO, an action endorsed by the Executive Board.

The Committee has held two meetings over the period, in Paris in October 1998, and in Thessaloniki, Greece, in June 1999. The latter meeting included a workshop on the needs of Developing Country members, and was associated with the "HELECO 99" Conference and Exhibition of the Technical Chamber of Greece. The TCG provided substantial financial assistance for the Workshop.

Committee accounts show a modest surplus. Several new members have been nominated for the Committee. New Zealand having led the Committee now since 1991, and completed two four year terms, the Executive Council has received offers from the Technical Chamber of Greece, the Institution of Engineers (India), and the Chinese Institute of Engineers (Taiwan).

The Institution of Professional Engineers (NZ) expresses its appreciation to WFEO for the privilege of leading CEE over the period from just prior to the Arusha General Assembly of 1991, until the 1999 General Assembly in Madrid.

Committee on Technology

by Chairman James Poirot

In 1996 WFEO established the Committee on Transferring, Sharing and Assessment of Technology (ComTech). ComTech's mission is: "To lead the engineering profession worldwide in the promotion and application of sustainable technology and, accordingly, disseminate information about sustainable technologies; inform the profession on available data bases; encourage research into and education about sustainable technologies; and stimulate thinking, knowledge and action about WFEO Standing Technical Committees by all available means, including conferences, workshops, seminars, and the use of information technology." ComTech (Chairman: James W. Poirot; Secretariat: American Association of Engineering Societies, U.S.A.) provides leadership and guidance to the engineering profession worldwide on the promotion and application of sustainable technology, and the promotion of arrangements to encourage sharing and worldwide dissemination of technologies. These activities contribute to meeting the commitments given to the Earth Council on behalf of the engineering profession: (a) to become knowledgeable about sustainable development; (b) to include long term environmental costs and benefits in project planning; (c) to incorporate sustainable development principles in engineering codes of ethics; and (d) to inform the public of engineering adoption of principles of sustainable development.

The WFEO Committee on Agricultural and Food Engineering (CAF) (Chairman Dr. A. Nolasco; Secretariat: Instituto de la Ingenieria de Espana) is assigned the task of developing understanding of appropriate policies and sustainable technologies for the production, handling and processing of foods.

The Task Group on Renewable Energies (REG) (Chairman: Dr. Yuri Gulyaev; Secretariat: USEA, Russia) produces policy recommendations and guidelines for the development of renewable energy sources and applications, and works with the implementation committee for the WSSP to facilitate developments in this field.

The Task Group on IDNDR (NDR) works, as part of a global effort contribution to the International Decade of Natural Disaster Reduction. Its principal activities, conducted in conjunction with UATI, are managed jointly by the UATI and WFEO Secretariats in Paris. WFEO and UATI have joined together to form the International Council for Engineering and Technology (ICET), which is described below. The joint activities in support of the International Decade for Natural Disaster Reduction (IDNDR) are outlined in the section on ICET.

Fulfilling the mission of the Vice President for External Affairs to foster a relationship between the engineering and scientific communities, Mr. James W. Poirot (USA) represented the international engineering community at the International Council of Scientific Unions' (ICSU) annual meeting in Cairo. On September 28th, ICSU hosted a Megacities Roundtable that included reports on activities in the concluding International Decade of Natural Disasters Reduction (IDNDR). One of three presentations made, WFEO described its seminars (Asia, Mediterranean, and the Caribbean), follow-up activities and publications. Discussions touched on natural disaster reduction needs for megacities and outlined joint engineering, scientific and social science programs for the future.

**INTERNAL AUDIT REPORT/
RAPPORT D'AUDIT INTERNE**

for the period 1 January 1998 to 31 December 1998

Having checked on June 18, 1999 the accounts of WFEO for 1998 (including the accounts of the Paris office from June 1, 1997 to December 12, 1997), I confirm that these accounts have been kept properly as testified by the Auditors CMS Experts Associés.

I have also verified the proper use of resources in accordance with General Assembly and Executive Council decisions.

Two observations need to be made:

- Office space put at the disposal of WFEO by UNESCO does not allow for the storing of the Archives and a small external room had to be rented for this purpose. It seems that this cost could be eliminated soon.
- A large part of the losses incurred in 1998 is due to the fluctuation of the exchange rate of the US\$ to the French Franc. Accounts will have to be kept in EURO as of 2001 and the possibility of calculating subscriptions in this currency should be examined.

Ayant vérifié le 18 juin 1999 les comptes de la FMOI pour 1998 (comprenant les comptes du bureau de Paris pour la période du 1/7/1997 au 31/12/1997), je confirme la bonne tenue de ces comptes attestée par le Cabinet CMS Experts Associés

Je me suis assuré en outre de la bonne utilisation des ressources en conformité avec les décisions de l'Assemblée Générale et du Conseil Exécutif.

Deux remarques me paraissent devoir être faites :

- Les bureaux mis à la disposition de la FMOI par l'UNESCO ne permettent pas de stocker les Archives, et un petit local extérieur a dû être loué dans ce but. Cette source de dépense devrait, semble-t-il, pouvoir être éliminée dans un avenir proche.
- Une grande partie des pertes constatées en 1998 provient des variations du taux de change US\$/FFR. La comptabilité devra être tenue en EURO à partir de 2001, et l'opportunité de calculer les cotisations dans la même monnaie devrait être examinée.

Fait à Paris le 21 juin 1999

*Jean Roret
Trésorier Adjoint*

**REPORT OF THE AUDITORS/
RAPPORT SUR L'EXAMEN DES COMPTES**

We have audited the financial statements in accordance with Auditing Standards.

In our opinion the financial statements give a true and fair view of the state of the Federation's affairs at 31st December 1998 and of its excess of expenditure over income for the year then ended.

Nous avons examiné les comptes en effectuant les diligences prévues par les normes définies par l'Ordre des Experts-Comptables.

A l'issue de nos travaux, nous n'avons pas relevé d'éléments remettant en cause la régularité et la sincérité des comptes arrêtés au 31 décembre 1998 de votre Fédération.

Paris le 20 avril 1999

Stéphane Sznajderman
Expert Comptable

G.M.S. EXPERTS ASSOCIÉS,
149 Boulevard Malesherbes - 75017 Paris (France)

**WFEO'S SCHEMATIC FINANCIAL STRUCTURE
STRUCTURE FINANCIÈRE SCHÉMATIQUE
DE LA FMOI
(1 000 US \$)**

Resources / Ressources

200	400 (est.)
Members' fees <i>Cotisation des membres</i>	Standing Committees' own resources <i>Ressources propres des Commissions</i>

Expenditures / Dépenses

115	30	455 (est.)
Administration	other autres	Standing Committees' own programmes <i>Programmes propres des Commissions</i>
20 %	5 %	75 %

BILAN AU 31 DÉCEMBRE 1998
BALANCE SHEET AS AT 31 DECEMBER 1998

	1998 US \$	1998 FF	1997 US \$
CURRENT ASSETS/ACTIF			
Deposits/ <i>Dépôts</i>	447	2 680	
Debtors/ <i>Créances</i>	10 283	61 700	7 802
Investments/ <i>Titres</i>	27 652	165 911	
Bank/ <i>Banque</i>	8 923	53 536	47 516
Prepayments/ <i>Charges d'avance</i>	1 097	6 582	
TOTAL	48 402	290 409	55 318
CURRENT LIABILITIES/PASSIF			
Creditors/ <i>Dettes</i>	14 938	89 630	19 222
Deferred income/ <i>Produits d'avance</i>	1 464	8 784	
TOTAL	16 402	98 414	19 222
Difference	32 000	191 995	36 096
Financed by/ <i>Financé par</i> :			
Balance at Jan 1st/ <i>Report à nouveau</i>	36 096	216 576	42 336
Deficit of the year/ <i>Perte de l'exercice</i>	- 4 096	- 24 581	- 6 240
	32 000	191 995	36 096

COMPTE D'EXPLOITATION JUILLET 1997-DÉCEMBRE 1998
STATEMENT OF INCOME AND EXPENDITURES JULY 1997-DECEMBER 1998

	7-'97/12-'98 US \$ FF (18 mois/18 months)		1997 US \$ (12 m.)
RESSOURCES/INCOME			
Cotisations/subscriptions	164 571	987 426	183 491
Associés/Associates	17 021	102 126	22 396
Subventions	25 775	154 650	
Remboursement IDNDR Recovery	781	4 686	411
Intérêts/Interests	1 987	11 922	2 009
TOTAL	210 135	1 260 810	208 307
DÉPENSES/EXPENDITURES			
Administration	127 854	767 124	112 437
Activités générales/General Activities	32 949	197 694	16 902
Comités permanents/Standing committees	48 000	288 000	41 899
Promotion	1 439	8 634	4 778
IDNDR	792	4 752	3 652
Transfert du siège/Office move	3 197	19 182	34 879
Arrondis/Rounding up		5	
TOTAL	214 231	1 285 391	214 547
Déficit de l'exercice/Deficit for the year	- 4 096	- 24 581	- 6 240

National Members / Membres Nationaux

Afghanistan	<i>Islamic Association of Afghan Architects and Engineers</i>
Argentina	<i>Union Argentina de Asociaciones de Ingenieros</i>
Australia	<i>The Institution of Engineers (Australia)</i>
Austria	<i>Österreichischer Ingenieur und Architekten-Verein</i>
Bahrain	<i>Bahrain Society of Engineers</i>
Bangladesh	<i>The Institution of Engineers, Bangladesh</i>
Bolivia	<i>Sociedad de Ingenieros de Bolivia</i>
Brazil	<i>Federacao Brasileira de Associaoes de Engenheiros (FEBRAE)</i>
Bulgaria	<i>Fédération des Unions Scientifiques et Techniques de Bulgarie (FNTS)</i>
Chile	<i>Instituto de Ingenieros de Chile</i>
China	<i>China Association for Science and Technology (CAST)</i>
Colombia	<i>Sociedad Colombiana de Ingenieros</i>
Cuba	<i>Union de Arquitectos y Ingenieros de la Construcción de Cuba</i>
Cyprus	<i>Cyprus Professional Engineers' Association</i>
Czechia	<i>Cesky Svaz Vedeckotěchnických Společností (CSVTS)</i>
Ecuador	<i>Sociedad de Ingenieros del Ecuador</i>
Egypt	<i>Egyptian Engineering Association</i>
El Salvador	<i>Asociación Salvadoreña de Ingenieros y Arquitectos</i>
France	<i>Conseil National des Ingénieurs et Scientifiques de France (CNISF)</i>
Germany	<i>Verein Deutscher Ingenieure (VDI)</i>
Ghana	<i>Ghana Institution of Engineers</i>
Greece	<i>Chambre Technique de Grèce</i>
Hungary	<i>Fédération des Sociétés Scientifiques et Techniques (MTESZ)</i>
India	<i>The Institution of Engineers, India</i>
Indonesia	<i>Peresatuan Insinyur Indonesia</i>
Iraq	<i>The Iraqi Engineers' Union</i>
Ireland	<i>The Institution of Engineers, Ireland</i>
Israel	<i>Association of Engineers and Architects in Israel</i>
Italy	<i>Consiglio Nazionale degli Ingegneri</i>
Japan	<i>Science Council of Japan</i>
Jordan	<i>Jordan Engineers' Association</i>
Kenya	<i>Institution of Engineers</i>
Korea	<i>The Korean Federation of Science and Technology Societies (KOFST)</i>
Kuwait	<i>Kuwait Society of Engineers</i>
Lebanon	<i>Ordre des Ingénieurs et Architectes du Liban</i>
Libya	<i>Libyan Syndicate of Engineers</i>
Malaysia	<i>The Institution of Engineers, Malaysia</i>
Mauritius	<i>The Institution of Engineers, Mauritius</i>
Mexico	<i>Union Mexicana de Asociaciones de Ingenieros (UMAI)</i>
Morocco	<i>Union Nationale des Ingénieurs Marocains</i>
Nepal	<i>Nepal Engineers' Association</i>
New Zealand	<i>The Institution of Professional Engineers</i>
Nigeria	<i>The Nigerian Society of Engineers</i>
Pakistan	<i>Institution of Engineers, Pakistan</i>
Palestine	<i>General Union of Palestinian Engineers</i>
Peru	<i>Sociedad de Ingenieros del Peru</i>
Philippines	<i>Philippine Technological Council</i>
Poland	<i>Naczelna Organizacja Techniczna</i>
Portugal	<i>Ordem dos Engenheiros</i>
Romania	<i>Association Générale des Ingénieurs en Roumanie (AGIR)</i>
Russia	<i>Union of Scientific and Engineering Associations, Russia (USEA)</i>
Slovakia	<i>Association of Slovak Scientific and Technological Societies (ZSVTS)</i>
South Africa	<i>The Society for Professional Engineers</i>

Spain	<i>Instituto de la Ingenieria de Espana</i>
Sri Lanka	<i>The Institution of Engineers, Sri Lanka</i>
Switzerland	<i>Comité National Suisse de FEANI/FMOI</i>
Syria	<i>Order of Syrian Engineers and Architects</i>
Tanzania	<i>The Institution of Engineers, Tanzania</i>
Tunisia	<i>Conseil de l'Ordre des Ingénieurs de Tunisie</i>
Turkey	<i>Union of Chambers of Turkish Engineers and Architects</i>
Uganda	<i>Uganda Institution of Professional Engineers</i>
UAE	<i>Society of Engineers</i>
UK	<i>Engineering Council</i>
USA	<i>American Association of Engineering Societies (AAES)</i>
Uruguay	<i>Asociación de Ingenieros del Uruguay</i>
Venezuela	<i>Colegio de Ingenieros</i>
Yemen	<i>Syndicate of Yemeni Engineers</i>
Yugoslavia	<i>Union of Engineers and Technicians of Yugoslavia</i>
Zimbabwe	<i>The Zimbabwe Institution of Engineers</i>

Regional Member / Membre Régional

West Indies Council of Caribbean Engineering Organizations

Affiliated Members / Membres Affiliés

Hong Kong (China) *The Hong Kong Institution of Engineers*

Taiwan (China) *Chinese Institute of Engineers*

International Members / Membres Internationaux

Commonwealth Engineers' Council (CEC)
Fédération Européenne d'Associations Nationales d'Ingénieurs (FEANI)
Federation of African Organizations of Engineers (FAOE)
Federation of Arab Engineers (FAE)
Federation of Engineering Institutions of Southeast Asia and Pacific (FEISEAP)
Federation of Engineering Institutions of South and Central Asia (FEISCA)
Union Panamericana de Asociaciones de Ingenieros (UPADI)
Regional Council of Co-ordination (RCC)
Union of Scientific and Engineering Associations (USEA)

Associates / Associés

Patron Associate / Associé mécène :

YPF Sociedad Anonima (Argentina)

Associates / Associés :

The Arab Contractors (Egypt)
Sinotech Engineering Consultants Ltd (Taiwan)

Non-profit Making Associates / Associés à but non lucratif :

European Council of Civil Engineers (ECCE)
Société Européenne pour la Formation des Ingénieurs (SEFI)
Colegio de Ingenieros y Agrimensores de Puerto Rico

Individual Associates / Associé individuel :

Eng. Md. Shamsul Haque Bhuiyan (Bangladesh)



WFEO/FMOI

The World Federation of Engineering Organizations
La Fédération Mondiale des Organisations d'Ingénieurs

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