

THE INTERNATIONAL COMMISSION FOR ACOUSTICS

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Many acousticians attend the triennial congresses organized by the International Commission for Acoustics (ICA), but they may not be aware of the other programs and services that the ICA now provides for the international acoustics community. The ICA¹ has become more inclusive and proactive in its global outreach, as have many organizations and countries around the world. For the ICA, this new outreach has been prompted by the increasing need to coordinate and support the growing international interest and activity in acoustics. With that in mind, it would be helpful to understand how ICA functions, especially since it has recently been admitted as a Scientific Associate of the International Council for Science (ICSU).

Purpose

The purpose of the International Commission for Acoustics is to promote international development and collaboration in research, development, education, and standardization in all fields of acoustics. This is accomplished primarily by providing opportunities for the exchange of information and ideas among the various international acoustics communities. This is a highly encompassing objective since acoustics includes a wide variety of technical fields from the life sciences to physics and engineering on six continents. In addition, there are many organizations, corporations, and government agencies worldwide that are involved in both broad and specialized aspects of acoustics. Despite these complexities, the ICA's purpose is straightforward, namely to provide worldwide access to information to advance the science and engineering of acoustics, and in so doing, to assist acousticians in solving problems in acoustics. As a side benefit, international collaboration is conducive to the enjoyment derived from working with colleagues around the globe.

The International Commission for Acoustics carries out its mission by: 1) maintaining close contacts with national and regional acoustical societies and associations and other relevant professional organizations, seeking consensus in matters of mutual interest when necessary; 2) providing an information service for societies and the many research and



education organizations in the field of acoustics; 3) announcing workshops, congresses, and symposia on acoustics, and taking a proactive role in coordinating the main international meetings within acoustics, and 4) providing funding to organize international meetings and travel

expenses for attendees.

The International Commission for Acoustics is charged with selecting sites for the International Congresses on Acoustics and acting as the International Advisory Committee for these congresses. It also sponsors or co-sponsors other topical and special international conferences, normally in close cooperation with national and/or regional organizations. As part of this sponsorship, it provides financial support to meeting organizing committees and to participants via travel grants.

The Commission has established and maintains a website [<http://www.icacommission.org>] that contains information on the activities of the ICA and provides direct links to the sites of its member societies. This website also contains an International Calendar of meetings on acoustics. In addition to alerting acousticians of meetings in their field, the calendar is intended to minimize conflicts and redundancy since a major complaint often heard is that there are “too many meetings.” The calendar is regularly updated through the ICA Information Services [<http://www.icacommission.org/calendar.html>] and is published simultaneously in the *Journal of the Acoustical Society of America*.

Background and history

The International Commission on Acoustics was established in 1951. The main responsibility of the Commission through the years has been to convene the triennial International Congresses on Acoustics. The Commission held its first congress in Delft in 1953 with 314 registrants from 22 countries. The recent 18th International Congress on Acoustics was held in Kyoto, Japan in 2004 where 1332 registrants attended from 47 countries. Every attempt is now made to choose sites which rotate among Asia, the Americas, and Europe since the ICA considers the promotion of international participation to be part of its mission. A list of sites and dates for the past 18 congresses, along with the two

upcoming meetings in Madrid (2007) and Australia (2010), is given in Table 1. Proposals to hold the 2013 congress in the Americas have been submitted for Montreal, Canada, and Rio de Janeiro, Brazil.

Organizational structure

The ICA currently has a membership of 45 national acoustical societies which are listed in Table 2. Until 1998 the Commission essentially operated independently from this broader representation of acoustical activity taking place around the world. Board members were elected by the General Assembly of the International Union of Pure and Applied Physics (IUPAP). Since IUPAP has no formal link to the national acoustical societies in most countries, this made the nomination process difficult. The ICA Board had many discussions in the 1994-1996 time frame to plan and implement a more democratic operation to include acousticians and acoustical societies from the entire international community. An integral part of the plan was to contact 41 national acoustical societies to obtain ideas on how this objective could be achieved. As a result of these deliberations the Commission decided to make a formal proposal to IUPAP, the international organization to which it reported. ICA's proposal was to modify its status within IUPAP from an International Commission (C7) to an Affiliated International Commission. This would allow the ICA to operate under a more democratic structure. New Statutes were adopted by the International Commission for Acoustics in Antwerp in March 1996. These statutes were approved by the IUPAP

General Assembly in Uppsala, Sweden in September 1996 and the ICA changed its status accordingly to become the International Commission for Acoustics (AC3). As an Affiliated Commission, the ICA was allowed to have individual or "national" members, collect dues, and have a defined administrative structure. Acoustical societies from around the world were then invited to join the newly structured organization, and 35 national acoustical societies responded positively. The "new" ICA held its first General Assembly on 25 June 1998 during the 16th triennial Congress in Seattle where the Bylaws of the new organization were adopted by the Member Societies. Three General Assemblies have now been held: Seattle (1998), Rome (2001) and Kyoto (2004). The fourth will be held in Madrid in September 2007 during the 19th Congress.

During this same time period the ICA also applied to become an Affiliated Organization of the International Union of Applied and Theoretical Mechanics (IUTAM). A motion in favor of Affiliation was adopted unanimously at the IUTAM General Assembly Meeting held at the University of Stuttgart in 1998. Figure 1 shows that IUPAP and IUTAM are two of 29 Scientific Unions reporting to the International Council for Science (formerly the International Council for Scientific Unions which kept its abbreviation as ICSU). The International Council for Science was created in 1931 and is the oldest existing non-governmental body committed to promote international scientific cooperation for the benefit of humanity. ICSU maintains a formal working relationship with the United Nations Educational, Scientific and Cultural

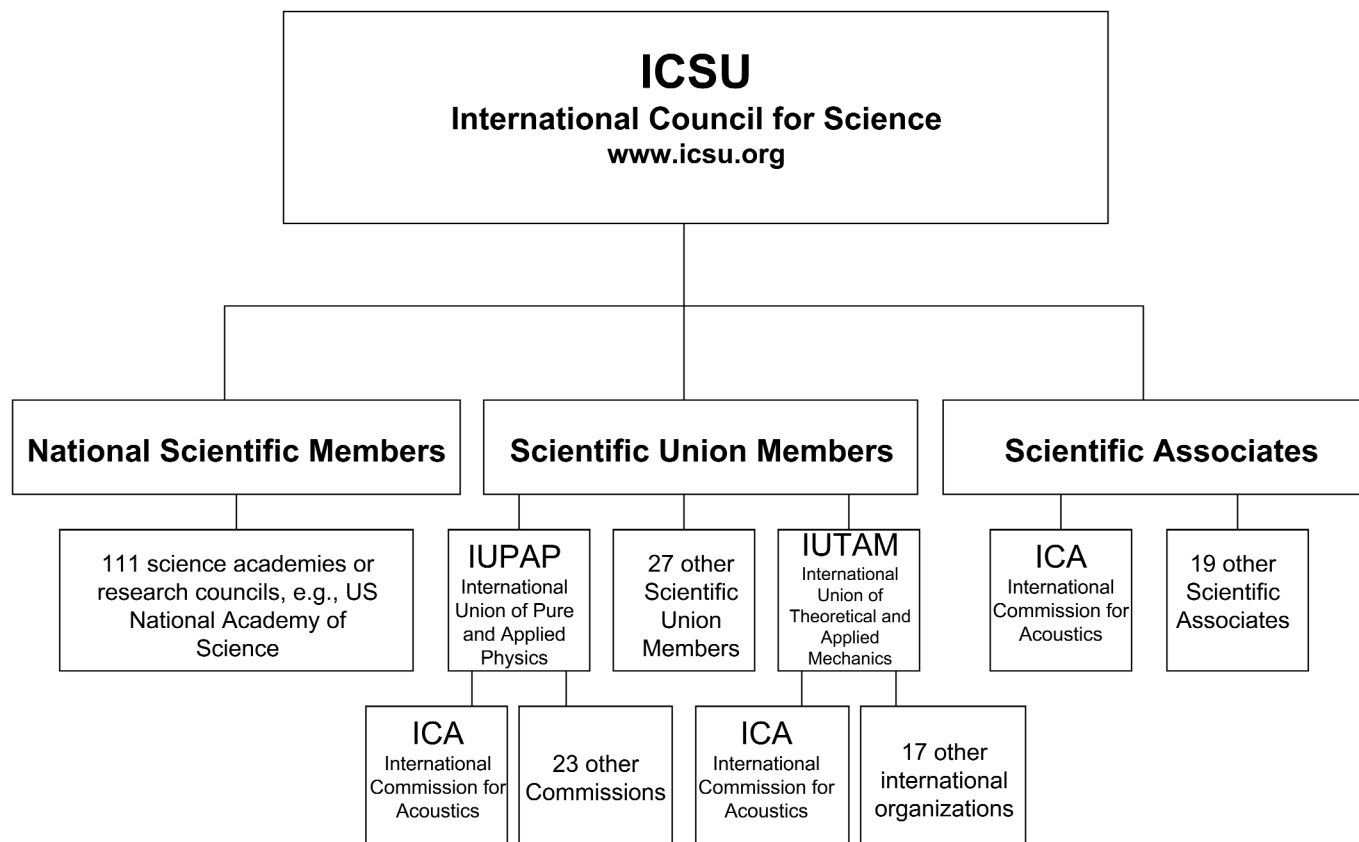


Fig. 1. ICA organization chart.

Table 1. International Congresses on Acoustics

Year	Site	Year	Site
1953	Delft, Netherlands	1983	Paris, France
1956	Cambridge, USA	1986	Toronto, Canada
1959	Stuttgart, Germany	1989	Belgrade, Yugoslavia
1962	Copenhagen, Denmark	1992	Beijing, China
1965	Leige, Belgium	1995	Trondheim, Norway
1968	Tokyo, Japan	1998	Seattle, USA
1971	Budapest, Hungary	2001	Rome, Italy
1974	London, England	2004	Kyoto, Japan
1977	Madrid, Spain	2007	Madrid, Spain
1980	Sydney, Australia	2010	Sydney, Australia

Organization (UNESCO) and the Third World Academy of Sciences (TWAS). More information on ICSU can be found at their website [www.icsu.org].

Proposal for ICA to become a scientific union

To better assume its role as the representative international body in acoustics, the ICA recently undertook a new initiative, namely to become a Scientific Union member like IUPAP and IUTAM. As noted above, the ICA now reports to IUPAP and IUTAM. But the ICA has realized that over the years the activity of its members in physics and mechanics within the member societies is not as prominent as it had been in the past. For example within the Acoustical Society of America (ASA), which has a strong international membership, only about 15% of its members selected physics as their professional identification, while in 1989 this statistic was 23%. Over the years other fields such as speech, hearing, biology and other areas of professional identification have broadened the range of acoustics, and hence the sense was that the ICA should seek Scientific Union membership within ICSU.

The ICA Board has had extensive discussions on the desirability for becoming a full fledged member of ICSU as a Scientific Union. An action plan was initiated during its annual Board meeting in 2001, and in 2003 the Board authorized the ICA President to write an informational letter to obtain the opinions of all ICA Member Societies about seeking Union membership. Responses from the Member Societies showed unanimous support for this plan. During the 2004 General Assembly of the ICA in Kyoto the Board

authorized the President to submit an application to ICSU for Union membership and to seek formal support from the various National Scientific Members and Scientific Union Members of ICSU, both of which were completed.

In its application to ICSU, the ICA stated the reasons for seeking Union membership. First, the current affiliated status within IUPAP and IUTAM is no longer adequate to serve the broad international field of acoustics wherein there is a need for a stronger and more unified voice. Second, Union membership would serve the growing number of national societies and their members as well as more specialized international and regional organizations. It would also provide recognition for the important economic and social benefits achieved through the application of acoustics, and thereby recognize the important contributions of acousticians to society. This was exemplified in the title and papers of the most recent International Congress on Acoustics "Acoustical Science and Technology for Quality of Life."

Other international organizations which offered support for ICA to seek Union membership included the International Institute of Noise Control Engineering (I-INCE), which was founded in 1974 as a worldwide consortium of organizations concerned with noise control, and the International Institute of Sound and Vibration (IIAV), which became an Affiliate Organization of IUTAM in 1997. Likewise regional organizations such as the European Acoustics Association (EAA), the Western Pacific Commission on Acoustics (WESPAC), and the Iberoamerican Federation of Acoustics (FIA) have expressed their support for ICA's Union membership within ICSU. Also letters of support have been received from eight of the present Scientific Union Members, including IUPAP, and from six of the National Scientific Members.

To summarize, there is a vast body of support from within the international acoustics community for the consolidation of acoustics through Union membership within ICSU. This would greatly promote the cooperation and unify the activities in acoustics around the globe in this rapidly expanding important field. This initiative will undoubtedly be for the overall benefit of the world's acoustics community.

The ICA submitted its application to ICSU for Union

Table 2. International Commission for Acoustics Member Societies. Listed in alphabetical order by country. (O) Indicates observer status

Argentinean Acoustical Assn. (O)	German Acoustical Society	Polish Acoustical Society
Australian Acoustical Society	Hong Kong Institute of Acoustics	Portuguese Acoustical Society
Austrian Acoustical Association	OPAKFI (Hungary)	East-European Acoustical Association
Belarusian Acoustical Society (O)	Acoustical Society of India	Russian Acoustical Society
Belgian Acoustical Association	Acoustical Society of Italy	Slovak Acoustical Society
Brazilian Acoustical Society	Acoustical Society of Japan	Slovenian Acoustical Society
Canadian Acoustical Association	Acoustical Society of Korea	South African Acoustics Institute (O)
Acoustical Society of Chile	Latvian Acoustical Society (O)	Spanish Acoustical Society
Acoustical Society of China	Lithuanian Acoustical Society	Swedish Acoustical Society
Acoustical Society of Croatia	Mexican Institute of Acoustics	Swiss Acoustical Society
Czech Acoustical Society	Acoustical Society of Netherlands	Turkish Acoustical Society
Danish Acoustical Society	New Zealand Acoustical Society	Institute of Acoustics of the UK
Acoustical Society of Egypt	Norwegian Acoustical Society	Acoustical Society of America
Acoustical Society of Finland	Acoustical Society of Peru	Institute of Noise Control Engineering USA
French Acoustical Society	Polish Acad. of Sciences Com. of Acoustics	Acoustical Society of Yugoslavia

membership in March 2005. In May 2005, the ICA was informed that the Executive Board of ICSU had examined the application. The Executive Board felt that a *prima facie* case for admission of the ICA as a Union Member had not been made and the application was premature. However, ICSU felt that admission of the ICA as a Scientific Associate would be considered. Therefore, the ICA resubmitted its application in March 2006, but this time for admission as a Scientific Associate. In November 2006, the ICA was informed that it had been officially admitted to ICSU as a Scientific Associate. The ICA is planning to submit a new application for Union membership in the near future after establishing better coordination and cooperation from other international organizations involved in the discipline of acoustics.

It is with this in mind that the ICA is exploring the admission of a number of new International Affiliated Members. This will ensure a greater degree of coordination and cooperation between the various international organizations to further the development of international efforts in acoustics. The ICA also proposed the formation of an International Conference Coordination Committee to bring about better coordination of international activities.

At the time of writing this article, ICA's suggestion of inviting other international organizations to become International Affiliates of the ICA has been warmly received. The European Acoustics Association (EAA), the Western Pacific Commission on Acoustics (WESPAC), the Iberoamerican Federation of Acoustics (FIA), the International Institute of Noise Control Engineering (I-INCE) and the International Conference on Ultrasonics (ICU) have all agreed in principle to become International Affiliates of the ICA. Revised Statutes to formally recognize the new International Affiliated Members are currently being circulated to the ICA Member Societies for approval at the next General Assembly in Madrid.

ICA operation

Under the new governance structure as an Affiliated Commission of IUPAP, the ICA created a procedure whereby a General Assembly of Member Societies elects the President, Vice-President, Secretary-General, and Treasurer and ten other ICA Board Members. The ICA Board may also elect Associate Board Members for liaison with Scientific Unions and other organizations concerned with acoustics. The Board of the International Commission for Acoustics meets once per year, generally at a site where a meeting of one of its member organizations is being held. Between meetings its



Fig. 2. ICA Board representatives met in Hawaii, December 2006
 Front Row (L to R)—Samir Geroges (Brazil), Gilles Daigle (Canada), Antoni Sliwinski (Poland), Hugo Fastl (Germany, Treasurer), Philippe Blanc-Benon (France), Sonoko Kuwano (Japan, Secretary-General)
 Back Row (L to R)—Marion Burgess (Australia 2010 Meeting), Anders Bostrom (IUTAM representative), Jean-Dominique Polack (EAA), Douglas Cato (Australia), Giovanni Brambilla (Italy), Philip Nelson (United Kingdom, President). [Photo by Charles Schmid (ASA- United States)]

business is conducted primarily via email through the office of the Secretary-General.

The ICA does not have an office *per se*, but covers the expenses of a Secretariat and relies on volunteers to assist in administrative matters. Expenses are covered by annual dues from Member Societies which range from \$US 25 for small societies to \$US 450 for large societies. In addition, 5% from the triennial Congress registration fees are contributed to the ICA. These meetings are the financial responsibility of the organization that sponsors the Congress. For example the Acoustical Society of Japan sponsored the meeting in Kyoto in 2004 and the Spanish Acoustical Society will assume

the financial responsibility for the 2007 meeting in Madrid.

Additional services to the international community

Since becoming an Affiliate of IUPAP in 1998, the Commission has established a number of programs to fulfill its mission which are described below:

- Sponsorship of *Specialty Conferences in Acoustics*. The ICA-sponsored conferences are normally limited to a specialized topic with an expected attendance of about 100. Support for regional or national conferences, especially in developing regions, are considered as long as the conference has an international character. Conferences sponsored by the Commission are eligible for a grant of up to \$US 2000. Other organizations including the Acoustical Society of America and the European Acoustics Association provide additional financial support to this program. Since 1999 this program has supported 23 conferences in many countries including Poland, India, Russia, Brazil, and Lithuania.
- *Young Scientist Conference Attendance Grants*. This program acknowledges the outstanding research contributions of acousticians, particularly young and early-career scientists, and provides partial funding to attend the triennial Congresses. Seventeen grants were awarded for the 2001 Rome Congress to attendees from eleven countries, and sixteen grants were awarded for the 2004 Kyoto Congress to attendees from ten countries. The total has increased for the 2007 Madrid Congress for which 53 Young Scientist Conference Attendance Grants have been approved for attendees from 25 different countries.
- An *ICA Early Career Award*. The award is presented at a triennial Congress to an individual who is relatively early in his/her professional career, and who has been active in the affairs of acoustics and has contributed

substantially, through published papers, to the advancement of theoretical or applied acoustics or both. The Award consists of a certificate with citation, an engraved medal, and a cash prize. During the Kyoto Congress awards were presented to two outstanding acousticians, Oleg Sapozhnikov from Russia and Timothy Leighton from Great Britain.

Conclusion

The International Commission for Acoustics has taken a more proactive role over the past decade to be more responsive to the international needs of the acoustics community. This has included creating a new governance to represent and coordinate activities of national and regional acoustical societies from around the world better, and providing increased services for its member organizations. These recent

improvements have increased the visibility of the ICA from the past when its primary role was to sponsor International Congresses on Acoustics, most of which were held in Europe or North America. An essential, although somewhat complex part of this transformation, has been to successfully work through the process of being admitted as a Scientific Associate of the International Council for Science. Reaching the next goal—to become a Scientific Union Member—will be described in a future article in *Acoustics Today* once that goal has been achieved.**AT**

¹ The abbreviation ICA is often used for both the International Commission for Acoustics AND the International Congress on Acoustics. This unfortunate ambiguity is usually resolved by the context in which it is applied. For this article it is only used to abbreviate the International Commission for Acoustics.

Gilles A. Daigle is currently a Principal Research Officer at the National Research Council of Canada Institute for Microstructural Sciences (IMS). He served as Group Leader for the IMS Acoustics and Signal Processing group from 1990 to 2000. He works on a broad range of acoustics topics including hearing aid technology, telecommunications and multimedia acoustics, environmental acoustics, noise control, signal processing, the acoustics of the ear and the physics of sound propagation. A fellow of the ASA since 1988, Daigle has also been awarded the Acoustical Society of America's (ASA) prestigious R. Bruce Lindsay Award (1988), a Silver Medal from the French Acoustical Society (2002), and the ASA's Helmholtz-Rayleigh Interdisciplinary Silver Medal (2005). He has served on the ASA's Executive Council (1992–1995), as ASA's Vice President (2000–2001), and as Secretary General (1998–2001) and President (2001–2004) of the International Commission for Acoustics. He currently serves as ASA's President and as Vice President—Development for International INCE. Dr. Daigle will become the 5th President of International INCE in 2009.



Philip Nelson is Deputy Vice-Chancellor of the University of Southampton with primary responsibility for Research and Enterprise. He previously served as Director of the University's Institute of Sound and Vibration Research and holds the post of Professor of Acoustics. He has personal research interests in the fields of acoustics, vibrations, fluid dynamics and signal processing, and is the author or co-author of 2 books, over 100 papers in refereed journals, 30

granted patents, and over 200 other technical publications. Professor Nelson is a Fellow of the Royal Academy of Engineering, the Institution of Mechanical Engineers, Institute of Acoustics, and the Acoustical Society of America. He is a Member of the Institute of Electrical and Electronics Engineers and a Chartered Engineer. He is the recipient of both the Tyndall and Rayleigh Medals of the Institute of Acoustics, and is currently serving as President of the

International Commission for Acoustics.

Charles E. Schmid was selected to be the first executive director of the Acoustical Society of America (ASA) in 1990. In that capacity he has been instrumental in arranging many international meetings that ASA has held with other organizations, including joint meetings with the European Acoustics Association, the Acoustical Society of Japan, the first Pan-American/Ibero-American meeting, and the 16th International Congress on Acoustics. Before becoming Executive Director of the ASA he performed research in underwater acoustics as a Fellow of Honeywell Marine Systems in Seattle, WA (1966–1990) and served as the ASA's 1985/86 Congressional Science and Engineering Fellow in Washington, DC. He holds a Bachelor's degree from Cornell University, Master's from the University of Connecticut, and Ph.D. from the University of Washington, all in Electrical Engineering. He has served on the American Institute of Physics (AIP) Governing Board for 17 years. He currently serves as a member of the ICA Board.