Engineering Education: balancing generalist and specialist formation in technological carriers: a current challenge – an overview about the EDUNINE first edition

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Abstract — **This paper has been organized in order to present the new IEEE Education Society Conference in Region 9, Latin America, the IEEE World Engineering Education Conference – EDUNINE2017. Its first edition is in Santos, São Paulo, Brazil, an important city for its characteristics and History. The host institution is The Santa Cecilia University and the Educational Complex (College and University) originated in 1961 from a small elementary school, and now offers courses from Early Childhood to Postgraduate This is the opportunity to introduce the important aspects of this conference that promises to endure and become a reference in the region. It offers unparalleled networking opportunities with peers worldwide, keynote speakers, international perspectives on engineering education and not to mention the value in meetings that comes from the human-to-human connections that occur.**

Keywords—Innovations, Sustainability, Information, Quality of Information, Cyber Safety and Scientific Research.

I. INTRODUCTION

The **IEEE World Engineering Education Conference – EDUNINE2017** [1] is the endeavor of IEEE Education Society a society that has a tradition of quality entrepreneurships in the field of Engineering Education (Figure 1).

FIGURE. 1
LOGO OF EDUNINE2017.

March 19-22, 2017, Santos, BRAZIL

The chosen theme of the conference is: "Engineering Education – Balancing Generalist and Specialist Formation in Technological Carriers: a Current Challenge". Using the event platform it aims to continue the success of all conferences of IEEE Education Society in supporting the dissemination of quality research and to provide memorable experience through the hospitality, location and conference facilities. And this one in Latin America, which complies 33 countries with languages that range from Spanish, Portuguese, English, Dutch and French besides dialects.

COPEC – Science and Education Research Council an international organization, has organized this first edition of EDUNINE in 2017 conference, being hosted by the Santa Cecilia University, in the City of Santos, São Paulo State, Brazil, in South America.

II. THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

A truly international organization, IEEE currently has 150,000 members & 93% U.S.A. It is now a Non-profit – volunteer based organization with more than 430,000 members (with 120,000 student members), in 160 countries & 333 Sections in 10 Geographic Regions worldwide.

It is the world's largest professional organization with more than 430,000 – over 50% U.S.A. – 50% Industry. It is a respected standards organization - 1,500 standards [2].

III. THE IEEE EDUCATION SOCIETY

The Education Society's FIELD OF INTEREST is the theory and practice of education and educational technology involved in the effective delivery of domain knowledge of all fields within the scope of interest of IEEE [3].

It has about 3,700 members, being 60% outside the U.S.A, 30% in Region 8 (Europe, Middle East, & Africa), and 10% of members in Region 9 (Latin America).

It has the FIRST President from South America, the second President from outside USA showing its international characteristic.

Its publications are Peer Reviewed Publications and very well indexed.

IV. THE SCIENCE AND EDUCATION RESEARCH COUNCIL (COPEC)

COPEC - Science and Education Research Council has been very active and has developed many achievements of great importance for the world since its foundation almost 20 years

The main mission of COPEC is to promote the progress of science and technology for the welfare of the humanity.

Presently in international scenario it plays an important role once it has been working to foster the discussions and the implementations of policies for the betterment of research in the several fields [4].

COPEC has organized many congresses since the decade of 90's: 16 editions of SHEWC (organizing the 17th. Edition) [5-20], 14 INTERTECH (organizing the 15th. Edition) [21-25], 9 ICECE (organizing the 10th. Edition) [26-30], 9 editions of WCCA (organizing the 10th. Edition) [31-39], 3 WCSEIT [40-42], 2 WCCSETE [43-44], 1 IGIP [45], 1 GCMM [46], 1 WCETE and 1 GCETE.

V. THE IEEE WORLD ENGINEERING EDUCATION CONFERENCE (EDUNINE2017)

After FIE (Frontiers in Education) a very well established conference in IEEE Region 1 to 7; the EDUCON (IEEE Global Engineering Conference) IEEE Region 8 that continues growing in Europe, Middle East and Africa and TALE (IEEE International Conference on Teaching, Assessment, and Learning for Engineering) in the Far East Pacific area of the IEEE Region 10, EDUNINE'2017 is the next successful conference held in IEEE Region 9 Latin America.

EDUNINE2017 is an event that has been organized and developed with the goal to provide the best environment for discussions and experience exchange among teachers, researchers and professionals of engineering and computer sciences who work for the enhancement of high education.

Following the already successful conferences EDUNINE conference is designed in order to provide participants:

- Key note speakers: specialists will be speaking about their area of expertise and will answer questions of the audience;

- Round Tables and Panels: A meeting with invited specialists to debate with the audience themes that are important for engineering and technology education;

- Technical Sessions: professionals and researchers will be presenting papers of relevance, specially selected by the international committee. These papers present the top researches and experiences;

- The Open Session: It counts with the presence of conference organizers, members of the committee as well as participants and authorities of the host cities and University; and

- During the event attendees can participate of cultural and social activities specially organized for the conference.

VI. PLANNING

The planning for the organization of an event comprehends a number of activities developed in phases that requires human resources and material, which works are the result of a lot of efforts and dedication. The development of the activities has 4 phases:

A. 1st Phase

Conception of the Project EDUNINE2017, in this phase there were discussions about the estimate date, necessary resources, establishment of goals and the elaboration of the Project.

B. 2nd Phase

Pre-Event that involves the establishment of the necessary activities for the accomplishment of the event:

- Operational team;

- Basic Budget;

- Basic Chronogram;
- Services to be hired;
- Establishment of organogram.

C. 3rd Phase

Event, which is the accomplishment of the Project taking into account the realities that present at the moment. It is the conference happening with all the activities that are necessary to develop during this phase that are basically the reception of attendees, accompaniment of all the sessions.

D. 4th Phase

After the event when the conference finishes a report is made with all the information about the conference and send to the Council, to be in the databases of the organization, to the Foment Agencies and etc

VII. PUBLICATIONS

EDUNINE2017 publishes electronically a collection of papers that were peer reviewed and approved by the Technical Program Committee; additionally, a book of abstracts is published containing general information on the Congress and the abstracts of all presented works as well as the Congress Proceedings registered at the National Library and they possess ISBN with international validity; besides all the papers presented on the conference will be published in IEEE Explore [47].

VIII. ACKNOWLEDGMENT

The I IEEE World Engineering Education Conference - EDUNINE2017 is organized by IEEE Education Society and COPEC – Science and Education Research Council and count with the technical cooperation of the most important education and cultural organizations in the world like (in alphabetical order): AAMP (Fishing Museum Friends Society), ABENC (Brazilian Society of Civil Engineers), ABENGE (Brazilian Society for Engineering Education), AENUI (Asociación de Enseñantes Universitarios de la Informática), ASEE (American Society for Engineering Education), ASIBEI (Ibero-American Association of Engineering Education Institutions), GCMM (Global Congress on Manufacturing and Management), IFEES (International Federation of Engineering Education Societies), IGIP (Internationale Gesellschaft für Ingenieurpädagogik), INTERTECH (International Council for Engineering and Technology Education), ISTEC (Ibero-American Science & Technology Education Consortium), OERN (Institute of Engineers of Portugal – North Region), Porto Gente (PortFolk), RBE (Brazilian Network of Engineering), RCI (Réseau Carthagène d'Ingénierie), SBA (Brazilian Automation Society), SBC (Brazilian Computer Society), SEFI (Société Européenne pour la Formation des Ingénieurs), SHERO (Safety, Health and Environment Research Organization), SPEE (Portuguese Society for Engineering Education), SPEED (Student Platform for Engineering Education Development), WCCA (World Council on Communication and Arts) and WCSEIT (World Council on Systems Engineering and Information Technology) as well as the support of Agencies: FAPESP (State of São Paulo Research Foundation), CNPq (National Council for Scientific and Technological Development) and CAPES (Coordination for Improvement of Personnel of Superior Level).

IX. FINAL COMMENTS

This is a very important conference accomplished by IEEE Education Society once its first edition is intended to be the first of many equally successful ones to come in the future.

Despite all the challenges it shows to be already a high quality scientific meeting promoting the understanding of some aspects of engineering and technology education so important at the present time of economical and social environment.

The discussions are around the challenges of this century for high education such as: changes in universities as institutions and at the level of internal organization, talent retention, call for social responsibility and knowledge transfer, new educational model, as well as interdisciplinary and trans disciplinary approaches.

And as the core of the discussions is Engineering Education that is of great importance once it is responsible for most of the cities infrastructure and comfort level that human beings have today.

EDUNINE2017 will continue to provide opportunities for all participants and stakeholders in the engineering community (industry, government, institutions of higher education, professional societies, et. al.) the environment for discussions and solutions for human being life on the planet that presently has to do with high education.

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