The 2nd International Conference on Technological Advancement in Embedded and Mobile Systems (2nd ICTA-EMoS)

Theme: Emerging Technologies and EMoS in Sustainable Development

Sainte Famille Hotel in Kigali, 19 and 20 September 2024 (Virtual and physical),

Organized by

University of Technology and Arts of Byumba (UTAB)/Rwanda

University of Oldenburg/ Germany

Nelson Mandela African Institution of Science and Technology (NM-AIST)/ Tanzania

Conference Organizing Committee

Prof. Dr. Jorge Marx Gómez

Prof. Anael Sam

Fr. Dr. Lucien Hakizimana

Dr. Devotha Nyambo

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1. Introduction

In the framework of CENIT@EA Project (Centre of Excellence for ICT in East Africa), UTAB collaborating with the Higher Learning Institution partners of this project, organizes an International conference with the theme: **Emerging Technologies and EMoS in Sustainable Development.**

2. Background of CENIT@EA Project

The Centre of Excellence for ICT in East Africa (CENIT@EA) is a partnership between East African universities and German institutions. CENIT@EA is hosted at the Nelson Mandela African Institution of Science and Technology (NM-AIST). The implementing partners in collaboration with NM-AIST are Carl von Ossietzky University of Oldenburg (Germany), UTAB from Rwanda, NM-AIST and UDSM from Tanzania, Kabale University from Uganda, MOI University Kenya, University of Burundi, University of Juba from South Sudan and Université de Kinshasa from DRC, Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), Inter-University Council for East Africa (IUCEA), and the German Academic Exchange Service

(DAAD), Hochschule Mannheim, and German Aerospace Center from Germany, German Aerospace Center (DLR) Braunschweig, Hochschule Mannheim (Germany), East African Business Council, and Hochschule für Technik und Wirtschaft Berlin (Germany).

3. Rationale of the International conference

ICT responds to the need of the development of Rwanda and East Africa in general. EMoS is profoundly affecting the development of the computer and many of the most exciting and practical new areas for the development are based on technology and mobile system.

The field of technology remains the most exciting and diversified field of study, a field that contributes to permeate all aspects of our society and lives and brings the most positive change to our way of life.

Today, companies in East Africa and in Rwanda in particular badly lack qualified experts in technology. A number of those who are dealing with technology in companies did not study enough or do not have required qualifications for boosting the development of the same companies.

Moreover, many companies employ a large number of expatriate experts who often leave their jobs in the middle of the year disturbing the objectives fixed by companies and industries. The CENIT@EA project established MSc in EMoS programme at the NM-AIST and partner universities sent the students from EAC to pursue the Master's degree programme in EMoS in the perspective of improving the sustainable development in East African Community.

In view of the above, the CENIT@EA achievement of expanding the knowledge and skills which should boost the development in this region, stepped up by international conferences to contribute in boosting EAC social economic development. The 2nd International conference hosted by UTAB would like to contribute to the radiation of CENIT@EA Project, thus helping to achieve the Rwandan government and EAC goals that seek to eliminate ignorance and poverty, increase employment levels and add value to the products (of both goods and services).

This International conference will further contribute to finding solutions to the following problems:
 (i)   The unsatisfactory application of EMoS in local industries in the East Africa Region
 (ii) The low level of industrialization in the East and Sub-Saharan region
 (iii) The low level of commercialization of knowledge in the EAC countries
 (iv) The unsatisfactory performance of industries and a number of challenges which needs innovative solutions

The shortage of highly qualified engineers, systems analysts, developers, skilled systems administrators, project leaders in the region who can maximize efficiency and effectiveness in technology and EMoS, the awareness and the role of emerging technologies Embedded and Mobile Systems in sustainable development are to be driving concepts of this conference.

4.The Host and the Venue

The 2ⁿᵈ International Conference on the Technological Advancements in Embedded and Mobile Systems (EMoS) Conference is initiated and organized by the project CENIT@EA. The conference will be technically coordinated by the University of Technology and Arts of Byumba (UTAB) in collaboration with the University of Oldenburg in Germany and other partners of the CENIT@EA. It will take place **on 19 and 20 September 2024 at Sainte Famille Hotel in Kigali-Rwanda**.

In-person Presentations will be organized into technical and plenary sessions at the venue/premises. Every presenter will have a maximum of 15 minutes for presentation and an extra 7 minutes for discussion. The presentation should be prepared in Microsoft PowerPoint within 10-15 slides in English and French specifically for RDC. **Online Presentations:** Zoom Online Meeting platform will be used. Every participant will receive an invitation to their email address.

5.Theme: Emerging Technologies and EMoS in Sustainable Development

Emerging Technologies and EMoS in Sustainable Development with the perspective of boosting economy in EAC corroborates with the vision of EAC which is to be a prosperous, competitive, secure, stable and politically united East Africa and EAC vision 2025 whose pillars are infrastructure development; industrialization; agriculture, food security and rural economy; natural resource and environment management; tourism, trade and services development. In this tandem, the subthemes are the following:

6.Sub-Themes and Topics

Topics of interest for submission include, but are not limited to:

1. **EMoS**

   - EMoS and health information systems for low-literate populations
   - The role of EMoS in addressing Economic problems
   - Building Economic resilience by EMoS
   - Ethics in EMOS

2. **Robotics and Artificial Intelligence:**

   - Predicting and Monitoring impact of Diseases: Blockchain technologies and solutions to problems related to diseases
   - Artificial intelligence and nano-robotics,
   - Robot surgery and economic considerations
   - Artificial Intelligence Tools and Sustainable Development
   - Mobile technologies and various innovations using local materials, drones, i.e., agriculture and health perspective

3. **Internet of Things :**

- IoT and agricultural Development-Chemicals in agriculture
- IoT and Environment Sociology
- Cyber Security and Sustainable Development

4. **Biotechnology:**

- Public Health and technology: Innovative Key Considerations
- Biotechnology and environmental considerations
- Biotechnology and animal and plant considerations
- Biotechnology and industrial considerations
- Industrial technology and Smart and green economic Development
- Global warming and industrialization/human activities
- Biotechnology and food security

7. Aims and Scope

The conference will combine in person and online sessions and will bring together scientists, activists, professors, researchers, students, and policy makers to exchange ideas, their experiences and research results.

The academic content obtained by this event will be published as conference proceedings in a highly reputable publisher following the lines of the publications of the outputs from the 1st series of the conference. A number of selected papers from the appropriate scientific discipline will also be considered for special edition publication of partner universities of CENIT@EA.

8. Conference Goals:

The Conference will supplement and enrich teaching, learning, research and professionalization offered through CENIT@EA. This EMoS conference is targeting to expand skills relevant to the sustainable development, the creation of decent jobs in the crucial fields (locally and internationally) of any kind of business and change and facilitate all the sectors of human activities. The conference targets to strengthen the permanent close collaboration with business partners (thanks to the networking) and secure the labour market relevance for the sustainable development.

To address current topic in the areas of Emerging Technologies and EMoS for the sustainable development, a series of presentations will be organized targeting the sustainable development. Furthermore, practice oriented experiments and discoveries are to be introduced by the researchers in order to strengthen the development in the respective of link with the industrial sector.

9. Submission

High quality research contributions describing original and unpublished results of conceptual, constructive, empirical, experimental, or theoretical work in the all areas Emerging Technologies and EMoS for the sustainable development.

All papers should be sent via EasyChair conference management system: Subject: UTAB-ICTA-EMoS Conference 2024.

Recommended paper length: 5-15 pages including an abstract of 200 words with 5 keywords (Microsoft Word, font 12, Times New Roman, 1.5 line spacing). Only full paper submissions are accepted. All articles must be in English <mark>except articles from DRC which may be presented in French.</mark> All accepted papers will be published after the conference as conference proceedings with an ISBN number. However, the author can decide to submit his/her paper for possible publication in some selected international peer reviewed journals

Certificate of the presentation will be issued to participants presenting their research in online or in-person sessions. Certificate of chairing a session will be issued to the chairs acknowledging their role at the conference. Best Paper Award will be conferred by the Program Committee to the author(s) of the best paper presented at the conference.

Conference publication: journals and publisher of the proceeding will be indicated (Springer Nature)

10. Key Dates and Fee

The 2nd Technological Advancement in Embedded and Mobile Systems (EMoS) Conference will take place on 19 and 20 September 2024 at Sainte Famille in Kigali-Rwanda.

Important dates:

- Call for papers – 15 March 2024
- Abstract/Full Paper Submission - 31 June 2024
- Acceptance Notification – 31 July 2024
- Registration Fee: Online Payment (Conference fee)
- Camera Ready Submission – 15 August 2024
- Conference Dates – 19 and 20 September 2024
- ***Note:** Only papers that successfully pass the peer review procedure will be presented and published.

The fee includes:

Admission and participation to the conference, one paper to be presented, copy of the conference program, conference certificate, book of abstracts, publication of an accepted paper in the online conference proceedings or/and journal publication.

11. Organizing and Scientific Committee

Conference Chair: Prof. Dr. Jorge Marx Gomez

Organizing Chair: Fr. Dr. Lucien Hakizimana

Technical Advisory: – Prof. Dr. Anael Sam

- Dr. Devotha Nyambo

12. Potential Key Stakeholders

Ministry of Education (MINEDUC)

Ministry of ICT and Innovation

Higher Education council (HEC)

National Council of Science and Technology (NCST)

ICT and Telecommunication companies in Rwanda: MTN, TIGO, AITEL

Regional bodies: GIZ, EAC Cluster; IFE, EAC, EABC, IUCEA

13. Budget: 39,856 Euro

14. Conclusion

Given the nature of the conference, close monitoring and evaluation of preparation progress is essential. For this conference, the monitoring and evaluation will be undertaken on a regular and continuous basis by UTAB, the University of Oldenburg and CENIT@EA team members. During the period of the preparation, a quarterly monitoring will be undertaken jointly by University partners. Leaders of preparation units will, on a quarterly basis, prepare reports on the progress of activities. UTAB will closely monitor the preparation of the conference through regular follow-up and supervision. The CENIT@EA team that is comprised of technical experts will work alongside the UTAB teams so as to help them to focus on the success of the conference. The university will play a crucial role in the mobilization of the target population of this conference.

Prepared by Fr. Dr. Lucien HAKIZIMANA

Approved by Fr. Dr. Gilbert MUNANA O.P.

Vice Chancellor of UTAB