Program Status: 8 March 2021

New Technologies, Ethics and Policy Engagement for Sustainable Development:
An Interdisciplinary Model for Engaging with the Technology Community

UN STI Forum Side Event

3 May 2021 (11:00 am – 12:00pm EDT/GMT -4)

SUMMARY REPORT

Event Description

Since the end of 2020, IEEE TechEthics and UN-DESA have jointly organized an IEEE/UN series of online events on New Technologies, Ethics and Policy Engagement for Sustainable Development. The series facilitates sharing of technology ideas and solutions and brings together policy makers, engineers, legal experts, ethicists, social scientists, and others, to engage in substantive discussions on a variety of topics related to the UN Sustainable Development Goals.

To date, events have been held on the following themes:

- Health & Human Well-being
- Universal Access to Energy
- Global Environmental Solutions

Each event featured presentations by leading engineers and technologists addressing key questions related to existing technologies and pending advancements, along with discussion about the related social impacts. The events also provided information on work being done by the UN, the IEEE, and their partners, as well as discussed engagement opportunities for attendees interested in participating in those efforts. Recordings from the sessions are available online at techethics.ieee.org/videos.

This side event to the 2021 STI Forum provided information on lessons learned from the event series to date, particularly the opportunity it has presented for increased collaboration between policy makers and technology professionals in a neutral setting.

The event also provided an overview of specific outcomes from each event, and presented a proposal for the evolution of the series into a regularly-scheduled set of virtual events that will allow for continued collaboration and topical discussion between annual STI Forums.

(see slides on following pages for information presented during the event)

Key Outcomes

Event attendees agreed that the kind of collaboration between policy makers and the technology community offered by this series is important, and supported the ongoing development of the series. They also offered several suggestions, including:

- Engagement with additional groups within IEEE and the UN
- Breakout/discussion opportunities during events
- Possible topics for future events

Speakers

- Mark A. Vasquez | Sr. Program Manager, IEEE TechEthics
- Richard A. Roehrl | Senior Economic Affairs Officer, United Nations Department of Economic and Social Affairs

Registration & Attendance

- Registrations: 16
- Attendees: 14 (88% attendance rate)

New Technologies, Ethics and Policy Engagement for Sustainable Development

An Interdisciplinary Model for Engaging with the Technology Community

3 May 2021

UN STI Forum Side Event

Mark A. Vasquez, Sr. Program Manager, IEEE TechEthics, m.vasquez@ieee.org

Richard A. Roehrl, Senior Economic Affairs Officer, DSDG, UN-DESA, roehrl@un.org

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

AGENDA

- Background
- Event details
- Key event outcomes
- Next steps
- Q&A

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

Background

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development

- New virtual event series co-organized by IEEE TechEthics and UN-DESA
- IEEE TechEthics, UN-DESA, UN-MGCY and others had been in discussions about hosting content for the 2020 UN STI Forum
  - This series was conceived in response to the postponement of the Forum
- Provides an opportunity to keep the target audience engaged between Forums via substantive discussions on a variety of topics related to the UN Sustainable Development Goals
- Facilitates sharing of technology ideas and solutions between policy makers, engineers, legal experts, ethicists, social scientists, and others

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

Event Details

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Health & Human Well-Being

Session 1: New Technology Presentations

- Richard A. Roehrl (opening remarks)
- Randi Sumner (moderator) | Senior Director, Strategy & Entrepreneurship, IEEE
- Paolo Bonato, PhD | Dept of Physical Medicine & Rehabilitation, Harvard Medical School at Spaulding Rehabilitation Hospital and Editor-in-Chief, IEEE Open Journal of Engineering in Medicine and Biology
- Sanna Gaspard, PhD | CEO, Rubitection
- Ali Tinazli | Chief Commercial Officer, Fluxergy

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Health & Human Well-Being

Session 2: Ethical, Legal and Policy Considerations

- Mark A. Vasquez (moderator)
- Paulo Gadelha | Former President, Fiocruz, Brazil
- Henry T. (Hank) Greely | Director, Center for Law and the Biosciences, Stanford University
- Andrea G. Parker, PhD | Associate Professor, School of Interactive Computing, Georgia Institute of Technology

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Health & Human Well-Being

Session 3: Engagement Opportunities and Policy Debate Roundtable

- Mark A. Vasquez (moderator)
- Spring Gombe | Programme Chair, Technology Access Partnership, UN Technology Bank
- Shantanu Mukherjee | Chief, Integrated Policy Analysis, Division for Sustainable Development Goals, UN-DESA
- Maria Palombini | Emerging Communities & Opportunities Development Director, IEEE Standards Association
- Laura Specker Sullivan | Assistant Professor, Department of Philosophy, Fordham University
- Sampath Veeraraghavan | Chair, IEEE Special Interest Group on Humanitarian Technology (SIGHT)

United Nations | Department of Economic and Social Affairs

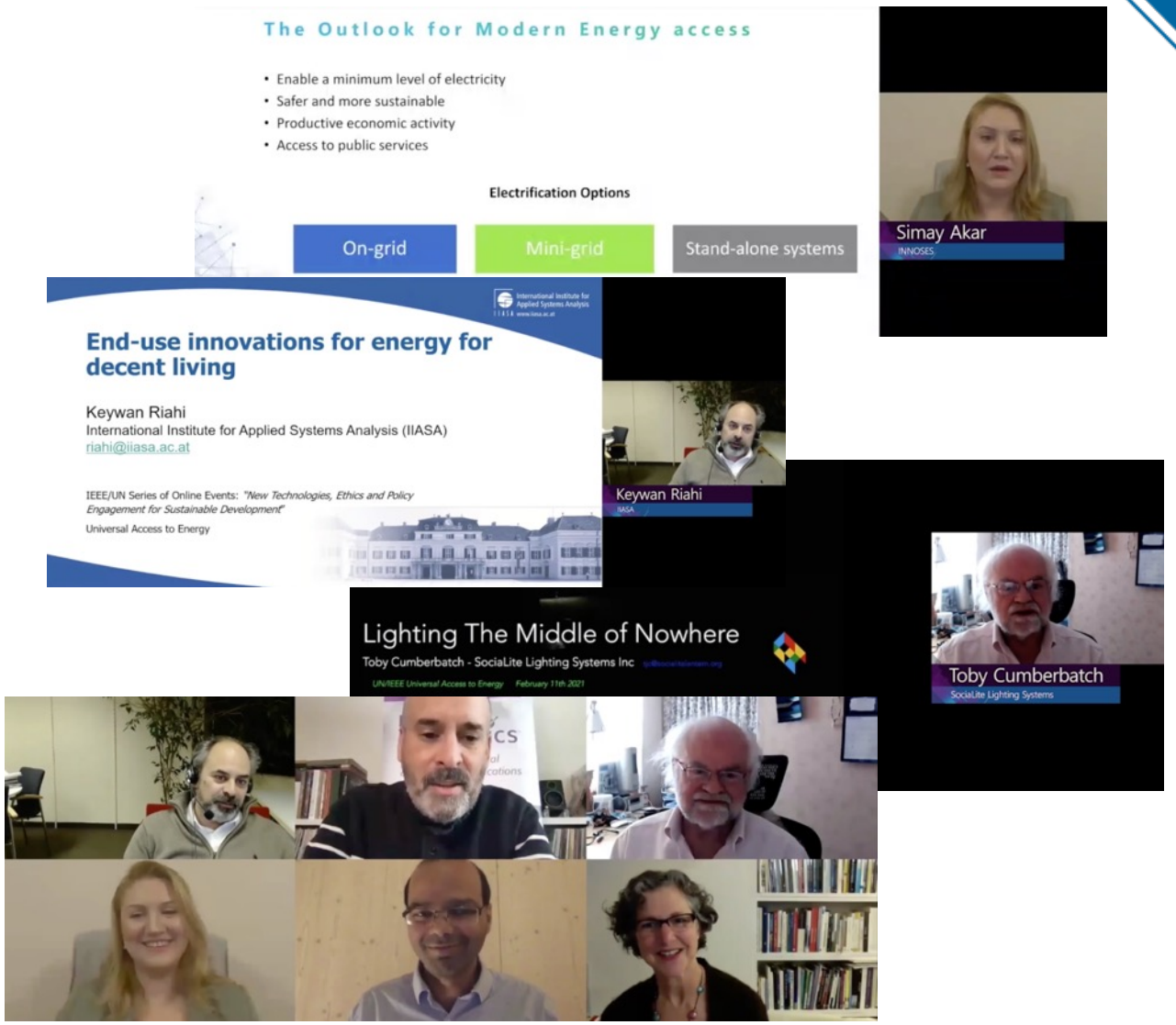
IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Universal Access to Energy

Session 1: New Technologies and Related Social Impacts

- Richard A. Roehrl (opening remarks)
- Mark A. Vasquez (moderator)
- Simay Akar | Chief Commercial Officer and Co-Founder, INNOSES
- Toby Cumberbatch | President, SociaLite Lighting Systems Inc
- Keywan Riahi | Director, Energy Programme, IIASA
- Simone Abram | Professor, Dept. of Anthropology, Durham University, UK
- Siddharth Sareen | Associate Professor in Energy and Environment, University of Stavanger, Norway



United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Universal Access to Energy

Session 2: Engagement Opportunities and Policy Debate Roundtable

- Mark A. Vasquez (moderator)
- Marcel Alers | Head of Energy, United Nations Development Programme
- Shantanu Mukherjee | Chief, Integrated Policy Analysis, Division for Sustainable Development Goals, UN-DESA
- Damir Novosel | Chair, Industry Technical Support Leadership Committee, IEEE Power & Energy Society
- Pritpal "Pali" Singh | Vice-Chair, Education Committee, IEEE Smart Village
- Sampath Veeraraghavan | Global Chair, IEEE Humanitarian Activities Committee

United Nations | Department of Economic and Social Affairs

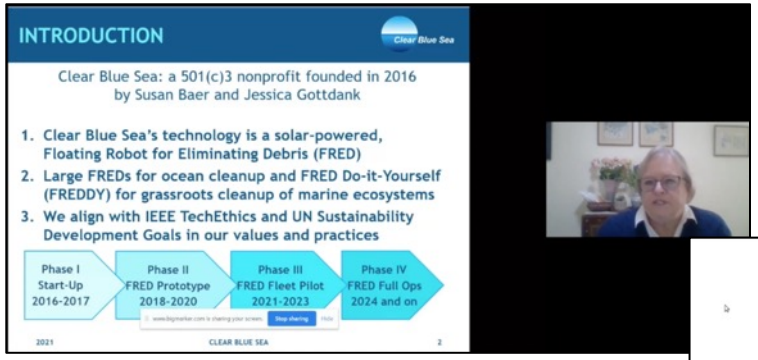
IEEE TechEthics

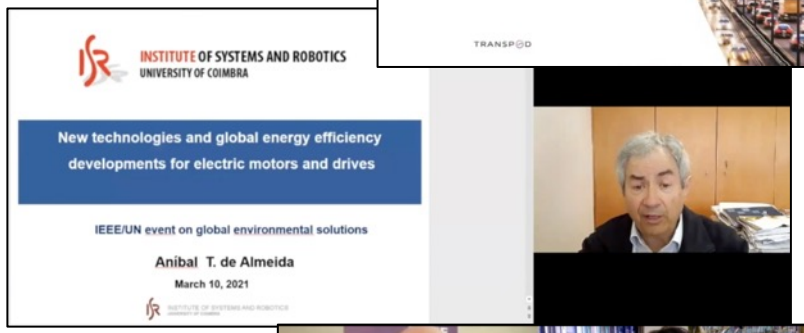
IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development:
Global Environmental Solutions

Session 1: New Technologies and Related Social Impacts

- Richard A. Roehrl (opening remarks)
- Mark A. Vasquez (moderator)
- Susan Baer | Executive Director and Founder, Clear Blue Sea
- Anibal de Almeida | Full Professor, University of Coimbra, Portugal
- Ryan Janzen | CTO and Co-Founder, TransPod Inc.
- Adrian Martinez | Staff Attorney, Earthjustice
- Dan Shahar | Department of History and Philosophy/Urban Entrepreneurship & Policy Institute, University of New Orleans





United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development:
Global Environmental Solutions

Session 2: Engagement Opportunities Roundtable

- Mark A. Vasquez (moderator)
- Alois Mhlanga | Chief, Climate Technology & Innovations Division, UN Industrial Development Organization (UNIDO)
- Bruno Lequesne | Chair, IEEE Transportation Electrification Community
- Shantanu Mukherjee | Chief, Integrated Policy Analysis, Division for Sustainable Development Goals, UN-DESA
- Rudi Schubert | Director, New Opportunities Development & Deployment, IEEE Standards Association

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

Key Event Outcomes

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

Wearable sensors

Remote Monitoring of Patients with COVID-19 and Frontline Healthcare Workers Using mHealth Technologies

FluxergyCards (modular)

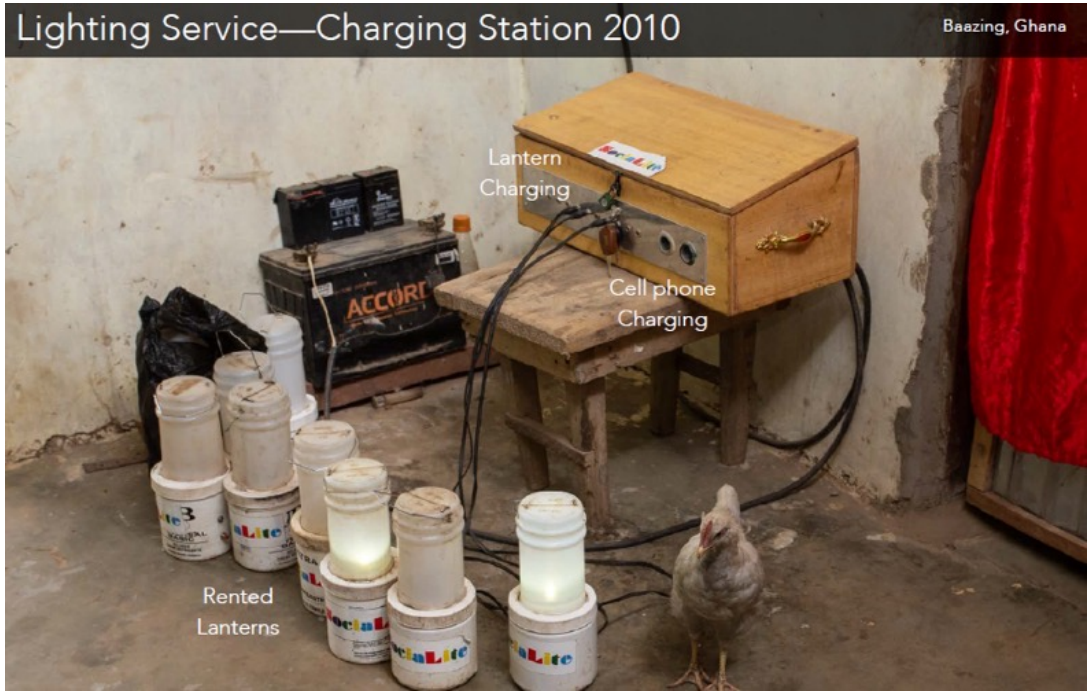
United Nations | Department of Economic and Social Affairs

- Digital health technologies generate large quantities of data → improve diagnostics, treatment and public health, but key issue is privacy.
- Greater efforts needed to balance the speed of innovation with public engagement and regulation
- Bring together engineers, community leaders, health care workers and policy makers
- COVID accelerated digitalization → personalized diagnostics and preventative medicine → omnipresent testing and diagnostic devices → democratize health tech
- People impacted by digital health technologies to be part of the decision-making. Included in design of affordable and accessible techs.

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development: Universal Access to Energy



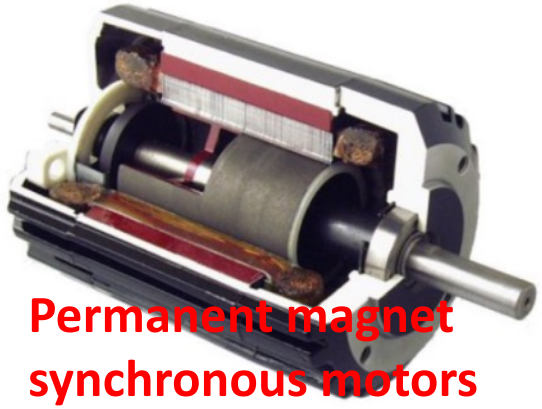
- New technology developments in electrification and renewable energy → sustainability
- People-centred design is critical for development solutions particularly in remote rural areas.
- Financing microgrid projects continues to be a challenge in many countries.
- Need to do more with less energy. Energy is the cornerstone of development → critical to decent living standards (hygiene, comfort, education, mobility)
- Focusing on end-use efficiency and granular technologies speed up the energy transition
- Digitalization creates opportunities → smart cities
- Numerous opportunities to engage with the UN on matters of universal energy access (UN-energy, TFM)
- Many IEEE groups and committees (incl. Smart Village Activities and Humanitarian Activities Committee)

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

New Technologies, Ethics and Policy Engagement for Sustainable Development:
Global Environmental Solutions



Permanent magnet synchronous motors

United Nations | Department of Economic and Social Affairs

- Environmental challenges require integrated responses drawing on engineering, urban planning, project management, and policy making
- Education system needs to produce problem solvers and innovators → software and hardware solutions for transformative change
- Just green transition including decent jobs and impacts along supply chains.
- Lifecycle approach to innovation important → business decisions to also consider ethics, health, environmental and climate impacts, and other environmental impacts.
- Ethical considerations integral to technology development
- IEEE and UN should deepen collaboration and partnerships to advance environmentally compatible technology solutions

IEEE TechEthics

IEEE

Next Steps

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE

Attendee Feedback

- This is an important method to increase awareness.
- This was a great event. Keep the conservation going.
- The discussion after the talks were most useful and engaging! It was very interesting to hear the speakers' perspectives!
- I think opportunity should be given for participants to engage
- As always too little time to discuss participant's questions and comments
- Excellent choice of speakers--all with deep knowledge and fresh perspectives. It was good to see speakers from a variety of fields. It is important that we are able to look at what we are doing with a critical eye. Having speakers from many disciplines definitely helped with that. I would love to hear a follow on conversation that takes the issues a bit deeper. One of the best webinars I have attended this year (and I have been to a lot of them!).

Proposed next steps

Keeping the conversation going

- Continue as series of bimonthly virtual events between STI Forums (July, Sept., Nov., Jan., March)
- Restructure format to allow for more context, discussion and action
  - Brief introductory talk/keynote to set the overall context for the event
  - Session with technology talks in various categories (industrial, commercial, etc.), followed by moderated discussion with speakers
  - Panel discussion delving into ethical and policy-related matters
  - Breakout sessions/working groups allowing attendees to formulate follow-up actions (perhaps along same categories represented in technology session) – AND/OR – Session with UN & IEEE speakers briefly providing engagement opportunities, followed by breakout sessions with each of the speakers
- IEEE TechEthics will continue to coordinate involvement from other IEEE groups
  - Collaborators, so far: IEEE Brain Initiative, IEEE Engineering in Medicine & Biology Society, IEEE Entrepreneurship, IEEE Humanitarian Activities Committee, IEEE Power & Energy Society, IEEE Standards Association, IEEE Smart Village
- Rotate UN collaborators for each event based on topic/availability
  - IEEE TechEthics has previously collaborated with UN-MGCY and ILO on other events

United Nations | Department of Economic and Social Affairs

IEEE TechEthics

IEEE

Questions? Comments? Ideas?

United Nations | Department of Economic and Social Affairs

IEEE TechEthics™

IEEE