# An Update on COPE Activities

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Prof. Rekha Labade provided a brief report on IEEE Antennas and Propagation Society (AP-S) Committee on Promoting Equality (COPE) activities in Region 10, at the AP-S Amrutvahini College of Engineering, Sangamner, Chapter. Through a COPE project, the Chapter donated virtual reality (VR) headsets to the Sangram Niwasi Muk Badhir Vidyalaya school, one of the prominent institutes in Maharashtra, India, working with hearing-impaired and mentally challenged children neglected by society. The school was established on 5 September 1984 and began with 35 students, a total that has risen to 80. Classes are conducted from first grade through eighth grade.

The main objectives of Sangram and similar schools are

1) to bring all hearing-impaired and mentally challenged children with different abilities into the "educable spectrum"
2) to teach the general public to accept and respect people with different abilities
3) to make children with different abilities a contributing part of society and help them live with dignity.

AP-S COPE provided US$2,000 for the VR headsets, which were presented during a ceremony on 19 September 2022 at the Sangram school. The event was led by IEEE student volunteers Rahul Khatode, Rushikesh Khatode, and Sangita Balu Jorvekar, final-year students in the Department of Electronics and Telecommunication, Amrutvahini College of Engineering, along with Prof. Labade, IEEE Branch counselor (Figure 1).

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## EDITOR'S NOTE

As 2022 comes to an end, we seem to have begun emerging from the global COVID-19 pandemic, from which we successfully learned and acquired new methods and norms and continued to make strides. IEEE Antennas and Propagation Society Committee on Promoting Equality projects that received funding are making good progress, while new projects are in the pipeline.

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**FIGURE 1.** Students at the Sangram school try the new VR headsets. Back row, from left: Anand Alle, Rushikesh Khathode, Sangeeta Jorvekar, Prof. Rekha Labade, Vipul Pancha, Rahul Khatode, and Sanjay Misal.

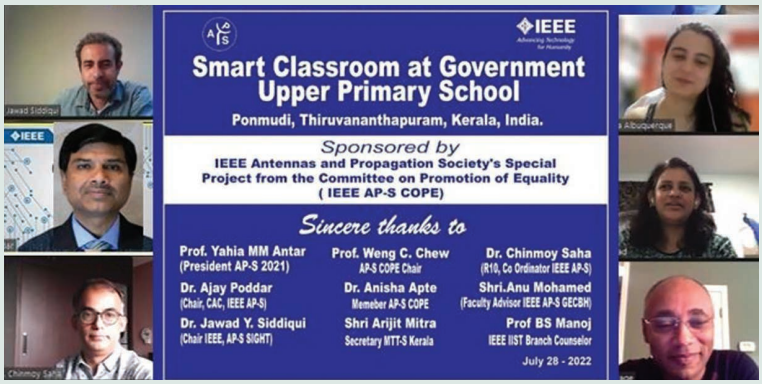
## COPE PROJECT ACTIVITY: G.D. GOENKA PUBLIC SCHOOL PURNEA

Education is the visa to the future, for tomorrow belongs to those who prepare for it today. Dr. Ajay Poddar, AP-S COPE cochair, visited G.D. Goenka Public School Purnea on 2 August 2022

to address and educate the children and engage the teachers in COPE (http://aps-cope.org/), IEEE Special Interest Group on Humanitarian Technology (SIGHT) (https://sight.ieee.org/), and IEEE Smart Village (ISV) (https://smartvillage.ieee.org/) project activities (Figure 2). The school is situated in a remote district of Bihar State, India, bordering three countries (China, Nepal, and Bangladesh). It opened in 2018, and in a very short period of time, about 1,500 children enrolled for a high-quality education focusing on the importance of science, technology, engineering, and mathematics (STEM).

With a science and humanitarian activity-based curriculum and through subsidies to underprivileged students, the school instills in children a sense of responsibility to give back to society. Dr. Poddar emphasized the importance of science and the promotion of technology that can help remove inequalities in gender, race, and geographical location. The goal of AP-S COPE is to reduce inequality by 1) disseminating knowledge via Society Chapters, 2) transferring technological know-how through the ISV program, and 3) emphasizing STEM. Dr. Poddar highlighted the importance of collaborative technology together with productive trade that can help equalize wealth around the world.


**FIGURE 2.** The education session at G.D. Goenka Public School Purnea.




(a)

(b)

**FIGURE 3.** (a) The dedication of the smart classroom at Government Upper Primary School. (b) The "Fun With Magnetism" interactive demonstration session.

## SMART CLASSROOMS IN UNDERPRIVILEGED SCHOOLS

There is always a spectrum of opportunity, even in difficult times, including prolonged COVID-19 lockdowns, from which there were a lot of positive takeaways. One was the highly effective and successful remote education process through "smart facilities." The AP-S Indian Institute of Space Science and Technology (IIST) and Government Engineering College (GEC), Barton Hill, Student Branch Chapter (SBC) conceived and implemented two smart classrooms in 1) Government Upper Primary School, Trivandrum, India, and 2) Asananagar High School, Nadia, India. The AP-S COPE committee approved the proposal to establish the classrooms, which was jointly submitted by Prof. Chinmoy Saha, IIST, and Prof. Anu Mohamed, GEC, on 5 September 2021, after an online presentation (Figure 3).

The proposal included a smart TV with a direct-to-home connection via a set top box, subscription to children's and educational content, webcam, and associated electronics for remote education. The smart classroom at Government Upper Primary School was inaugurated by Dr. Y.V.N. Krishna Murthy, IIST, in August 2022, in the presence of Prof. Jawad Y. Siddiqui, AP-S SIGHT Committee chair; Prof. B.S. Manoj, IEEE IIST Branch counselor; Dr. Saha, AP-S Region 10 coordinator; Dr. Deepti Das Krishna, AP-S Kerala Chapter chair; Dr.

Usha Krishna Murthy; Shri Arijit Mitra, IEEE Microwave Theory and Technology Society Kerala Chapter secretary; Prof. Mohamed, AP-S Kerala Chapter vice-chair, and Ms. Simy (Figure 4).

A plaque acknowledging the contribution of Prof. Weng C. Chew, AP-S COPE chair; Prof. Yahia Antar, AP-S 2021 president, 2021; Dr. Poddar, AP-S Chapter Activity Committee chair; Prof. Siddiqui, AP-S SIGHT chair; Dr. Apte, AP-S COPE Committee vice-chair; and local organizers was mounted by school authorities and unveiled by Dr. Krishna Murthy. The inauguration of the smart classroom was followed by an interactive demonstration session, "Fun With Magnetism," with the students, conducted by AP-S IIST and GEC student volunteers (Figure 3).

The smart classroom facility at Asannagar High School was unveiled on 22 July 2022. Dr. Saha and Prof. Siddiqui (who appeared remotely) inaugurated the classroom in the presence of Shri Manojit Biswas (the school principal), Shri Subhas Chandra Pal, Shri Samar Biswas, Shri Ashish Saha, Shri Chittaranjan Saha, Shikha Saha, and almost 100 students (Figure 5). Dr. Saha delivered a short presentation about AP-S SIGHT and AP-S COPE. In addition to regular use of the facility by school authorities, AP-S IIST and GEC student volunteers are conducting various remote lectures and learning sessions for the students.


**FIGURE 4.** The inauguration of the smart classroom at Government Upper Primary School.


**FIGURE 5.** The opening of the smart classroom at Asannagar High School.

## COPE FUNDING REQUEST DEADLINE

AP-S COPE aims to fund projects that provide good use of IEEE expertise exhibiting a strong technological component, with clear engagement with the community, indicating that a proposed solution is both desired and feasible. Established relationships with stakeholders who will be involved in a project should be documented and submitted in addition to an implementation plan with a clear, detailed, and credible project assessment matrix and a budget. Proposals should demonstrate combined experience to credibly execute a project, identify and address potential risks, and show that the project would have a real tangible impact. If a proposal misses the mark on two or more of these areas, it might not be ready for funding.

### *AREAS OF FOCUS*

AP-S COPE is prioritizing an immediate impact on poverty and inequality reduction through the following project areas:

- upgrading of marginalized populations
- STEM education for marginalized populations
- information and communications technology for underserved populations
- sustainable power sources for underserved populations
- water, sanitation, and hygiene for underserved populations.

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the terror of the false smoke alarm at 2:00 a.m. has ended.

DSC provides a full line of wireless detector and security products. So far, my installation has operated flawlessly. If you are looking for such a system, I recommend that you consider their products.

## A MUNDANE USE FOR ALEXA

Amazon.com's Alexa has been advertised as some version of the ultimate personal assistant. Its ability to respond to natural-language inquiries combined with its artificial-intelligence ability to search the Web for information is indeed impressive. However, with Echo Dot Alexa devices selling as low as the US$32–$40 range, it becomes reasonable to use the device for a much more mundane purpose: as an intercom. I have purchased and tried various intercoms for use in our home. These have included wireless versions operating in the 400-MHz, 900-MHz, and 2.5-GHz bands as well as wired versions that used data-overpower-lines to communicate. The wireless versions suffered either from interference from other units in use by our neighbors (in spite of multiband operation) or an inability to provide coverage over the whole house. The wired units had unacceptable levels of noise.

**With Echo Dot Alexa devices selling as low as the US$32–$40 range, it becomes reasonable to use the device for a much more mundane purpose: as an intercom.**

The solution was to buy an Echo Dot supporting Alexa for each major location in the house. The Echo Dot uses your existing Wi-Fi network. Surprisingly, it is able to operate in a very robust fashion even when the Wi-Fi signal is quite weak. It has the ability to "broadcast" a message to all other Alexa devices or to a specific, specified device. This system works very well as an intercom. Of course, it has many more capabilities.

Installation is quite simple. There is an application that needs to be downloaded to your smartphone, and it then takes you step-by-step through the installation process. There are a number of settings that affect privacy, including whether you want Alexa to preserve recordings of conversations and requests. The installation guide provides links to very complete discussions of the privacy implications of the various settings. I suggest you read these before you go through the installation process.

Using an artificial-intelligence-based personal assistant as a simple intercom may seem like "overkill." However, given the excellent performance of the Alexa devices and their very competitive cost, it certainly made sense to me.

## REFERENCES


[1] M. Ahrens, "Smoke alarms in US home fires," National Fire Protection Association, Quincy, MA, USA, Feb. 2021. [Online]. Available: http://www.nfpa.org//-/media/Files/News-and-Research/Fire-statistics-and-reports/Detection-and-signaling/ossmokealarms.pdf

[2] Digital Security Controls. Accessed: Sep. 20, 2022. [Online]. Available: www.dsc.com


# COPE CORNER

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Reports must be submitted to the AP-S at the end of every calendar year, indicating the project status and utilization of funds. Expense vouchers should be included as supporting documents for audits. The "APS COPE Project Budget Template 2022" should be submitted during the application process, as should an expense report at project completion. Fund utilization should be clearly indicated. AP-S Chapters/Joint Chapters/SBCs may submit multiple proposals. Proposals are subject to review and scrutiny, and project funding will not exceed US$3,000 for any year.

For additional funding, groups are encouraged to submit proposals to AP-S SIGHT and the AP-S Chapter Activity Committee. AP-S Chapter officers/members can fill out and submit AP-S COPE "Special Project Funding Request Form 2022" at https://forms.gle/XwDUrDtZSkYojE35A. If Google Forms are not available in your region, you may use "AP-S Special Project Request Form MS Word::PDF," found on the AP-S website (https://www.ieeeaps.org). Chapter officers can submit write-ups, photos, and videos of COPE events to be uploaded to the COPE website (https://www.aps-cope.org) and to be published in the "COPE Corner" column.