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Newsletter Editor: Luis A. Tatis

The IEEE MOVE truck is deployed to respond to hardest hit disaster areas that frequently have no power or communications. MOVE can quickly set up temporary operations and provide the power and communications required to initiate services to the people affected by the disaster. MOVE is staffed by a network of hundreds of IEEE volunteers who cross train with the Red Cross to provide technology and services at disasters. IEEE volunteers designed, maintain, and operate the truck. When not at disasters, IEEE MOVE provides public outreach and STEM

education at schools, universities, public events and IEEE events. The large truck draws interest to IEEE from over 50,000 people annually. For additional information, visit move.ieeeusa.org.



MOVE News by Loretta Arellano

The MOVE team has been very busy in 2023. We have been supporting various conferences and events and we also supported the Mississippi tornados in late March. The MOVE USA team assisted the MOVE Puerto Rico team with their antenna tests and successfully communicated between municipalities around the main island of Puerto Rico. Read about all these activities in this newsletter.

Hurricane season runs from June 1 through November 30. In preparation for this season, both trucks have been getting ready by conducting their normal maintenance checks and some upgrades. An operations training class was held this spring and a driver class was held in early June so that we have enough team members to support either truck when called upon.

The MOVE leadership team held a strategic meeting in May to discuss ways to improve our programs. We have many programs that we'd like to support but we need more volunteers. You will see many calls for volunteers in this issue – please consider joining our team.

We continue our monthly Tech Talks, and we have exciting speakers lined up. Stay in touch by making sure you are on our distribution for meeting announcements. Sign up at <https://bit.ly/MOVE-SIGNUP>

MOVE is supported by donations. Please consider a donation today to assist your fellow IEEE Volunteers as they respond to those in need. Visit <http://bit.ly/DONATION-MOVE>.

A special section is included on MOVE Puerto Rico and India as both are doing excellent work.

MOVE 2019 ASAE
"Power of A" Gold Award



IEEE Foundation

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Program**

MOVE NEEDS YOUR SUPPORT

MOVE VOLUNTEER HIGHLIGHT

Volunteer Highlight

By Timothy Troske

I am a Senior IEEE member, having joined while in college 42 years ago. I serve as the Lead of Operations for the MOVE-1 truck in San Diego, CA. I am also a member of the MOVE Network Operations support team. I have a Bachelor of Science Degree in Electronics Engineering from the University of Minnesota, and a Master of Science Degree in Systems Engineering from the Naval Postgraduate School.



I was employed for 33 years at the Naval Surface Warfare Center in Port Hueneme, California. I specialized in the development, testing, and in-service engineering of numerous US Navy shipboard radar, missile, and combat systems. Starting as an entry-level radar systems engineer, I served in positions of increasing technical and managerial responsibility within the Port Hueneme Division, finishing in 2018 as Technical Director and Senior Executive of the Division. I am a certified Lean Green Belt and certified in project management.

I served as Chief Information Officer of CBC Federal Credit Union in 2018-2019. I directed all aspects of the credit union's information systems, information security, and facilities operations. I also served on the credit union's board of directors from 2016-2018, sitting on the financial governance and information security committees.

I have been a MOVE volunteer for one year. I joined MOVE to apply my technical talents to helping others in need, and to encourage youngsters to pursue science, technology, engineering, and math careers. I like working with my hands, both on the truck systems as well as the generator power, satellite, and network systems. It allows me to directly exercise the skills I developed in my engineering career.

During the year I deployed as a driver with both MOVE-1 and MOVE-2 trucks. I supported three MOVE-1 outreach events with Bill Torre at IEEE conferences in California, and deployed with Jay Diepenbrock in MOVE-2 to support the American Red Cross disaster relief operation after the Eastern Kentucky Floods.

During the disaster relief operation in Kentucky, I was proud to be part of the huge team of American Red Cross and charitable organization volunteers, who helped get the flood victims started in recovery. The combination of MOVE-2 capabilities and our skills were valuable to provide power and telecommunications to Red Cross shelters and outreach stations. I was impressed by the institutional scope, reach, and responsiveness of the Red Cross, and was especially impressed and humbled by the human talent that the Red Cross brings to helping those in need - and we all are volunteers.

I have enjoyed making new friends in MOVE. We share a passion for developing sound technical solutions, and for maintaining the readiness and relevance of MOVE trucks and systems. It is fun to drive, maintain, and improve MOVE-1. I also enjoy being on the network team – we have installed and configured two new network installations in the past year. I look forward to applying new technologies and developing new ways of delivering MOVE capabilities, and I look forward to my next MOVE deployment.



move.ieee.org/

MOVE WEST

IEEE MOVE WEST – 2023 Off to a Great Start!

By Kathy Herring Hayashi



MOVE-1 at 2023 IEEE Region 6 OpCom in San Francisco Tom Coughlin, Kathy Herring Hayashi, Kathleen Kramer and Tim Lee

Region 6 OpCom – The Region 6 OpCom was held on Feb 3-5 in San Francisco. Tim Lee provided an overview of the MOVE WEST program followed by a tour of the MOVE-1 truck which parked outside the venue. Region 6 members from Hawaii, Alaska, Utah and more areas of the region were able to see the truck, and many were interested in how they could be involved



Kathy Herring Hayashi, IEEE Region 6 Director, presenting 2023 MOVE medallions to Tom Coughlin, Tim Lee, Tim Troske, Ken Pigg, Jill Gostin, David Snyder and Bill Torre

Sponsors – Thank you to our many Region Donors: IEEE Region 6, IEEE San Diego Section, the SCV Consultants network, Qualcomm, Boeing and many individual IEEE contributions! Please consider being a donor today.

Volunteers are vital to the MOVE Initiative, and we are glad to recognize those amazing volunteers supporting MOVE WEST.



R6 OpCom Awards Ceremony
Tim Lee, Bill Torre, Kathy Herring Hayashi and Kathleen Kramer

San Diego Section Awards –

On January 21st, the San Diego Section held their annual awards Banquet at the University of San Diego. At this event, the section past chair, Gabe Alcala, recognized member Bill Torre for his leadership of the MOVE



WEST Operations team. After the awards program, Kathy Herring Hayashi and Bill Torres provided an overview of the MOVE Initiatives to the San Diego IEEE members.

MOVE OPERATIONS

IEEE MOVE Operations

By Grayson Randall

The MOVE Operations team has been very busy. We supported several outreach events culminating recently in the Atlanta Science Festival. While in Atlanta, MOVE was requested at the Mississippi tornadoes. The truck was moved to Birmingham, Alabama where we changed crews before deploying to the disaster.



While deployed, the MOVE Operation teams provided support to the deployed teams.

The **Weather team** provided daily weather updates. At one point, there was a significant concern for additional tornadoes and the MOVE truck was moved to Red Cross Headquarters in Flowood Mississippi away from the danger. The weather team played a key role at this deployment in keeping the truck and team safe.

The **Networking team** monitored the activity at the MOVE truck. As we have Cisco Meraki equipment on our trucks, our network system administrators can be located anywhere and monitor and modify the networks from a cloud-based application.

The MOVE **maintenance team** was monitoring the deployment and provided feedback on some questions that the drivers had. Upon returning, we found some metal in a rear tire. The maintenance team had the tire repaired and the oil changed in the truck and generator so we are ready for the next deployment.

The IEEE MOVE **Radio Club** (IMRC) was in service and monitored the deployed teams in the field. IMRC has an internally developed cloud-based logging system where MOVE ham radio operators can update the tracking log and provide support for the deployed teams. The IMRC utilizes Digital Mobile Radio (DMR) to support communications between the trucks, deployment teams, and all our IMRC members world-wide.

The Operations teams will be supporting several upcoming outreach events coming up in the next couple of months. This includes events on both the east and west coasts. As our disaster deployments increase in number and duration, and our requests to support outreach events continue to grow, IEEE MOVE continues to need more members to support our operations. You can support our program in many different ways: deployment in the field, hands on support at the MOVE truck home base, or virtually on our support teams. If you have an interest, please contact Mark Torres mgtorres@ieee.org to get additional information on how you can be involved.

MOVE SUPPORT TEAMS

Operations Team

IEEE MOVE Operations (Con't)

By Grayson Randall

I also want to thank **Francis Grosz** for recently accepting the chair position for the weather team. Special thanks to Tim Forrest, the founding chair of the weather team and for all the work he does for MOVE.

Tim Troske has accepted the chair position of the Operations' Network team. Tim is also the West Coast Operations lead. Tim is taking over the lead role from Grayson Randall who is working on a variety of strategic MOVE projects.

June 1st is the beginning of the Hurricane Season. If you live in areas that are impacted by hurricanes, please have a hurricane plan in place. It could save your life. And if you live in areas with tornadoes, please respect Tornado Warnings seriously. These are life threatening events.

Thank you to all our Operations team leads and the many volunteers that make this program successful.

Call for Volunteers

by Loretta Arellano

The MOVE International Community Outreach program is looking for qualified volunteers who not only have a deep passion for humanitarian work but also the expertise, wisdom and time to commit in support of our program. As we are in an expansion phase of this IEEE-wide initiative, we are primarily seeking candidates for leadership positions of our important committees. We are looking to engage people with developing-world field experience to form and head working groups tasked to pursue the wide variety of the MOVE International global goals.

We'd love to learn about your passions, skills, interests, and volunteer time to explore how we can work together to find a good fit for you in our program.

If interested, please visit <https://bit.ly/MOVE-SIGNUP> to complete our MOVE volunteer form.



NCEM's Exercise

IEEE MOVE's Testing during NCEM's Exercise

By David Green



MOVE-1 Truck, and team (Danny Briggs, Fred Curtis, Dennis Peck and Bill Torre, not shown)



Jay Diepenbrock inside MOVE-2.

The IEEE MOVE team held a systems' test in conjunction with the North Carolina Emergency Management (NCEM) Exercise on May 9, 2023. This exercise was an excellent opportunity for MOVE to test out its systems and have some interaction with the North Carolina Emergency Management team. The exercise engaged the MOVE-1 and MOVE-2 trucks, the weather team, and the Radio Club. The Network, Communications, and Leadership Teams provided support during the planning of the event.

The event consisted of 4 phases:

- Preliminary phase, where weather forecasts were generated by the weather team
- Phase 1, where the trucks operated in their parked locations but under conditions that might occur on initial deployment (no communications via the cellular network, communicating through satellite, and MOVE-2 used a generator for power).
- Phase 2, where the trucks operated in their parked locations but under conditions that might occur later during the deployment where the cellular network was also available.
- Phase 3, where the trucks operated in their parked locations without the satellite but continued using emergency power and only the cellular network for communications.

Throughout phases 1 to 3, the Radio Club would operate on MOVE1 talk group with a Net Monitor, Test Director and other club members who would be online to assist. The Radio Club was also prepared to receive SMS messages should the DMR radio capability need supplementing. A WebEx session was also hosted by the Radio Club to provide a viewing opportunity.

During phases 1 to 3, the truck teams ran a collection of tests checking out the DMR radios, the various WIFI channels that can be active during a deployment, made an amateur radio contact through a repeater, checked the cloud view of various truck systems, the Viper Radios, sent WinLink messages, etc. The event lasted for approximately 5 hours.

The following MOVE Volunteers participated in the exercise:

MOVE-1	Bill Torre*, Fred Curtis*, Danny Briggs, Dennis Peck*
MOVE-2	Jay Diepenbrock*
Radio Club	Andy Moorwood*, A J Burke*, Ira Arman*
Weather	Jason Luze, Francis Grosz*
WebEx & other support	Mark Torres*
Planning	David Green*
Other support	Grayson Randall*, Bill Ratcliff*, Tim Troske

* Member of the Radio Club

Amateur Radio Emergency Service

Amateur Radio Emergency Service (ARES) Activity Day Participation

By Bill Torre

The Amateur Radio Emergency Service (ARES) consists of licensed amateurs, who voluntarily register their qualifications and equipment with their local ARES leadership, for communications duty in the public service when disaster strikes. Each year, ARES has an activity day to practice emergency communications using amateur radios in the field, without any dependence on utility power or other standard resources. The purpose is to establish and test communication standards in preparation for major disasters where normal communication systems are not available.

This year IEEE MOVE representatives Danny Briggs and Fred Curtis set up a station and participated in the Activity Day event held in San Diego, CA at the Kearny Mesa Recreation Center. They demonstrated Winlink on FM using both VHF and UHF radios. Winlink is a form of email that can be transmitted between stations without reliance on local internet. Danny and Fred contributed by displaying their IEEE MOVE colors and responding to many questions from people interested in the IEEE MOVE program.



Want your IEEE Society to support MOVE?

Possibilities include (depending on level)

- Sponsor a Joint STEM event
- MOVE truck at your conference
- Your Logo on MOVE web page
- Facebook post featuring your society
- Your Logo on the MOVE truck

The MOVE program is funded by donations to the IEEE Foundation "MOVE fund." Help today! ieeefoundation.org/move

For more information, contact merandall@ieee.org

MOVE WEST TEAM

MOVE TRAINING PROGRAM

Training

By David Sewell

The MOVE training program continues to progress and get more volunteers familiarized with the program. The people taking the MOVE trainings fall into three categories:



- A. Those who want to actively deploy and serve on the truck either as a driver or as a team member. Those who want to serve the MOVE program by supporting its mission behind the scenes performing the vital support roles that make the truck deployments possible:- Maintenance, STEM, Training, Radio, Networking, Engagement, Outreach, and Weather.
- B. Those that have a genuine interest in the program and want to know about what we do so they can gain more knowledge and share our incredible work via the power of 'word of mouth' but are not interested or able to become actively engaged in the MOVE program. This last group is comprised of potential donors and our IEEE colleagues who help maintain vital strong interest and support for MOVE.

Training has a part in all of this as all our trainings are open to anyone. We recently finished our most recent 3-session operations training, which provides a thorough overview of the MOVE program. While anyone can join this training, the specific purpose of the training is to be the initial training for our new team members as well as existing team members who want to get a refresher and/or updates.

Following the operations training, our training and development coordinator, who is also a Red Cross Disaster Services Technology (DST) Chief, taught over two sessions of the basics of serving on a Red Cross Disaster Operation for the first 48 hours of starting an operation from a technology standpoint. These classes cover the DST Overview, Customer Service, and the First 48 hours of the operation.

The other Red Cross DST classes (Technology Information Management Systems, Computer Operations, Networking, and Communications) will be taught in the future. We have our MOVE driver's training scheduled for June. This is a five-day training designed to get new driver's certified to deploy on disaster operations as the driver of MOVE-1 or MOVE-2. The driver's training is open to candidates in any part of the country, but we want to especially target students in the central part of the country as that is the area where we want to expand the program next.

Finally, every month we have a different speaker in our Tech Talk series. This is a chance to feed our technological side by bringing a variety of speakers to present both topics that directly apply to utilizing the truck and to learn about very interesting technology topics. These take place on the 4th Tuesday of each month from 7-9 PM Central Time. Please watch **the IEEE MOVE Facebook page**, our **website**, and **vTools** to sign up for future sessions.

STEM/Public Visibility

MOVE2 - Richmond STEM events

By Walt Burns

On February 12th and 13th, the MOVE2 truck traveled to Richmond, VA for two events, crewed by Mark Torres and Walt Burns. The first was an all-day event held at the Dewey Gottwald Center at the Science Museum of Virginia. MOVE2 was on display outside one of the main entrances and was visited by young science enthusiasts of all ages. The wet weather put a bit of a damper on overall attendance, but word spread of our location, and several folks from the local amateur radio community also came out to view the truck.

The next day, MOVE2 paid a visit to the Virginia Commonwealth University Engineering Department, where both students and faculty enjoyed a quick tour. The IEEE Richmond Section Chair, Allen Jones, also stopped by for a look at the communications technology on MOVE2 as well as a discussion of the role of the MOVE program in fulfilling the IEEE mission of “Advancing Technology for Humanity.” We then departed for the return trip to our home base in Durham, NC. (See photo)



Pictured left to right, MOVE volunteers Walt Burns, Bill Guzek and Mark Torres, and Allen Jones, IEEE Section Chair.



Pictured left to right: Allen Jones, IEEE Richmond Section Chair, and IEEE MOVE volunteers Walt Burns, Mark Torres and Bill Guzek (Photos courtesy of Bill Guzek)

MOVE-2 goes to Atlanta

Jay Diepenbrock

Jay Diepenbrock and Walt Burns drove MOVE-2 from its home base in Durham, NC to Gastonia, NC on Monday, March 20, then continued to Peachtree Corners, GA outside Atlanta for a networking event sponsored by the IEEE Atlanta Section on Tuesday.



The event, part of the IEEE Awards Meetup Series, was held at the Atlanta Tech Park, and included short talks by Alessio Medda, Atlanta Section Chair, Robin Bienfait, ATP CEO, and some of IEEE Chapter Chairs in the Atlanta Section. Tours of MOVE-2 were conducted, with visitors including John McDonald, past President, and board member of the IEEE Foundation, (which funded the trucks' development and ongoing operations), and Theresa Brunasso, Region 3 Director as well as a number of others participating in the event.



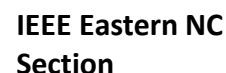
MOVE-2 goes to Atlanta (con't)

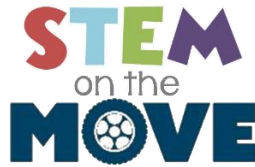
Other activities planned for later in the week included a visit to the Marietta campus of Kennesaw State University, and on Saturday the Atlanta Science Festival. Walt and Jay did some radio and housekeeping work on the truck between events.



The radios are now working better. On Friday, Brian Page from the Atlanta Section had arranged a visit to Kennesaw State University's Marietta Campus where the IEEE Chapter was hosting a 'Lunch n Learn' event at which they also conducted tours for three faculty members and a number of their students. The students had a lot of great questions about IEEE and the technologies implemented on MOVE-2.

Thanks to our Supporters





The Atlanta Science Festival's Exploration Expo was held on March 26 2023, at Piedmont Park in Atlanta, Georgia. The Exploration Expo is the culminating event of the Atlanta Science Festival, an annual celebration of the world-class learning and STEM career opportunities in metro Atlanta for curious kids and adults at venues all across the region.

The Expo featured 91 hands-on interactive science booths and live science demonstrations from local organizations, universities, and companies. Festivalgoers were able to control a robot with their brain, saw a Delta jet engine in person, and discovered the MOVE truck program. Visitors to our mobile exhibit explored elementary generators, took a tour of the truck, and learned about all the types of engineers who built the MOVE truck from the ground up.

The festival drew a large, diverse audience of all ages, ethnicities, and backgrounds, from professionals to novices, from science enthusiasts to the merely curious. It is estimated more than 35,000 attended the Expo and we gave over 700 tours of the truck!



MOBILE DISASTER RELIEF WITH MOVE

Mississippi Tornado Response – March 25

By Mark Torres

The Red Cross requested the IEEE-USA Community Outreach - MOVE team to assist in Mississippi after a devastating tornado struck on Friday March 24th. The MOVE-2 truck left the Atlanta Science Festival in Georgia, US on Saturday to head to the American Red Cross DRO Headquarters in Flowood, Mississippi with a 3-person crew John Balsam, Mark Torres and Jay Diepenbrock.

On Monday, Mar 27 the MOVE team assisted the Red Cross with configuration of cell phones and laptop computers before leaving for Greenwood, MS to aid in the region impacted by the tornados.



During the next 10 days the MOVE team was deployed to locations in Winona, MS and Black Hawk to provide power in areas until power was restored and to provide internet access to the public and the Red Cross at Community Outreach locations.

The path of the tornado through Black Hawk was obvious and the amount of damage was astonishing.



On Sunday, Mar 5th, MOVE 2 was again deployed to the small crossroads community of Black Hawk. Internet access and computer support was provided to the Red Cross Recovery Care Assistance personnel at the small K&M grocery which served as a staging point for water, snacks and clean up supplies' distribution. FEMA was also there speaking with victims of the tornado.

Region Events

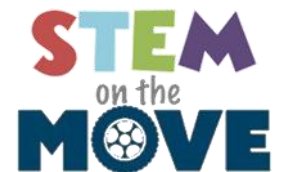
Region 3 SoutheastCon 2023

by Loretta Arellano

IEEE SoutheastCon 2023 was held April 14 - 16 in Orlando Florida. The MOVE team had a table display where we visited with current IEEE MOVE volunteers and provided information on the IEEE MOVE program to many prospective MOVE volunteers. Unfortunately, the MOVE 2 truck could not be accommodated at the conference hotel this year. That evening, at the banquet, Loretta provided a MOVE program update and presented IEEE MOVE volunteers present with the annual MOVE coin to thank them for their hard work and support.



Our own **STEM lead, Melody Richardson**, was awarded the Region 3 Educational Activities Chair Award for her exemplary service to R3 Educational Activities, particularly K-12 STEM outreach. **Congratulations to Melody.**



Hope to see you at [IEEE SoutheastCon 2024](https://www.ieee.org/conferences-events/seasouthcon/2024).

Public Visibility

MOVE at IEEE PES Grid Edge Technology Conference

Tim Troske

MOVE participated in the inaugural IEEE Power and Energy Society (PES) Grid Edge Technologies Conference, held April 11-12 at the San Diego, CA Convention Center.

The conference brought organizations, experts, policy makers, and technology providers together to explore solutions to enhance productivity, efficiency, and interoperability of the electrical grid for communities around the world. The conference explored the future of the electric grid to integrate renewable energy sources and accommodate the convergence of millions of diverse intelligent devices connected at to the grid edge.

MOVE-1 was on display in the convention exhibition hall and provided tours to showcase its capabilities. Nearly 100 conference attendees visited the truck and learned about its ability to provide internet and power during disasters in cooperation with the American Red Cross. Of relevance to the conference was a demonstration of the onboard solar cells and battery storage capability, providing a renewable complement to the truck's diesel electric power generator, along with the solar rechargeable battery packs for mobile phones.

MOVE volunteers Kathy Hayashi, Bill Torre, Tim Troske, and Mike Wilson were on hand to provide tours for MOVE-1 visitors. Also volunteering at the conference were new MOVE members Danny Briggs, Fred Curtis, and Steve Kurtzman, coming from the American Red Cross San Diego Chapter.

The MOVE team was proud to welcome IEEE President Saifur Rahman to the display on Wednesday.



Call for Communication Volunteers!!!

We are looking for dynamic, sincere members, who can devote their free time, energy, and services to ensure continuity of the IEEE MOVE initiatives. Volunteering is seen as an individual commitment.

Tools:

- Social Media Tools such as IEEE Collabratec and the Facebook Groups
- Canva platform for layouts and designs
- Microsoft Power Point for Monthly Tech Talks for flyers and Newsletters

The Volunteer Interest Form to become a communications Team Member is <https://bit.ly/MOVE-SIGNUP>

SPONSORSHIP and VOLUNTEERS

Donations from Cisco Systems

By Grayson Randall

We would like to thank Cisco Systems for their generous grants to IEEE MOVE. Cisco has supplied grants of Meraki networking equipment to MOVE and are utilized in our MOVE trucks and in the field. This equipment allows MOVE to manage and control all the internet traffic including WIFI and wired ethernet. Meraki equipment allows us to create private virtual LANs that enable us to give private channels to multiple organizations. This supports privacy and security on our networks. Because Meraki is cloud-based, all our IEEE network administrators can monitor and update the system virtually which is extremely important in supporting our deployed teams.

In addition to the networking equipment, Cisco Systems donated a disaster response vehicle to IEEE MOVE in 2021, which is now called MOVE-2. That truck was immediately placed in service and spent 40 days in Louisiana and 30 days in Kentucky only months after it was donated. It continues to be actively used on the east coast to support both disasters and public outreach.

IEEE MOVE has deployed to 33 disasters utilizing the Meraki equipment. This includes a grant of equipment for MOVE-1, another grant for MOVE-2, and a third grant for additional equipment for a deployable network in IEEE Region 5 as well as a response vehicle.

It is with **great appreciation** that we thank **Cisco Systems** for these generous donations.



Volunteer & Public Engagement

By Mark Torres

As we approach mid-year 2023, the number of MOVE volunteers continues to grow. As I said in February, my primary objective for 2023 will be to strengthen the engagement opportunities with our MOVE volunteers. My goal is to have every volunteer plugged into at least one activity that they can become excited about. We need passionate MOVE volunteers that carry out IEEE's Mission, "IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity."

The MOVE Volunteer and Public Engagement (VPEC) coordinates activities to recruit and engage volunteers. In addition to maintaining the Volunteer Roster, the team: 1) Welcomes new MOVE volunteers, 2) Coordinates onboarding and retention of MOVE volunteers, 3) Supports other MOVE teams with volunteer engagement activities, and 4) Supports MOVE activities at event and conferences. **If you are interested in joining the VPEC please contact Mark Torres at MGTorres@ieee.org.**

The MOVE Training and Development Committee has expanded the training offerings. The monthly MOVE Tech Talk Series continues to be well received. Both the MOVE Operations class and American Red Cross DST class were well attended. Please let David Sewell or me know if you need the links to Collabratec. A new training series is in development and will include more in-depth courses on Networking, Power, Amateur Radio, etc. If you are interested in helping with course development, please let David Sewell or me know. Please see David Sewell's article on ongoing activities in MOVE Training

All volunteers are urged to provide MOVE volunteer roster updates on your current situation, location or email address, by submitting updates on the Volunteer Interest Form >> <https://bit.ly/MOVE-SIGNUP>

THANK YOU FOR YOUR SUPPORT

DONATIONS

Support IEEE-USA MOVE with an IRA Charitable Distribution

By James Look

Assisting victims of natural disasters – that’s the mission of the IEEE-USA MOVE Community Outreach program. The program operates thanks to dedicated volunteers and the benevolence of donors. During 2022, MOVE volunteers deployed in response to five natural disasters dedicating more than 4500 community service hours to providing short-term communications, computer, and power solutions that made a significant impact on the lives and well-being of individuals affected by these disasters.



Contributing directly from your IRA account helps grow the impact and reach of the IEEE-USA MOVE Community Outreach program. It might also save you some taxes.

Here is how it works - each year, IRA account holders age 70 ½ and older can make qualified charitable distributions (QCD) of up to \$100,000 per year (and up to \$200,000 per year for married couples) to qualifying charities – like the IEEE Foundation for the IEEE-USA MOVE Fund – directly from the IRA plan. These distributions become tax free as long as they’re paid directly from the IRA custodian to the eligible charitable organization.

A key advantage of contributing directly from an IRA account is the tax benefit since QCDs are excluded from your taxable income. This giving method is particularly valuable for people with significant pre-tax assets in their IRA or anyone who doesn’t itemize their deductions. This means that your donation can go further in supporting the IEEE cause you care about.

Another advantage is that contributing directly from an IRA account is simple and hassle-free. Instead of having to write a check or make an online donation, simply instruct your IRA custodian to send the donation directly to the IEEE Foundation in support of the MOVE Community Outreach program. This can save time and effort, while also ensuring that your donation goes directly to the cause you want to support.

Your donation can be the critical difference needed to help individuals stay safe and support the on-site teams providing communication services during emergency deployments. By contributing directly from your IRA account, you will help ensure that this vital support is available when it is needed most.

It is also a convenient and efficient way to support a cause that is meaningful to you while potentially reducing your tax liability. Donations in support of the IEEE-USA MOVE Community Outreach program should be directed to the [IEEE Foundation](#) (EIN# 23-7310664). The IEEE Foundation, IEEE’s philanthropic partner where technology and philanthropy intersect, is a 501(c)(3) public charity in the United States. Visit the IEEE Foundation website to learn more about giving from your IRA and discover other ways to support IEEE-USA MOVE – www.ieeefoundation.org. To hold a personal discussion about giving, contact the IEEE Foundation at donate@ieee.org. You will be connected with one of the IEEE Foundation Development Officers.

The information on this article is for educational purposes only and is not intended as legal, tax, or investment advice. If you are an IRA QCD gift, consult with your own tax and legal advisors to determine the best options for you.

THANK YOU FOR YOUR SUPPORT

MOVE-1 at Red Cross Exercise

American Red Cross Southern California Regional Exercise IEEE MOVE Disaster Relief Support

The IEEE MOVE-1 disaster relief vehicle was provided in support of an emergency preparedness exercise conducted across the Southern California region on Saturday, June 3, 2023. This exercise simulated a earthquake along the Cabazone fault line and involved setting up evacuation shelters in five counties, including Riverside, San Bernardino, Imperial, Orange, and San Diego counties. The IEEE MOVE truck participated in supporting the evacuation shelter located at the San Diego County Emergency Operations Center in Kearny Mesa area. A pre-simulation debriefing describing the exercise was provided at 9 am. The IEEE MOVE truck was dispatched at approximately 10 am, and arrived at the Emergency Operations center at about 10:30 am. IEEE MOVE ARC DST members proceeded in setting up and distributing lap top computers. Only VHF DMR radios were used for communications since the exercise simulated loss of cell phone service. The truck satellite dish was deployed, ethernet cable was run from the truck to inside the shelter and ARC operations areas. Internet service was established along with Voice over IP communications. By 12 noon all systems were fully deployed and operational. Disaster simulations continued until approximately 3 pm, at which time communication systems were removed, stowed, and the truck returned to San Diego ARC headquarters.

IEEE MOVE volunteers included Dennis Peck and Bill Torre and worked along side fellow ARC DST members James Brauer and Billy Kelly.



ARC DST Southern California Regional Exercise Team Members, Bill Torre, Billy Kelly, Dennis Peck, James Brauer



San Diego DOC fully operational for the exercise

International MOVE is “MOVEing” ahead!

By Mary Ellen Randall

International MOVE is “MOVEing” ahead!

In this newsletter, Learn more about the **Antenna test**, volunteers who are obtaining amateur radio licensing and STEM events held in **Region 9 – Puerto Rico**.

In **India**, MOVE volunteers are providing **STEM training**, partnering with like-minded organizations, and conducting a **MOVEATHON**.

Disaster Awareness Training Program in Chennai

February 9 2023 - Disaster awareness training program was organised for **80** school students from **KRM PUBLIC SCHOOL**, Perambur, **Chennai**, Tamil Nadu by **10 volunteers** from **Sri Ram College Chennai**, Tamil Nadu



February 26 2023 - Disaster awareness training program was organised for **50 government school students** from Government Girls GirlsHigher Secondary School Kundrathur, **Chennai**, Tamil Nadu by **4 volunteers** from **Sri Ram College Chennai**, Tamil Nadu



Disaster Awareness and Climate and Sustainability workshop in partnership with VITM Bangalore

May 15-17 - 33 school students from 6-7 schools attended the Disaster awareness, Climate Change and Sustainability workshop for three days facilitated by a resource person. The camp was conducted for 3 days, 3 hours each day at Visvesvaraya Industrial and Technological Museum Bangalore

MOVEATHON / IDEATHON

By IEEE MOVE INDIA INITIATIVE MEMBERS

MOVE Outreach India is a collaboration between IEEE MOVE (Mobile Operations Vehicle) and IEEE India Council to provide emergency relief committed to assisting victims of natural disasters with short-term communications, and power solutions.

The aim and objective of this ideathon is to invite ideas from students and young professionals for providing such immediate relief in the face of natural disasters that India is particularly prone to – floods, cyclones, droughts, earthquakes and landslides

Ideathon Topics

- Each of the following topics can be considered to have two perspectives
 - Preventive– technology which can prevent such disasters from happening
 - Relief - technology which assists in providing relief after a disaster has occurred
- IEEE MOVE India's focus is on Technology for Disaster Relief and submissions are preferred in this area
 - However, exceptional submissions in the Preventive area may also be considered

Floods	Droughts	Earthquakes and landslides	Cyclones	Open*
<ul style="list-style-type: none"> Clean water Rescue Power Weather forecast Others ... 	<ul style="list-style-type: none"> Detecting ground water Water extraction Others ... 	<ul style="list-style-type: none"> Detecting life under rubble, ruins Rescue Power Others ... 	<ul style="list-style-type: none"> Weather forecast Rescue Power Weather forecast Others ... 	<ul style="list-style-type: none"> Open topics are to do with areas other than the four types of natural disasters Submissions may be conditionally accepted



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Target Audience

01	Undergraduate Students
02	Postgraduate Students and Research Scholars
03	Young Professionals

IEEE membership is not essential for participation



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Puerto Rico continues building capacity for disaster relief with communications test for the hurricane season

By Loderay I.M. Bracero Marrero, Chair MOVE International Puerto Rico

The MOVE Puerto Rico team has conducted exciting and great accomplishments these months. We conducted outreach events and talks, prepared our kits for the next hurricane season, launched the antenna test, expanded our collaboration network, and volunteers completed important training and certification to continue our mission.

In February, MOVE Puerto Rico represented MOVE International at the IEEE Meeting Series in New York where we were able to share the MOVE benefits for humanity in its various locations. In March, we had an outreach activity at the University of Puerto Rico, Río Piedras campus in which we interacted with Natural Science students and discussed the benefits of the IEEE membership, MOVE volunteer work, and WIE. Additionally, we participated in a MOVE Townhall sharing our accomplishments and experiences with other MOVE volunteers in India and USA. Lastly, we finished our first draft of the disaster technology procedure (DTP) for the kit inverters.

In April we relocated the kits to our own storage. In this space, we organized, inventoried, labeled, and checked our kits for the antenna tests and the hurricane season. During this month we had meetings with the universities and radio amateur colleagues who were participating in the upcoming antenna tests. In general, in April we organized all the planning for the antenna tests: car rental, branding items, agendas, letters, and more.

The antenna tests were launched from May 3-May 8, 2023. We hosted MOVE USA volunteers to conduct the antenna test communications in three locations. We rented two trucks to install the antennas and move the kits around the main island of Puerto Rico. The kit inverters were used to power each of the radios. Hence, we simulated a situation without power. The completed teamwork during the antenna test was a milestone and a wonderful opportunity to expand each volunteer's experience in our program. The importance of collaboration was also evident among the universities, radio amateur organizations, and all the attendees at the test. In summary, we all enjoyed this milestone as one MOVE International team. The next steps include publishing an article and evaluating the radio items to be added to the kits. Please, visit the complete article about this topic on page <https://move.ieee.org/>

MOVE Puerto Rico volunteers also continue to get trained: three finished their radio amateur technician course and two volunteers finished the training in the MOVE Operator class. We want to highlight the first MOVE Puerto Rico volunteers who obtained their radio amateur Technician and General licenses, Florencio Sáez, and Héctor Feliciano, respectively. Welcome to the team and congratulations! In summary, the recent months have been great in which we have grown as a team in the MOVE program. Puerto Rico volunteers are thankful to have the support of the IEEE MOVE International, MOVE-USA, Puerto Rico and the Caribbean Section and Western Section members, and Region 9 leadership.

Contact us at: move-puertorico@ieee.org

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Transferring the kits to the new storage: Florencio Sáez, Francisco Carrero, Jenifer Castillo, and Magdiel Mojica.



An example of the MOVE kit items



One of the antenna test teams and Polytechnic University at San Juan: Magdiel Mojica, Jay Diepenbrock, Butch Shadwell, and Heber Soto.



MOVE Volunteers Francisco Carrero, Jenifer Castillo, and Loderay Bracero, with one of the teams at Mayaguez, University of Puerto Rico: Frank Torres, Julio Ortiz, Víctor Huerfano, Amanda Soto, and Leyda Rios



Speakers of the antenna tests: Loderay Bracero, Butch Shadwell, and Jay Diepenbrock. MOVE Puerto Rico would like to thank you both for your time and teaching during the tests!



Successful Communications Using NVIS Antennas in Puerto Rico

By Loderay I.M. Bracero Marrero, Butch Shadwell, and Jay Diepenbrock

Last month, MOVE International Puerto Rico and MOVE USA successfully completed the antenna tests using the Near Vertical Incident Skywave (NVIS) propagation method. The team successfully communicated between municipalities around the main island of Puerto Rico. Dozens of volunteers from the IEEE, radio amateurs, professors, university personnel, and other colleagues participated in the tests at the three antennas locations: (1) the University of Puerto Rico Ponce, (2) University of Puerto Rico Mayagüez, and (3) Polytechnic San Juan.

Why is it such a significant milestone for MOVE International? First, the two antennas designed by Robert Merville and Butch Shadwell, both volunteers from MOVE USA, were successfully assessed showing outstanding performance. Second, Puerto Rico's Cordillera Central (mountain range) portrayed a great scenario to successfully communicate between sites using NVIS propagation without requiring repeaters. Lastly, the three antenna locations' elevation, weather, and land, use differences provided various scenarios where the antennas performed.

NVIS communications is a particularly good choice for this problem domain. The antennas are designed to send the main lobe of the transmitter power directly into the upper atmosphere. When conditions are right, that energy is reflected to earth in a cone shape covering a very wide area. All stations within that cone should be able to hear those transmissions and reply in similar fashion. Our tests in May showed that is the case for Puerto Rico. Even with large mountain ranges blocking the path between stations, clear communications were established between all three cities. This technology works without satellites, Internet, or repeaters, and can send voice or digital signals.

There were three main objectives for this testing phase:

1. To see if our antenna designs would function in the field as expected.
2. To find out if the radios selected for this test would provide adequate performance.
3. To see if there were other issues or phenomena that needed to be addressed to make this system reliable and simple to use.

As to the first objective, both antennas worked as expected, though each design had differing results at different locations. Approximately, the line distances (in miles) between sites were the following: San Juan-Ponce 45, Ponce-Mayaguez 37, and Mayaguez-San Juan 71. We suspect that this may be due to some local conditions, either geological or electromagnetic. The answer is unknown at this point but with further experiments we could find that choosing the antenna sites and how they are erected, may be more critical than expected, for optimal results.

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The uBITX radios we brought for the tests had issues. Though they seemed to have enough power and an adequate radio receiver, it became evident that they lacked proper modulation of the transmitted carrier. We tried changing the microphone at one of the sites and observed some improvement. Further study is needed to determine if these radios can be easily improved to meet our needs, or if an alternate design is required.

As for previously unknown phenomena, there were very few. We knew in advance the expected best times of the day to do this kind of transmission in Puerto Rico, thanks to previous experiments of local ham radio operators. Within those parameters, the systems worked very well. We tested to see if subterranean features could be affecting antenna performance by rotating each design 30 degrees and testing for Voltage Standing Wave Ratio (VSWR) and signal strength afterwards. In our locations rotation did not have a huge effect.

At this point there are two main areas of investigation needed. The first is to determine if the current transmitter can be improved to handle this system, or if we should move to a more expensive design. The second is to understand why the two different antenna designs varied significantly in performance at the different installations. All installations worked well during the peak operating hours, so that may not be a limiting factor, but it certainly needs further parameterization. Overall, these experiments proved that this solution has a very high probability of success for areas in need of low-bandwidth emergency communications. This milestone allows communication in case of a blackout (as experienced during Hurricane María in 2017).

Groups participating in these experiments included:

- MOVE Puerto Rico Volunteers, MOVE USA, and MOVE INTERNATIONAL
- Polytechnic University San Juan Electrical and Computer Engineering and Computer Science Department
- UPR Ponce Administration
- UPR Mayagüez Administration, Nursing School, and Red Sísmica de Puerto Rico
- KP4DOGS Group, Puerto Rican group of radio amateurs
- American Radio Relay League-Puerto Rico Chapter
- IEEE Puerto Rico and Caribbean Section and Western Puerto Rico Section

Contacts: move-puertorico@ieee.org ; move-usa@ieee.org



Mayaguez assembly crew



Team operating at San Juan Site