

IEEE Power and Energy Society Entity Annual Report 2020

Entity: Marine Systems Coordinating Committee (MSCC)
Website: <https://ewh.ieee.org/cmte/pes/msc/>
Chair: CDR Dwight Alexander, USN (RET), PE
Vice-Chair: Prof. John Prousalidis
Secretary: Prof. Federico Silvestro
Immediate Past Chair: Paul Bishop

1. Significant Accomplishments:

(Please explain why these are significant and include details and examples)

- Following discussions early in 2020 to disband the MSCC, there was a spark of interest noted suggesting a committee restart was warranted. The Committee was rebooted in October 2020, and the committee campaigned to re-connect with former members and recruit new members. Considering that the previous meeting took place in 2014 this was a major step.
- The Vice-Chairman and a Secretary positions were filled to help the Chairman get the MSCC restarted. In November 2020, MSCC attended in the PES Technical Council retreat meetings, and the list of representatives updated.
- Communication with other PES-technical and coordinating committees (and other organizations) has started since MSCC's charter aligns with their interests (see below); e.g., classification societies, International Organizations, other Institutes. Despite the ongoing pandemic and the MSCC members and stakeholders commitments, several meetings of organizational nature have taken place via Tele / WEB-conference tools, which have been efficient in facilitating communication.

2. Benefits to Industry and PES Members from the Committee Work:

(Provide specific examples and explain what the benefits are)

As a Coordinating Committee, MSCC provides the interdisciplinary expertise of marine electrical power engineering to the maritime industry (especially relevant now as increasing marine platform / vessel electrification is being incorporated to address a myriad of specific technical issues for platform / vessel performance) taking advantage of the work and outcome of other Committees more dedicated to general electrical engineering disciplines (e.g., T&D, ODSP). Certain standards closely coupled to the MSCC (e.g., IEEE-45 Series, IEEE 1662, IEEE 1709, IEEE 1826, and IEC/IEEE 80005) are well recognized by the maritime community as extremely useful, while new challenges are always emerging.

3. Benefits to Volunteer Participants from the Committee Work:

(Provide specific examples and explain what the benefits are)

The Volunteer Participants can both raise issues and work to develop solutions to marine electrical power problems. Despite the fact that most members come from the Industry and have less free time to devote,

their participation will prove beneficial due to the easy and efficient collaboration with other industry, academic and government experts around the world who share similar thoughts and face similar challenges in the maritime business.

4. **Recognition of Outstanding Performance:**

Dr. John Prousalidis and Dr. Federico Silvestro for their enthusiastic acceptance of the Vice-Chairman and Secretary roles for MSCC. They both have jumped into the roles to actively push committee restart efforts which is bearing fruit by the number of old and new members joining MSCC.

5. **Coordination with Other Entities (PES Committees, CIGRE, standards, etc.):**

As already mentioned, the “Coordinating” role of MSCC seems to be substantial and critical. There is a strong interest to face challenges related to electrical engineering in the marine sector (not necessarily limited to power but also to communication, control, cyber-security, big-data, IoT, blockchain, etc.) that many entities have expressed their interest to either attend via delegates (e.g., classification societies like ABS, LRS, RINA, BV, DNVGL) or sign an MoU or similar cooperation agreement and co-operate officially with MSCC (e.g., EMSA, IMarEST, ISO/TC8).

Updating the PCIC IEEE 45 Series has commenced (updating IEEE 45.2, Control Systems recently commenced). It is anticipated that the updated version of IEEE 45.2 will be balloted before 2021 ends. Moreover, there is a strong interest in IEEE/IEC 80005. To this end, collaboration with IEC committees will be sought.

6. **New Technologies of Interest to the Committee:**

Technologies related to environmental friendly shipping such as:

- Smart grids in ships and ports,
- AC and DC ship-to-shore interconnection
- DC distribution in ships
- RES and energy harvesting techniques deployed onboard
- Efficient submersible interconnections (for islands, or for offshore and near-shore RES plants).

7. **Global Involvement**

PES is looking to increase involvement with members from Regions 8, 9 and 10 (Africa, Europe, Middle East, Latin America, Asia and Pacific). Please provide the following information.

Total Number of committee members	Officers from regions 8,9 and 10	Subcommittee officers from regions 8, 9 and 10	Subcommittee members from regions 8,9, and 10
Officially 90 but about 45 active in 2020	The Vice chairman and the Secretary are from Region 8. In addition 4 new representatives come from Region 8	<i>Subcommittees have not been fully re-activated yet.</i>	<i>Subcommittees have not been fully re-activated yet.</i>

8. Problems and Concerns:

Continuing relevance and participation in MSCC activities will be driven by convening the committee on a regular basis to discuss relevant topics of interest to the members. To this end the MSCC will formally convene (about twice per year) via tele-/WEB-conference. Decoupling MSCC meetings from specific IEEE sponsored symposiums will ensure the maximum number of participants can attend. The WEBEX account provided officially by IEEE-PES will be fully exploited.

9. Significant Plans for the Next Period:

- Continue recruiting new members
- Set the framework of collaboration with other entities via MoUs
- Support the organization of the 2021 IEEE Electric Ship Technology Symposium (ESTS) more substantially (in collaboration with the ESTS Organizing and Technical Committee)
- Continue supporting IEEE 45 Series updates when coordination across IEEE communities is needed. In particular, 45.2 update has commenced in 2021.
- Trigger the discussions about new challenges which could result to new standards or updating existing ones

Submitted by:

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John Prousalidis (IEEE/MSCC Vice Chairman)

Federico Silvestro (IEEE/MSCC Secretary)

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