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IEEE EMC Society no longer supports iNARTE
August 2022

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I can't improve on the proposal put to the IEEE EMC Society Board at the EMC+SIPI Symposium in Spokane, in July/August 2022, copied below [with some of the feedback from that meeting added in BOLD \(like this\)](#):

Proposal to the EMC Society Board of Directors (Final Edit, 11 July 2022)

The EMC Society (EMCS) is the premier organization associated with EMC and EMI in all its many facets and strives to develop and stay on the cutting edge of technology to ensure the performance of a wide range of components, subsystems, and systems, as well as the health and safety of societies world-wide. Because of this, the EMCS has been dedicated to helping its members maintain a high level of knowledge and competency through a variety of means, including its ongoing national and international symposia, regional events, distinguished lecturer series, annual tutorials, and the Global University, offered at the annual symposia.

The EMC Engineer certification process was established by NARTE in 1990 to identify those with the necessary background and experience to be as certified EMC engineers. The original NARTE merged in 2012 with the Registrar Accreditation Board and Quality Society of Australasia (RABQSA), later known as Exemplar Global (EG). In 2016, EG and the IEEE EMC Society agreed to a Memorandum of Understanding (MOU), (attached), with the goal of enhancing the validity and value of the iNARTE EMC certification process.

However, since entering into the MOU, EG's EMC certification process has become less rigorous, raising quality concerns within the EMC Society. An ad hoc subcommittee of EMCS technical committee TC1 was established by the EMCS board in April 2022, to develop recommendations to strengthen the certification program.

The subcommittee drafted a letter to be sent from EMCS President Vignesh Rajamani to EG CEO Andrew Baines, expressing the EMCS's concerns. After reviewing the letter with the help of the IEEE legal staff, President Rajamani sent the letter to Mr. Baines. Mr. Baines's reply made clear that EG did not see a concern, and that in his view the certification program was the "sole responsibility" of Exemplar Global.

Given this background, the subcommittee recommends that the EMCS board take the following steps:

1. Terminate the current Memorandum of Understanding (MOU), because:
 - a. The existing MOU (attached) is interpreted by EG to mean that EG has "sole responsibility" for the accreditation program.
 - b. THE EMCS understands the meaning of the MOU to be that the review and relevance of the qualifying exam to be the purview of the EMCS, but EG is now laying claim to it being its "sole responsibility."
 - c. Therefore, the requirements of the MOU, as signed, are not being met and it is clear that EG does not intend to abide by the MOU requirements with respect to EMCS involvement.
2. Select an accrediting body to act as an administrative agent and certifying body that would be responsible for certificate recordkeeping, collection of fees, planning examination dates

and locations, conducting the initial examination and collecting the information for subsequent recertification, and promoting the value of certification.

3. Assume responsibility for the certification requirements and examination format and questions. Establish a question database for the exam within the EMCS, maintained by a standing committee of experienced EMC engineers appointed by the EMCS board. That committee would be responsible to assure questions are EMC-relevant and in step with current technology.
4. Establish basic certificate renewal requirements. Currently, only the payment of a renewal fee to EG is required, with no evidence of ongoing EMC activity, training, or employment.
5. Application and renewal fees are to be shared between the administrative contractor and the EMCS. The EMCS's share will defray the expenses incurred to maintain the examination database (a secure server, clerical staff to organize records, paying the people who create the questions, etc.)
6. Further, make clear to existing certificate holders, as well as the EMC community at large that the IEEE EMCS is longer associated with the current iNARTE certification program.

The subcommittee is researching alternate certifying bodies that we may wish to contract with to develop a certification program and is working on a revised qualification and examination process to be recommended to the EMCS board. Further, we know that changing or severing the relationship between the EMCS and EG will be a cause of concern for the engineers and technicians who currently hold certifications. For that reason, the subcommittee is also working on recommended steps to smooth the transition from the existing iNARTE program to one that is revised and improved. Please note that the name of the new program will not be iNARTE, but some yet to be determined program name that is consistent with IEEE branding requirements, and that should be trademarked to establish it as its own entity.

To assist the board in debating and making these changes, subcommittee proposes the following draft motions for your consideration.

Motion 1: The IEEE EMC Society will terminate its MOU with Exemplar Global, Inc., and formally end its association with the iNARTE EMC certification programs.

Passed -- there was broad agreement that this was the right move.

Note that actual termination of the MOU requires written notice to Exemplar Global Inc., 30 days prior to the actual termination date.

Motion 2: The IEEE EMC Society Board of Directors (BOD) will establish an ad hoc committee to develop a detailed proposal outlining a new certification for EMI/EMC engineers and technicians. The new certification will have requirements mirroring those of Professional Engineer (PE) licensing including education and experience requirements, a licensing exam, and continuing education requirements for renewal. The proposal will be brought to the board for consideration at its Spring 2023 meeting.

Passed -- the board agreed that is the logical next step.

Motion 3: The Board of Directors (BOD) directs the ad hoc committee established by Motion 2 to identify prospective certifying bodies that the EMCS could partner with to develop an EMC certification program. Additionally, the ad hoc committee will prepare a Request for Information (RFI) which can be sent to the certifying bodies at the direction of the Board.

**Tabled -- the board agreed this needs to be done, but thought it premature.
After Motion 2 is completed, the board will revisit Motion 3 to pursue these steps.**

Motion 4: The Board of Directors (BOD) directs the ad hoc committee established by Motion 2 to develop a roadmap that can be used to establish a new certification program consistent with the principles presented to the Board of Directors (BOD) in the current ad hoc committee's recommendations on addressing the situation with the existing iNARTE certification.

Tabled -- the board agreed this also needs to be done, but thought it was also premature.

When Motion 2 is completed, the board will revisit Motion 4 to review the roadmap.

The bottom line is that it's a go. The bylaws say appointments are to be made by the EMCS president, so Vignesh will soon begin that process. There was no dispute that the broader goal is appropriate and necessary.

Vignesh explicitly thanked our committee for the work to get us to this point, and I can only echo what he said.

iNARTE membership is a very big deal if you are working in the EMC industry in the USA, Korea, or Japan, but has never been adopted with any enthusiasm in Europe or the UK.

The 'Elephant in the Room'

Some senior E³ positions in companies and other organisations make continuing iNARTE membership a condition of employment, so the fact that (as the above proposal states): "...EG's EMC certification process has become less rigorous, raising quality concerns within the EMC Society..." means that the people in those positions may be not as competent or knowledgeable in E³ as their employers assume.

I understand that the phrase "...less rigorous...", in the above proposal, means that annual iNARTE recertification requires nothing more than paying the fee! There are no requirements at all for demonstrating any professional development activities, or passing any examinations (e.g. in new topics), such as are commonplace in institutions that license professionals.

This is worrying, especially when coupled with the fact that – in the committee's view (and, I am told, that of some senior EMC Society members, over several years) – the iNARTE examination has not been kept up to date over recent years that have seen massive developments in electronic technologies, plus massively increased adoption of electronics in all applications, including safety-related and safety-critical systems.

EMC and EMI have traditionally been regarded as little more than functional nuisances, but these days most of our lives, and livelihoods, depend on the correct functioning of increasingly-advanced electronics that are increasingly susceptible to EMI.

Visit <https://www.emcstandards.co.uk/emiemc-risk-management> for more on this issue, especially: <https://www.emcstandards.co.uk/why-do-we-need-an-ieee-emc-standard-on-managing> and: <https://www.emcstandards.co.uk/its-emc-jim-but-not-as-we-know-it-incompliance>.

Where such E³ professionals have responsibilities for products (e.g. aircraft), equipment, systems or installations for which EMI could increase functional safety; environmental; reputational; or other risks – their employers might be unwittingly exposed to huge financial and reputational risks under product liability laws.

The meaning of E³

E³ (sometimes written as E3) stands for **Electromagnetic Environmental Effects**, and embraces all EMC/EMI issues, including at least the following:

- Electromagnetic Compatibility (EMC)
- Electromagnetic Interference (EMI)
- Electrostatic Discharge (ESD)
- Electromagnetic Shielding
- Electromagnetic Pulse (EMP)
- High Intensity Radiated Fields (HIRF)
- Precipitation Static (P-Static)
- Indirect Effects of Lightning (IEL)
- RADHAZ (HERO, HERP, HERF)
- Electromagnetic Vulnerability (EMV)
- RFID Vulnerability to Electromagnetic Energy

Possible damages under Product Liability laws

In the EU, some Member States have limited the maximum liability in civil cases under the Product Liability Directive, to 70 billion EUROS. Yes, billions, not millions.

However, other EU member states, and the UK, have no upper limit on damages that can be awarded in product liability cases.

The USA also sets no upper limit on liability, under its product liability laws.

The possible damages are intentionally set high, so that even the largest organisations in the world have to take notice, and not treat paying legally-awarded damages as being just one of their many operational costs.

What next?

The “*...ad hoc subcommittee of EMCS technical committee TC1...*” mentioned in the above proposal, has discussed what should be done now that Exemplar Global’s iNARTE EMC professional certification is not supported by the IEEE EMC Society (EMCS).

At the present time, the idea of the IEEE EMCS creating a totally new professional EMC/EMI certification programme from scratch, in-house, is not finding many supporters due to its high costs of administration and long lead-times. It should, of course, more than pay for itself when up and running, but getting from here to there could take over 5 years.

The current idea, therefore, is that the IEEE EMCS would set up a panel of experts to develop new examination questions, and everything else would be administered by third-party training and certification providers. For example, the idea is to recommend a programme of study based on the comprehensive EMC/EMI training courses already run and kept up to date by:

Todd Hubing, <https://learnemc.com/>

Ken Wyatt, <https://www.emc-seminars.com/>

Doug Smith, <https://www.emcesd.com/>

Elya Joffe, <https://www.stopemi.com/about-3.html>

Keith Armstrong (me), <https://www.emcstandards.co.uk/emcacademy>

and others, to be decided.

3rd-party training and certification providers would administer the programme, including: organising and marking membership examinations; handling membership fees; supervising annual CPD, etc.

Exemplar Global apparently intend to continue with *i*NARTE despite losing all support from the IEEE EMCS. So, when the IEEE EMCS scheme is in place, it is expected to include special 'transitional examinations' for existing *i*NARTE members who want to join it.