

CAISEMS - project brief

Coordination & Alignment of Standards for Energy Efficient Electric Motor Driven Systems

20191125

Introduction

In order to lower market barriers for energy efficient Electric Motor Driven Systems (EMDS), to promote their contribution to sustainability goals and to improve the alignment and coordination of international standards of components that together are forming this EMDS (see Figure 1), IEC ACEE TG6 launched the project CAISEMS (Coordination and Alignment of Standards for Energy Efficient Electric Motor Driven Systems).

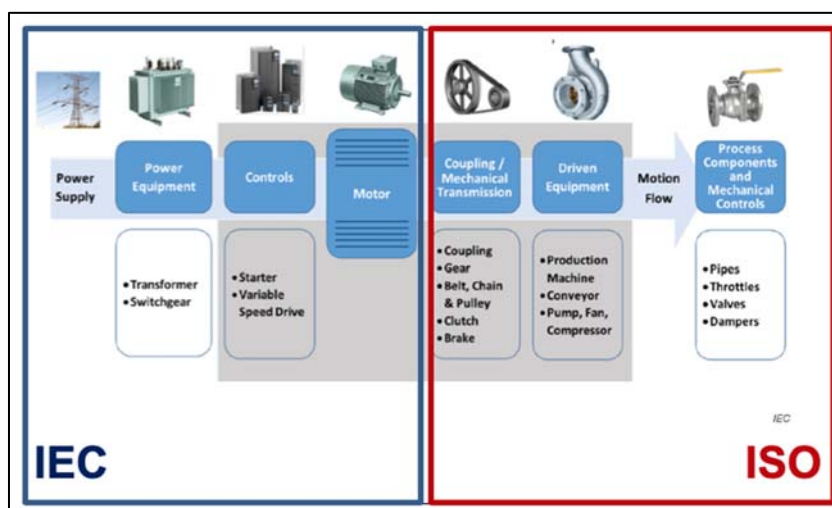


Figure 1 EMDS components and the fields of interest of IEC (electrical) and ISO (mechanical)

As a first step, a workshop to lay the groundwork for future cooperation between ISO & IEC Technical Committees and international standards was organized. The workshop was held on 20 September 2019, the day after EEMODS'19¹, at the JEMA headquarters in Tokyo Japan with the support of JSA and JISC and was attended by 28 participants.

Representatives from three IEC TCs (TC 2, 22 and 121) and three ISO TCs (115, 117, 118) (see Figure 2) reported on their current stage of development of energy efficiency standards for EMDS in their field.

Motor control		Motor	Mechanical equipment		Driven equipment			
IEC TC 121	IEC TC 22 SC 22G	IEC TC 2	ISO TC 41	ISO TC 60	ISO TC 115	ISO TC 117	ISO TC 86	ISO TC 118
Switchgear & controlgear	Adjustable speed drive	Rotating machinery	Pulleys & belts	Gears	Pumps	Fans	Cooling-Compressors	Air-Compressors
1927	1934	1911	1947	1947	1964	1964	1957	1965

Figure 2 EMDS components and their TCs

¹ International Conference on Energy Efficiency in Motor Driven Systems (<https://eemods19.org/>)

Invited speakers from other stakeholders discussed ways to improve the system design and operation of energy efficient EMDS. The IEC ACEE Guides 118 and 119 with Basic and/or Group Standards for EMDS were also presented as possible tools to manage and possibly achieve the desired standards coordination.

Results of the workshop

The workshop was a success to bring together for the first time the key stakeholders for EMDS from IEC and ISO, from Industry, Universities and Government Regulators. Regulators expressed interest in coordinated system standards by IEC and ISO. The participants agreed on the importance of energy efficiency and the need to establish coordinated motor system standards in order to better harvest the potential energy savings in EMDS. The participants provided a number of proposals on organizational and technical level on how to improve the cooperation between the TCs involved and to coordinate and align the respective standards. Main outcomes of the workshop can be summarized as follows:

- Important first meeting between IEC and ISO TCs and guests on Energy Efficient EMDS for all participants
- Good representation of IEC and ISO TCs, industry and associations plus regulators
- Constructive discussion on how to conceive system standards
- Energy efficiency is important for Electric Motor Driven Systems (EMDS)
- Systems are important because they harvest the biggest energy savings
- Consensus on next steps
- The intensive collaboration is needed: stakeholders are willing to collaborate, analyze the problems because it is important; they want to identify the challenges, define the goals and the necessary tools
- Many spontaneous participants are willing to join future work in CAISEMS.

Next Steps

The participants agreed on the following next steps:

1. Establish an informal CAISEMS Task Force.
2. Research and document the following topics for the group:
 - Existing standards (and drafts) for energy efficiency in EMDS in IEC & ISO
 - Terminology questions to be identified and clarified
 - Existing energy efficiency classification metrics to be listed and compared
 - Interpolation methods to be listed and analyzed
 - Minimum Energy Performance Standards and national Regulations (existing and drafts) for EMDS and components to be listed.
3. Set up a draft workplan 2020 – 2021
4. 2nd Meeting of CAISEMS May 2020: video conference.
5. 3rd Meeting of CAISEMS, November 2020: next physical meeting to discuss and decide upon the way forward in organizational terms, the explicit goal and timeline, based on Work plan with Tasks. Meeting as a side event at the Motor Summit 2020 Switzerland.

For more information, please contact

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