



CAISEMS

Coordination and alignment of IEC and ISO standards for energy efficient electric motor driven systems



Coordinator: IEC Advisory Committee on Energy Efficiency ACEE - Task Group 6

CAISEMS - project brief

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

20200423

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 coordination and alignment of international standards of components that together are forming this EMDS (see Figure 1), IEC ACEE TG6 has launched the project CAISEMS (Coordination and Alignment of IEC and ISO Standards for Energy Efficient Electric Motor Driven Systems).

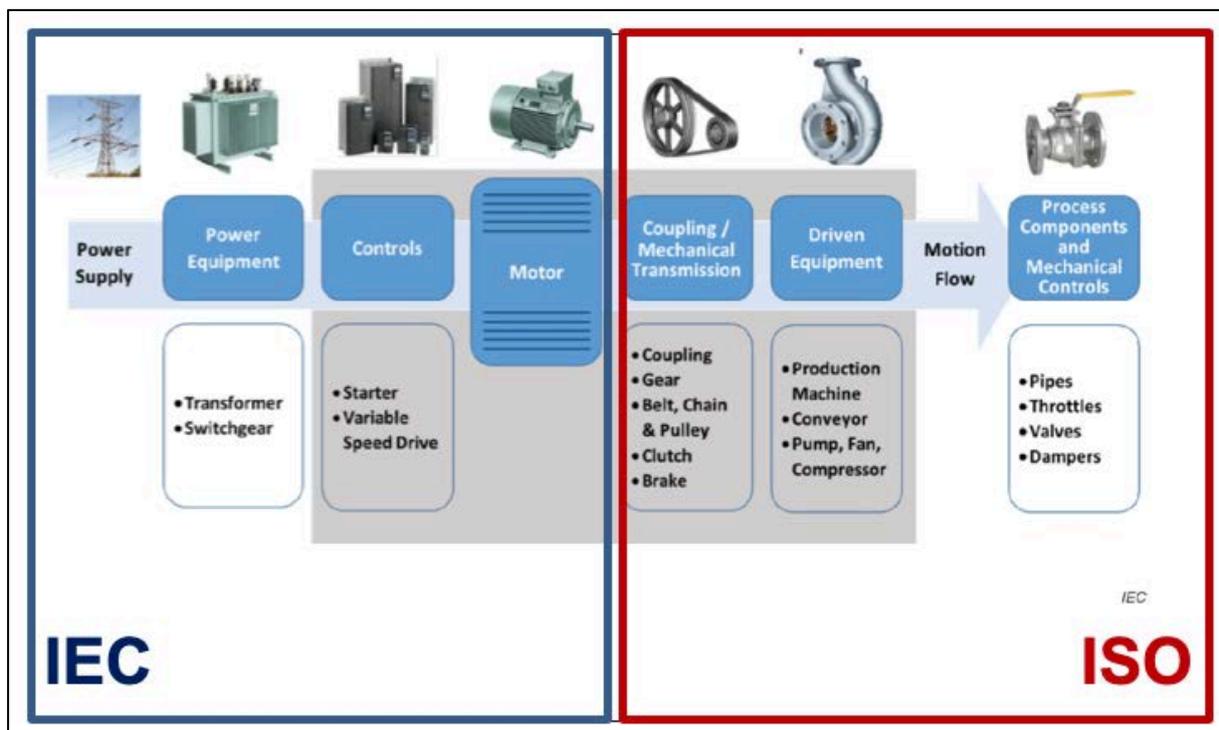


Figure 1 EMDS components and the fields of interest of IEC (electrical) and ISO (mechanical)

The CAISEMS project kick-off was held in a 1st meeting to lay the groundwork for future co-operation between ISO & IEC Technical Committees and international standards. The meeting was held on 20 September 2019 in Tokyo Japan 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 TC115 | 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 responsible TCs

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 Tokyo 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. All participants profited from the contact with experts in other fields forming part of EMDS standardization work. 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.

- 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.

In the period following the kick-off workshop, 41 international experts in various fields of EMDS decided to join the CAISEMS project group as active members, along with 19 passive members.

Next steps

Up to the 2nd CAISEMS meeting on 27 March 2020 two working papers were developed:

1. CAISEMS Background Documents with 5 chapters:

| Chapter | Title |
|---------|--|
| #0 | Executive Summary Introduction, Next Steps, Abbreviations |
| #1 | IEC and ISO standards (and drafts) for Energy Efficiency in Electric Motor Driven Systems (EMDS) |
| #2 | Terminology questions to be clarified |
| #3 | Energy Efficiency classification metrics for Electric Motor Driven Systems and components in IEC & ISO Standards |
| #4 | Interpolation and extrapolation methods |
| #5 | Minimum Energy Performance Standards (MEPS) - existing (and drafts) for EMDS and components |

2. Draft Work Plan 2020 – 2021:

The Work Plan includes the set-up of a New Work Item Proposal for a Basic (or Group) IEC/ISO standard for energy efficient EMDS and the launch of a new Joint Technical Body (Joint Technical Committee or Joint Working Group) between IEC and ISO. Also, a Project Management Group was assigned with the preparation of this.

Further meetings for the CAISEMS project group have been scheduled to discuss and approve the Work Plan:

- 3rd Meeting of CAISEMS: August 2020 (video conference) to agree on scope and operating points
- 4th Meeting of CAISEMS, 20 November 2020 (physical meeting) to discuss and decide upon the way forward in organizational terms, the explicit goal and timeline, based on Work Plan with tasks. This meeting is planned as a side event at the Motor Summit 2020 Switzerland.

For more information, please contact

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