

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

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### 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 form together an EMDS (see Figure 1), IEC ACEE TG6 launched the project CAISEMS in 2019 (Coordination and Alignment of IEC and ISO Standards for Energy Efficient Electric Motor Driven Systems).

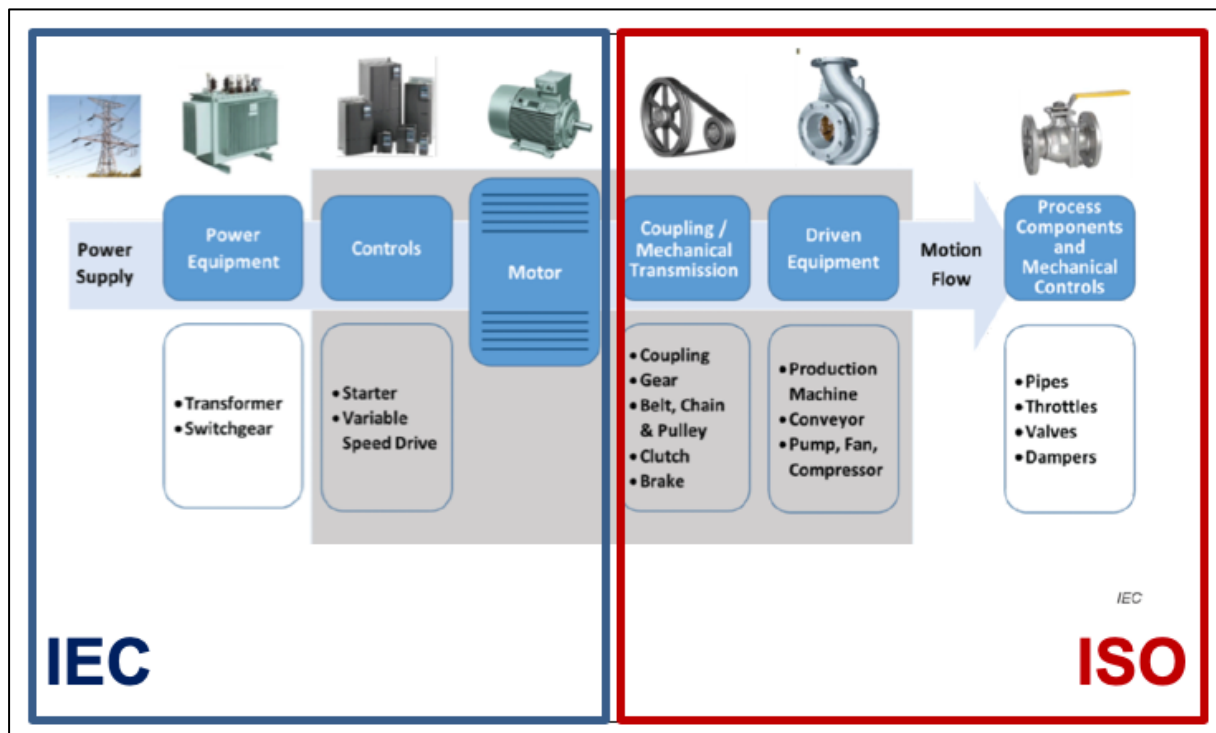


Figure 1 EMDS components and the fields of interest of IEC (electrical) and ISO (mechanical)

The CAISEMS project kick-off was held in a 1<sup>st</sup> 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 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 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. Systems are important because they harvest the biggest energy savings. All participants profited from the contact with experts in other fields forming part of EMDS standardization work. A more intensive collaboration is needed: stakeholders are willing to collaborate, analyze the problems, identify the challenges, define the goals and the necessary tools. The participants provided a number of proposals on organizational and technical level for improving the cooperation between the TCs involved and working on coordination and alignment of the respective standards.

### Preparatory work 2020

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.

Between March and November 2020, four CAISEMS meetings were held (online). Their main task was to update a set of **Background Documents** and to prepare a **Work Plan**.

### CAISEMS Background Documents with 5 chapters:

Chapter	Title
#0	Executive Summary Introduction, Next Steps, Abbreviations
#1	IEC & ISO standards for Energy Efficiency in Electric Motor Driven Systems
#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

## **CAISEMS Work Plan 2020 – 2021:**

The Work Plan, 2nd edition (30 October 2020), includes four concrete steps to prepare the start of an ISO & IEC Joint Working Group. At the November 2020 CAISEMS meeting agreement was reached to start the preparatory work for the set-up of an ISO & IEC Joint Working Group, including at the outset IEC TC 2 (motors), IEC TC 22 (converters) and ISO TC 117 (fans). A Project Management Group was assigned with the preparation of this JWG, where the JWG's kickoff meeting is planned for September 2021.

### **Preparations for an ISO & IEC Joint Working Group**

The new to be formed JWG can define the ISO & IEC JWG's Work Plan and decide how to start on the path towards a widely accepted guideline for well-coordinated and energy efficient EMDS.

The ACEE continues to work for increased cooperation between these and more TCs that will want to join to organize what eventually might evolve towards a Basic Standard for the horizontal energy efficiency aspects of many kinds of different EMDS.

### **For more information, please contact**

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