

CENELEC/TC or SC 23H	Secretariat FRANCE	Date 2022-05-24
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**SC 23H Title:** Plugs, Socket-outlets, connectors and appliance inlets for industrial and similar applications, and for electric vehicles

## **A Background**

In 1976, a decision was taken by IEC in Brussels to separate the technical works pertaining to plugs, socket-outlets and couplers for industrial purpose from those related to domestic ones. This decision was based on the following considerations:

- Domestic socket-outlets operate in a well-defined indoor environment, whereas industrial socket-outlets meet a great variety of environmental and climatic conditions;
- Domestic socket-outlets are designed for a limited number of (low) voltages and for reduced currents, whereas industrial socket-outlets operate up to 800 A 25 000 V;
- Experts in domestic socket-outlets have generally little interest in industrial socket-outlets and vice-versa.

In 1976, IEC/SC 23H was formed, taking over industrial socket-outlets and gathering specialized experts, with today's following scope: Plugs, Socket-outlets and Couplers for industrial and similar applications, and for Electric Vehicles.

IEC/SC 23H standards have, since then, been adapted to the EC market by BTWG 112-1, whose main task was to delete references to North American wire sizes and ratings.

In 2011, in absence of a CLC/TC 23H, the maintenance works of EN 62196 series was given to TC 23BX, renamed "Switches, boxes and enclosures for household and similar purposes, plugs and socket-outlets for DC and for the charging of electric vehicles including their connectors".

This did not facilitate the coordination and harmonisation of works between IEC and CENELEC.

In 2016, the French SR 23H was converted into a full TC 23H and the Secretariat was left to France.

## **B Business Environment**

### **B.1 General**

The EC Mandate M533 'to draft European standards for alternative fuels infrastructure' widely calls on 23H expertise on its past and current works. 23H is involved in 6 of the 8 items in 4.1.2 European standards for electricity supply.

## **B.2 Market demand**

The following items are part of the European mandate M/533:

### "Item 2

*One technical solution for interoperability with a technical specification for battery swapping for electric vehicles"*

- Connecting devices for battery swap (IEC/TS 63066) are available. This document is not under the parallel vote scheme.

### "Item 3

*One technical solution for interoperability with a technical specification for electric bus supply connectors and socket-outlet. If feasible, this technical interoperable solution should be based on the standard developed for electric passenger cars and light duty vehicles"*

- These connectors are covered by EN 62196-1 Ed.3, EN 62196-2 Ed.2, EN 62196-3 Ed.1 (TC 23H).
- The Automated Connecting Device (ACD) for passenger buses is covered by EN 50696: 2021. The EN document was offered to IEC and the number assigned is IEC 63407.

### "Item 5

*One technical solution for interoperability with a technical specification for shore-side electricity supply for maritime vessels compatible with the specification contained in IEC/ISO/IEEE 80005-1 standard"*

1. The EN version of IEC 62613 series is published (Plugs, socket-outlets and ship couplers for **high-voltage** shore connection systems).
2. The EN version of IEC 60309-5 (Annex ZZ) is at publication stage (Plugs, socket-outlets and ship couplers for **low-voltage** shore connection systems).

### "Item 6

*Technical solution for interoperability with a technical specification for shore-side electricity supply for inland waterway vessels compatible with the specification contained in standard EN15869-2:2010 or its later edition and an additional standard for inland waterway vessels with higher power requirements"*

- Plugs and socket-outlets for this application are those of EN 60309 series (TC 23H)

### "Item 7

*Establish technical specifications as a recommended solution for interoperability for Alternate Current (AC) normal recharging points for L-category motor vehicles"*

The European commission has already published a document on October 22, 2019 (reglement 2019/1745 from commission dated 13 August 2019)

IEC specification for Connecting devices for L-category vehicles for Direct Current (DC) are within the scope of IEC TS 62196-4 and IEC 62196-6. Anyhow, IEC TS 62196-4 is on hold as it contains normative references to unpublished documents of the 61851 series.

## **B.3 Trends in technology**

No major change is expected in plugs, socket-outlets and couplers contact technology due to the set dimensions required for compatibility.

#### **B.4 Market trends**

At a time when the development of alternative fuels infrastructure is being more and more needed, the goal of TC 23H is to develop standards for connecting devices as required by the industry (car industry, ship industry and electrotechnical industry) and for public infrastructures, in a timely manner.

#### **B.5 Ecological environment**

The works of TC 23H are closely linked to the needs of alternative fuels infrastructures. Although products covered by TC 23H have little impact on the environment, several works are closely linked to environmental concerns, e.g. electric vehicle couplers and ship-to-shore connecting devices in high-voltage and low-voltage.

#### **B.6 Involvement of societal stakeholders**

None

#### **B.7 Involvement of SMEs**

Chairman, Secretary and many experts in IEC/SC 23H PTs and MTs and CLC/TC 23H WGs, come from European SMEs.

### **C System approach aspects**

IEC/SC 23H has liaisons with TC 20, TC 69, SC 48B, TC 18, TC 125 to ensure cooperation and coordination of works. Such liaisons are not deemed necessary in CENELEC TC 23H as all developments are made at IEC level

### **D Objectives and strategies (3 to 5 years)**

- To develop standards according to the latest state-of-the-art, in a timely manner;
- To keep 23H standards up-to-date to reflect new/changing technologies and user requirements both in the marketplace, and in CEN and CENELEC customer Technical committees.
- See B.2 Market demand

### **E Action plan**

- For standards under WG 1 and WG 2, TC 23H is waiting for the answers of the Consultant.

### **F Useful links to CENELEC web site**

TC home page giving access to Membership, TC/SC Officers, Scope, Publications, Work programme [password-protected area].

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