

ALBA 2026

IEC Standardization Project

IEC 60095-8
IEC 63711-1

Luca Brisotto

IEC 60095-8 (FDIS)

Project plan update

CD

- **CD publication** : September 2023
- CD comments from NCs : November 2023
- CD comments review : May 2024
- **CD rework submission** : **July 2024 → September 13, 2024**
- CD comments stage : **Until November 2024**

COMMITTEE STAGE

CDV
FDIS

- **CDV** : **January 2025 (+ translation and voting 12w)**

ENQUIRY STAGE

- CDV Voting : Closed end June 2025
- CDV Comments review : October 9, 2025 (Wuhan IEC TC21 WG2 meeting)
- FDIS Launch : October 2025
- **FDIS Editing check** : **December 2025-April 2026 (under final review)**
- FDIS Voting period : 6 weeks upon disclosure to NCs
- Several minor editorial changes have been requested – response delivered to IEC and review running before disclosure of FDIS
- No technical changes or further actions required

FINAL APPROVAL STAGE

IEC 63711-1 ED1

STATUS and MILESTONES

Detail

Committee	Subgroups	Project Leader	Current Status	Frcst Pub Date	Stability Date
TC 21	WG 2	Mr Luca Brisotto	ACD	2029-05	

History

Stage	Document	Downloads	Online	Voting Result	Decision Date	Target Date
prePNW					2025-07-21	
PNW	21/1260/NP	 358 kB		APPROVED	2025-07-25	
PRVN					2025-09-19	2025-09
ACD	21/1270/RVN	 44 kB  250 kB			2025-12-05	2027-06
CD						2027-06

- **WD (Working Draft) preparation by IEC TC21 WG2**
 - OSD (ONLINE STANDARD DEVELOPMENT) Mandatory
 - Next milestone: **Committee Draft (CD)**



Project

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12 V sodium-ion secondary batteries for start-stop and auxiliary application - Part 1: general requirements and methods of test

Initial Project Plan

Committee	Enquiry	Approval	Publication
2027-06-30	2028-06-30	2029-01-31	2029-05-25

Up-to-date Project Plan

Committee	Enquiry	Approval	Publication
2027-06-30	2028-06-30	2029-01-31	2029-05-25
CD	CDV	FDIS	

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Project Launch and Wuhan IEC TC21 meeting



Courtesy of Camel Group



Courtesy of Camel Group

- **First proposal (NP)** : May 2025
- Revision of NP (EU+US) : May-June 2025
- Voting/Approval of NP : July 2025
- **Official kick-off:**
 - IEC TC21 WG2 meeting in Wuhan (October 2025)
 - SiB Workshop with support from China NCs, Industry and international experts
- Workstreams, activities and enquiry about sub WGs defined, in preparation of the Committee Draft (Committee Stage)

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Action plan following Wuhan IEC TC21 meeting

- **Organization by sub working groups** to collaborate on the different parts/test methods:
- **SG1** Definitions
- **SG2** High rate discharges (CCA, PPC, Charge Recovery)
- **SG3** Endurance, High T durability, self discharge, failure mode "promoting" procedures
- Working groups to meet regularly (mainly virtual meetings) and agree on testing according to their possibility, share the results and reach a consensus on the test procedures and requirements levels
- Full WG meeting face to face to be planned 1 or 2 times per year
- Based on previous experience, it can be estimated around 2 years before reaching a good maturity to output a CD (First Committee Draft)

SWG1:

- Not active yet
- Kick-off after ALBA 26
- Leader: to be appointed

SWG2:

- Active
- CCA/PPC undergoing
- Leader: Eckhard Karden

SWG3:

- Not active yet
- Kick-off after ALBA 26
- Leader: to be appointed

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SWG2 Activities (I)

- Following project kick-off (Wuhan, 9 Oct 2025), the sub-group had **10 web meetings** (26 Nov – 27 Apr) and coordinated test work in >5 leading industry labs

test methods for cold performance	problem statement
CCA or I_{cc} cold cranking amps (cf. IEC60095-1)	The second = “power” rating of automotive batteries will keep the name Icc or CCA, but the traditional test method is highly specific for lead-acid batteries in classic engine-starter applications: transfer this method into one that is appropriate for LIB and auxiliary / backup batteries in modern vehicles, maintaining first-order backward compatibility
PPC pulse-power characterization (cf. IEC60095-8)	Peak discharge performance at moderate loads, partial SOC and (very) low temperatures are essential for auxiliary & backup battery design and size selection. Test methodology should be compatible with IEC 60095-8 (allowing cross-technology benchmarking) but adjusted per technology (e.g., accelerate pre-discharge from I20 rate)
CR charge recovery (cf. IEC60095-8)	Quick recovery of state-of-charge (SOC) and, even more importantly, dynamic discharge performance (state-of-function, SOF) is the key enabler for robust availability of auxiliary and backup power from downsized 12V batteries. Each technology has their specific limitations, but appropriate test methods should allow technology-independent requirement definition.

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SWG2 Activities (II)

test methods for cold performance	work items so far (results will be reported during ALBA 2026)	next steps
CCA or I_{cc} cold cranking amps (cf. IEC60095-1)	- focus on first 10s (like LIB SLI and LAB AUX norms) and generalize requirement to any time - ratio of I_{cc} values between temperatures (e.g., -29 °C vs -18 °C: undefined in LAB norms)	- document results - define “technology agnostic” procedures and requirements for the SIB Standard
PPC pulse-power characterization (cf. IEC60095-8)	- soak period duration before & after pulse tests - PPC maps as functions of SOC and temperature across cell types & designs, cell vs. 3p4s battery, etc.	
CR charge recovery (cf. IEC60095-8)	How relevant is the SOF boost over initial SOC recovery per technology? ($\gg 1V$ for LAB $< -18^{\circ}C$)	

PNW 21-1260 ED1

SCOPE (definition agreed by China/EU/US National Committees)

- This proposal is applicable to sodium-ion batteries with a nominal voltage of 12 V, used in passenger cars, commercial and industrial vehicles as a power and energy storage with one or more functions such as:
 - 1) starting an internal combustion engine (ICE)
 - 2) in vehicles with start-stop (or stop-start, idling-stop or idle-stop-and-go) system, supply the electric 12V system of the vehicle while the engine is automatically switched off and alternator is not operated, and restart the engine
 - 3) in vehicles with 12V regenerative (or recuperative) braking function, absorb maximum alternator power while the ICE powertrain deems to prioritize 12V electric generation, and contribute to support electric loads in other periods of a trip (saving fuel and reducing CO2 emissions then)
 - 4) stabilize the 12V system voltage by absorbing or delivering peak power in conditions of rapid change in load demand, 12V generation, or system malfunctions
 - 5) supply energy to 12V electrical loads (including safety relevant loads or autonomous driving features) in situations when the primary 12V electric source is not active (examples: parking, vehicle activation, after-run, failure of DC-DC) or not matching electric consumption (example: alternator fully utilized)
- *REFERENCE for 24V (or other multipliers of 12V) systems testing → to be introduced in scope*

SLI

S&S

AUX

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Standards Framework (documents available on IEC portal)

AVAILABLE DOCUMENTS (Sodium Ion – Room temperature)			
IEC 63591-1 ED1	21/1268/CD	IEC TC 21	Secondary sodium-ion cells for the propulsion of electric road vehicles – Part 1: Performance testing
IEC 63591-2 ED1	21/1269/CD	IEC TC 21	Secondary sodium-ion cells for the propulsion of electric road vehicles – Part 2: Safety requirements and test methods
IEC 63635 ED1	21A/937/CD	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary sodium ion cells and batteries for use in industrial applications
IEC 61434 ED2	21A/944/CD	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Guide to designation of current in alkaline secondary cell and battery standards
IEC 63636 ED1	21A/945/CD	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sodium ion cells and batteries for use in industrial applications
IEC 63635 ED1	21A/976/CD	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary sodium ion cells and batteries for use in industrial applications
IEC 63636 ED1	21A/977/CD	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sodium ion cells and batteries for use in industrial applications
OTHER REFERENCE DOCUMENTS (Sodium Ion – Room temperature)			
IEC 60095-8 ED1	21/1244/CDV	IEC TC 21	Secondary sodium-ion cells for the propulsion of electric road vehicles – Part 1: Performance testing
IEC 62660-1 ED3	21/1281/CD	IEC TC 21	Secondary sodium-ion cells for the propulsion of electric road vehicles – Part 2: Safety requirements and test methods
IEC 62660-2 ED3	21/1282/CD	IEC TC 21	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary sodium ion cells and batteries for use in industrial applications

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Standards Framework (Official publications – mostly Li-Ion reference)

PUBLICATIONS		
IEC 62485-5:2020	IEC TC 21	Safety requirements for secondary batteries and battery installations - Part 5: Safe operation of stationary lithium ion batteries
IEC 62485-5:2020/COR1:2022	IEC TC 21	Corrigendum 1 - Safety requirements for secondary batteries and battery installations - Part 5: Safe operation of stationary lithium ion batteries
IEC 62485-6:2021	IEC TC 21	Safety requirements for secondary batteries and battery installations - Part 6: Safe operation of lithium-ion batteries in traction applications
IEC 62660-1:2018	IEC TC 21	Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 1: Performance testing
IEC 62660-2:2018	IEC TC 21	Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 2: Reliability and abuse testing
IEC 62660-3:2022	IEC TC 21	Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 3: Safety requirements
IEC TR 62660-4:2017	IEC TC 21	Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 4: Candidate alternative test methods for the internal short circuit test of IEC 62660-3
IEC 62902:2025	IEC TC 21	Secondary cells and batteries - Marking symbols for identification of their chemistry
IEC 63118-1:2024	IEC TC 21	12 V lithium-ion secondary batteries for automotive starting, lighting, ignition (SLI) applications and auxiliary purposes – Part 1: General requirements and methods of test
IEC 61960-3:2017	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications - Part 3: Prismatic and cylindrical lithium secondary cells and batteries made from them
IEC 62133-2:2017	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems
IEC 62133-2:2017/AMD1:2021	IEC SC 21A	Amendment 1 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems
IEC 62619:2022	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications
IEC 62620:2014	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications
IEC 62620:2014/AMD1:2023	IEC SC 21A	Amendment 1 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications
IEC 63056:2020	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems
IEC 63056:2020/COR1:2021	IEC SC 21A	Corrigendum 1 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems
IEC 63057:2020	IEC SC 21A	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium batteries for use in road vehicles not for the propulsion