

Annex 2

STRATEGIC BUSINESS PLAN (SBP)

IEC/TC OR SC: IEC/TC125	SECRETARIAT: Belgium	DATE: 2019-09-24
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Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF TC

Title: Personal e-Transporters (PeTs)

Scope:

Standardization of electrically powered transport devices where the speed control and/or steering is electrical/electronic ('personal e-transporters') for use on the road or in public spaces.

This means, standardization in the field of personal e-Transporters, including but not limited to:

- Electrical and mechanical Safety
- Reliability
- Functional safety
- EMC
- Maintenance
- Docking stations for public use
- Recycling

Exclusions:

Standardization of electrically powered bicycles, mopeds, motorcycles and passenger cars are excluded from the scope because they are handled by other TCs:

- IEC TC 69
- ISO TC 149
- ISO TC 22

B. MANAGEMENT STRUCTURE OF THE TC

Since PeTs devices and technologies are still evolving and expanding vigorously, the structure of the TC is preferred to be flexible so as to effectively follow the rapid change but not constrain it.

Below is a first WG structure:

WG 1 :

Title : General requirements, terminology and classification

Tasks :

to develop standards defining the terminology, classification and general requirements for all types of PeTs.

JAHG 2 :

Title : Coordination with IEC TC 61/electrical safety requirements

Tasks :

To review the TC 61 standard IEC 60335-2-114 and make recommendations.

Provide a proposal for the update of the scope of IEC TC 125 with reference to the standardization in IEC TC 61.

C. BUSINESS ENVIRONMENT

The business environment of PeTs devices and technologies is rapidly expanding on a global basis with new emerging markets and applications. PeTs products will be used in emerging application sectors using various technologies which include PCBs, displays, sensors, batteries, etc.

PeTs are a diverse group of products which overlap or can be applied with products in the different areas like Robots, Sports and wellness, Consumer electronics, Moveable battery storage, Security, Transportation, Goods transport/logistics, Medical devices.

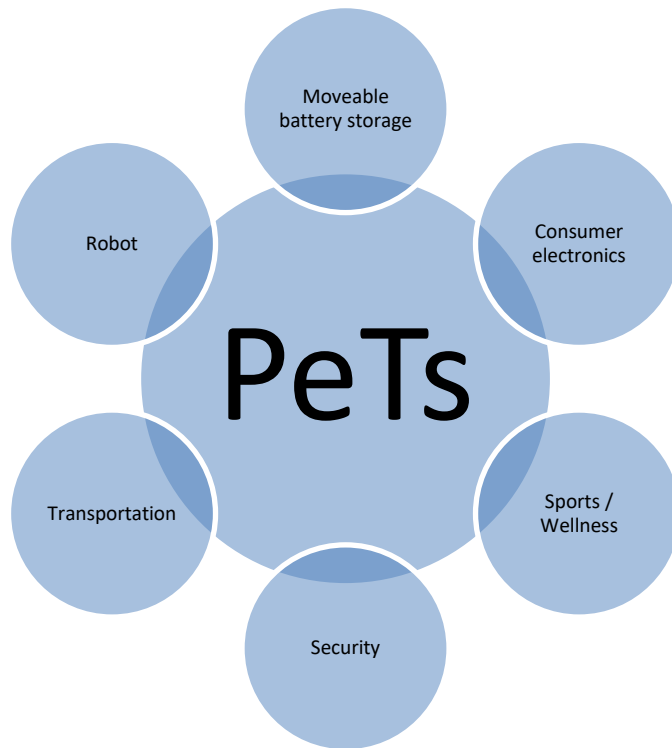


Figure 1 : Business areas and applications of PeTs devices and technologies

D. MARKET DEMAND

The stakeholders for TC 125 standards include end users, manufacturers of appliances, certification and testing laboratories, retailers, service providers and national (local) authorities. At the moment, there are no obstacles for these groups to participate.

There are currently standards available for PeTs at the regional or the national levels, but at the international level the available standards do not cover all the aspects for PeTs.

PeTs are a developing industry. And as new technologies and new products will emerge, the scope of the PETs might need to be adapted or expanded.

Today, PeTs are widely used all over the world. After years of development, the PeTs market is now growing rapidly. China is the largest exporter of this kind of products. According to statistics from the general administration of customs of China, the export amount under the HS code (87116000) was 1.85 billion US dollars in 2017, and rising by 2.73% per year.

PeTs devices have developed from toys to personal mobility devices and have expanded to also become automated devices for transporting goods. Though PeTs devices and technologies can be very different in type and shape, they share common characteristics in that they are helping people to have an easier life in terms of transport. They are providing solutions for transporting passengers and goods.

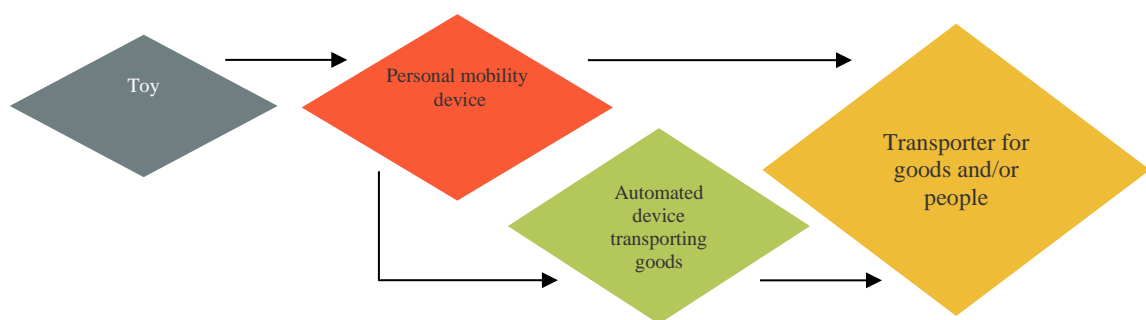


Figure 2 : The evolution and road-map of PeTs devices and technologies

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

PeTs technology will focus on portability, energy conservation, automatic driving, self-balancing control, etc.

These technologies will integrate many of the underlying technologies.

For example, the use of electronic circuits (including programmable elements) to provide safety related functions. The effects of electromagnetic phenomena on such circuits will significantly impact the design and construction of future appliances. In addition, manufacturers are using the telecommunications network to enable remote controlling of appliances and remote servicing of devices which incorporate programmable electronic circuits. (This aspect of device servicing and usage is also expected to grow.) All these technologies have a significant impact on the development and the safety of these devices. Self-driving technologies and GPS systems will also have an impact on the PeTs as they will also be included in these devices.

It can be predicted that the technologies shown in the figure below will become the driving technologies of PeTs.



Figure 3 : Trends in PeTs devices and technologies

Safety, Reliability, EMC, Environmental, Quality assurance etc. are the directions into which the standards for PeTs will need to focus.



Figure 4 : Focus for Standards of PeTs

There is also a link to the Internet of Things (IoT): controlling and steering of PeTs by means of communication between the user using his mobile phone and the device is already being developed (mobile phone to device communication). But also communication between the different PeTs is likely to happen : for example if the PeT consists of 2 separate devices (like a roller skate system) the link to the internet (used for example for GPS steering) might also be used to limit the distance between the 2 devices for safety reasons.

Personal e-Transporters as a new mode of transportation have recently emerged and their market is rapidly increasing. These devices are gaining popularity as a fast and flexible means of transportation for urban traffic and as a first/last mile solution in combination with public transport. A survey conducted in June 2018 in nine European cities indicated that 1-10% of the road users use a Personal e-Transporter at least on a monthly basis (De Ceunynck et al., 2019). This share is rapidly expanding, pushed by the arrival of shared electric scooter companies in many cities during the last year, and by increasing individual sales of these devices. The wide range of devices serves the diverse needs of various individual users, and while most devices are intended for individual transportation, devices for passenger and freight transport are emerging as well. In short, the market for Personal e-Transporters is new but rapidly expanding, and will likely take up a substantial share of the modal split in the near future.

F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)

TC 125 is, in terms of the IEC system approach to standardization, a customer committee of the following IEC component committees.

- TC 20 Electric cables
- SC 21A Secondary cells and batteries containing alkaline or other non-acid electrolytes
- SC 23J Switches for appliances
- SC 32C Miniature fuses
- TC 33 Power capacitors
- TC 35 Primary cells and batteries
- SC 37A Low-voltage surge protective devices
- TC 40 Capacitors and resistors for electronic equipment
- SC 47E Discrete semiconductor devices
- TC 77 Electromagnetic compatibility
- TC 94 All-or-nothing electrical relays
- TC 96 Transformers, reactors, power supply units and similar products for low voltage up to 1100 V
- CISPR International special committee on radio interference
- ...

Also IEC TC 125 will be a customer committee of multiple ISO component TCs such as:

- TC 1 Screw threads
- TC 4 Rolling bearings
- TC 31 Tyres, rims and valves
- TC 61 Plastics
- ...

The customers of TC 125 standards and of products designed and manufactured to TC 125 standards are consumers who purchase the products, product manufacturers and Regulatory Authorities responsible for safety/ performance. Consequently, to ensure

- that regulatory Authorities responsible for safety/performance have confidence in using TC 125 standards in their regulations and
- the safety of consumers who use the products designed and manufactured to TC 125 standards, all components used in these devices may not compromise the ability of the device to meet the requirements of the device standard when they are incorporated into the device as specified by the device/component manufacturer.

G CONFORMITY ASSESSMENT

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The standards produced by TC 125 are to be used for certification purposes in the IECEE scheme, and the certificates issued are used to obtain or cover market approval requirements internationally.

H. HORIZONTAL ISSUES

TC125 will avoid technical overlap with other TCs and will make reference to the relevant publications.

1) The currently existing standardization is scattered and insufficiently covering safety aspects:

In IEC TC 61:

- IEC 60335-1 (2010): Household and similar electrical appliances – Safety – Part 1: General requirements
- IEC 60335-2-114 (2018): Household and similar electrical appliances – Safety – Part 2-114 Particular requirements for self-balancing personal transport devices for use with batteries containing alkaline or other nonacid electrolytes.

This standard has solid electrical safety, but because this standard was initially made to address hoverboards and some other devices, the scope is not covering the requested scope (such as road use, requirements depending on a speed classification and functional safety).

2) In CEN TC 354 (no link to work in an ISO TC):

- prEN 17128 (= to CDV stage): Non-approved light motorized vehicles for the transportation of persons and goods and related facilities – Personal light electric vehicles (PLEV) – safety requirements and test methods
- This draft has good functional safety but is lacking decent electrical safety, rental use and the environmental testing is not sufficient for road use.

3) Future work in ISO TC 299:

- ISO 13482-x (NWIP foreseen for launch end of 2019): Personal care robots safety – Part x – Person Carrier

Is foreseen to look at basic functions of self-balancing Person Carriers. Road use is not in the scope.

I. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
to develop standards defining the terminology, classification and general requirements for all types of PeTs.	Creation of WG1 and kickoff within 2020	ongoing
To review the TC 61 standard IEC 60335-2-114 and make recommendations Provide a proposal for the update of the scope of IEC TC 125 with reference to the standardization in IEC TC 61	Creation of JAHG 2 and a first proposal to be provided (to IEC TC 61 and IEC TC 125) before the end of 2020	Before the next plenary meeting