



Standardization  
Administration  
of the P.R.C

# Standardization Cooperation for Self-balancing Vehicle and Unmanned Aerial Vehicle Between China and the USA

Dr. Yubing LI  
DG of International Cooperation  
Department. SAC

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# 1 .Background

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## Electric self-balancing vehicle (scooter)

- ❖ A device controlled by user's body to start/stop and accelerate/decelerate.
- ❖ A tool for short distance traffic & entertainment.



## Unmanned aerial vehicle

- ❖ is an aircraft without a human pilot aboard.
- ❖ A tool used for missions too dull, dirty or dangerous for humans.



# 1 .Background

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Market:

- ❖ The global industry scale of electric self-balancing vehicle is about 60 billion dollars and unmanned aerial vehicle is about 84 billion dollars.
- ❖ In recent years, global industry scale in China is growing rapidly. In 2015, the production of electric self-balancing vehicle from China is about 15.5 million, which occupies almost 90% of the world.
- ❖ In 2015, the market scale of unmanned aerial vehicle from China worth 1.2 billion USD, which occupies almost 15% of the world.



# 1 .Background

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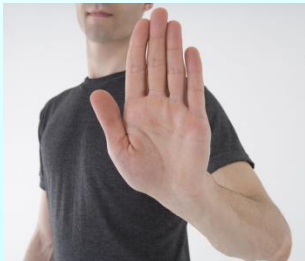
Market:

However, the blossom also brought some risks because of the existence of low quality products.

Due to the low quality batteries used for electric self-balancing vehicles, several fires occurred one after another in the US and some caused serious losses.



Due to flight control, GPS instability, magnetic interference etc., unmanned aerial vehicles (uavs) is easily out of control and cause security problem.



US issued policies to restrict the imports of electric self-balancing vehicle, which seriously affected the exports from China. US also published regulations for restricting the commercial use of UAV.

# 1 .Background

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Standards: USA

- ❖ In 2016, UL released the first standard for safety of electric self-balancing vehicle: UL 2272, and the standard for unmanned aerial vehicles: UL3030.
- ❖ In December 2016, UL 2272 became the national standard of both America and Canada: ANSI/CAN/UL-2272:2016, Electrical Systems for Personal E-Mobility Devices.



# 1 .Background

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Standards: CHINA

- ❖ In October 2016, SAC assigned the plan of two national standards for self-balancing vehicle: ‘Electrical self-balancing vehicles—Safety requirements and test methods’ and ‘Electrical self-balancing vehicles—General technical requirements’.
- ❖ These two Chinese national standards provide the requirements, test methods and rules for electrical, mechanical, environmental and using safety of self-balancing vehicle.
- ❖ The public enquiry of these two standards has already been finished. SAC plans to review and authorize approval recently.



# 1 .Background

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## Standards: China

- ❖ Ministries formulated The Guidelines for The Construction of Standard Systems for Unmanned Aerial Vehicle System (2017 - 2018 Edition), and the standardization of national unmanned aircraft systems was planned as a whole.
- ❖ The Terminology, Classification and other civil use unmanned aerial Vehicle national standards are being developed.
- ❖ China held the plenary meeting of ISO/TC20/SC16 on unmanned aerial vehicle. We have submitted the proposal of developing the ISO standard on the classification of unmanned aerial vehicle and was approved..





## 2 .Purpose & Significance

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### 3 .Work Has Been Done

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- ❖ Both China and the USA are the IEC / SMB members, China and USA who is the developer of the United States national standards in electric self-balancing vehicles and unmanned aerial vehicle maintain smooth communications.
- ❖ The two sides realized that the development of standards needs to participate in each other.
- ❖ In the process of national standards development of Sino-US self-electric balancing vehicles and unmanned aerial vehicle, both Chinese and American enterprises and experts participated in the formulation of the other standards, and in-depth exchanges at the expert level.

### 3 .Work Has Been Done

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- ❖ At present, the US standards have been published and the Chinese standards are being approved. Industrial standards department II of SAC organized experts to make a consistent comparison on the standards between China and the United States.
- ❖ There are 62% of the items are basically similar or the same, and 38% of the items are different as following:
  - ✓ China's standards are more detailed and comprehensive than the US';
  - ✓ Motor and battery standards refer to the national standards respectively;
  - ✓ Individual technical parameters for some components are different.

# 4 .Cooperation proposal

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- ❖ Set up a standard working group of electric self-balancing vehicles and unmanned aerial vehicle together.
- ❖ Strengthen the standardization of cooperation and promote the standard mutual recognition in the framework of standardized cooperation between China and the United States.
- ❖ Based on the mutual recognition work, make an international standard proposal jointly and push forward the international standardization work in this field.



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# **Thank you !**

**Address: No.9 Madian Donglu, Haidian District**

**<http://www.sac.gov.cn>**

